JURNAL SYNTAX ADMIRATION

Volume 4, No. 4, April 2023
p-ISSN 2722-7782 | e-ISSN 2722-5356
DOI: https://doi.org/

IDENTIFICATION OF INFRASTRUCTURE AVAILABILITY IN PARIT TOKAYA VILLAGE, SOUTH PONTIANAK DISTRICT, PONTIANAK CITY, WEST KALIMANTAN

Weni Dewi Utami
Teknik Arsitektur, Politeknik Negeri Pontianak
Email: wenidewiutami.polnep@gmail.com

Abstract:
The increasing demand for infrastructure provision in urban areas is inseparable from the increasing population and urbanization flows that have an impact on the uncontrolled development of urban areas. To anticipate this phenomenon, it is necessary to have integrated infrastructure planning involving various agglomerated stakeholders to produce policies that apply holistically. Pontianak City like other cities in Indonesia continues to show growth in the development sector, one of which is in the field of infrastructure. This study aims to identify the availability of infrastructure, especially in Pontianak City which is included in one of the Strategic Growth Areas (WPS) in West Kalimantan to realize integrated, holistic, and sustainable infrastructure system planning. Identification activities were carried out in Parit Tokaya Village, South Pontianak District, with purposive sampling location determination representing villages with quite diverse complexity. Data collection methods using survey, observation, and documentation methods, as well as data analysis methods are carried out in a qualitative descriptive manner referring to references, literature, and related policies. The results showed that most of the available infrastructure conditions and environmental facilities were adequate, but there were several recommendations for improvement in several infrastructure components such as repairing damaged roads and bridges, providing city water reserves during the dry season, normalizing drainage channels that often cause flooding in the area, managing used water that is still discharged directly into the city room, it is necessary to provide several garbage polling points and 3R trash cans. Recommendations for improvements in the components of environmental facilities include anticipating congestion in educational facilities, especially during school entry and return hours, increasing parking capacity in commercial facilities, and structuring public RTH as community socialization and recreation facilities.

Keywords: Sustainable; Holistic; Infrastructure; Environment; Infrastructure; Means.

Article History
Accepted : 5 April 2023
Revised : 16 April 2023
Publish : 25 April 2023

INTRODUCTION

Infrastructure development is one of the vital aspects for accelerating regional and national development (Yu, 2017). Infrastructure also plays an important role as one of the driving forces of economic growth (Huang et al., 2021). This is because the pace and growth of a country's economy cannot be separated from the availability of infrastructure such as transportation, telecommunications, sanitation, and energy. Therefore, the development of this sector is the foundation of the development of the driving force of a region (Zhou et al., 2020).

Infrastructure refers to the physical system that provides transportation, irrigation, drainage, buildings, and other public facilities needed to meet basic human needs in the social and economic spheres (Grigg, 1988). The infrastructure system is the main support of the functioning of the social system and economic systems (Gabdrakhmanov & Rubtsov, 2014). The social and economic conditions of a region cannot be separated from the availability of infrastructure in the region both in quality and quantity (Salemink et al., 2017).

Increasing demand for infrastructure provision in cities is inseparable from the increasing population and urbanization flows that have an impact on the development and expansion of urban sprawl (Kaur et al., 2020). This phenomenon occurs in most cities in Indonesia and even in the world. To anticipate the increasingly widespread phenomenon, it is necessary to have integrated infrastructure planning involving various agglomerated stakeholders to produce policies that apply holistically (Alberini, 2021).

To realize an integrated, holistic, and sustainable infrastructure system planning, it is necessary to first identify the availability of infrastructure, especially in Pontianak City which is included in one of the Strategic Growth Areas (WPS) in West Kalimantan. The identification process starts from the area bordering the Pontianak hinterland (Kubu Raya Regency) in South Pontianak District.

