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Analysis of Terminal Type C Requirements for Rural Areas in Bolaang Mongondow Selatan District, North Sulawesi Province

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Abstract

Terminals as a road transportation network node become a barometer of the rapid growth in the number of trips to and from a city, requiring a focused planning platform. These are all needed to create a terminal system infrastructure that can provide service benefits to smooth transport traffic with efficiency in space, time, and funds. Bolaang Mongondow Selatan Regency is a district in North Sulawesi Province with remote access from North Sulawesi Province's capital city. Bolsel Regency does not have a representative road transport terminal as a place for passenger ups and downs on a rural scale, so it is necessary to analyze the type C terminal's needs there. The potential for agriculture, plantation, fishery, and tourism in this area as part of a rural area is in dire need of road transport infrastructure for accessibility and mobility. The need for a type C terminal in Bolaang Mongondow Selatan district to serve rural communities in the western part of the district is Terminla Type C Lion in the Posigadan sub-district. Meanwhile, to serve the community in the eastern part of the district is the Adow type C terminal in the Central Pinolosian district.

Keywords: : *Terminal,Rural area, Bolaang Mongondow Selatan Regency*

I. INTRODUCTION

A. Background

Road transportation as a transportation subsystem has an important role in providing passenger transportation services. The movement/mobility of people occurs because of daily activities that need one another. The movements that occur in accordance with urban patterns or the distribution of settlements give rise to passenger traffic flows from one place to another.

To support people's movement, the government must provide adequate services and arrangements for both transportation facilities and infrastructure. One of the vital road transport infrastructures is the passenger transportation terminal in accordance with the Decree of the Minister of Transportation No. 31 of 1995 concerning the Road Transportation Terminal. So far, many terminal developments lack a foundation for careful planning so that they are less functional in operation.

Terminals as a road transportation network node become a barometer of the rapid growth in the number of trips to and from a city, requiring a focused planning platform, involving planning experts from various scientific disciplines and paying attention to social, economic, cultural, environmental aspects and spatial aspects. These are all needed to create a terminal system infrastructure that can provide service benefits to smooth transport traffic with efficiency in space, time, and funds.

Bolaang Mongondow Selatan Regency is an area in a coastal area which is a remote area with limited movement of people due to the absence of public transportation services for the accessibility of its people. The Molibagu terminal in this district tends not to be used by the community because its access does not meet the terminal planning requirements.

This Bolaang Mongondow Selatan Regency area, which stretches across the southern part of North Sulawesi Province from east to west, has no rural transportation terminal. Before constructing the Type C terminal at the research location, it is necessary to research the Type C terminal's needs in Bolaang Mongondow Selatan district, which can improve the accessibility of coastal communities.

The background of this research is the absence of a proper terminal at the research location and as a reference from the South Bolaang Mongondow Regency government in the context of building road transport terminal infrastructure so that it can be operational in the future.

B. Problem Statement

The research problem is analyzing the need for a Type C terminal in rural areas in Bolaang Mongondow Selatan Regency and an accessibility need for remote communities in coastal areas.

C. The Aimed of The Research

This research's specific objective is for the welfare of rural communities to improve rural communities' economy and increase accessibility.

D. Benefits of Research

This study's results form the basis of planning for the Bolaang Mongondow Selatan Regency government in planning a Type C Terminal for rural areas.

II. LITERATURE REVIEW

A. Terminal Infrastructure

Based on the decree of the minister of transportation number 31 of 1995 concerning road transportation terminals and the Ministerial Regulation Number PM 132 of 2015 concerning the Operation of Road Transportation Passenger Terminals. The Transportation Terminal is:

1. A node in the road transport network serving as a public service.
2. A place for traffic control, supervision, regulation, and operation.
3. Transportation infrastructure is part of the transportation system to facilitate the flow of passengers and goods.
4. The spatial planning element has an important role in the efficiency of city life.

