

ANALYSIS OF SETTLEMENT FACILITIES IN TANGERANG DISTRICT, TANGERANG CITY

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ABSTRACT

Population growth in the Tangerang Subdistrict must be balanced with the availability of settlement facilities because facilities are essential for a settlement to support community activities, such as social activities, economic activities, and other activities that can benefit the community in the neighbourhood. This study aimed to analyze the suitability of settlement facilities in the Tangerang Sub-district with SNI 03-1733-2004 on urban settlement planning procedures. The research method used is descriptive evaluative, aiming to comprehensively describe, record, analyze, and interpret the conditions related to the suitability of applying Existing Conditions to SNI 03-1733-2004. Data collection was conducted through observation and documentation methods. The variables used in this study consist of educational facilities, health facilities, places of worship, and trade and commerce facilities. Based on the analysis, it can be concluded that the provision of education facilities in Tangerang Sub-district based on SNI 03-1733-2004 is adequate. Facilities for worship and facilities for trade and commerce have met SNI 03-1733-2004. Meanwhile, health facilities have not met the standard. The addition of 100 *Posyandu* is required, but due to the density of the residential environment, it is recommended that the addition in each RW, with a total of 53 *Posyandu* and the addition of 2 *Puskesmas* health facilities is recommended to be located in Sukarasa Village and Cikokol Village.

Keywords: Settlement Facilities, SNI 03-1733-2004, Tangerang District, Descriptive Evaluative Method.

1. Introduction

The increase in population must align with the availability of settlement facilities in Tangerang District because settlement facilities are essential for a settlement to support community activities such as social activities, economic activities and other activities that can benefit the community. From an environmental perspective, Tangerang City is a city in Banten Province, Indonesia. Tangerang City is the largest city in Banten Province and the third largest city in the Jakarta metropolitan area after Bekasi and Depok. This study analyses the availability of housing in Tangerang District, which consists of 8 sub-districts, namely Buaran Indah Sub-district, Cikokol Sub-district, Tanah Tinggi Sub-district, Sukarasa Sub-district, Sukasari Sub-district, Babakan Sub-district, Kelapa Indah Sub-district and Suka Asih Sub-district. The objectives of this study were to analyze the suitability of housing facilities in Tangerang Regency with SNI 03-1733-2004 on Procedures for Structuring Housing Environments in Urban Areas [1].

2. Material and method

2.1. Theoretical Review

2.1.1. Settlements

Settlements form part of a housing area that comprises multiple housing units equipped with infrastructure, facilities, public utilities, and supporting functional activities in urban or rural locales [2].

2.1.2. Facilities

Facilities are residential facilities that support the implementation and development of social, cultural and economic life [2].

2.1.3. Indonesian National Standard on Planning Procedures and Housing Environment in Urban Areas

SNI 03-1733-2004 on Procedures for Planning and Housing Environment in Urban Areas provides a reference framework for planning, designing, and meeting the facilities and infrastructure needs [1]. Technical abbreviations are explained when first used. The structure maintains conventional sections with a logical flow of information and clear, objective language. Passive tone, an impersonal construction, and high-level vocabulary with standard technical terms are employed. Hedging is used to clarify the position on subjects. The text adheres to style guides with consistent citation, regular Authors and institution formatting, and a clear footnote style. Quotes are marked clearly, and filler words are avoided. Grammatical correctness is ensured with no spelling, punctuation, or grammatical errors. Avoidance of biased, emotional, figurative, ornamental, colloquial, informal, and unnecessary jargon language is a key element. The scope encompasses Educational (Table 1), Health (Table 2), Worship (Table 3), Cultural, Recreation, Trade and Commerce facilities (Table 4), Open Space Facilities, Parks, and Sports Fields. The SNI encompasses a wide range of infrastructure, including Road Network Infrastructure, Drainage Network Infrastructure, Clean Water Network Infrastructure, Waste Water Network Infrastructure, Network Infrastructure Waste Management, Electrical Network Infrastructure, Telephone Network Infrastructure, and Local Transportation Network Infrastructure.

Table 1. Education Facilities Requirement Standard.

No.	Facility Type	Supporting population (Soul)	Facility Unit Needs		Standard (m2/Soul)	Criteria		Information
			Minimum Floor Area (m2)	Minimum Land Area (m2)		Achievement Radius	Location and Settlement	
1	Kindergarten	1.250	216 including the 36 m2 guard house	500	0,28 m2/j	500 m'	In the middle of a group of residents, do not cross the main road. Join the park so that there is a grouping of activities.	2 pre-learning groups @ 60 students can unite with other means.
2	Elementary school	1.600	633	2.000	1,25	1.000 m'	Facility Unit Needs	Needs must be based on calculations using formulas 2,3 and 4. Can be combined with other educational facilities, eg. SD, SMP, SMA in one complex
3	Junior High School	4.800	3.828	9.000	1,88	1.000 m'	Can be reached by public transportation. Attached to a sports field. It doesn't always have to be in the center of the environment	
4	High School	4.800	3.835	12.500	2,6	3.000 m'	In the middle of the group of residents did not cross the neighborhood road.	
5	Reading Garden	2.500	72	150	0,09	1.000 m'		

Source: SNI 03-1733-2004 [1].

