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Adjustment Of The Need For Land Water Signs On The Musi River Flow

Bambang Setiawan[1], Miran[2], Firda Maria Tutuz Fatimatuz[3]

ABSTRACT

16 Ilir River Port is a port located in the city of Palembang. There are obstacles along the Musi river shipping lane so that instructions/information must be given for safety on the way, one of which is inland water signs but the condition is not maintained and there are signs that are missing, damaged, and have been covered by trees, it is necessary to install signs according to their needs. The aims of this study are as follows: To determine the need for river signs in the Musi River area. To determine the placement of river signs in the area of Palembang City (Pulo Kerto) to Banyuasin Regency (Muara Sungsang). To stipulate technical specifications for signs in terms of the shape and size of inland water signs. The research methodology used is observation, library/documentation (literature) and institutional. The analysis used is the analysis of the need for river signs, analysis of the placement of river signs, analysis of the technical specifications of signs in terms of the shape and size of the signs. The results of this study are the addition of Mainland Water Signs on the Musi River shipping channel as many as 98 signs to support safety, security, necessity, and discovery of past currents. Placement of river signs in the area of Palembang City (Pulo Kerto) to Banyuasin Regency (Muara Sungsang). There are points of vulnerable locations such as bends, crossroads that are not yet complete with inland water signs and also obstacles.

Keywords: Musi River, River signs, adjustment

1. Introduction

River transportation is organized with the aim of realizing safe and safe river traffic and transportation, as a driving force, driving and supporting the development of rural and urban areas at a cost that is affordable by the people's purchasing power. However, river transportation has not been used optimally and its utilization is still very minimal. Meanwhile, the opportunity to use it for the purpose of transporting goods, passengers, and tourism is still very wide and very cheap for the transportation of goods in large quantities. The role of the Musi River as a means of transportation cannot be abandoned, even now the government is continuously developing, so that it is no longer just an alternative mode, but becomes a simultaneous mode that grows and develops in addition to road transportation modes. Some shipping lanes are formed by themselves because of the urgent need to communicate with each other from one area to another.[1]

Transportation River transportation is a transportation activity using ships carried out on the river to transport passengers or goods. To ensure safety, security, order, and smooth traffic and transportation in river and lake shipping lanes, it is obligatory to have river and lake shipping lane facilities. One of the river cruise channel facilities is the presence of signs installed in the river cruise channel.

[1] Junaidi,F.F. 2014. *Analisis Distribusi Kecepatan Aliran Sungai Mus*i,. jurnal Teknik Sipil dan Lingkungan. Vol.2(3) : 3-4

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The role of Musi River transportation can be seen from the activities of passenger and freight ships sailing along the Musi River. With the increasingly busy traffic in the waters of the Musi river, the potential for ship accidents is quite large due to the lack of signs installed along the Musi river.

Many accidents occur in Banyuasin Regency, one of which is the Speedboat accident on the Island of Salah Nama Muara Kumbang, Banyuasin Regency, across the SDP Poltektrans. On Monday, 23-3-2020 at 16.30, the accident did not cause any casualties. According to the information gathered, the 200 PK engine speedboat commanded by Rohiman Bin Mustofa with 1 assistant, Sopian, departed from the pier under the Ampera bridge for Line 8, Pulau Gundul.[2] Because Banyuasin Regency has many accidents, it is necessary to install signs on the Musi River shipping lane, Banyuasin Regency.

Traffic signs are vital on land and in waters because one of their functions is as a warning to crossing users. Accidents can be minimized if transportation users understand the meaning contained in traffic signs. There are obstacles along the Musi River shipping lane so that instructions or information for safety in shipping must be given, one of which is inland water signs. The Musi River already has inland water signs but its condition is not maintained and there are signs that are missing, damaged, and have been covered by trees. The current condition of inland water signs is felt to be lacking because there are several places in the Musi River channel signs should be given but not installed so as to interfere with the smooth operation of the operator in carrying the ship and reduce the level of safety, security, order and smoothness in crossing the Musi River channel, it is necessary to install signs according to their needs.

As an anticipation to prevent accidents in the Musi river channel, Palembang City and Banyuasin Regency, it is necessary to install a number of safety signs on the Musi river on the channel that is considered prone to accidents. The installation of a number of signs on the river is very important, especially at a number of points along the river. In addition, joint supervision is needed to avoid irresponsible people intending to damage the signs. The existence of these signs is very important because they are placed in accident-prone points. If the sign is damaged or missing, of course it is very dangerous. The existence of signs along the Musi river route, Palembang City and Banyuasin Regency is expected to reduce accidents on the river. Installation of signs is very useful and beneficial for ship captains crossing the waters to comply with the rules for mutual safety.[3]

2. Research Methods

The method used in this research is qualitative method. Qualitative research is an investigative process that is carried out intensively (really) with a careful recording process of what is happening in the field, through a document, which presents evidence and reports the results of data analysis descriptively (complete).[4]