The function of the road transport terminal can be viewed from 3 (three) elements, namely:

1. The terminal function for passengers is for the convenience of waiting, moving from one mode or vehicle to another, information facilities, and private vehicle parking facilities.
2. The government's terminal function is planning and traffic management to organize traffic and transportation, avoid congestion, collect user fees, and control public transportation.
3. The terminal function for operators/entrepreneurs is the regulation of bus operations, rest facilities, and information for bus crews and as a base facility.

According to the Minister of Transportation No.31 of 1995 concerning Road Transportation Terminals and Ministerial Regulation Number PM 132 of 2015 concerning Road Transportation Passenger Terminals' implementation.

Based on their function, the terminals can be grouped into:

1. Passenger terminal to lower and raise passengers
2. Goods terminal for unloading and loading goods

Passenger terminals are grouped into:

1. Terminal Type A, a terminal serves public transportation for intercity and inter-provincial transportation, and/or cross-border transportation, inter-city transportation within provinces, city transportation, and rural transportation.
2. Terminal Type B, a terminal that functions to serve public transportation for city transportation within the province, city transportation, and/or rural transportation.
3. Terminal Type C, which is a terminal that serves public transportation for rural transportation

Several matters related to the terminal and its accessories are as follows:

1. To support the smooth movement of people and/or goods and the integration of intermodal and intermodal in certain places, terminals can be built and operated;
2. Terminals built: a. can be in the form of the passenger terminal and/or goods terminal b. According to its service, passenger terminals are grouped into type A, type B, and Type C. Each type is divided into several classes based on the intensity of the vehicle served.

The terminal location's determination is carried out by taking into account the terminal requirement plan, which is part of the road traffic and road transport network master plan. The terminal location is determined by taking into account:

1. The level of accessibility of transportation service users
2. The land suitability with the national spatial plan, the provincial spatial plan, and the regency / municipal spatial plan.
3. Conformity with the road network's development plan and/or performance, route network, and traffic network.
4. Conformity with development plans and / or activity centers.
5. Harmony and balance with other activities.
6. Demand for freight.
7. Technical, financial, and economic feasibility.
8. Security and safety of traffic and road transportation.
9. Environmental preservation.

The location of the terminal must meet several other criteria, such as:

1. The location is far from industrial areas
2. Has a level of noise and air pollution that does not disturb the surrounding environment
3. Close to the center of the activity/activity center

For passenger terminal facilities, it consists of main facilities and supporting facilities. The main and supporting facilities will be described as follows:

1. Main facilities, consisting of:

a. Public transportation departure route;
b. Public transportation arrival route;
c. Public transportation parking lots while waiting for departure, including waiting areas and public transport rest areas;
d. Terminal office building;
e. The place to wait for passengers and/or delivery;
f. Watchtower;
g. Ticket counters;
h. Signs and information boards, which at least contain directions for directions, fares, and travel schedules;

i. Parking for delivery vehicles and/or transactions.

2. Supporting facilities, as referred to in Article 3, can be in the form of:

a. Washroom/toilet;
b. Islamic Prayer Room;
c. Kiosk/canteen;
d. Treatment room;
e. Information and complaint room;
f. Payphone;
g. Deposit box;
h. Garden.

III. RESEARCH METHODOLOGY

The research methodology is a step in completing research in the form of initial preparation to study the Sam Ratulangi University Research Master Plan (RIP) Manado to create a research road map.

A preliminary study is very important to explain the background and research problems. The preliminary study will be the background of the problem to understand the problem and seek research objectives. The analysis will work well if it is supported by the data and methods to be used. They collect data in secondary data and primary data, followed by data processing or data analysis, until determining the Type C terminal planning strategy.