Table 2. Health Facilities Requirement Standard.

No.	Facility Type	Supporting population (Soul)	Facility Unit Needs		Standard (m2/Soul)	Criteria		Information
			Minimum Floor Area (m2)	Minimum Land Area (m2)		Achievement Radius	Location and Settlement	
1	Posyandu	1.250	36	60	0,048	500	In the middle of a group of neighbors do not cross the highway	Can join a community hall or residential facility/house
2	Medicine Hall	2.500	150	300	0,12	1.000 m'	In the middle of a group of neighbors do not cross the highway	Can join in the location of the community hall
3	BKIA / Maternity Clinic	30.000	1.500	3.000	0,1	4.000 m'	Can be reached by public transportation	
4	Sub Health Center and Environmental Medicine Center	30.000	150	300	0,006	1.500 m'	-Same-	Can join in sub district office location
5	Health Centers and Medical Centers	120.000	420	1.000	0,008	3.000 m'	-Same-	Can join in district office location
6	Doctor's Practice Place	5.000	18	-	-	1.500 m'	-Same-	Can be combined with a residence / place of business / pharmacy
7	Pharmacy / Medicine House	30.000	120	250	0,025	1.500 m'	-Same-	

Source: SNI 03-1733-2004 [1].

Table 3. The Standard for the Need for Religious Facilities.

No.	Facility Type	Supporting population (Soul)	Facility Unit Needs		Standard (m ² /Soul)	Criteria	
			Minimum Floor Area (m ²)	Minimum Land Area (m ²)		Achievement Radius	Location and Settlement
1	Musholla / Langgar	250	45	100 if the building is separate	0,36	100 m'	In the middle of a group of neighbors. Can be part of the building of other facilities.
2	Citizens Mosque	2.500	300	600	0,24	1.000 m'	In the middle of a group of neighbors do not cross the highway. Can join in the location of the community hall.
3	Neighborhood Mosque (Sub District)	30.000	1.800	3.600	0,12		Can be reached by public transportation.
4	District Mosque	120.000	3.600	5.400	0,03		Adjacent to neighborhood center/keurahan. Some facilities have 2 floors, KDB 40%.
5	Other religious facilities	Depends on the kinship system / institutional hierarchy.	Depends on local customs	Depends on local customs	-	-	-

Source: SNI 03-1733-2004 [1].

Table 4. Standard for Trade and Commerce Facility Requirements.

No.	Facility Type	Supporting population (Soul)	Facility Unit Needs		Standard (m ² /Soul)	Criteria	
			Minimum Floor Area (m ²)	Minimum Land Area (m ²)		Achievement Radius	Location and Settlement
1	Stores / Stalls	250	50 (including warehouse)	100 (when standing alone)	0,4	300 m'	In the middle of a group of neighbors. Can be part of another facility.
2	Shops	6.000	1.200	3.000	0,5	2.000 m'	At the sub-environment activity center. KDB 40% Can be in the form of P&D.
3	Shopping Center + Neighborhood Market	30.000	13.500	10.000	0,33		Can be reached by public transportation.
4	Shopping and Commerce Center (store + market + bank + office)	120.000	36.000	36.000	0,3		Located on the main road. Including parking facilities according to local regulations.

Source: SNI 03-1733-2004 [1].

2.2. Research Method

The research method employed is a descriptive, evaluative approach. Descriptive research aims to provide a systematic, factual and accurate depiction of the features and aspects of a specific region or population [3]; on the other hand, evaluation research entails making judgements by analyzing data or information collected against predetermined criteria, benchmarks or standards [4]. Evaluative descriptive method is a research approach that collects descriptive data and analyses it systematically for evaluation purposes [5]. The descriptive, evaluative method was chosen to record and analyze the conditions in the field and interpret their relevance to the implementation of Existing Conditions following SNI 03-1733-2004. Observations and documentation were utilized for data collection. The variables examined in this research apply to educational facilities, such as kindergartens and elementary schools. High School/Vocational High School, Health Facilities, Religious Facilities, Trade & Commerce Facilities.

3. Results and Discussion

3.1. Population

Currently, the population of Tangerang District is 155,069 people, with a school-age population of 46,287 [6, 7].

3.2. Educational Facilities

There are 37 existing kindergartens, 47 existing primary schools, 32 existing junior high schools, and 32 existing high schools in Tangerang District (Table 5), as illustrated in Figure 1.

