

3<sup>rd</sup>

# INTERNATIONAL CONFERENCE on

ASSET AND FACILITY MANAGEMENT



## ICASFAM 2014

November, 11-13, 2014 Grand Inna Muara Hotel Padang  
West Sumatra Indonesia



Bung Hatta University

## CONFERENCE PROCEEDING

# Asset and Facility Management

### Resilience and Sustainability Organizations

Civil Engineering Department Postgraduate Program Bung Hatta University  
Padang, West Sumatra Indonesia

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***"Resilience and Sustainability Organisation"***

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Civil Engineering Postgraduate Studies, Bung Hatta University, Padang West Sumatra Indonesia





## WELCOME SPEECH

### *The Chairman of ICASFAM 2014 Organizing Committee*

Dear Colleagues and friends,

In this opportunity of the 3<sup>rd</sup> International Conference on Asset and Facility Management, on behalf of the Organizing Committee, I would like to welcome you all to attend this prestigious conference. The 3<sup>rd</sup> International Conference on Asset and Facility Management was held on 11-12 November 2014 in Grand Inna Muara Hotel, Padang, West Sumatra, Indonesia. The objective of this conference is to disseminate widely the result of researches and the new technology including useful information in the domain of asset and facility management.

For that reason, main theme of this conference is set on the "Asset and facility management: Resilience and Sustainability Organizations". However, we have also put our interest on the sub-themes to cover wide spectrums of topics ranging from *Risk Management, Maintenance Management, Asset and Facility Management, Sustainable Energy Planning and Management, Legal Aspect on Asset and Facility Management, Disaster and Crisis Management, Asset and Facility Management Information System, Asset and Facility Assessment, Project Management, Operation Management, Construction Management, Strategic Management and Technology Management.*

In this regard, I sincerely thank all members of the scientific committee, keynote speakers and invited speakers, who have contributed a large portion in this conference. I would like also to thank all of my colleagues in the organizing committee that have been worked so hard to prepare this conference.

Finally, I wish this conference will have a great success and all participants will obtain large benefit to broaden their knowledge particularly in the area of asset and facility management. We really hope that all participant will enjoy their stay and have a sweet memory in the beautiful city of Padang.

Yours sincerely,

Ir. Wardi, M.Si.





## WELCOME SPEECH

*Director of Postgraduate Studies, Bung Hatta University*

Dear Participants,

The 3<sup>rd</sup> International Conference on Asset and Facility Management is a biannual agenda of the Civil Engineering Graduate Program of Bung Hatta University, aiming to get information and the development of science in the field of asset management in Civil Engineering Graduate University of Bung Hatta.

On behalf of the local organizing, it is our great pleasure to cordially welcoming you to the 3<sup>rd</sup> International Conference on Asset and Facility Management on 11-12 November 2014, in the Grand Inna Muara Hotel, Padang, West Sumatra, Indonesia. The major theme of this conference is "*Asset and facility management: Resilience and Sustainability Organizations*". This conference is a great opportunity to discuss particularly in the area of asset and facility management and to network with colleagues.

We hope you will enjoy the conference and your stay in Padang, and leave this event enriched with ideas and friends.

Yours sincerely,

**Prof. Dr. Ir.Nasfryzal Carlo, M.Sc**



## **OPENING REMARKS**

### ***Rector of Bung Hatta University***

Dear Participants,

On behalf of Bung Hatta University, I respectfully welcome you all to our beloved city of Padang the capital city of West Sumatra Province. On the 3<sup>rd</sup> International Conference on Asset and Facility Management (ICASFAM) 2014, we highly appreciate the participation of Professors, academicians, researchers and practitioners for accepting our invitation to discuss current and various issues related to Asset and facility management.

We also would like to appreciate the continuous support of our provincial Government, especially our governor Prof. Irwan Prayitno to the development of our university. The government of West Sumatra has been our strategic partner for more than 30 years in providing higher educational services for our community towards better quality of life.

