Fulfillment Facility Cost Ferry Port Side Of Mainland District Ketapang Banyuwangi East Java Based Communications Km Number 52 Of 2004

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Abstract

Ketapang Port is managed by PT. ASDP Indonesia Ferry (Persero) Ketapang branch which serves 2 routes with different tollgates. Ketapang Port is a connecting route between Banyuwangi Regency, East Java Province with Jembrana Regency, Bali Province and Banyuwangi Regency, East Java Province with West Lombok Regency, West Nusa Tenggara Province. at the port is still not complete. This can disrupt the smooth operation of the port.

Based on the results of the analysis, there are several problems with the main facilities on the mainland side of the Ketapang Port of Ketapang – Lembar such as the Pernumpang terminal not yet available, weighbridge is not available, there is no separation of passenger and vehicle entry access. When passengers go to/from the ship (gangway), there is no field. delivery/pick-up parking and not yet optimal parking lot ready to load Lintas Ketapang – Lembar.

In order for services at the Ketapang Crossing Port to run smoothly, which is supported by maximum land-side basic facilities, efforts can be made, namely procurement of passenger terminals so that port operational activities are more optimal, Procurement of weighbridge facilities so that vehicle tonnage can be limited according to the maximum limit. wharf, provision of gangway facilities so that passengers have their own lane so as to improve passenger safety when from/to the ship. provision of delivery/pick-up parking facilities so that delivery/pick-up vehicles can be accommodated, and provision of vehicle class separators in the ready-to-load parking lot Ketapang – Lembar.

Keywords: Port; Main Land Side Facilities; Passenger Terminal; Weighbridge; Gangway, Delivery/Pick Up Parking Facility; Ready to Load Parking Area.

1. Introduction

Transportation plays a very important role in the successful development of an area, which has a role as a liaison between one region and another. other areas separated by waters, the role of transportation is also very closely related in development, and stimulates new activities in the economic development of a region. The need for transportation in an area is caused by the interaction between social and economic activities in the area, the human desire to travel is never ending and also the many reasons that cause goods to be transported from one place to another.

Ferry transportation has a very important role for the State of Indonesia because it is an archipelagic country so that it requires ferry transportation as a liaison between islands that cannot be passed by land routes. Therefore, the role of crossing transportation is very important so that it requires proper facilities and infrastructure for service users so that service users feel comfortable and safe.

The Ketapang Ferry Port is located in Banyuwangi Regency, East Java Province. This port has a very important role because it is a connecting route for land transportation from East Java Province to Bali Province and East Java Province to West Nusa Tenggara Province, which aims to support trade activities and the development of community activities, tourism activities, industry, plantations, livestock, and bring economic progress to the community around the port.

Ketapang Port has basic land-side facilities as a support for the smooth implementation of activities at the port, so it needs adequate land-side facilities and can be used according to their respective functions so that activities at the Ketapang Ferry Port can run smoothly and comfortably for service users. In an effort to provide maximum service to service users to launch activities at the Ketapang Ferry Port, it is appropriate for the port manager, namely PT. ASDP Indonesia Ferry (Persero) Ketapang Branch to provide appropriate service facilities as in attachment II point A number 1 (one) and number 3 (three) Decree of the Minister of Transportation Number 52 of 2004 concerning the Operation of Ferry Ports and in attachment II example 1 (one)) and sample 2 (two) Regulations of the Directorate General of Land Transportation Number SK.2681/AP.005/DRJD/2006 concerning the Operation of Ferry Ports.

2. Research Method

This study uses quantitative methods by analyzing the supposed area of Terminal Building facilities, shuttle/pick-up parking spaces, ready-to-load parking spaces and the placement of weighbridges based on Ministerial Decree Number 52 of 2004 concerning the Implementation of Port Management and facilities *gangway* at the Ketapang Crossing Port of Ketapang - Lembar. Collecting data using observation, measurement and literature methods. Data collection is useful for finding data as follows 1). The observation method is a process of observing using our five senses. (Martono, 2014:86). The author uses this method by observing and taking documentation directly about the conditions at the current Ketapang Ferry Port, 2). According to Ign. Masidjo (1995:14) measurement is an activity to determine the quantity of an object through certain rules so that the quantity obtained truly represents the nature of an object in question. The measurement method is carried out directly for each dimension of the facilities contained in the Ketapang Ferry Port, 3). This literature study is related to the object of research. Any books, journals or articles that support the entire research process (Chang, 2014:29).

3. Results and Discussion

Based on the survey results that have been carried out, there are several problems regarding the existing land facilities at the Ketapang Crossing Port of Ketapang - Lembar. The analysis required is as follows:

1. Existing Condition mainland side of the main facilities at the Port of traffic crossing Ketapang Ketapang – Lembar

Table 1.