The method of implementing this research consists of the following steps:

A. Initial Preparation

Activities undertaken include:

a. Understand the aims and objectives, research objectives, the scope of work, location of activities, and expected outputs;
b. Prepare and collect initial data;
c. Establish a preliminary design from the initial data to be used as a guide for the preliminary survey;
d. Determination of the location to be surveyed

B. Field Survey Stage

Field surveys and investigations are carried out to obtain data in the field up to a certain level of accuracy by taking into account several factors, such as actual existing field conditions and treatment targets to be achieved In the field survey, there are several activities, including:

a. Survey of the existing condition of road facilities and infrastructure
b. Survey of traffic flow conditions on rural roads
c. Site survey suitable for type C terminal

C. Data Analysis

Perform analysis of previously compiled data. The analysis carried out includes:

a. Analysis of the rural type terminal needs according to the RTRW of Bolaang Mongondow Selatan Regency.
b. Analysis of future rural type C terminal needs

D. Formulation Phase of Type C Terminal Development Program Indication

This stage formulates an indication of the Type C Terminal construction program

IV. DISCUSSION

A. Geographical and Administrative Position

Bolaang Mongondow Selatan Regency is a district in North Sulawesi Province, Indonesia, with a government center in Bolaang Uki. This district was created according to Law Number 30 of 2008, which is the division of the Bolaang Mongondow Regency. The inauguration was held by the Minister of Home Affairs, Mardiyanto, in Manado on Tuesday, September 30, 2008.

Bolaang Mongondow Selatan Regency is one of the districts in North Sulawesi, with the center of government being in Molibagu. This district was formed based on Law Number 30 of 2008, which was expanded from the Bolaang Mongondow district (the main district).

Geographically, Bolaang Mongondow Selatan district is at a position of 0 ° 22 "54" North Latitude and 123 ° 28 "59.2" East Longitude, with boundaries, among others:

- Northern boundary: borders the area of Bintauna sub-district, sub-district Sangkub in Bolaang Mongondow Utara district, and Dumoga Barat sub-district, Sangtombolang sub-district, Lolayan sub-district in Bolaang Mongondow district;
- Eastern boundary: borders the West Modayag sub-district, Modayag sub-district, and Nuangan sub-district in Bolaang Mongondow Timur district;
- Southern boundary: bordering the Maluku Sea (Tomini Bay);
- West boundary: adjacent to the administrative area of Bone Bolango district - Gorontalo province.

Bolaang Mongondow Selatan Regency consists of 5 (five) districts, namely:

a. Bolaang Uki sub-district with the capital city of Molibagu;
b. East Pinolosian sub-district with the capital city of Dumagin ;
c. .Central Pinolosian District with the capital city of Adow;
d. Posigadan District with Momalia as a capital;
e. Pinolosian District with Pinolosian capital.

Figure 1. Map of the Bolaang Regency Administrative Region Southern Mongondow

B. The Economy of Bolaang Mongondow Selatan Regency

Bolaang Mongondow Selatan Regency is a coastal area located on the southern side of North Sulawesi Province. Geographically, this district is a coastal area with abundant fishery and tourism potential. According to Dahuri (2003), coastal areas generally have the characteristics of areas that have abundant natural resources. This wealth can be in the form of forestry, fishery, marine resources, and tourism. Seeing the potential of the Bolaang Mongondow Selatan Regency area, in the Spatial and Regional Planning (RTRW) of North Sulawesi Province, South Bolaang Mongondow Regency is a strategic area for economic growth in the form of developing marine and fisheries infrastructure, tourism, and limited professional transmigration.

Regional economic development requires facilities and infrastructure to support good and sustainable growth. Rustiadi et al., 2011) explained that an area's development leads to the equity that supports economic growth (efficiency) and sustainability. Facilities and infrastructure with a wide range of services are located in strategic areas and have a hierarchy of regions. Higher. These areas are areas that act as centers of growth.

The existence of infrastructure in the growth center can support marine and fishery activities and tourism activities in the Bolaang Mongondow Selatan Regency area for the better and can improve the welfare of the people who are directly involved in these activities. The process of one region affecting another region occurs because of the dominance of activities owned by the region. Areas that can influence other regions are called growing points or growth centers (Adisasmita, 2008). The role of the growth center is big in improving the community's economy in these activities.