This study aims to identify the availability of infrastructure in the South Pontianak sub-district area as a database in the continued process of sustainable integrated infrastructure planning in Pontianak City. The benefits of this research are: Through this identification activity, it is hoped that the resulting report can be useful for regulators in determining the direction of integrated, holistic, and sustainable urban infrastructure planning.

METHOD

Data analysis techniques in this research activity are carried out in a qualitative descriptive manner, namely an analytical technique or method used in qualitative research,

namely research that emphasizes more on observing phenomena and requires sharp instincts and assumptions from researchers (Haas, 2020). The type of data needed in this research activity is in the form of primary data and secondary data. Primary data is data obtained from the field in the form of documentation, observations, and measurements, while secondary data is data sourced from literature or related agencies in this case in the form of thematic maps, regional boundaries, and other spatial information (FG Assis et al., 2019).

Primary data collection and secondary data are carried out through survey methods by conducting direct visits to the field:

1. Observation. That is a data collection technique carried out through an observation accompanied by recording information, conditions, or behavior of target objects either directly or indirectly.
2. Documentation. The definition of documentation according to KBBI is the process of collecting, selecting, processing, and storing information in the field of knowledge, providing or collecting evidence from information such as pictures, quotes, newspaper cutouts, and other reference materials.
3. Interview. Is a question-and-answer activity between researchers and other parties that are needed to be asked for information or opinions about something. In this study, interviews are included in the secondary data classification in the form of opinions and information from the community and agencies around the identification area about existing facilities.

RESULTS AND DISCUSSION

Pontianak City is the capital of West Kalimantan Province with a total area of 107.82 km2. Administratively, Kota Pontianak is divided into 6 sub-districts; namely the Districts of North Pontianak, West Pontianak, Pontianak City, Pontianak Tenggara, South Pontianak, and East Pontianak, and consists of 29 wards. Geographically, Pontianak City is located on the equator, therefore Pontianak City is nicknamed the City of the Equator or City of the Equator. Pontianak City is also crossed and divided into three lands by two large rivers, namely, Kapuas River and Landak River. South Pontianak District has an area of 14.54 km or 13.49% of the total area of Pontianak City. It has 5 wards and is bordered by Pontianak Kota District, Southeast Pontianak District, and East Pontianak District. The location of the observation is in Parit Tokaya Village which is bordered by Akcaya Village, Kota Baru Village, and Continent Melayu Darat Village.

