

EVALUATION OF LAND FACILITIES AND MANAGEMENT OF PASSENGER AND VEHICLE CIRCULATION AT THE BANJARAYA RIVER PORT, BANJARMASIN CITY, SOUTH KALIMANTAN PROVINCE

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ABSTRACT

The Banjaraya River Port is a link between the land transportation network of Banjarmasin City to Barito Kuala Regency which is separated by the Barito River. Currently, the condition of the Banjaraya River Port is not optimal due to a contract for 20 years, written in the lease agreement number 511/228/DPP/2004 dated September 10, 2004 between the Banjarmasin City Government and the Banjaraya Main Market Traders. This is contrary to the ideal condition of river and lake ports as stated in the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 40 of 2022 and the Decree of the Directorate General of Land Transportation Number SK.242/HK.104/DRJD/2010. The land facilities currently available at the Banjaraya River Port are the Banjaraya Terminal Building which functions as an administrative office, parking lot, canteen, ticket counter that has not been managed optimally, a traffic park and a post building that is not functioning and there is a market on the main road to the Banjaraya River Port.

The research method used is mixed research by combining two methods, namely qualitative methods and quantitative methods. Based on the results of the analysis, the area needed for the terminal building is 283.2 m² where there are 5 (five) rooms, namely the passenger waiting room (158.4 m²), canteen (23.76 m²), administration room (23.76 m²), utility room (51.48 m²) and public space (25.74 m²), it is necessary to reallocate passenger ticket counters before the waiting room and vehicles before the parking lot is ready to load. Dividing the functions of the available parking lot into a ready-to-load parking lot (48.6 m²) and a shuttle parking lot (118 m²). As well as managing the circulation of passengers and vehicles from the gate to the exit of the Banjaraya River Port using signs and markings.

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1. INTRODUCTION

One of the inland water infrastructure in South Kalimantan Province is the Banjaraya River Port with an area of 9,998 m² which is used as a link between the land transportation network of Banjarmasin City to Barito Kuala Regency which is separated by the Barito River. Currently, the condition of the Banjaraya River Port has not functioned optimally, this is due to the condition of the port which is bound by a contract with the market for 20 years in accordance with the lease agreement number 511/228/DPP/2004 dated September 10, 2004 between the Banjarmasin City Government and the Banjaraya Main Market Traders. This is contrary to the ideal condition of river and lake ports as stated in the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 40 of 2022 concerning the Implementation of River and Lake Ports and the Decree of the Directorate General of Land Transportation Number SK.242/HK.104/DRJD/2010 concerning Technical Guidelines for Crossing Traffic Management.

2. RESEARCH METHODS

The type of research carried out is mixed research by combining two methods, namely qualitative methods and quantitative methods simultaneously as research instruments. With this approach, researchers collect and analyze quantitative and qualitative data to answer the researcher's questions. The results of research in the form of insights or understanding that are more complete than those may be obtained from quantitative methods or qualitative methods alone. So the mixed method combines both types of data to provide a better understanding in solving problems in this study

1. Quantitative Methods

In quantitative methods, researchers are used to analyze the wide range of needs for terminal building facilities, ready-to-load parking lots and shuttle parking lots.

a. Terminal building**1) Lounge**

The determination of the number of passengers in one ship is taken from the data of table 4.7. regarding the characteristics of KM. Pancar Mas which is the largest ship on the Banjaraya-Muara Teweh Crossing with a passenger capacity of 110 people. Meanwhile, the determination of the number of ships coming and going at the same time on the Banjaraya-Muara Teweh Cross is set at 1 (one) unit. From the above data, the area of the waiting room can be calculated using the following formula equation (4.1):

Area of the waiting room (A1) = $a \cdot n \cdot N \cdot x \cdot y$

Information:

A1 : Waiting area (m²)

a : Area required for one person (1.2 m² per person)

n : Number of passengers on one ship (data taken according to the capacity of the largest passenger ship which is 110 people)

N : Number of ships coming/departing at the same time (1)

x : Concentration Ratio (1.0)

y : Volatility Average (1.2) (4.1)

So the area of the waiting room can be calculated as follows:

$$\begin{aligned} A1 &= a \cdot n \cdot N \cdot x \cdot y \\ &= 1.2 \text{ m}^2/\text{person} \cdot 110 \cdot 1 \cdot 1 \cdot 1,2 \\ &= 158.4 \text{ m}^2 \end{aligned}$$

According to the calculation above, the area of waiting space needed in the terminal building is 158.4 m².

2) Canteen Room

In calculating the area of canteen space needs, use the following formula (4.2):

Canteen/Kiosk Area Area (a_2) = 15% x a_1

Information:

$$A1 : \text{Waiting area (158.4 m}^2\text{)} \quad (4.2)$$

So from the above data can be taken into account:

$$\begin{aligned} A2 &= 15\% \times A1 \\ &= 15\% \times 158.4 \text{ m}^2 \\ &= 23.76 \text{ m}^2 \end{aligned}$$

According to the calculation above, the area of canteen space needed in the terminal building is 23.76 m².