The growth center in Bolaang Mongondow Selatan Regency consists of 3 districts. The 3 sub-districts are Bolaang Uki District, which acts as a Regional Activity Center (PKW), and Pinolosian District and Posigadan District, which acts as a Local Activity Center (PKL). As a strategic area for economic growth in infrastructure development for certain activities, it is not known how these activities will develop in the growth centers of Bolaang Mongondow Selatan Regency.

C. Economic Development

The distribution and marketing processes in fisheries and marine and tourism activities are greatly supported by the existing transportation facilities and infrastructure in the growth center areas. The development of the distribution process in fisheries and marine activities has increased in terms of distribution channels, which in current conditions can pass through the waterways with the Torosik Regional Port in Central Pinolosian District. The opening of road access in the Central Pinolosian District, which directly connects with the Kotamobagu City area, provides an alternative to a new distribution route if the main distribution line in Bolaang Uki District cannot be passed.

The final destination for the distribution of fishery and marine products in growth centers is located within the province of North Sulawesi and outside the province. Within the province, the final distribution locations are Kota Kotamobagu, Manado city, and Bitung city. Simultaneously, the areas outside the province are located in Bone Bolango Regency and Gorontalo City, which are within the administrative area of Gorontalo Province. For distribution to Manado City, fishery and marine products are directly exported to Japan via Sam Ratulangi Airport. Then for Bitung City, the products distributed are used as raw materials for large fish processing industries. For other areas, the product is directly traded to traders in the market.

The development of tourist attractions in the form of facilities and infrastructure to support tourism and tourism marketing in the last 5 years has generally made South Bolaang Regency tourism one of the potential local and foreign tourist destinations in the future.

D. Development of Transportation Infrastructure

The development of fishery products in the growth center is supported by docks' presence, which are functioned by fishermen to park their ships before and after going to sea. The existence of a jetty in Bolaang Mongondow Selatan Regency has not played a role in human movement because the dominance of the jetty's function is to support fishery activities in each existing sub-district. Especially for the Bolaang Uki growth center, there is a Dudepo Pier located in Dudepo Village. This wharf is a berth for large ships whose products are distributed directly to Bitung City and Manado City to be used as raw material for the fishery industry or directly exported abroad, such as Japan. Production products used as export goods and industrial raw materials are certain types of fish that are easily found in the waters of Bolaang Mongondow Selatan Regency.

Apart from the pier, there is the Torosik Port, which began operating in 2017. Torosik Port is a regional port and is the only port in the Bolaang Mongondow Selatan district, located in Torosik Village, Pinolosian Tengah District. This port is a port of goods and passengers serving routes:

- Torosik- Pagimana,
- Torosik-Gorontalo
- Torosik - Luwuk.

The existence of the port of Torosik is a means that can support the economy of the Bolaang Mongondow Selatan Regency area because it can become a new distribution channel for goods and facilitate the movement of people into and out of the Bolaang Mongondow Selatan Regency.

Figure 2. Dudepo Pier, Bolaang Uki District

Figure 3. Torosik Port

E. Tourism Development

The types of tourism in the Bolaang Uki District consist of natural tourism, special tourism, and artificial tourism. Nature tourism consists of Bihina Timur Beach, special tours consisting of the king's meat, the former Molibagu Kingdom located in Molibagu, and artificial tours consisting of culinary tours and Boulevard Sondana tours. Pinolosian Subdistrict tourism destinations consist of natural tourism and cultural tourism.

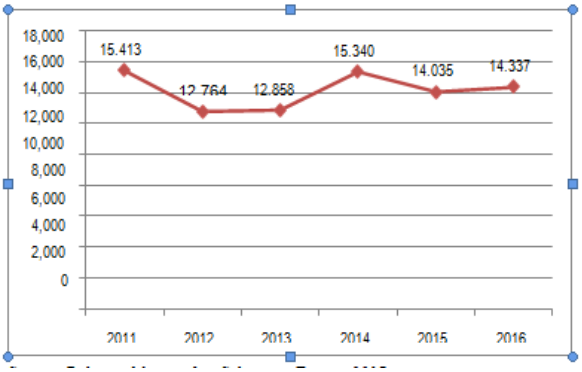
Nature tourism consists of Modisi Beach Marine Park, Putri Bangsawan Marine Park, and White Sand Beach in Nunuk Village, and L reveals Beach. Cultural tourism consists of Dance Funds.