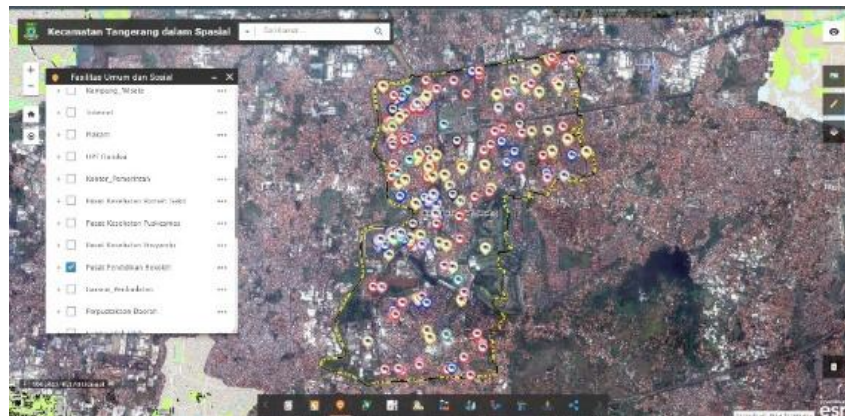


Figure 1. Existing Educational Facilities.

Source: <https://maps.tangerangkota.go.id/tangerangspasial/> [8], accessed 4 April 2023.

Table 5. Calculation of Educational Facility's Needs.

No.	Education	Total population	Number of Existing Educational Facilities	Total Supporting Population	Needs Based on SNI	Need
1	Kindergarten	46.287	37	1.250	37	-
2	Elementary school		47	1.600	29	-
3	Junior High School		32	4.800	10	-
4	High School		36	4.800	10	-

Source: Authors

Based on the above analysis, the educational facilities in the Tangerang District meet the requirements of SNI 03-1733-2004 [1].

3.3. Health Facilities

The Tangerang District has three Health Centers, 24 *Posyandu*, and six hospitals (Table 6), as shown in Figure 2.



Figure 2. Existing Health Facilities.

Source: <https://maps.tangerangkota.go.id/faskes/> [8], accessed 4 April 2023

Table 6. Calculation of Needs for Health Facilities.

No.	Health facility	Total population	Number of Existing Educational Facilities	Total Supporting	Needs Based on SNI	Need Addition
1	Posyandu	155.045	24	1.250	124	100
2	Health Center		3	30.000	5	2
3	Hospital		6	120.000	1	-

Source: Authors

The number of health facilities in the Tangerang District does not meet SNI 03-1733-2004; from calculations based on the provisions of SNI 03-1733-2004, it is necessary to add 100 *Posyandu* health facilities and to add 2 health facilities to the health centre, the following are recommendations for the additional needs, see Table 7 and Figure 3.

Table 7. Recommendations for Adding *Posyandu*

No.	Sub District	Number of Existing Posyandu in each sub-district	The name of the existing Posyandu	Number of RW	Additional Recommendations
1	Cikokol	2	Posyandu 07 Posyandu Flamboyon	13	11
2	Kelapa Indah	2	Mawar Kasih Ibu	7	5
3	Babakan	2	Melati 2 Mawar	7	5
4	Buaran Indah	2	Melati Dahlia	9	7
5	Sukaasih	2	Mawar B Mawar Merah A	4	2
6	Sukarasa	0	-	5	5
7	Sukasari	8	Melati Dahlia Kenanga Nusa Indah Bringin Kuntum Mekar Flamboyon Dharma Bakti Kemuning Akasia 3	16	8
8	Tanah Tinggi	6	Seruni Mawar 1 Bunga Pinus	16	10
		Total			53

Source: Authors

It is advisable to limit the addition of *Posyandu* facilities to 53 in each RW area, as the calculation results based on SNI have proven that it is not feasible to add 100 facilities due to overcrowding constraints.



Figure 3. Recommendations for Adding Health Centers

Source: Googleearth.com, accessed 2 Mei 2023

It is recommended that two community health centres be situated within a radius of 1 km in the Sukarasa and Cikokol sub-districts.

3.4. Worship Facilities

The Tangerang District currently has 127 mosques, 2 churches, and 1 temple (Table 8), as depicted in Figure 4, representing the total number of worship facilities in the area.