3) Administration Room

In calculating the area of administrative space needs, the following formula is used (4.3):

Area of Administration Room (a_3) = 15% x a_1

Information:

$$A1 = \text{Waiting area (158.4 m}^2\text{)} \quad (4.3)$$

So from the above data can be taken into account:

$$\begin{aligned} A3 &= 15\% \times A1 \\ &= 15\% \times 158.4 \text{ m}^2 \\ &= 23.76 \text{ m}^2 \end{aligned}$$

According to the calculation above, the area of administrative space required in the terminal building is 23.76 m².

4) Utility Room

For the calculation of utility space, the formula (4.4) is used as follows:

Utility Space Area (a_4) = 25% ($a_1 + a_2 + a_3$)

Information:

$$\begin{aligned} A1 : & \text{Waiting area (158.4 m}^2\text{)} \\ A2 : & \text{Canteen space (23.76 m}^2\text{)} \\ A3 : & \text{Administrative space area (23.76 m}^2\text{)} \end{aligned} \quad (4.4)$$

So it can be calculated using the formula (4.1), namely:

$$\begin{aligned} A4 &= 25\% (A1 + A2 + A3) \\ &= 25\% (158.4 \text{ m}^2 + 23.76 \text{ m}^2 + 23.76 \text{ m}^2) \\ &= 25\% (205.92 \text{ m}^2) \\ &= 51.48 \text{ m}^2 \end{aligned}$$

According to the calculation above, the area of utility space required in the terminal building is 51.48 m².

5) Public Space

For the calculation of Public Space, the formula (4.5) is used as follows:

Area of Public Space Area (a_5) = 10% ($a_1 + a_2 + a_3 + a_4$)

Information:

$$\begin{aligned} A1 : & \text{Waiting area (158.4 m}^2\text{)} \\ A2 : & \text{Canteen space (23.76 m}^2\text{)} \\ A3 : & \text{Administrative space area (23.76 m}^2\text{)} \\ A4 : & \text{Utility space area (51.48 m}^2\text{)} \end{aligned} \quad (4.5)$$

So it can be taken into account with this formula, namely:

$$\begin{aligned} A5 &= 10\% (A1 + A2 + A3 + A4) \\ &= 10\% (158.4 \text{ m}^2 + 23.76 \text{ m}^2 + 23.76 \text{ m}^2 + 51.48 \text{ m}^2) \\ &= 25.74 \text{ m}^2 \end{aligned}$$

According to the calculation above, the area of public space needed in the terminal building is 25.74 m².

Based on the formula in Appendix II of the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 40 of 2022 concerning the Implementation of River and Lake Ports,

the results of the calculation of the area of the terminal building needed at the Banjaraya River Port are as wide as:

$$\begin{aligned} A &= A1 + A2 + A3 + A4 + A5 \\ &= 158.4 \text{ m}^2 + 23.76 \text{ m}^2 + 23.76 \text{ m}^2 + 51.48 \text{ m}^2 + 25.74 \text{ m}^2 \\ &= 283.16 \text{ m}^2 \end{aligned}$$

So that the total area of the terminal building needs is 283.16 m^2 which is rounded to 283.2 m^2

2. Qualitative Methods

In qualitative research, the presentation of data is carried out in the form of narrative texts such as brief descriptions and the relationship between existing conditions in the field and applicable regulations. By presenting data, it will make it easier to understand what is happening. The presentation of the organized data is then analyzed. The following is an analysis of the existing conditions of land facilities that the researcher carried out in the field

Table 1 Existing conditions of land facilities at the Banjaraya River Port

It	Land Facilities	Existing Conditions		Information
		Exis t	None	
1	Dock	✓	-	The pier is still in good condition
2	Terminal Building	✓	-	The available building has an area of 394 m ² which functions as an administrative place
3	Ticket counter	✓	-	The passenger ticket counter is in front of <i>the trestle</i> so that passengers wait on the <i>trestle</i> and the vehicle ticket counter is on the <i>trestle</i> so that vehicles that have tickets waiting in front of the <i>moveable bridge</i> interfere with entering and exiting the vehicle
4	Canteen	✓	-	The canteen location is outside the terminal building
5	Road access	✓	-	Road access is disrupted by the market (leased for 20 years) located in the port area
6	Parking lot ready to load	✓	-	The available parking lot is disrupted by buying and selling activities (Market)
7	Shuttle parking lot	✓	-	The parking lot has not been divided according to function so that passengers park their vehicles in any place.

