



Clock And Level of Feasibility of Cihampelas Road, Bandung City

Sukaria Tanzil

Master of Architecture Program, Faculty of Technology & Vocational Education

*Correspondence: E-mail: s.tanzil@gmail.com

ABSTRACT

Jalan Cihampelas, Bandung City was originally one of the roads that connected the northern area of Bandung City or the Lembang sub-district city to the center of Bandung City. Initially, the area on the right and left of the road was an area used as a residence. The development of the area to the right and left of the road has changed its function to become a commercial area, the change in function can be seen in the presence of malls, offices, pools, travel, hotels, restaurants, shops public areas with the construction of shopping and culinary areas on the road called Teras Cihampelas. With all this increased activity, congestion often occurs which is caused by, among other things, the wide capacity of the road which cannot accommodate the increasing number of vehicles passing through it and the queues of vehicles that will park and the disorder of public vehicles picking up and dropping off passengers. The purpose of this study is to determine the feasibility of the Cihampelas Road with the development of the surrounding area, using the data observation method and testing the level of traffic service on the Cihampelas Road. From the results of this study, it can be said that the Cihampelas Road in the city of Bandung is not prepared to become a road with a large commercial area and is no longer suitable as a connecting road between cities or sub-city areas. The purpose of this study is to determine the feasibility of the Cihampelas Road with the development of the surrounding area, using the data observation method and testing the level of traffic service on the Cihampelas Road. From the results of this study, it can be said that the Cihampelas Road in the city of Bandung is not prepared to become a road with a large commercial area and is no longer suitable as a connecting road between cities or sub-city areas.

ARTICLE INFO

Article History:

Submitted/Received 16 February 2022

First Revised 18 November 2022

Accepted 30 January 2023

First Available online 1 March 2023

Publication Date 1 March 2023

Keyword:

Residence

Commercial area

Function

Feasibility

1. INTRODUCTION

Seeing the potential of the city of Bandung as an objective tourist destination and service city is certainly a distinct advantage for the city of Bandung. These advantages include stimulating local regional economic growth, increasing local revenue, creating jobs, and supporting regional development. With the development of the city of Bandung and its surroundings, it has had an impact on people's activities to visit the city of Bandung, one of which is the increase in the number of users of the Cihampelas road as a route for the people of the northern region of Bandung city or the city of Lembang sub-district. The increasing volume of vehicles passing through the Cihampelas road certainly has an impact on the potential opportunity to open a business begins with a swimming pool, shop- shops selling food/food souvenirs Bandung, the establishment of school buildings, hospital buildings, factories, in the past. Around the mid-80s, a fashion store was opened that focused on selling clothes made from jeans and succeeded in becoming a new icon for people shopping for clothes made from jeans and that place happened on Jalan Cihampelas. The store's attractiveness, it has caused many shops selling other jeans to grow on either side of Jalan Cihampelas. So since then the name "Jeans Cihampelas" has become famous. Entrepreneurs see another potential on the Cihampelas road due to the existence of "Cihampelas Jeans", there is an expansion of the type of business from jeans-made shops with supporting businesses such as restaurants, malls, apartments ending with the construction of the Cihampelas Terrace.

The existence of business development in the right and left areas of Jalan Cihampelas is not matched or the limited body of the road which has been shaped from the past until now is difficult to widen again, including making proper sidewalks for shop visitors in the area.

Of course, the function of the Cihampelas road as a connecting road between the northern city of Bandung and the Lembang sub-district which leads to the center of Bandung city is disrupted by vehicles that will visit shops, for this reason, traffic jams cannot be avoided due to increased volume caused by the number of vehicle activities that pass through the road. Cihampelas is no longer just a connecting road but added visiting vehicles.

2. THEORETICAL BASIS

Cihampelas Street, Bandung

Jalan Cihampelas has an average road width of 7 m, with an average effective road width of 6 m. On this road section, the width of the should effective average below 0.5 m. The right and left of the road are bordered by mahogany trees, then on the east side is the Cikapundung valley, the land surface is generally lower than the Cihampelas road front, and to the west are plains which are generally parallel to the Cihampelas road front. Because Road was originally a PE road connecting cities or regions then there are adequate sidewalk facilities as pedestrian paths. There is a development in the area where congested shops already exist on sidewalks that have an average width of 1.5 m, and an effective average shoulder width of 0.5 m. Building boundaries in a few shops in the shopping area too much land use usually un used to park motor vehicles. Partisan The area is also used as a trading area by street vendors and semi-permanent stalls inside the road. On some other roads, there are also building borders that function as parking lots.