Existing Condition
Basic amenities
Mainland Side
Cross Ketapang
Ketapang Harbor -
Lembar

NO	FACILITIES LAND	EXSISTING CONDITION		PHOTOS
		THERE	NOTHING	
1.	PASSENGER TERMINAL	-	✓	
2.	WEIGHING vehicle CHARGED	-	✓	
3.	ROAD PASSENGER SHIP MASUK.KELUAR*(gang way)*	-	✓	-
4.	UNIT OFFICE SERVICES	✓	-	
5.	FUEL STORAGE FACILITY (BUNKER)	✓	-	
6.	INSTALLATION OF WATER, ELECTRICITY AND TELECOMMUNICATIONS	✓	-	
7.	ACCESS ROADS AND / OR RAILWAY	✓	-	

9.	PARKING FIELD READY tO LOAD	✓	-	

Source: the survey results PKL team Ketapang Harbor Care Unit (2021)

a. Analysis of passenger waiting room
acreage passenger waiting area calculated by the formula 1.1:

A_1 = a . n . N . x . y…………………………………… .. (1.1)

Information :

A_1 = Area of waiting room (m^2)

a = Requirement of room area for 1 person (1.2 m^2 / person)

n = Number of passengers in one ship

N = Number of ships arriving/departing at the same time

x = Concentration ratio (1.0 to 1.6)

y = Average fluctuation (1,2)

Waiting room analysis using the average passengers obtained from the data thecapacity largest passenger carryingis 459 people on the KMP ship. Dharma Ferry IX..:

Table 1.2
Characteristics of VesselsKetapang – Lembar

No.	Ship Name	COMPANY	YEAR	GRT	HEIGHT DECK (m)	CAPACITY	
						HUMAN	VEHICLE
1	KMP. PARAMA KALYANI	PT. Jemla Ferry	2018	1751	4.3	320	50
2	KMP. JAMBO X	PT. Duta Bahari Menara Line	2017	1320	4.25	230	35
3	KMP. SWARNA CHAKRA	PT. Nusantara Bridge	1998	829	4	254	39
4	KMP. DHARMA FERRY IX	PT. Dharma Lautan Utama	1989	2934	4.2	459	30
5	KMP. MUNIC VII	PT. Munic Line	1996	1279	4	205	30

Source: Ketapang Ferry Port Service Unit BPTD XI East Java Region

So, from the data above it can be calculated:

A1 = a . n . N . x . y

A1 = 1.2 m^2/ person. 459 passengers/ship . 1 Ship . 1 . 1.2 = 660.96 m^2

Based on the calculation of the area of the waiting room requirement, a passenger waiting room is needed with an area of 660.96 m^2

The existing condition does not have a passenger waiting room, based on the results of research based on KM Transportation No. 52 of 2004 the ideal area for room facilities passenger waiting at 660.96 m^2 to support the operations of the Port.

Source: Author's survey results (2021)

Figure 1.1

The unavailability of waiting rooms causes passengers to be in the surrounding community houses.

b. Analysis of ready-to-load parking spaces. To measure the area of the shuttle parking lot, formula 1.2 can be used, namely:

A$_1$ = a. n . N . x . y…………………………………… .. (1.2)

Information :

A   = Total Parking Area for Crossing Vehicles.
a   = Area required for one unit of vehicle:
       8 ton truck   = 60 m^2
       4 ton truck   = 45 m^2
       2 ton truck   = 25 m^2
        Passenger Vehicles   = 25 m^2
n   = Number of vehicles in one ship
N   = Number of ships arriving/departing at the same time.
x   = Average utilization (1.0)
y   = Concentration Ratio (1.0-1.6)

To calculate the parking area for ready-to-load vehicles, you can use the formula 2.2:

Table 1.3
Vehicle Productivity Data for 14 days

DATE	TRIP	VEHICLE												VEHICLE TOTAL	VEHICLE TOTAL/ TRIP
		I	II	III	IVA	IVB	VA	VB	VIA	VIB	VII	VIII	IX		
22 Maret 2021	3	0	0	0	3	0	1	15	0	13	2	0	0	34	11,3
23 Maret 2021	3	0	1	0	1	2	0	32	0	29	11	4	0	80	26,67
24 Maret 2021	3	0	7	0	6	4	1	54	1	24	14	0	0	111	37
25 Maret 2021	3	0	4	0	2	4	0	25	0	22	7	0	0	64	21,3
26 Maret 2021	3	0	6	0	1	0	17	0	10	5	1	0	0	40	13,3
27 Maret 2021	3	0	6	0	9	1	4	34	0	42	6	0	0	16	16
28 Maret 2021	3	0	4	0	4	1	0	34	0	19	6	0	0	102	34
29 Maret 2021	3	0	5	0	2	2	0	26	0	26	5	0	0	66	22
30 Maret 2021	3	1	0	0	0	2	0	40	0	37	8	0	0	88	29,3