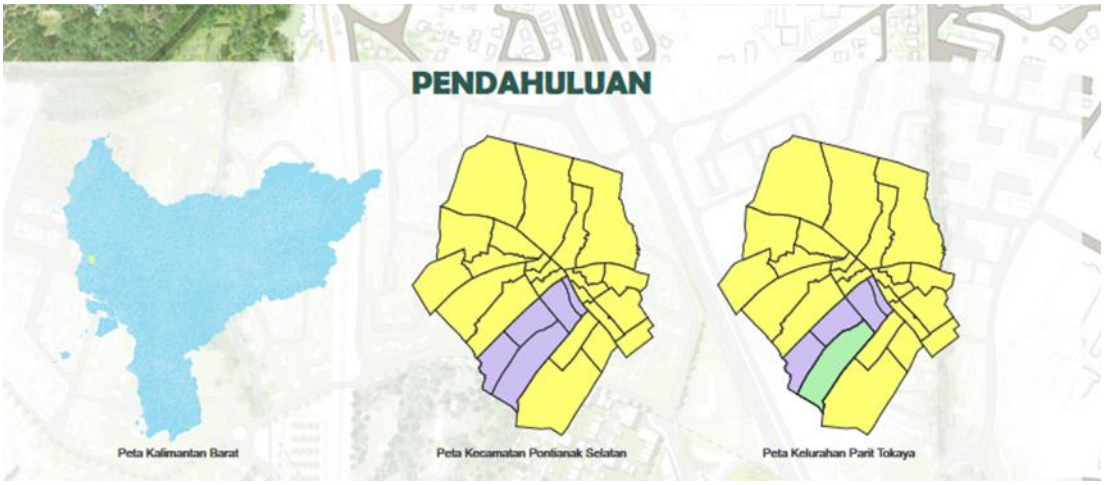


Figure 1 Map of the Research Location

A. Identify the Availability of Environmental Infrastructure

The availability of residential and urban environmental infrastructure in Parit Tokaya Village, South Pontianak District includes (a) Roads and bridges. (b) Clean water network. (c) Sanitation and wastewater networks. (d) Drainage channels. (e) Waste. (f) Power and telecommunications networks.

1. Road and Bridge Infrastructure

The main roads in Parit Tokaya village are Jalan Ahmad Yani as the primary arterial road and Jalan Letjend. Sutojo as a collector's street.

2. Clean Water Network Infastructure

The main source of clean water comes from PDAM Pontianak City while the backup water source uses rainwater collected in the reservoir.

3. Sanitation and Wastewater Infrastructure

Dirty Water Management (black water) generally uses a local treatment system (on-site system) in the form of septic tanks or cubluks. While used water treatment (grey water) still does not exist and is immediately discharged into roll.

4. Drainage Channel

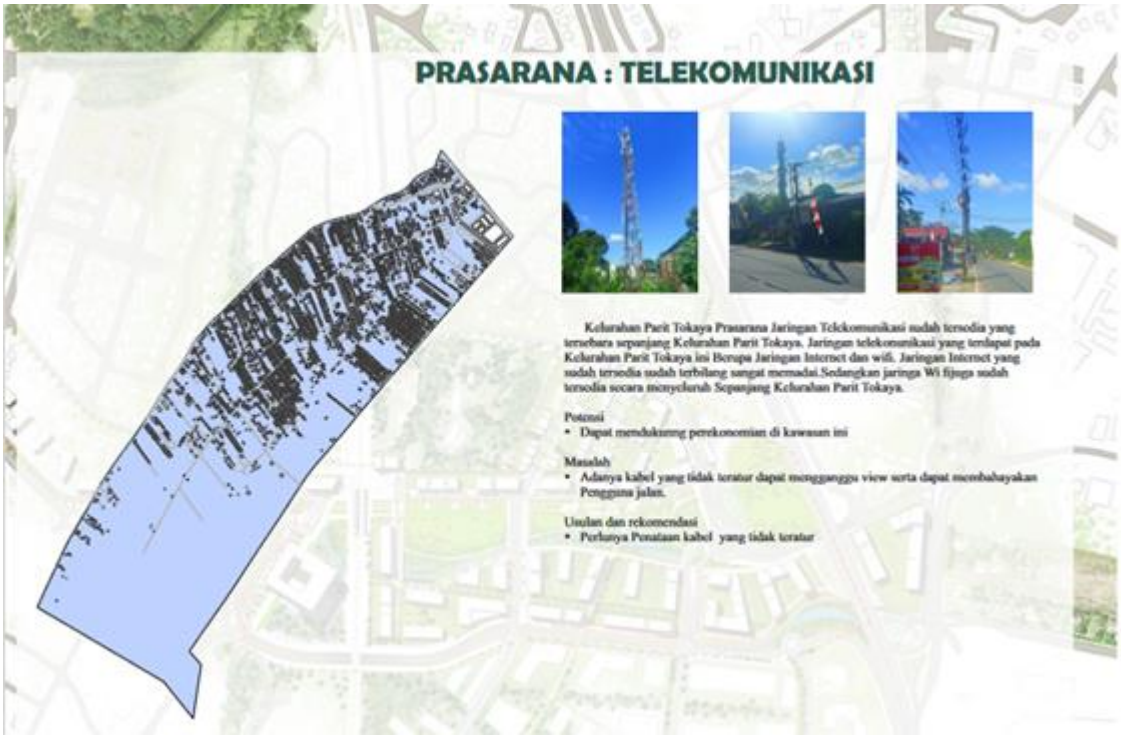
There are two types of drainage channels at the study site, namely natural drainage on Jalan Letjend Sutojo and artificial drainage on every other road section. During times of high rain frequency, the location often experiences inundation/flooding.