Posigadan sub-district has natural tourist destinations that have beach tourism attractions and several dive points. The coastal destinations in this sub-district are not like the east biniha beach in Bolaang Uki and the modisi Beach in Pinolosian, known to people outside the region. A potential natural tourist destination currently in the development stage is Ponii Beach, located in Luwoo Village.

The development of tourist attractions in the form of facilities and infrastructure to support tourism as well as tourism marketing in the last 5 years has generally made South Bolaang Regency tourism one of the potential local and foreign tourism destinations in the future. Based on the tourism potential, there are several tourist destinations in the Bolaang Uki District, currently in the development and construction stage of supporting facilities and infrastructure.

The development and development of tourist objects, followed by the provision of facilities and infrastructure to support tourism, is one of the main causes of the increasing number of tourists coming to various tourist objects in the Bolaang Mongondow Selatan Regency area. A very significant increase was found in increasing foreign tourists. The increase in the number of foreign tourists is due to the tourist attraction of several diving points scattered in various regions of Bolaang Mongondow Selatan Regency.

The number of domestic tourists visiting tourist objects from 2011 to 2016 has increased and decreased, as shown in Figure 4 below.



Source: Bolaang Mongondow Selatan in Figures 2017

Figure 4: Graph of Domestic Tourists in Bolaang Mongondow Selatan Regency

F. Terminal in Bolaang Mongondow Selatan

There is no representative terminal in the Bolaang Mongondow Selatan district for existing conditions, and it is still classified as a type C terminal, namely a terminal that serves public transportation for rural transportation. Currently, those that function as type C terminals are Molibagu, Dumagin, Adow, and Momalia terminals, whose conditions are still inadequate according to terminal standards and requirements. For its operations, land transportation is still integrated with sub-district market activities. However, in the direction of the RTRW for Bolaang Mongondow Selatan district, it is known that in 2013-2033, there are plans to include:

a. Terminal type A in Molibagu (kec. Bolaang Uki), where this terminal serves public transportation for inter-city transportation between provinces, and/or cross-border transportation, inter-city transportation within the province, city transportation, and rural transportation. Terminal facilities serve to serve long-distance (regional) high volume passenger flows, usually accommodating 50-100 vehicles per hour with a minimum space requirement of 3 - 5ha.
b. Type C terminal in East Pinolosian, Central Pinolosian, Pinolosian, and Posigadan sub-districts, where this terminal serves to serve public transportation for rural transportation. This terminal has a role in accommodating passengers who move near a small volume, accommodating <25 vehicles per hour with a space requirement of around 2.5 ha.

Based on the 1995 LLAJ Technical Guidance, a transportation terminal is A node in the road transportation network that functions as a public service, a place for traffic control, supervision, regulation, and operation; Transportation infrastructure is part of the transportation system to facilitate the flow of passengers and goods; and

Spatial planning elements that have an important role for the efficiency of urban life.

The functions of the land transportation terminal are for the convenience of waiting for passengers, the convenience of moving from one mode or vehicle to another, information facilities and vehicle parking facilities; in terms of planning and traffic management to organize traffic and transportation as well as avoiding congestion, a source of collecting user fees and controlling public vehicles, and playing a role in regulating bus operations, providing rest facilities and information for bus crews and as a base facility.

Terminal Type C, which is a terminal that serves public transportation for rural transportation. In this case, the type C terminal is located in East Pinolosian, Central Pinolosian, Pinolosian, and Posigadan. This type C terminal is included in the class, including branch terminals (sub terminals), which are terminals that function to accommodate passengers who are moving in close proximity with small volumes, able to accommodate <25 vehicles per hour with a minimum space requirement or land area of 2.5 Ha.