On behalf of Bung Hatta University I would like to thank the Governor of West Sumatra for its kindness to host the welcoming dinner and the Minangkabau cultural presentation for our honorary guests of the 3<sup>rd</sup> International Conference on Asset and Facility Management on November 10<sup>th</sup>, 2014. I would also like to appreciate our partner of the conference; University Technology Malaysia (UTM) Malaysia, Kyoto University-Japan, Teeside University-UK, HAWK Universiteit Germany and all of the sponsors. Last but not least, my deep appreciation to the committee, both steering and organizing committee, for their hard work for this conference. We do hope that the conference will provide fruitful outcomes for our academic exercise towards the better quality of life of our society.

Yours sincerely,

**Prof. Dr. Niki Lukviarman, S.E., Akt., M.B.A.**





## Causative Factor of Road Damage Related to Tonnage Limit Violation in Padang

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### Abstract

This study aimed to identify causative factor of truck tonnage limit violations in Padang. In West Sumatra have enacted rules on cargo freight vehicles, namely the Governor Circular No. 551-23 / 291 / ECONOMY-2011. However, there are still many truckloads boundary violations in Padang. The study was conducted by using a criminological approach. The study population includes road users, law enforcement agencies, employers, and the truck driver. Samples were taken in non-probability sampling design. Data collected by the study documentation, interviews, and surveys. Documentary study used to collect the legislation and criminal statistics. Interviews are used to explore the legal culture of society, apparatus, and businessman. Survey is used to analyze the completeness of facilities and infrastructure associated with the enforcement of truck tonnage. The data were analyzed qualitatively. The study showed that the causative factor of truck tonnage limit violations stem from structural problems. The government does not have an integral policy to regulate and manipulate traffic. This can be seen from several factors, namely: (1) factor of legislation there are several reasons, namely: Governor Circular Restriction of Truck Tonnage less have force of law, the absence of local regulations on goods transport pathways, local regulations on road class, there are no regulations on spatial planning, no (2) institutional factors, community agencies most concerned to support the enforcement of truck tonnage limits, but there are public institutions (youth organization) that actually take advantage for personal gain. (3) The equipment to ensure the rules are still manually so vulnerable violation, in addition to the road signs is not complete. (4) The general public legal culture does not support the enforcement of truck tonnage limit.

**Keywords:** causative, damage, roads, tonnage, trucks



### Preliminary

Road infrastructure is a vital asset to support any community activities in various fields. To maintain the function of the life of the road, there are rules set by the government, among others:

1. Law No. 22 of 2009 on Road Traffic and Road Transport.
2. Law Number 38 of 2004 on the road.
3. Government Regulation No. 34 of 2006 on the Way;
4. Circular No. 551.23 / 291 / Economy-2011 on Control of Vehicle Cargo Freight Transport in the province of West Sumatra.

Governor Circular Letter No. 551.23 / 291 / Economy-2011 on Control of Vehicle Cargo Freight Transport in the province of West Sumatra issued in order to improve the safety and smooth traffic and prevent road damage due to overloaded vehicles. Based on the research shows that the circular proven ineffective and still many violations tonnage trucks. The modus operandi is to truck tonnage offense to bribe the local police officers and avoid raids conducted by law enforcement officials.

Non-compliance is suspected goods transport drivers affected by several factors, among others: the rules of limit tonnage of freight and other supporting rules, human apparatus (which includes law enforcement, truck drivers, businessmen, and community), supporting facilities and infrastructure, as well as economic factors.

Violation of truck tonnage is one cause of damage to roads in Padang. The implications of damage to the road are the undermining of the road, but it also affects the reduced life of the road. The consequence of this is that the State should be harmed because of road maintenance and repair budget larger than it should be.

This study aimed to identify and analyze the causative factors violations tonnage limit the amount of trucks.

### Research Methods

1. Research Approach

This study uses criminological approach. This approach was used to identify factors that lead to violations tonnage trucks.

2. The flow of thought

Violation tonnage trucks suspected to be caused by several factors, among others: the human factor, legislation factor, facilities and infrastructure factors, and economic factors.

Human factors are including the authorities in the field of enforcement of road tonnage, truck drivers, businessmen, and public road users.





Regulatory factor is all the rules relating to tonnage trucks, among others: Road Traffic Act, Road Safety Act, the rules include the implementation of government regulations, local regulations, and other regulations.

Infrastructure factor, include: container terminal, weigh stations, warehouses, traffic signs.