Jalan Cihampelas as a connecting road between the northern area of Bandung city and the city center is of course a fast vehicle lane, but in its development, the Cihampelas road has now become a dual function, namely as a connecting road between regions and the city's

commercial street which is a slow vehicle lane, of course, this will cause the problem of speed deceleration on the route users between connecting urban areas.

At certain times the activity of the Cihampelas road will tend to be congested for inter-regional road users. Usually, this activity occurs in the morning until noon, while from noon to night it becomes a commercial road but the function of a connecting road from noon to evening is still needed by users from inter-city areas of Bandung to the city center. During holidays, for example on weekends, this road section is dominated by users who visit the Cihampelas road area as an attraction for tourists.

When the Cihampelas road becomes crowded due to the time tourists visit it will cause heavy traffic jams due to the function of the double road as a connecting road and a commercial road which is also caused by queues looking for parking lots or queues for parking lots as well as pedestrians who use the road as a means of walking due to the function sidewalks with a width of 1.5 m are very inadequate, plus the sidewalks are used by street vendors.



Picture 2: Cihampelas Street in the Ancient Times



Figure 2: Current Cihampelas Street and Cihampelas Terrace

Vehicle Traffic Volume

According to Pignataro in Malvina (2005), what is meant by vehicle volume is the number of vehicles passing a certain point at a certain time or the number of vehicles passing a certain road section at a certain time. While the maximum volume during peak hours is defined as the amount of volume that occurs on a road section during peak hours.

Along Jalan Cihampelas which is the object of observation, there is a mix of types of vehicles that pass, starting from motorcycles, light vehicles such as sedans, minibuses, jeeps, and other similar vehicles, to heavy vehicles such as buses, trucks, as well as non-motorized vehicles such as bicycles and carts. The vehicles that dominate the use of Jalan Cihampelas are light vehicles and motorbikes.

Initially, the function of the Cihampelas road was as a connecting arterial road between the northern city of Bandung or the Lembang sub-district city to the city center, in its development it became an urban commercial road which is still a connecting arterial road (dual function).

Road Traffic Capacity

The capacity of one road section in a road system is the maximum number of vehicles that have sufficient possibilities to pass through that road section in a certain period and under the general road and traffic conditions.

When the flow is low, the speed of free vehicle traffic is free, there is no interference from other vehicles, the more vehicles that pass through the road, the speed will decrease until one day the traffic flow/volume can no longer increase, this is where capacity occurs.

After that the current will decrease continuously under forced current conditions until a moment when the condition is stuck, the current is not moving and the density is high.

Factors that affect the capacity of city roads are the width of lanes or lanes, whether there are road dividers/medians, road shoulder/curb barriers, road gradients, in urban or out-of-town areas, and city size. The formula in urban areas is shown below:

$$C = C_o \times FCW \times FCSP \times FCSF \times FCCS$$

Where: C = Capacity (pcu/hour)

C_o = basic capacity (pcu/hour), usually 2300 pcu/hour is used

FCW = Road width adjustment factor

FCSP = Splitting adjustment factor (only for undivided roads)

FCSF = Adjustment factor for side barriers and curbs

FCCS = City size adjustment factor

Based on the geometric conditions of Cihampelas Road and the factors that affect road capacity. SocapacityCihampelas Street namely:

$$\begin{aligned} C &= C_0 \times FCW \times FCSP \times FCSF \times FCS \\ &= 3300 \times 0.92 \times 1.00 \times 0.73 \times 1.00 \\ &= 2216.28 \text{ pcu/hour} \end{aligned}$$

3. RESULTS AND DISCUSSION

StudyThis aims to see the extent to which a road can carry out its role in serving the flow of vehicles and also to determine the extent to which the level of traffic problems that occur on a road segment. StudyThis is observed and tested from the data secondary (existing data from previous studies). The level of road service can be determined by calculating the ratio between traffic volume and road capacity.

If the ratio between road volume and capacity is close to 1 (one), then the road section can be said to have a poor level of road service. This condition is usually marked by an unstable traffic flow which is reflected in a decrease in vehicle speed and an increase in travel time. Based on the road service level developed by IHCM (*Indonesianhighwaycapacitymanual*)1997, it can be said that the ratio of road volume and capacity is ≤ 0.80 which is given the symbol A which means ideal. While the ratio of road volume and capacity which is more \geq than 0.80 is given the symbol B which means it is not ideal enough. The smoother the traffic, which means that the maximum capacity of the road has not been reached, the better the level of road service. On the other hand, if the traffic flow is high, even if it exceeds the capacity of the road, the road service level will be low.