And the following are the results of observations on the circulation of passengers and vehicles at the Banjaraya River Port:

Table 2 Causes and Consequences of Disruption of Passenger and Vehicle Circulation

It	Passenger and vehicle circulation is disrupted	
	Because	Result
1	No waiting room available	Passengers waiting for the departure of the ship or waiting for the pick-up on the <i>trestle</i>
2	Vehicle ticket counter on the <i>trestle</i>	Disturbing/obstructing vehicles that are about to disembark from the ship
3	Parking lots are not divided according to function	Pick-up/delivery vehicle parks the vehicle in front of the <i>trestle</i> and enters the pier area
4	Port area leased for market land	There was a <i>vehicle crossing</i> between port users and market consumers on the road access to the Banjaraya River Port
5	Insufficient signs and markings	Making it difficult for users to know the facilities they want to go to

3. RESULTS AND DISCUSSION

a. Land Facilities

The expiration of the lease agreement number 511/228/DPP/2004 dated September 10, 2024 between the Banjarmasin City Government and the Banjaraya Main Market Traders, the Banjaraya River Port can renovate the terminal building, reallocate ticket counters, and parking lots divided according to their functions in regulating passengers and vehicles. A comparison of existing conditions with regulations can be seen in the following table:

Table 3 Comparison of the Size of Land Facilities in Existing Conditions with Regulation

It	Land-Side Facilities								
	Facility Name		Existing Conditions		Size Existing Condition of Facilities (m2)	Compliance with *Regulations		Appropriate Facility Size *Regulations (m2)	Information
			Exist	None		Appropriate	Not Suitable		
1.	Terminal Building	Lounge		✓	0		✓	158,4	The terminal building at the Banjaraya River Port has Luas = 394 m2 which functions as an administrative place or office for officers of the Banjarmasin City Transportation Department and officers of the Banjaraya Service Unit
		Canteen Room	✓		32		✓	23,8	
		Administrati on Room	✓		40		✓	23,8	
		Utility Room	✓		15		✓	51,5	
		Public Space		✓	0		✓	25,7	
2.	Ticket Counter	Passenger	✓		8		✓	5,5	There is no exact size related to the ticket counter but there are rules for the placement of ticket counters, namely for the ticket counter for passengers in front of the waiting room and the vehicle ticket counter before the parking lot is ready to load
		Vehicle	✓		4,8		✓	3,7	
3.	Parking Lot	Ready to load	✓		0		✓	48,6	The parking lot has not been divided according to function and joined the market
		Shuttle	✓		0		✓	188	

*Note:

- Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 40 of 2022 concerning the Implementation of River and Lake Ports
- Decree of the Director General of Transportation No. SK.242/HK.104/DRJD/2010 concerning Technical Guidelines for Crossing Traffic Management

b. Passenger and Vehicle Circulation

After observation, the circulation conditions of passengers and vehicles at the Banjaraya River Port were found as follows:

Table 4 Because, Consequences and Suggestions for the Needs of Land Facilities in Passenger and Vehicle Circulation Management

It	Passenger and vehicle circulation is disrupted		Passenger and Vehicle Needs in accordance with Regulations
	Because	Result	
1	No waiting room available	Passengers waiting for the departure of the ship or waiting for the pick-up on the <i>trestle</i>	Addition of waiting room facilities in the terminal building covering an area of 158.4 m ²
2	Vehicle ticket counter on the <i>trestle</i>	Disturbing/obstructing vehicles that are about to disembark from the ship	Reallocation of vehicle ticket counters before the parking lot is ready to load
3	Passenger ticket counter before <i>trestle</i>	Piling up passengers on the <i>trestle</i>	Reallocation of passenger ticket counters in front of passenger lounges
4	Parking lots are not divided according to function	Pick-up/delivery vehicle parks the vehicle in front of the <i>trestle</i> and enters the pier area	Divide the available parking lot into a ready-to-load parking lot of 48.6 m ² and a shuttle parking lot of 118 m ²
5	Port area leased for market land	There was a <i>vehicle crossing</i> between port users and market consumers on the road access to the Banjaraya River Port	The expiration of the lease agreement number 511/228/DPP/2004 dated September 10, 2024 between the Banjarmasin City Government and the Banjaraya Main Market Traders, the River Port area can be improved
6	Insufficient signs and markings	Making it difficult for users to know the facilities they want to go to	The addition of signs and markings, the following are suggestions for signs and markings at the Banjaraya River Port: 1. Parking lot signs 2. Pelican Cross Signs 3. Speed limit signs (40 km/h) 4. Traffic order area signs 5. No parking or stopping sign 6. Pedestrian crossing markings

4. CONCLUSION

After the previous descriptions, it can be concluded:

1. There is still a discrepancy between the land facilities at the Banjaraya River Port and PM 40 of 2022 concerning the Implementation of River and Lake Ports, namely where the terminal building that should be used to facilitate passengers becomes the administrative room of the officers, this is due to the lack of waiting room facilities, utility rooms, public spaces for passengers and separate canteens and their less strategic location. And parking lots that have not been divided according to their functions, namely ready-to-load parking lots and shuttle parking lots.
2. There is also a discrepancy between the management of passenger and vehicle circulation at the Banjaraya River Port and the Decree of the Directorate General of Land Transportation Number SK.242/HK.104/DRJD/2010 concerning Technical Guidelines for Crossing Traffic Management. Where in the current condition the ticket counter is on the *trestle*, making vehicles that already have tickets wait on the *trestle* where this will block the road and there will be a *crossing* with vehicles getting off the ship and there is a market in the Banjaraya River Port area, causing the circulation of passengers and vehicles to/from the port to be disrupted.

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