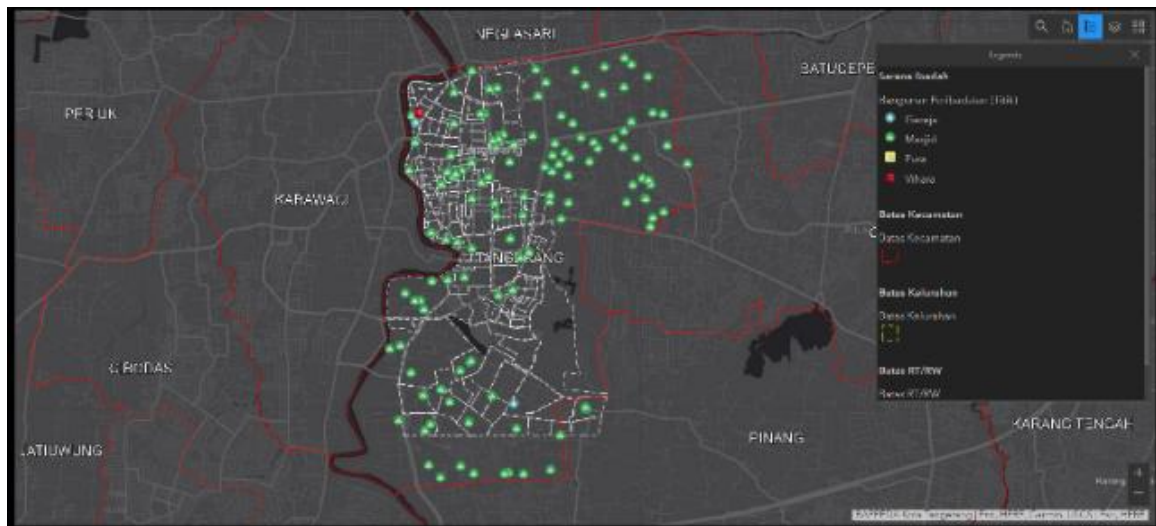


Figure 4. Existing Worship Facilities.

Source: <https://maps.tangerangkota.go.id/tangerangspasial/> [8], accessed 4 April 2023

Table 8. Calculation of the Need for Worship Facilities

No.	Facilities of Worship	Total population	Number of Existing Educational Facilities	Total Supporting Population	Needs Based on SNI	Need Addition
1	Mosque	155.045	127	2.500	62	-
2	church		2	-	-	-
3	monastery		1	-	-	-

Source: Authors

Based on the above analysis, the quantity of religious facilities in Tangerang District complies with SNI 03-1733-2004.

3.5. Trade and Commerce Facilities

The quantity of active commercial facilities within the Tangerang District, specifically supermarkets, equates to 46, with traditional stores numbering 9 (Table 9). Please refer to Figure 5 for further information.

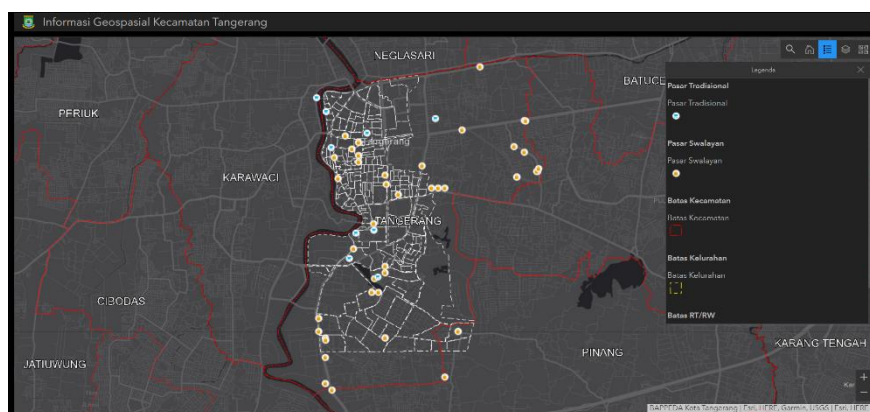


Figure 5. Existing Trade and Commerce Facilities

Source: <https://maps.tangerangkota.go.id/tangerangspasial/> [8], accessed 4 April 2023

Table 9. Calculation of the Need for Worship Facilities

No.	Trade and commerce facilities	Total population	Number of Existing Educational Facilities	Total Supporting Population	Needs Based on SNI	Need Addition
1	Supermarket	155.045	46	6.000	26	-
2	Traditional market		9	30.000	5	-

Source: Authors

The quantity of commercial and trading establishments in Tangerang District conforms to SNI 03-1733-2004 [1].

4. Conclusion

Based on the results of an analysis of the availability of housing facilities in the Tangerang District with SNI 03-1733-2004 concerning Procedures for Planning Residential Environments in Urban Areas, it can be concluded that the availability of Educational Facilities, Worship Facilities, and Trade & Commerce Facilities already meets SNI 03-1733-2004, for health facilities that do not meet SNI 03-1733-2004, it is necessary to add 100 *Posyandu*, it is recommended to add *Posyandu* to each RW of 53 *Posyandu* and 2 Community Health Centers are recommended to be located in Sukarasa and Cikokol sub-districts with a radius of 1 KM.

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