Economic factors, including the financial benefits obtained and the risks are borne by those who break the rules.

3. Population and sample

This study population includes people who use the road, officials involved in the enforcement of truck tonnage, and entrepreneurs. Samples were taken with a non-probability sampling design technique, considering the number of the population can not be determined with certainty.

4. Data collection techniques

- a. Documentary study was used to collect secondary data from legislation, criminal statistics about traffic violations (especially on offense tonnage trucks), and law enforcement activity data.
- b. Interviews were used to collect primary data, especially to explore the legal culture of society, officials, and businessmen. In addition, interviews were also used to explore the economic aspects of truck tonnage violations.
- c. Survey was used to analyze the completeness of facilities and infrastructure associated with the enforcement of truck tonnage.

5. Data analysis

To achieve the goals and objectives of the study, data was collected and then tabulated and grouped by type and then analyzed both qualitatively and synthesis, with a focus on and linked to the objectives of the study. Some of the analytical tools used in this study are:

- a. Analysis of Government policy document on zoning (spatial), policy, transportation management policies, crime statistics.
- b. Descriptive and qualitative analysis were used to analyze the aspects that affect the legal culture of society;
- c. Descriptive analysis concerning economic studies businessmen and truck drivers who violate tonnage trucks.

### Regulatory and Institutional Factors

Rules on truck tonnage restrictions need to be supported by the implementation of other regulations. Rule implementation that supports the implementation of truck tonnage restrictions include: local regulations on road class, local regulations on zoning, rates of freight, local regulations on the transportation of goods traffic lane, and local regulations on road class.

The Government has not yet made Padang Local Regulation on the class path. Class path is needed to set the vehicle may be passed over the road. Barriers faced by





municipalities in setting the class path in the city of Padang is the condition of the road on each road in the city of Padang is not the same.

Spatial restriction affects the effectiveness of regulation tonnage of goods. These are most of the trucks from the port to the warehouse (or vice versa), from out of town to the warehouse or vice versa. Ideally, local governments must establish warehousing area. Prohibit the existence of warehouses outside the specified region. Currently there is a warehouse located in the residential area, so it is not supported by the appropriate infrastructure. It is so damaging to the road users, and potentially reduces the life of the road. One warehouse located in settlements was: storeroom salt (sea salt is not the brand of cigarettes) is located in Parak Laweh, nut warehouse located in Banuaran. Every morning the truck axis 3 (good truck, and the truck los tub) passing in Jalan Parak Laweh.

Institutions that have the authority to enforce the rules of tonnage trucks include:

- a. Department of Transportation and Information Padang
- b. Department of Communications and Information Technology of West Sumatra
- c. Police Traffic Unit

Law enforcement can not simply rely on the government alone, but must be supported by existing social institutions in the community. The government requires the support of existing social institutions are deliberately formed in relation to the transportation problem, in this case about the transport of goods, as well as general social institutions. Social institutions that have contributed to enforce truck tonnage limit is Gafeksi INFA and Kopenbapel. While general social institutions that are expected to have contributed to enforce truck tonnage limits are: Youth, Neighborhood (RT), Rukun Warga (RW).

Gafeksi INFA and Kopenbapel have the authority to set tariffs of freight. This rate applies to goods transport entrepreneurs who are members of cooperatives. But for the transport of goods for entrepreneurs who are not members of the cooperative, transport fares are set by the business owner. Basic rate calculation based on weight and distance. Violations often occur due to a tonnage limit on these social institutions generally do not have the authority to monitor tonnage trucks.

Youth or Youth Institute in the city of Padang has the power to regulate access to trucks in their area. Youth (Youth Institute) organize *Pak Ogah* governing truck traffic in some places. They arrange shifts and sharing the results of *Pak Ogah*. In the first observation area (Parak Laweh), those over-tonnage trucks can pass without any action from the apparatus and Youth. The truck is a truck that crossed the 3 axis and trucks los tub. The truck should not be through Jalan Parak Laweh because it does not correspond to the class. Trucks typically transport rubber from warehouses in Banuaran towards Teluk Bayur. The Company provides funding of Corporate Social Responsibility (CSR) to the coral Youth (Youth organization) local.