5. Waste Infrastructure

Waste infrastructure is a system or infrastructure that aims to manage waste effectively and efficiently so as not to cause negative impacts on the environment and human health (Maiurova et al., 2022). This infrastructure consists of several important components such as collection, transportation, processing, and final disposal of waste.

6. Power and Telecommunication Network

Power and telecommunications networks are two types of infrastructure networks that are very important in our modern lives (Alkhaleel et al., 2022). Power grids are responsible for providing electricity to homes, buildings, and industries, while telecommunications networks carry voice, data, and video information around the world. The power grid consists of power generation, transmission, distribution, and customer service. Power plants can be hydroelectric power plants, gas-fired electricity, and nuclear power. The electricity generated is then sent via transmission over long distances, using a transmission network consisting of a network of high-voltage cables and power towers. After reaching the distribution area, electricity is then channeled to homes, buildings, and industries through a distribution network consisting of a network of low-voltage cables and transformers.



B. Identify the Availability of Environmental Facilities

The availability of residential and urban facilities in Parit Tokaya Village, South Pontianak District, which includes: (a) Educational facilities. (b) Health facilities. (c) Means of worship. (d) Office facilities. (e) Means of business. (f) Sports facilities and RTH.

1. Educational Facilities

Education facilities spread across Parit Tokaya Village consist of public and private schools ranging from elementary school (SD), junior high school (SMP) and high school (SMA).

2. Health Facilities

Health facilities spread across Parit Tokaya Village have several types of services including maternity clinics, general practitioner practices, and pharmacies.

3. Facilities of Worship

Worship is an activity carried out by religious people as a form of respect, devotion, and worship of God. Each religion has different rituals and rites of worship, but all worship has the same goal, which is to strengthen the relationship with God and increase spiritual awareness. Worship can be done individually or together in places of worship such as churches, mosques, temples, monasteries, or other sacred places (Hüwelmeier, 2016). Some forms of worship are done at home or in the open such as meditation, prayer, or fasting.