After knowing the volume of passing vehicles and the capacity of the Cihampelas road, the next step is to calculate the ratio between volume and capacity (VCR). This VCR value is used to determine the level of road service or the feasibility of the road.

$$VCRs = \frac{\text{volume lalu lintas kendaraan}}{\text{kapasitas lalu lintas jalan}}$$

Cihampelas Road Service Level

Day	Time	Volume (pcu/hour)	Capacity (/1.2km)	VCRs	Symbol
Friday	07.00-08.00	1509.2	2216.18	0.6809	A
	08.00-09.00	1758.6	2216.18	0.7934	A
	12.00-13.00	1899.4	2216.18	0.8570	B
	13.00-14.00	1911.2	2216.18	0.8623	B
	14.00-15.00	2036.6	2216.18	0.9189	B
	17.00-18.00	2156.6	2216.18	0.9730	B
	18.00-19.00	2173	2216.18	0.9840	B
	19.00-20.00	2110.2	2216.18	0.9521	B
Saturday	07.00-08.00	1450.6	2216.18	0.6545	A
	08.00-09.00	1682.6	2216.18	0.7592	A
	12.00-13.00	1974.6	2216.18	0.8909	B
	13.00-14.00	1953	2216.18	0.8812	B
	14.00-15.00	2041.8	2216.18	0.9212	B
	17.00-18.00	2185.6	2216.18	0.9861	B
	18.00-19.00	2295.4	2216.18	1.0356	B
	19.00-20.00	2217.6	2216.18	1.0005	B
Sunday	07.00-08.00	1445.8	2216.18	0.6523	A
	08.00-09.00	1632.6	2216.18	0.7366	A
	12.00-13.00	1933.4	2216.18	0.8723	B
	13.00-14.00	1969.8	2216.18	0.8887	B
	14.00-15.00	2180.8	2216.18	0.9839	B
	17.00-18.00	1963.2	2216.18	0.8858	B
	18.00-19.00	1893.8	2216.18	0.8544	B
	19.00-20.00	1826.6	2216.18	0.8241	B

Source: Secondary Data

<https://ejournal.itenas.ac.id/index.php/rekaracana/article/view/2001/1779>

Based on the table, it is known that there are more B symbols (≥ 0.80) which are close to 1, so it can be said that Cihampelas road has a very bad level of road service and can be said to be unfit.

4. CONCLUSION

Based on the research study, it can be seen that the number of VCR values is ≥ 0.80 and close to 1. From these results it can be said that the Cihampelas road is said to be not ideal as an arterial road connecting urban areas, namely the northern area of Bandung city or Lembang sub-district to the city center and roads it also becomes a commercial road with a high-density vehicle using the road, causing congestion in the commercial area.

It is recommended that Cihampelas Street is no longer considered an arterial road connecting city areas and because it functions as an urban commercial street, it is necessary to build adequate sidewalks for pedestrians and public transport shuttles as a means of getting on and off passengers. As well as appealing to business actors to be able to provide adequate independent parking facilities according to the needs of the business they are doing.