The second observation area is in Batung Taba, District Lubuk Begalung. The truck went into the area to take sand from the river. Each truck sand to pay Rp 5,000.00



each trip. Money is collected by the youth leaders and used to improve the way a passing truck.

### Facilities and infrastructure factors

Critical infrastructure to enforce restrictions includes weighbridge truck tonnage, freight transport terminals, and roads. Weighbridge pathway out of Padang is in two places, namely in Lubuk Selasih and Lubuk Buaya. The role of weighbridge is very important to monitor vehicles in and out of Padang. Lubuk Selasih weighbridge and weighbridge at Lubuk Buaya are under the authority of the Government of West Sumatra Province. Location weighbridge Lubuk Buaya is not representative because it is not right to be in the path of exit or entrance of Padang from Bukittinggi. The truck will be out of Padang pass through By Pass the village to turn into the road Jambak Adinegoro. As a result, the streets where the truck was damaged and there play *Pak Ogah* help truckers to play the track. Instead lorry from Bukittinggi does not pass through weigh stations, but directly go through the streets of By Pass.

Koto Lalang freight transport terminals already in operation one year. This terminal serves only to park the truck. The establishment of this terminal is intended to provide a parking lot for trucks, to provide a solution for truck owners who do not have a truck garage. Based on the observations, a lot of trucks parked along the By-Pass. With the terminal is expected to transport goods no longer the owner of the truck which park his truck on the side of the road. But in fact the truck is parked in a terminal Freight Koto Lalang average of 15 pieces per day, while the truck is parked on the side of the road (such as in the By-Pass) of more than 100 trucks per day.

Means necessary to enforce restrictions on truck tonnage includes: traffic signs, means at weigh stations.

Weighbridge can work properly equipped for complete. Conditions weighbridge in Lubuk Selasih and Lubuk Buaya is different, Weigh Bridge facilities in Lubuk Selasih more complete when compared to the existing facilities at the weighbridge at Lubuk Buaya. However, existing facilities that are not yet ideal, because it has not been integrated with information technology systems. Operation of the equipment is still dependent on humans, so that it remains vulnerable to fraud. Means in both existing weighbridge compared, as follows.

Table 1  
Means at Weigh Stations

NO	FACILITIES	IDEAL	EXISTING CONDITIONS
<b>Weigh Stations in Lubuk Selasih</b>			
1.	Scale	digital scales (integrated with information technology system)	Digital





2.	CCTV	exist	None
3.	Warehouse storage of goods	exist	None
4.	Dike barrier weighbridge	exist	None
5.	Means of loading and unloading trucks	exist	None
6.	The information technology system to monitor the number of trucks crossing the weighbridge	exist	None
7.	The information technology system to monitor the number of trucks in violation tonnage	exist	None
<b>Weigh Station in Lubuk Buaya</b>			
1.	Scale	digital scales (integrated with information technology system)	Manual
2.	CCTV	exist	None
3.	Warehouse storage of goods	exist	None
4.	Dike barrier weighbridge	exist	None
5.	Means of loading and unloading trucks	exist	None
6.	The information technology system to monitor the number of trucks crossing the weighbridge	exist	None
7.	The information technology system to monitor the number of trucks in violation tonnage	exist	None

Source: Observation (27/05/2014 & 01/06/2014)

Existing facilities at the weighbridge is not complete, so it has the potential violations. Adherence rates truckers to cross the scales at weigh stations Lubuk Selasih higher than the trucks that cross the weighbridge Lubuk Buaya. All vehicles that enter the weighbridge Lubuk Selasih passed over the scales, but the freight vehicles coming into the weighbridge Lubuk Buaya 80% did not pass over the bridge, but in addition to the scales. The driver freight vehicles (trucks) are not crossing the scales down to meet the officer.

Incoming truck weighbridge Lubuk Selasih no access roads to avoid the scales because it is limited by the levee and access road beside the scales prevented. Conversely, incoming truck weighbridge Lubuk Buaya can freely pass beside the scales due to the easy access.

To monitor compliance with the truck driver and the officer in applying the rules of tonnage of goods are ideally used means of CCTV, but this technology is not used. Monitoring is only relied on the guard, making it very vulnerable to violence and abuse of authority.





