Evaluation Of The Application Of The Zoning System On Vehicle Flow Patterns At The Torobulu Ferry Port

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Abstract

Torobulu Ferry Port is a port located in Laeya District, South Konawe Regency, Southeast Sulawesi Province. This port connects between Konawe Selatan and Muna districts. At this time, the Torobulu Ferry Port has not implemented a zone system in accordance with applicable regulations, which causes many local residents to carry out activities in the port area, delivery vehicles or pick-ups are free to enter the port dock, a parking area ready to load vehicles and a parking area for shuttle vehicles, making delivery/pick-up vehicles often park in a ready-to-load parking area.

To analyze this, an analysis based on the Minister of Transportation Regulation Number 29 of 2016 concerning Ferry Port Sterilization is used to analyze the zone system and the Decree of the Director General of Land Transportation Number SK.242/HK.104/DRJD/2010 concerning Technical Guidelines for Traffic Management Crossing for analysis of vehicle traffic flow patterns as well as analysis of the need for traffic signs supporting the zoning system and flow patterns referring to the Regulation of the Minister of Transportation Number 13 of 2014 concerning Traffic Signs.

In order to create an orderly and safe ferry port, the results of the analysis are to establish a zoning system and regulate the traffic flow patterns of vehicles at the Torobulu Ferry Port and to support the zoning system and vehicle flow pattern settings, it is necessary to optimize facilities such as: adding tollgates, determination of parking areas for passenger/pick-up, determination of parking areas for ready-to-load vehicles, and traffic signs.

Keywords: Traffic; Zone; Flow Pattern; Vehicle.

1. Introduction

South Konawe Regency is one of the regencies located in Southeast Sulawesi Province. The district capital is located in Andoolo. This regency originated from the expansion of Kendari City which was ratified by Law Number 4 of 2003, dated February 25, 2003. Geographically, it is located in the southern part of the equator, across from north to south between 3°58’56” and 4°31’52” latitude. South, and extends from west to east between 121°58’ and 123°16’ East Longitude. South Konawe Regency has a land area of about 5,779.47 Km², or 15.15% of the land area of Southeast Sulawesi, which is 38,140 Km² and an area of water (sea) reaching 9,368 Km², with a coastline length of ± 200 Km, thus The land and sea area reaches 15,147.47 Km². with a total population of 308,524 people.
The Torobulu Ferry Port is managed by the Southeast Sulawesi Provincial Transportation Service and is directly supervised by the government, in this case the Land Transportation Management Center for Region XVIII Southeast Sulawesi Province. This port connects South Konawe Regency and Muna Regency with a travel time of ± 3 hours. Torobulu Ferry Port serves the Torobulu-Tampo crossing, which supports the transportation of agricultural products, livestock and building material needs as well as creates traffic for the transportation of people, goods and vehicles either heading to the Muna Regency area or vice versa. The ferry transportation used is 2 (two) Ro-Ro (Roll on-Roll Off) type Ferries, including KMP. Nuku and KMP. Rubiah Island. Torobulu Ferry Port Operational Services, namely Monday, Wednesday, Thursday, Friday, Saturday, Sunday as many as 4 trips while Tuesday only 3 trips with a total operational service in one week as many as 27 trips.

Based on the results of observations made in the field that the condition of the Torobulu Ferry Port has not operated optimally, there is still a need for improvements in accordance with government regulations that should be implemented. This is due to the absence of a zoning system at the Ferry Port. So that the arrangement in the port area becomes less regular, this is evidenced by the many local residents who carry out activities in the port area so that residents are free to sell around the parking area ready to load vehicles, and fish in a limited area of the port. The zoning system has not yet been established at the port, causing delivery vehicles or pick-ups to freely enter the port dock. In addition, due to the absence of barriers and signs for instructions and support in the parking area ready to load vehicles and the parking area for shuttle vehicles, making delivery/pick-up vehicles often park at the port parking area ready to load. At the Torobulu Ferry Port itself, passengers and vehicles buy tickets at the same place, so that vehicle users must first get off the vehicle which causes the flow of passengers to become irregular. This is contrary to the ideal conditions as stated in the Regulation of the Minister of Transportation Number 29 of 2016 concerning Fertilization of Ferry Ports. So every ferry port is required to pay more attention to the regulation of cargo traffic at the ferry port, both passengers and vehicles, so that it is more orderly, organized and smooth. The smooth movement of cargo, both passengers and vehicles in a port, shows the successful performance of a port in managing and processing port operations to be better in providing services to the community.