The proposed location for the passenger terminal takes into account several requirements, including:

• The level of accessibility of transport service users;
• Land suitability with the Spatial Plan for Bolaang Mongondow Selatan Regency;
• conformity with the development plan and/or performance of the Road network, route network, and traffic network;
• Compliance with the development plan and/or activity center;
• Harmony and balance with other activities;
• Demand for transport;
• Technical, financial and economic feasibility;
• Security and Safety of Traffic and Road Transportation;
• Environmental preservation;
• Location away from industrial areas;
• Has a level of noise and air pollution that does not disturb the residential environment;
• Close to the activity center/activity center, it is recommended that it be integrated with the sub-district market development plan;
• Technically, the terminal location is not a mangrove swamp area, as well as not on land that has hilly topographical conditions that require relatively high costs for land maturation and avoid changes in the landscape.

According to the Local Transportation Order (Tatralok) of the Bolaang Mongondow Selatan Regency in 2015, there are 4 potential locations in East Pinolosian, Central Pinolosian, Pinolosian, and Posigadan districts as Type C terminal locations. Central Pinolosian sub-district with the name Adow terminal and Posigadan sub-district with the name Lion terminal. This type of C terminal serves to serve public transportation for rural transportation. This terminal has a role in accommodating passengers who move in close proximity with a small volume, accommodating <25 vehicles per hour with a space requirement of around 2.5ha.

The Type C Passenger Terminal Node is determined by the Regent / Mayor with due observance of the suggestions/input from the SKPD, which is responsible for road traffic and road transportation facilities and infrastructure.

G. Adow Type C Terminal

The Adow terminal is located in Pinolosian Tengah District with coordinates of North $00^{0}26^{1}05,88^{11}$ and East $124^{0}15^{1}46,52^{11}$. The location of the Adow terminal is on the local district road. Figure 5.is the existing condition of the planning location for Type C Adow Terminal.

Figure 5. The planned location of Adow Type C Terminal

Figure 6. Adow Market beside the Adow Type C terminal location

H. The Advantages And Disadvantages Of Each Terminal

Selection of the location of the Type C terminal in Bolaang Mongondow Selatan district based on the criteria for determining the location with the following points:

a. The level of accessibility of transportation service users
b. land suitability with district spatial planning
c. land suitability with the development plan and road network performance and route network;
d. conformity with the activity center development plan;
e. harmony balance with other activities;
f. demand for transportation;
g. technical, financial, and economic feasibility;
h. security and safety of traffic and road transportation; and
i. preservation of environmental functions.

Table 1. The following are the advantages of Type C terminals. Each location has met the criteria for determining the location of the terminal.

Establishment criteria	Lion Terminal	Adow Terminal
Accessibility	√	√
RTRW compliance	√	√
Route network	√	√
Hub	√	√
Harmony	√	√
Transport demand	√	√
Technical, financial	√	√
security	√	√
Living environment	√	√

Source: analysis results, 2020

The location selection that needs to be considered is the accessibility of transportation service users who are the people of Bolaang Mongondow Selatan Regency. The Lion terminal in the Posigadan sub-district is a terminal in the western part of Bolaang Mongondow Selatan Regency, which will increase the accessibility of public transportation service users in the western part of the Regency. Meanwhile, the Adow terminal will increase the accessibility of the community in the eastern part of Bolaang Mongondow Selatan Regency.

These two type C terminals will cause the generation and attraction of people's movement and the movement of vehicles, which make the accessibility of transportation service users high. Current community access in the Posigadan sub-district is more likely to travel to Gorontalo because access to Gorontalo is closer and faster. With the Lion terminal, it will increase the accessibility of the community in the whole South Bolaang Mongondow Regency.

V. CONCLUSION

In conclusion, in this study that the need for type C terminals in Bolaang Mongondow Selatan Regency is found in 2 locations, namely Adow Type C Terminal in Central Pinolosian sub-district and Type C Lion terminal in Posigadan district.

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