5. REFERENCES

- Ardiyanto, N., & Hermawan, D. (2020). PENGEMBANGAN KAWASAN PUSAT JUAL BELI DENGAN PENDEKATAN KENYAMANAN TERMAL DI DESA MARON, WONOSOBO. *Jurnal Ilmiah Arsitektur*, 10(1), 1–5. <https://ojs.unsiq.ac.id/index.php/jiars>
- A Rifqi M, 2021, Arrangement of Regional Activities as a Solution to Congestion on the Otto Iskandardinata Road in Bandung City
- Bambang, R. R., & Sari, Y. (2021). Penerapan Konsep Arsitektur Tropis Pada Bangunan Pendidikan “Studi Kasus Menara Phinisi UNM.” *Journal of Architectural Design and Development*, 2(1), 20. <https://doi.org/10.37253/jad.v2i1.4341>
- Cahyani, D., Kusdinar, Y., & Mardiana, R. (2017). KENYAMANAN TERMAL PADA SARANA OLAHRAGA. In *Jurnal Keplatihan Olahraga* (Vol. 10, Issue 2).
- Edyas, A., Daming, T., & Syarif, E. (2017). Konsep Arsitektur Tropis pada Green Building sebagai Solusi Hemat Biaya (Low Cost). *Temu Ilmiah Ikatan Peneliti Lingkungan Binaan Indonesia* 6, H033–H040. <https://doi.org/10.32315/ti.6.h033>
- Fajar, P., & Purwantiasning, A. W. (2021). KAJIAN KONSEP IMAGEABILITY DAN PERMEABILITY DALAM PENGEMBANGAN KAWASAN PUSAT KOTA BARU PARAHYANGAN. *Jurnal Arsitektur Zonasi*, 4(1), 21–33. <https://doi.org/doi.org/10.17509/jaz.v4i1.28307>
- Ghassani, A. I., Permana, A. Y., & Susanti, I. (2019). Konsep Ekowisata Dalam Perancangan Resort di Kabupaten Ciamis. *Jurnal Arsitektur TERRACOTTA*, 1(1), 11–21.
- Jhon Alfred Depa Dede, P., Masias Siso, S., & Kerong, F. T. (2020). *Pendekatan Arsitektur Tropis Pada Bangunan SMAK Syuradikara Ende*.
- Kaharu, A., Kindangen, J. I., and Intisari, J. O. W. (2017). ANALISIS KENYAMANAN TERMAL PADA RUMAH DIATAS PANTAI TROPIS LEMBAB “Studi Kasus Rumah Atas Pantai Desa Kima Bajo, Kabupaten Minahasa Utara.”
- Mahabella, L. S., Abduh, M., Person, K., Lintang, :, Mahabella, S., Tlogomas, J. R., and Lowokwaru, K. (2019). *Seminar Nasional Teknologi dan Rekayasa (SENTRA) 2019 ISSN (Cetak) 2527-6042 eISSN (Online)*.
- Meiranny, A. (2017). *KENYAMANAN TERMAL SELAMA PERSALINAN* (Vol. 1, Issue 2).
- Muhamad, 2019, The Influence of the Cihampelas Terrace on the Surrounding Road Corridors
- Mustamin, T., Rahim, R., Mulyadi, R., Jamala, N., & Kusno, A. (2017). *Analisis Fluktuasi Temperatur Udara dalam Ruang pada Ruang Seminar Laboratorium Sains dan Bangunan Kampus Gowa*.
- Nurrahman, H. (2019). Optimalisasi Desain Fasad Bangunan Restaurant Di Kebonwaru, Batununggal Kota Bandung. *Jurnal Arsitektur ZONASI*, 2(2), 138. <https://doi.org/10.17509/jaz.v2i2.17470>
- Parliana Dewi, 2017, Trandromari Commercial Area Cihampelas Walk Bandung
- Permana, A. Y., Akbardin, J., Permana, A. F. S., & Nurrahman, H. (2020). The concept of optimal workplace in providing a great experience to improve work professionalism in the interior design of PLN Corporate university, Ragunan, Jakarta. *International Journal of Advanced Science and Technology*, 29(7), 3238–3254. <http://sersec.org/journals/index.php/IJAST/article/view/18953>
- Permana, A. Y., Nurrahman, H., & Permana, A. F. S. (2021). Systematic assessment with “poe” method in office buildings cases study on the redesign results of office interior after occupied and operated. *Journal of Applied Engineering Science*, 19(2), 448–465. <https://doi.org/10.5937/jaes0-28072>

- Permana, C. S., Permana, A. Y., & Dewi, N. I. K. (2020). Penerapan Konsep Green Architecture dalam Perancangan Hotel Resort di Kabupaten Tasikmalaya. *UNDAGI: Jurnal Ilmiah Arsitektur Universitas Warmadewa*, 8(2), 82–94.
- Prianto, E., Suyono and Sahid, B. (2018). *Aplikasi Resiliensi Arsitektur Tropis pada Renovasi Disain Masjid (Studi Kasus Disain Masjid Baitul Hikmah-Losari Brebes)* INFO ARTIKEL. 24–41.
- Wijaya, K., & Permana, A. Y. (2018). Textile Tourism Image as an Identity of Cigondewah in Bandung City Textile Tourism Image as an Identity of Cigondewah in Bandung City. *IOP Conference Series: Earth and Environmental Science*, 213(1), 012012.
<https://doi.org/10.1088/1755-1315/213/1/012012>
- Wijaya, K., & Permana, A. Y. (2020). Settlement Pattern of the Village of Dayeuh Luhur, Sumedang. *Journal of Architectural Research and Education*, 2(1), 55.
<https://doi.org/10.17509/jare.v2i1.24292>