[2] Artikel ini telah tayang di TribunSumsel.com dengan judul Kecelakaan Speed Boat di Pulau Salah Nama Muara Kumbang Banyuasin, *https://sumsel.tribunnews.com/2020/03/23/kecelakaan-speed-boat-di-pulau-salah-nama-muara-kumbang-banyuasin.*
Penulis: Melisa Wulandari. Editor: Siemen Marti

[3] Arianto,S,B. dan Heriwibowo,D, 2014. *Evaluasi Kebutuhan Rambu Di Sungai Musi Kota Palembang*, Jurnal Penelitian Transportasi Darat. Vol. 16. No.1 : 7-8

[4] Suwendra, Wayan I, 2018. Metodologi Penelitian Kualitatif dalam Ilmu Sosial, Pendidikan, Kebudayaan dan Keagamaan. Bandung : Nilacakra, hlm: 4-5

There are 2 (two) sources of data used in this research, namely internal data and external data. Internal data is data obtained from within the organization, while external data comes from outside the organization. The data sources used in this research are internal and external data where internal data is obtained from the Palembang City Transportation Service while external data is obtained from survey results to the field. Classification of data based on how to get it[5] :

2.1 Primary Data

Primary data is data obtained directly from the source and goes directly to the field and then observed and recorded. In collecting primary data, the writer carried out several activities, including:[6] :

1. Observation Method

Observations are observations that are carried out systematically by going directly to the field. The data obtained is then recorded so that it is used as data to analyze the existing problems accurately and clearly. The data obtained from the survey results by observation are as follows:[7]

1. Sign plan survey
2. Survey of the location of the Musi River channel
3. STA Survey (Water Level Scale)
4. Traffic Volume Survey

2. Documentation

Documentation is a method used to obtain data and information in the form of books, archives, documents, writings and images in the form of reports and information that can support research. Documentation is used to collect data and then reviewed.[8]

2.2 Secondary Data

Secondary data is obtained based on the observations of other parties and in the form of a written report, in obtaining secondary data the author uses the following methods: [9]:

1. Library Method (*Literature*)

The literature method is an effort to collect data and information based on reference books and regulations related to the research conducted. In this method a lot of literature and modules are used for the LLASDP Diploma III Program to study theories related to the research subject and these theories can be used as a basis for analyzing problems and alternative solutions to problems.

2. Institutional Method

The data collected from various related agencies. The following institutions and data obtained :

[5] *Ibid*
[6] L. Moleong, 2002. Metode Penelitian Kualitatif, Bandung:PT Remaja Rosdakarya,hlm: 34-35
[7] Emzir, 2016. Metodelogi penelitian Kualitatif: Analisis Data/Emzir. Jakarta : PT Raja Grafindo Persada, hlm: 37
[8] Emzir, 2016. Metodelogi penelitian Kualitatif: Analisis Data. Jakarta : PT Raja Grafindo Persada, hlm: 66
[9] L. Moleong, 2002. Metode Penelitian Kualitatif, Bandung:PT Remaja Rosdakarya,hlm: 34-35

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1) Palembang City Transportation Service
   - Data on the Annual Productivity of the Musi River Transport in Palembang City
   - Organizational Structure of the Palembang City Transportation Service
2) South Sumatra Provincial Transportation Service
   - Ship Accident Data
3) UPTD 16 Ilir River Port, Palembang City
   - List of Names of *Longboats* Operating at Pier 16 Ilir
4) Central Statistics Agency (BPS) of South Sumatra Province, namely an effort to collect data and information based on reference books and laws and regulations related to the research conducted.
   - Geographichal Condition
   - Population
   - Regional Commodities

3. Results and Discussion

A. Research Result Data Analysis

1) Sign Needs Analysis

1. The Musi River Cruise Line starts from the Pulo Kerto River Port to Muara Sungsang, there are several locations that the inland water sign wants where the locations are divided into 2 segments in the Palembang City Region which can be seen in the picture following:

Picture 5.1 Musi River Cruise Line Segmentation
Sumber : Google earth 2021

The above segmentation is used by the author to make it easier to review further regarding the position and priority of installing inland water signs. As for segmentation 1 from the results of research at this location, there are several points that require inland water signs which can be explained at the location of the coordinate points above. :

a. Segment 1

From the results of research at this location, there are several points that require inland water signs. At this location there are piers and bends. Locations that become obstacles to shipping and need to install inland water signs are explained at the location of the coordinate points as follows:

Picture 5.2 Conditions for Placement of Signs on Segment 1

b. Segment 2

From the results of research at this location, there are several points that require inland water signs. At this location there are docks, houses and gas stations. Locations that become obstacles to shipping and need to install inland water signs are explained at the location of the coordinate points as follows:

Picture 5.3 Conditions for Placement of Signs in Segment 2

2) Analysis of River Signs Placement

As for the results of research at survey locations on the Musi river shipping lane in the city of Palembang, there are several locations that require the placement of inland water signs, including the following :

The requirements for placement procedures are based on the provisions of the Regulation of the Director General of Land Transportation No: KP.4755/AP005/DRJD/2020 Technical Guidelines for River and Lake Signs regulates about :

a. Distance of sign placement

1) As far as possible the signs are placed close to the shipping lane, on the left and/or right side when the ship is moving towards the face of the sign.
2) The placement of signs must be arranged in such a way by taking into account the condition of the river bank so that its existence is safe from natural disturbances.
3) Signs must be free of leaves and/or tree branches or other objects that obstruct the view from any point along the line that is at a distance of up to 200 m in front of it.

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4) The distance between the sign leaves is at least 2 meters from the outer side of the sign leaves.
5) Signs are placed at a distance of 5 (five) meters to the ground from the highest tide.

b. The height of the sign leaf placement

1) Leaf signs are installed at a minimum height of 350 cm measured from the ground surface to the bottom side of the leaf sign or a minimum of 150 cm measured from the highest tide to the side of the lower leaf sign.
2) In certain locations and conditions, signs can be placed on trees or other permanent buildings (eg piers, bridges, etc.)

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TABLE 5.1 Results of Analysis of the Placement of Palembang City Signs

NO	LOCATION (COORDINATES)	Sign Pictures	Information	Amount	Information	Supporting Factors for Installing Signs
1	2° 57' 54" S 104° 51' 55" E 2° 59' 28" S 104° 45' 44" E		Ban	2 Units	Plan	At this location there is a refueling station (SPBB) on the banks of the river so that ships sailing through this location are prohibited from smoking so as not to cause sparks so that they are not harmful.
2	2° 59' 27" S 104° 45' 48" E 2° 59' 39" S 104° 45' 42" E		Ban	2 Units	Plan	At this location there is after the Ampera Seberang Ulu Bridge, where it is forbidden to moor ships.
3	3° 00' 05" S 104° 45' 01" E 2° 58' 58" S 104° 46' 20" E		Ban	2 Units	Plan	Do not dock (moor) within 25 meters of this sign
4	2° 59' 21" S 104° 49' 47" E		Ban	1 Units	Plan	It is forbidden to cut wood as long as the number stated on the sign (in KM)
5	2° 59' 28" S 104° 45' 57" E 2° 59' 28" S 104° 45' 57" E 2° 58' 52" S 104° 46' 31" E 2° 59' 44" S 104° 45' 22" E 2° 59' 43" S 104° 45' 24" E 2° 59' 42" S 104° 45' 24" E 2° 59' 22" S 104° 48' 23" E		Ban	25 Units	Plan	At this location there are community settlements jutting into the river bank so that ships sailing through this location must operate

NO	LOCATION (COORDINATES)	Sign Pictures	Information	Amount	Information	Supporting Factors for Installing Signs
	2° 59' 07" S 104° 47' 21" E					carefully so as not to cause damage. waves of water so as not to harm the people who live on the banks of the river.
	2° 58' 59" S 104° 50' 05" E					
	2° 58' 52" S 104° 49' 48" E					
	2° 58' 43" S 104° 49' 40" E					
	2° 58' 53" S 104° 47' 11" E					
	2° 58' 52" S 104° 46' 31" E					
	2° 58' 59" S 104° 46' 18" E					
	2° 58' 02" S 104° 46' 14" E					
	2° 59' 15" S 104° 46' 01" E					
	3° 00' 00" S 104° 45' 17" E					
	3° 00' 18" S 104° 44' 57" E					
	2° 58' 42" S 104° 48' 50" E					
	3° 00' 05" S 104° 45' 01" E					
	2° 59' 28" S 104° 45' 44" E					
	2° 59' 28" S 104° 45' 44" E					
	2° 59' 24" S 104° 45' 49" E					
	2° 59' 01" S 104° 49' 58" E					
	2° 58' 42" S 104° 48' 50" E					
6	2° 59' 29" S 104° 45' 50" E		Order	8 Units	Plan	At this location there are community settlements jutting into the river bank so that ships sailing through this location must operate carefully so as not to cause waves of water so as not to detrimental to the people who live on the banks of the river.
	2° 59' 26" S 104° 46' 00" E					
	2° 59' 21" S 104° 46' 06" E					
	2° 59' 27" S 104° 45' 48" E					
	2° 59' 32" S 104° 45' 51" E					
	2° 59' 29" S 104° 45' 47" E					
	2° 59' 31" S 104° 45' 48" E					
	2° 59' 35" S 104° 45' 49" E					
7	2° 59' 24" S 104° 45' 49" E		Order	4 Units	Plan	In this area there is a control post where ships of certain types must stop for a purpose such as inspection of the ship and the provision of paying retribution for the cargo carried.
	2° 59' 01" S 104° 49' 58" E					
	2° 57' 38" S 104° 50' 52" E					
	2° 58' 57" S 104° 50' 09" E					