2. Research methods

From observations made in the field, several problems were identified. To identify these problems, it is necessary to collect some data that will be used for analysis. In this study, the data collected are secondary data and primary data at the study location of the Torobulu Ferry Port. Primary data is data obtained from observations and direct surveys in the field. While secondary data is written data obtained from related agencies and institutions. The primary data collected were passenger and vehicle productivity data for 30 days, vehicle traffic flow patterns, port characteristics, port layouts, and an inventory of traffic signs. As well as secondary data in the form of port productivity data for the last 5 years, port infrastructure facilities, and ship characteristics.
After the primary data and secondary data are collected, data analysis and processing are carried out. Namely analysis of the application of the zoning system, analysis of vehicle traffic flow patterns, and analysis of the need for traffic signs supporting the zoning system. The method of analysis used in conducting research on the location of the Torobulu Ferry Port is based on the analysis of the Regulation of the Minister of Transportation Number 29 of 2016 concerning Fertilization of Ferry Ports, Regulation of the Minister of Transportation of the Republic of Indonesia Number 13 of 2014 concerning Traffic Signs, and the Decree of the Director General of Land Transportation Number SK .242/HK.104/DRDJ/2010 concerning the Technical Guidelines for Crossing Traffic Management.

The analytical steps used are based on PM No. 29 of 2016: Observation directly to the field, namely to find out the actual conditions regarding the implementation of the zoning system at the Torobulu Ferry Port; Carry out measurements of the port area and its facilities; Determine the application of the zoning system in accordance with the Regulation of the Minister of Transportation Number 29 of 2016 concerning Fertilization of Ferry Ports. The analytical steps used are based on PM No. 13 of 2014: Observation directly to the field, namely to find out the existing condition of placing traffic signs at the Torobulu Ferry Port; Conduct surveys of places that require traffic signs; Determine the need for traffic signs supporting the zoning system based on the Regulation of the Minister of Transportation of the Republic of Indonesia Number 13 of 2014 concerning Traffic Signs. The analytical steps used are based on SK.242/HK.104/DRDJ/2010: Direct field observations are to determine the existing condition of vehicle traffic flow patterns at the Torobulu Ferry Port; Get the layout of the traffic flow pattern of vehicles at the Torobulu Ferry Port; Determine the pattern of vehicle traffic flow in accordance with the Decree of the Director General of Land Transportation Number: SK.242/HK.104/DRDJ/2010 concerning the Technical Guidelines for Crossing Traffic Management.

Then from the analysis will be obtained results in the form of conclusions which can then be given suggestions and recommendations for problem solving.

3. Results and Discussion

As mentioned in the previous chapter regarding the existing problems, the author tries to analyze the problem so that conclusions can be drawn which can later be used as solutions or problem solving. For this, the author uses the reference according to the Regulation of the Minister of Transportation Number 29 of 2016 concerning Fertilization of Ferry Ports, the Regulation of the Minister of Transportation Number 13 of 2014 concerning Traffic Signs and the Decree of the Director General of Land Transportation Number SK.242/HK.104/DRDJ/2010 concerning Crossing Traffic Management Technical Guidelines as a reference in solving problems.
The following is an analysis of the application of the zoning system based on Ministerial Regulation Number 29 of 2016 concerning Fertilization of Ferry Ports

1) Passenger zone (Zone A)

Zone A1: That is a general zone that functions for the placement of passenger counters and vehicle parking, only intended for introduction and pick-up of passengers.

Zone A2: Zone A2 is for the waiting room and is only intended for prospective passengers who already have tickets.

Zone A3: That is a restricted zone that functions only for passengers passing through the gangway whose tickets have been checked.

2) Vehicle zone (Zone B)

Zone B1: This is the zone for placing the weighbridge and the vehicle counter (tollgate) which functions to weigh vehicles before entering the ship and the tollgate to pay for vehicle tickets to cross at the Ferry Port.

Zone B2: This is a limited zone that functions as a parking lot for crossing vehicles that already have tickets before entering the ship.
Zone B3: That is a limited zone that functions as an area for vehicles ready to load/ready to enter the ship.

3) Security Zone (Zone C)

Zone C: which functions for the security and safety of important facilities, which are forbidden to enter except for officers, including:

   a) Bunker
   b) Water tank
   c) Electric Substation/Genset
   d) Moveable Bridge house
   e) Bolder Place

The following is an analysis of the need for traffic signs at the Torobulu Ferry Port Regulation of the Minister of Transportation Number 13 of 2014 concerning Traffic Signs:

**Table 1**

Placement of Signs at the Ferry Port

<table>
<thead>
<tr>
<th>No</th>
<th>Sign Type</th>
<th>Laying</th>
<th>Amount</th>
<th>Function</th>
</tr>
</thead>
</table>
| 1  | This sign is placed in Zone C, such as:  
   - Generator  
   - Moveable Bridge House  
   - Catwalk | 3 pieces | The sign serves to prevent unauthorized passengers from entering the area where the sign is placed. |
<p>| 2  | Put on the road before the zebra cross | 2 pieces | Warning a lot of pedestrian traffic using the crossing facilities |</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Sign Type</th>
<th>Laying</th>
<th>Amount</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><img src="image" alt="Sign" /></td>
<td>This sign is placed on the road to the port entrance area and at the port exit area</td>
<td>3 pieces</td>
<td>Warning for passengers who have vehicles not to park along the road that is placed on the sign.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Sign" /></td>
<td>Signs are placed in the delivery or pick-up passenger parking area</td>
<td>1 pieces</td>
<td>Notification for passengers who have vehicles must park their vehicles in the area of the sign.</td>
</tr>
<tr>
<td>5</td>
<td><img src="image" alt="Sign" /></td>
<td>This sign is placed at the exit of the vehicle from the ship and the exit of the vehicle for picking up passengers</td>
<td>1 pieces</td>
<td>The sign serves so that unauthorized passengers do not enter the area where the sign is placed.</td>
</tr>
<tr>
<td>6</td>
<td><img src="image" alt="Sign" /></td>
<td>Placed on the road before entering the port</td>
<td>1 pieces</td>
<td>Port Location Guide</td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Sign" /></td>
<td>Placed in the vehicle exit lane from the port</td>
<td>1 pieces</td>
<td>Notifications for vehicles leaving the port area</td>
</tr>
</tbody>
</table>
From the results of the analysis, it can be seen the layout of the placement of signs used to support the zone system and current patterns at the Torobulu Ferry Port.
The following is an analysis of the implementation of the traffic flow pattern planned for the Torobulu Ferry Port in accordance with the Decree of the Director General of Land Transportation Number SK.242/HK.104/DRDJ/2010 concerning Technical Guidelines for Crossing Traffic Management

Based on the results of the analysis that have been obtained, the solution to the problem that will be recommended for the Torobulu Ferry Port is as follows:

1) Regulate the application of the layout of land facilities with a zoning system at the Torobulu Ferry Port in accordance with PM 29 of 2016 concerning Sterilization at the Ferry Port.
2) In order for the arrangement of the land facility layout system for this regional zoning system to run safely, orderly and smoothly, it is necessary to provide information dissemination to the public about the regional zoning system used for passengers and vehicles at the Torobulu Ferry Port in accordance with the Decree of the Director General of Land Transportation Number: SK .242/HK.104/DRDJ/2010 Regarding the Technical Guidelines for Crossing Traffic Management.
3) Improving service and convenience to service users by checking passenger tickets just once, namely in zones A3 and B3.
4) Sterilize, regulate and discipline delivery and pick-up passengers, both those using vehicles or on foot in accordance with the applicable zone system.
5) In order to create a vehicle traffic condition that is safe, orderly, orderly and smooth, it is necessary to rearrange the vehicle lanes and parking areas for ready-to-load vehicles and pick-ups, so that smooth operation at the Torobulu Ferry Port is organized.
6) Regulate the placement of traffic signs to improve services at the Torobulu Ferry Port in accordance with PM 13 of 2014 concerning Traffic Signs.
4. Closing

a. Conclusion

1) There is no application of a regional zoning system at the Torobulu Ferry Port which should be adjusted to the Regulation of the Minister of Transportation Number 29 of 2016 concerning Port Sterilization in which in the regulation the port must be divided into zone areas.

2) The irregular pattern of vehicle traffic flow at the Torobulu Ferry Port which should be adjusted by applying the regulation of the vehicle traffic flow pattern according to the vehicle arriving to board the ship or vice versa based on the Decree of the Director General of Land Transportation Number SK.242/HK. 104/DRDJ/2010 concerning the

3) Technical Guidelines for Crossing Traffic Management. Lack of supporting traffic signs for supporting facilities for the zoning system and vehicle traffic flow patterns at the Torobulu Ferry Port such as land signs, road markings and traffic cones.

b. Suggestion

1) It is necessary to stipulate the application of regional zoning at the Torobulu Ferry Port in accordance with the Regulation of the Minister of Transportation of the Republic of Indonesia Number 29 of 2016 concerning Fertilization of Ferry Ports.

2) In order to expedite the flow of vehicle traffic entering and leaving the port area, as well as delivery or pick-up vehicles, it is necessary to apply a new traffic flow pattern in accordance with the order in which the vehicles arrive to board the ship or vice versa based on the Decree of the Director General of Land Transportation No. SK.242/HK.104/DRDJ/2010 concerning the Technical Guidelines for Crossing Traffic Management.

3) Placing traffic signs supporting the zone system and traffic regulation such as land signs and road markings based on the Regulation of the Minister of Transportation of the Republic of Indonesia Number 13 of 2014 concerning Traffic Signs.

5. References

1) 2008. Undang – Undang Nomor 17 tentang Pelayaran

2) 2016. Peraturan Menteri Perhubungan Nomor 29 Tentang Sterilisasi Pelabuhan Penyeberangan


4) 2010. Surat Keputusan Direktur Jenderal Perhubungan Darat Nomor 242 Tentang Pedoman Teknis Manajemen Lalu Lintas Penyeberangan