### Human Factors

Human factors is limited to reviewing the legal culture of the community, law enforcement officers, businessmen organizing transport of goods, entrepreneurs freight services users, and truck drivers. Legal culture is the same general response of a particular community on the symptoms of the law.

To explore the legal culture of society about the rules limit truck tonnage taken 50 respondents. There are 11 questions posed to the public, directed to explore.

- Knowledge of the rules of tonnage trucks.
  - Knowledge trucks carrying loads exceeding the allowable tonnage
  - Knowledge due to trucks hauling goods exceeds the tonnage
  - Knowledge of freight trucks
  - Disturbance of the truck
  - Precautions so that over-tonnage trucks across their area
- Of the questionnaires distributed to the public most of the shows that they know there are rules about truck tonnage limits. (Table 2)

Table 2  
Knowledge of Truck Tonnage Limit Setting

No	Answer	Total	%
a	Know	24	48
b	Don't KnowTahu	19	38
c	Uncertain	7	14
Total >>>		50	100

Some communities have seen a truck carrying a load exceeding the tonnage.

Table 3  
Knowledge of Trucks Carrying Goods Exceed Tonnage

No	Jawaban	Total	%
a	Ever	42	84
b	Never	4	8
c	Uncertain	4	8
Total >>>		50	100



Table 6  
Community Efforts to Prevent Truck Tonnage over Passing Those Areas

No	Answer	Total	%
a	Installing the portal	30	60
b	Charge on each truck that passing in roads in their neighborhood	8	16
c	Divert to other road	4	8
d	Inform to chairman neighborhood	5	10
e	Making the rules for truck that pass their neighborhood	1	2
f	Speak to truck driver	2	4
Total >>>>		50	100

## Conclusion

Causative factors truck tonnage limit violations in the city of Padang is.

1. Aspects of the legislation there are some limitations, namely:
  - a. Circular Governor of Truck Tonnage Limitation lacked the legal power to force.
  - b. The absence of local regulations on the class path.
  - c. There are no local regulations on spatial.
2. Formally, the agency has authority to enforce truck tonnage limit is the Department of Transportation and Information. In addition, community organizations are expected to also support truck tonnage limit rule is an association or cooperative which facilitate the delivery of trucking services, youth agencies (Youth).
3. Facilities available to enforce truck tonnage limit the manual so prone offense. Padang city government does not have a policy to create a monitoring system tonnage trucks in particular, which is based on integrated information technology. Enforcement of traffic rules in general is still manual.
4. Legal culture of officers and the general public do not support the enforcement of truck tonnage limit.



## BIBLIOGRAPHY

- Amil Abraar, Uning Pratimaratri, 2013: *Kebijakan Non Penal dalam Membatasi Jumlah Tonase Truk di Wilayah Hukum Kota Padang*, Pascasarjana Universitas Bung Hatta, Padang.
- G. Peter Hoefnagels, 1967: *The Other Side of Criminology: An Inversion of the Concept of Crime*, Kluwer Deventer, Holland.
- Kartini Kartono. 1996: *Pengantar Metodologi Riset Sosial*, Mandar Maju, Bandung.
- M. Suparmoko, 2002: *Ekonomi Publik untuk Keuangan & Pembangunan Daerah*, Penerbit ANDI, Yogyakarta.
- Nordiawan. D, Sondi P.I, Rahmawati. M, 2007: *Akuntansi Pemerintahan*. Penerbit Salemba Empat, Jakarta.
- Soerjono Soekanto, 1982: *Pengantar Penelitian Hukum*, CV. Rajawali, Jakarta.
- , 1988: *Pengantar Sosiologi Hukum*, Bina Aksara, Jakarta.
- , 1988: *Pendekatan Sosiologi terhadap Hukum*, Bina Aksara Jakarta.
- , 1984: *Sosiologi Hukum dalam Masyarakat*, Rajawali Press, Jakarta.
- Sutojo Siswanto. 2000. *Pembiayaan Investasi Proyek*. Penerbit Damar Mutia Pustaka.
- Standar Akuntansi Pemerintah, 2011. Penerbit Tamita Utama.