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8	3° 00' 55" S 104° 44' 56" E		Order	1 Units	Plan	At this location there is a tributary (main tributary). The installation of this sign can provide instructions to ship operators so that they can sail more safely.
9	2° 59' 31" S 104° 45' 46" E		Order	1 Units	Plan	At this location there is a tributary (main tributary). The installation of this sign can provide instructions to ship operators so that they can sail more safely.
10	3° 00' 48" S 104° 45' 03" E		Order	1 Units	Plan	At this location there is a tributary (main tributary). The installation of this sign can provide instructions to ship operators so that they can sail more safely.
11	2° 58' 54" S 104° 48' 50" E 3° 00' 00" S 104° 45' 17" E 3° 00' 08" S 104° 45' 12" E 3° 00' 08" S 104° 45' 12" E 2° 58' 42" S 104° 48' 50" E 3° 00' 05" S 104° 45' 01" E 2° 59' 28" S 104° 45' 44" E 2° 59' 24" S 104° 45' 49" E 2° 59' 01" S 104° 49' 58" E 2° 58' 57" S 104° 50' 09" E		Order	10 Units	Plan	At this location there is a pier that operates by serving passengers and goods, the installation of this sign can provide instructions to ship operators so that they can moor at the pier.
12	2° 58' 42" S 104° 48' 50" E		Order	1 Units	Plan	At this location there is the Kemaro Island Intersection (Seberang Ilir). The installation of this sign can provide instructions to ship operators so that they can sail more safely.

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13	2° 59' 43" S 104° 50' 20" E		Order	1 Units	Plan	At this location there is a fork in the river channel. Installation of these signs can provide instructions to ship operators so that they can sail more safely.
14	2° 59' 50" S 104° 50' 14" E 2° 59' 43" S 104° 43' 23" E		Order	2 Units	Plan	At this location there is a fork in the river channel. Installation of these signs can provide instructions to ship operators so that they can sail more safely.
15	2° 58' 57" S 104° 50' 09" E 2° 59' 01" S 104° 49' 58" E 2° 59' 24" S 104° 45' 49" E 2° 59' 28" S 104° 45' 44" E 2° 58' 42" S 104° 48' 50" E 3° 00' 08" S 104° 45' 12" E 2° 59' 39" S 104° 45' 42" E 3° 00' 00" S 104° 45' 17" E		Order	8 Units	Plan	At this location there is a dock that operates by serving passengers and goods, the installation of this sign can provide instructions to ship operators so that they can park at the dock.
16	2° 57' 54" S 104° 51' 55" E		Order	1 Units	Plan	The number listed on the sign indicates the distance to reach the city listed on the sign (in km)
17	2° 57' 54" S 104° 51' 55" E		Order	1 Units	Plan	At this location there is Sutet, the installation of this sign can provide instructions to ship operators to be careful crossing high voltage power lines

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4. Closing

A. Conclusion

The conclusions obtained are as follows :

1. There is a need for additional Mainland Water Signs on the Musi River shipping lane as many as 98 signs. Divided into regional boundaries in the city of Palembang as many as 70 signs with details of 26 guidance signs, 12 command signs, and 32 prohibition signs which are divided into 2 segments. While on the Musi River shipping lane in Banyuasin Regency there are 28 signs with details of 11 guide signs, 10 warning signs, 6 mandatory signs, and 1 prohibition sign which are divided into 6 segments to support safety, security, order, and smooth traffic flow.
2. Placement of river signs in the area of Palembang City (Pulo Kerto) to Banyuasin Regency (Muara Sungsang). There are points of vulnerable locations such as bends, sharp bends, channel intersections that have not been equipped with inland water signs and also obstacles in shipping lanes that need attention that can interfere with shipping activities in Palembang City and Banyuasin Regency such as charred deposits, garbage branches and households as well as the installation of high-voltage power poles.
3. The technical specifications of the signs in terms of the shape and size of the inland water signs are in accordance with the Regulation of the Minister of Transportation Number 52 of 2012 concerning River and Lake Shipping Lines.

B. Suggestion

The suggestions from the conclusions above are as follows :

1. The signs on the Musi River both in terms of installation and technical specifications must be based on the Regulation of the Minister of Transportation No. 52 of 2012 concerning River and Lake Flows and the Regulation of the Director General of Land Transportation No: KP.4755/AP005/DRJD/2020.
2. There needs to be maintenance and care for existing river signs so that the condition of river signs remains suitable for use.
3. Need supervision from officers on river signs and punishments for people who steal or damage river signs.

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