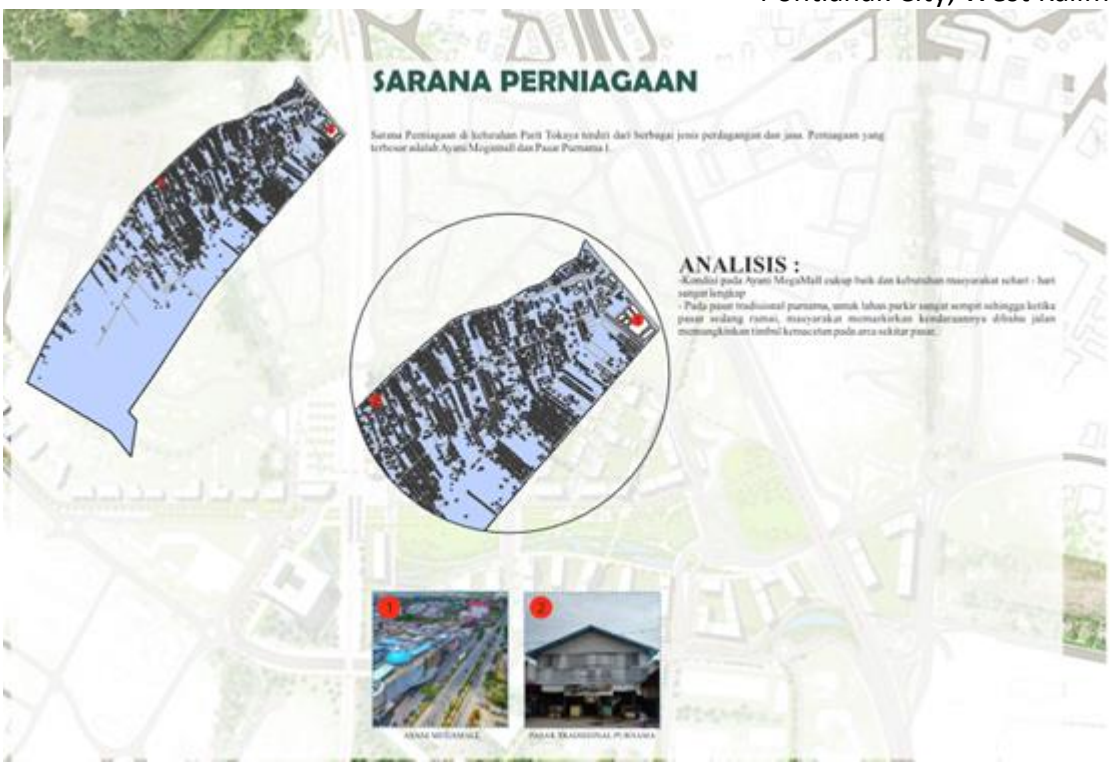
4. Office Facilities

An office is a building or building that is used as a center of operations and administration for a business or organization (Korpela et al., 2015). Offices usually have special rooms such as conference rooms, meeting rooms, waiting rooms, staff rooms, and offices for officials or managers. Inside the office, there are various facilities and services provided to support business activities and occupant comfort.

5. Business Facilities

Commerce is a business activity that involves the process of producing, distributing, and selling goods or services with the aim of making a profit. Business activities can be carried out by individuals, groups, or companies operating in various business sectors such as trade, services, manufacturing, and so on. To run a business business, several essential things are needed such as capital, management, human resources, technology, and markets. Capital is an important aspect of running a business because capital is used to develop and maintain the business and to deal with risks that may arise.

Effective and efficient management is very important in running a business business, because management will help in decision making, strategy development, human resource management, and others. Quality human resources are also important in running a business because skilled and trained employees will help improve business performance.



6. Sports Facilities

Exercise is a physical activity that is done regularly to improve health and fitness. Sports can be done individually or in groups and can be done indoors or outdoors. Exercise provides not only physical benefits but also psychological and social benefits. The physical benefits of exercise are improved muscle strength, endurance, balance, flexibility, and cardiovascular fitness (Izquierdo et al., 2021). Exercise can also help control weight, reduce the risk of heart disease, diabetes, and cancer, and improve sleep quality. The psychological benefits of exercise are improving mental well-being, reducing stress and anxiety, improving cognitive abilities, and increasing self-confidence (Parry et al., 2018). Exercise can also help overcome depression and improve a positive mood.

CONCLUSION

Based on the results of observations and identification that have been carried out at the study location, namely in Parit Tokaya Village andAkcaya Village, South Pontianak District, it can be concluded as follows: (a) Road and bridge infrastructure, in general, is in good condition even though in some parts of the road there are damaged due to the heavy vehicle load that often passes through it or because of sufficient intensity and frequency of flooding tall. (b) Most wastewater networks are already owned by residents with an onsite system, namely sewage treatment in the yard of the house in the form of septic or cubluk tangka. As for grey water, it is still dumped into the city. (c) Drainage channels consist of natural and artificial drainage channels, some of which have been equipped with retaining walls in the form of bara or cheap. At times of high rainfall intensity, the drainage canal overflows and causes flooding in the surrounding area. (d) Clean water networks are already available in both locations, namely, distribution pipes originating from PDAMs. Some houses also provide toren or reservoirs to collect rainwater as water for consumption and water reserves during dry monsoons. (e) The waste system is quite good, although there is still garbage scattered in public areas, especially after inundation or flooding.