So, the area of the parking lot ready to fit for each group is: Area

1. for Gol Vehicles. 2

A_1 = a . n . N . x . y

A_1 = 1.5 m^2 x 3 x 1 x 1 x 1

A_1 = 4.5 m^2 ^{Area}

2. for Goal Vehicles. IV

A_1 = a . n . N . x . y

A_1 = 25 m^{2}x 4 x 1 x 1 x 1

A_1 = 100 m^2 ^{Area}

3. for Goal Vehicles. V

A_1 = a . n . N . x . y

A_1 = 25 m^{2}x 18 x 1 x 1 x 1

A_1 = 450 m^2 ^{Area}

4. for Goal Vehicles. VI

A_1 = a. n . N . x . y

A_1 = 45 m^2 x 8 x 1 x 1 x 1

A_1 = 360 m^2 ^{Area}

5. For Goal Vehicles. VII

A_1 = a . n . N . x . y

A_1 = 60 m^2 x 4 x 1 x 1 x 1

A_1 = 240 m^2

A_1 =(4,5m^2 + 100m^2 + 450 m^2 + 360 m^2 + 240 m^2)

=1,154.5 m^2

So, based on the area calculation parking lot is ready for unloading at 1154.5 m^2 existing Condition has been having a field ready for the parking area of 4639 m^{2,}but has not been

accompanied separator vehicle class

Figure 1.2

existing Condition parking lot ready for loading cross Ketapang - Lembar

c. AnalisaSize of Parking Lot Introduction / pick up

$A^{'}$ = a . n$_1$. N . x . y . z . 1/n$_2$ ....(1.3)

Explanation :

A = Total Parking Area For Shuttle/Vehicles

a = Area required for one vehicle

Private(public transportation and private vehicle = 25 m^2)

n$_1$ = Number of passengers in one ship

n$_2$ = Number of passengers in one vehicle

(Average 8 people / vehicle)

N	= Number of ships arriving/departing at the same time.
x	= Average utilization (1.0)
y	= Concentration ratio, (1.0 - 1.6)
z	= Utilization ratio, (1.0 : all passengers leave the terminal by vehicle)

To calculate the parking area for delivery vehicles/ the picker can use the formula 1.3: Determination of the number of passengers in 1 (one) ship is determined based on the largest passenger carrying capacity, namely 459 vehicles on the ship KMP.DHARMA FERRY IX

Table 1.4
Passenger Productivity For 14 (Fourteen) Days

NO	DATE	TRIP	PASSENGER	TOTAL PNP / TRIP
1	22 March 2021	3	97	32.3
2	23 March 2021	3	165	55
3	24 March 2021	3	296	98.67
4	25 March 2021	3	133	37.67
5	26 March 2021	3	84	28
6	27 March 2021	3	322	107, 33
7	28 March 2021	3	144	48
8	29 March 2021	3	140	46.67
9	30 March 2021	3	113	37.67
10	31 March 2021	3	107	35.67
11	01 April 2021	3	544	181.33
12	02 April 2021	3	70	23.33
13	03 April 2021	3	69	23
14	04 April 2021	3	170	56.67
	TOTAL	42	2454	57.95

From the table above it can be seen that to determine the concentration ratio Traction (y) can use the following formula:

Concentration Ratio (y) = $\dfrac{The\ largest\ number\ of\ PNP\ per\ day/trip}{Capacity\ of\ PNP\ in\ one\ ship}$

$$= \frac{181\ passengers}{459\ passengers}$$

= 0.39 ~ 1.0 So, the concentration ratio (y) is 1, 0

Then the calculation is:

$A' $ = a. n_1. N. xyz $1/n_2$

= 25 m^2 x 459 x 1 ship x 1.0 x 1.0 x 1.0 x 1/8

= 1,434,375 mdelivery^2

Existing conditions do not yet have a/pick-up field, based on research needed area parking lot shuttle vehicle / pickup of 1434.375 m^2 in order to accommodate delivery vehicles and pickup.