BIBLIOGRAFI

Alberini, C. (2021). A holistic approach towards a more sustainable urban and port planning in tourist cities. *International Journal of Tourism Cities*, *7*(4), 1076–1089.

Alkhaleel, B. A., Liao, H., & Sullivan, K. M. (2022). Model and solution method for mean-risk cost-based post-disruption restoration of interdependent critical infrastructure networks. *Computers & Operations Research*, *144*, 105812.

FG Assis, L. F., Ferreira, K. R., Vinhas, L., Maurano, L., Almeida, C., Carvalho, A., Rodrigues, J., Maciel, A., & Camargo, C. (2019). TerraBrasilis: a spatial data analytics infrastructure for large-scale thematic mapping. *ISPRS International Journal of Geo-Information*, *8*(11), 513.

Gabdrakhmanov, N. K., & Rubtsov, V. A. (2014). The objects of social infrastructure in the social image of the region shaping. *Procedia-Social and Behavioral Sciences*, *140*, 419–421.

Grigg, N. S. (1988). *Infrastructure engineering and management*.

Haas, T. (2020). Reflections on Scientific Inquiry and Methodology for Applied Social Sciences and Humanities: Releasing the Research Creativity and Imagination. *American Journal of Humanities and Social Science*, *6*.

Huang, H., Zhuo, L., Wang, R., Shang, K., Li, M., Yang, X., & Wu, P. (2021). Agricultural infrastructure: The forgotten key driving force of crop-related water footprints and virtual water flows in China. *Journal of Cleaner Production*, *309*, 127455.

Hüwelmeier, G. (2016). Praying in Berlin's "Asiatown": religious place-making in a multi-ethnicbazaar. In *Spiritualizing the City* (pp. 77–92). Routledge.

Izquierdo, M., Merchant, R. A., Morley, J. E., Anker, S. D., Aprahamian, I., Arai, H., Aubertin-Leheudre, M., Bernabei, R., Cadore, E. L., & Cesari, M. (2021). International exercise recommendations in older adults (ICFSR): expert consensus guidelines. *The Journal of Nutrition, Health & Aging*, *25*(7), 824–853.

Kaur, M., Hewage, K., & Sadiq, R. (2020). Investigating the impacts of urban densification on buried water infrastructure through DPSIR framework. *Journal of Cleaner Production*, *259*, 120897.

Korpela, J., Miettinen, R., Salmikivi, T., & Ihalainen, J. (2015). The challenges and potentials of utilizing building information modelling in facility management: the case of the Center for Properties and Facilities of the University of Helsinki. *Construction Management and Economics*, *33*(1), 3–17.

Maiurova, A., Kurniawan, T. A., Kustikova, M., Bykovskaia, E., Othman, M. H. D., Singh, D., & Goh, H. H. (2022). Promoting digital transformation in waste collection service and waste recycling in Moscow (Russia): Applying a circular economy paradigm to mitigate climate change impacts on the environment. *Journal of Cleaner Production*, *354*, 131604.

Parry, D. A., Oeppen, R. S., Amin, M. S. A., & Brennan, P. A. (2018). Could exercise improve mental health and cognitive skills for surgeons and other healthcare professionals? *British Journal of Oral and Maxillofacial Surgery*, *56*(5), 367–370.

Salemink, K., Strijker, D., & Bosworth, G. (2017). Rural development in the digital age: A systematic literature review on unequal ICT availability, adoption, and use in rural areas. *Journal of Rural Studies*, *54*, 360–371.

Yu, H. (2017). Motivation behind China's 'One Belt, One Road'initiatives and establishment of the Asian infrastructure investment bank. *Journal of Contemporary China*, *26*(105), 353–368.

Zhou, X., Song, M., & Cui, L. (2020). Driving force for China's economic development under Industry 4.0 and circular economy: Technological innovation or structural change? *Journal of Cleaner Production*, *271*, 122680.