Based on the entire calculation of the parking area area that has been carried out, it can be seen the difference between the current condition vehicle parking area and the vehicle parking area analysis results in the following table:Lot

Table 1.5

ParkingArea Current Condition and Analysis Results

NO	FACILITY	NOW CONDITION	ANALYSIS RESULTS
1 .	VEHICLE PARKING AREA OF READY TO LOAD	4539 m^2	1154.5 m^2
2.	VEHICLE PARKING AREA OF INTRODUCTION / pickup	-	1434.375 m^2

sources: Team Ketapang street vendors Care Unit, 2021

From the table above, it can be concluded that the ready-to-load parking lot is feasible in terms of its size, but there is accumulation in the ready-to-load parking lot because there is no sign of the division of vehicle classes in the ready-to-load parking lot. delivery/pickup vehicle parking area of 1,434,375 m2.

d. *Gangway*

The width of the *gangway is* calculated using the following formula:

W = (V/ 35) + N)………………………….(1,4)

Where:

W = Width of the pedestrian path (meters)

V = Volume pedestrians (person/minute/meter)

N = Additional width according to local conditions

To calculate the width of the *gangway, you* can use the formula 1.4 The following survey was carried out at the Ketapang Crossing Port of Ketapang- Lembar for three days from April 1 to April 3, 2021 when the ship docks at thepier *moveable bridge* IVto determine the volume of pedestrians crossing the pier:

Table 1.6

Pedestrian Volume During the 3 Days Survey

DAY/DATE	TIME	MINUTE	VOLUME PEJALAN KAKI (ORANG)
1 April 2021	07.00-09.00 WIB	0 – 30	57
		31 – 60	50
		61 – 90	45
		91 – 120	78
	16.00-18.00 WIB	0– 30	45
		31 – 60	32
		61 – 90	90
		91 – 120	59
	23.00-01.00 WIB	0 – 30	69
		31 – 60	60
		61 – 90	31
02 April 2021	06.00-08.00 WIB	0 – 30	7
		31 – 60	18
		61 – 90	9
		91 – 120	10
	11.00-13.00 WIB	0 – 30	9
		31 – 60	5
		61 – 90	20
03 APRIL 2021	16.00-17.00 WIB	91 – 120	2
		0 – 30	18
		31 – 60	7
		61 – 90	15
		91 – 120	13

Source: Team Pkl Ketapang Service Unit, 2021

Based on the survey results, the highest pedestrian volume was taken on April 1 at 16.00 – 18.00 at 61 – 90 minutes, namely 90 people for 30 minutes, so for 1 minute the pedestrian volume was 3 people.

Then the width of the *gangway* is as follows:

W = (V/35) + N
W = (3/35) + 1.5 m
W = 0.08 + 1.5 m
W = 1.58 m ~ 2 m
Description: 1 ,5 m taken from table 2. 3.

The existing condition does not have a *gangway* , based on the results of the research the width of the gangway facility is   2 m and the height of the free space is 4.2 m

Figure 1.3
The *gangway* causes passengers to exit through the *unavailability oframpdoor.* theship's

Comparison and benefits between the existing system and the planned system

Table 1.7
And Benefits Comparison Between Existing Systems With Planned Systems

No	Facilities	Port Condition		Description
		Currently	Plans	
1	Terminal Building	No	1181.466 m2	facility construction of the terminal building covering an area of 1181.466 m2 with space Areal cafeteria / kiosk, administrative space area, utility room area and public room
2	Passenger waiting room	None	660.96 m2	Construction of facilities Passenger waiting room area of 660.96 m2 accompanied by several supporting facilities such as seating, air conditioning, charger box, tv. and wifi
3	Parking lot ready to fit	4539 m2	1,154.5 m2	Providing instructions for the division of vehicle

				groups in the ready-to-load parking lot.
4	parking Fields introduction / pickup	There is no	1434.375 m2	provision ofparker Fields introduction / pickup area of 1434.375 m2 in order to accommodate delivery vehicles and pickup.
5	Gangway	None	Width : 2 m Minimum free space height : 4.2 M	Construction offacilities *Gangwayso* that passengers and vehicles do not use the same path when getting to/out of the ship
6.	Weighbridge	None	Provided	Construction of weighbridge before *tollgate* vehicleand additions dispatcher at weighbridge for noting the dimensions of the vehicle

4. Conclusion

Based on the analysis described in the previous chapter, it can be concluded:

1) In the condition of *existing* the Port Crossing Cross Ketapang Ketapang - Sheets are some basic facilities incomplete mainland side of the MoC Decree No. 52 of 2004, such as the unavailability of weighbridges, gangways, delivery/pick-up parking lots, passenger terminals, and the not yet optimal parking lot ready to fit the track.

2) According to the results of the study, it is necessary to fulfill the need for basic facilities on the land side so that the conditions are ideal based on the Decree of the Minister of Transportation Number 52 of 2004, such as the procurement of a weighbridge so that the weight of goods vehicles that will cross is known, the procurement of a *gangway* with a width of 2 m and minimum free space height of 4 , 2 m, procurement parking lot introductory / pick-up area of 1434.375 m2, procurement area of 1181.466terminal m2building, which includes a waiting room, an area of 660.96 m2,and the area of the parking lot ready for loading eksisiting an area of 4539 m2 has met since based on the results of the analysis of an area of 1,154.5 m2

5. References

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