Original Article

e-ISSN: 2775-5037
p-ISSN: 2614-3917

Original Article

Study of River/Channel Normalization Planning Lines and River Boundaries in the Cibeunying SWK Area, Bandung City

Ina Revayanti[1]✉
Faculty of Engineering, Planning and Architecture, Winaya Mukti University, Bandung
Correspondence Author: inarevayanti74@gmail.com✉

Abstract:

The rapid growth of Bandung City, triggered by urbanization and vertical development, has led to significant land use change, requiring more adaptive spatial planning. This study focuses on evaluating the River/Channel Normalization and River Boundary Plan in the Cibeunying Sub-District (SWK). The main issue raised is the sedimentation and silting of rivers due to increased development in the housing, trade, and service sectors, which has changed the land use around waterways. The research method was carried out by superimposing technical plan maps (developed since 1988) with existing land use and integrating the latest housing site plans. Data transformation also involved migration from manual to digital maps integrated with the 2016 base map recommended by the Geospatial Information Agency (BIG). The results of this evaluation serve as geometric guidelines for spatial utilization control, particularly in the issuance of Spatial Planning Activity Suitability (KKPR) recommendations and site plans. This arrangement is expected to create integrated and sustainable infrastructure planning between built-up areas and the river network in the Cibeunying SWK.

Keywords: Spatial Planning; River Normalization; River Boundary; Planning Line Map; Land Use Conversion

Submited : 01 March 2026
Revised : 04 March 2026
Acceptance : 12 March 2026
Publish Online : 13 March 2026

Introduction

The city of Bandung is one of the major cities in Indonesia that is experiencing very rapid growth, with various complex challenges faced. The development of the city of Bandung which is influenced by the increase in population due to urbanization and the construction of multi-storey buildings in urban areas has caused various changes in land use (Rahmasary et al., 2020). The shift in land use, especially from unproductive to productive land, is a sign of the city's progress that is easy to see directly. In addition, the increase in land demand makes the growth of the city develop horizontally and vertically and become an urgent need (Janita, E. S., & Kartidjo, 2023; Revayanti & Avianti, 2026).

Urban planning in accordance with the policies set regarding spatial planning has been carried out by the Department of Human Settlements, Construction and Spatial Planning of Bandung City in the normalization of rivers and river boundary arrangements in the city of Bandung by utilizing the urban spatial technical plan map developed since 1988 based on the results of analysis from the city plan map made in 1976 with a scale of 1:1,000 (Indonesia, 2007, 2021). However, along with the times, the plan line map subsequently underwent evaluation along with the implementation of aerial photography to adjust to the physical development of the city that occurred in the following years: 2013, 2014, 2016, 2017, 2018, and 2019. Study of River/Channel Normalization Planning and River Boundary Delineation in the Cibeunying SWK Area, Bandung City was carried out based on the superimpose of the line map using existing land (Indonesia, 2022). In this evaluation, the newly published housing site plan line was also included in the city plan map, so it is hoped that integrated planning can be carried out between various areas that have been built by considering the continuity of infrastructure between the regions (Letlape, 2023).

The transformation of the map has not only been carried out from manual maps to digital maps since 2019, but has also been integrated with the latest base map in 2016 which has received recommendations from the Geospatial Information Agency (BIG) (Jatayu et al., 2022; Revayanti, 2024). The map of the plan line of the City of Bandung basically contains a geometric plan for the development of various urban infrastructure and facilities. The plan includes a new road network plan, an increase in the width of existing road and river owned areas, a geometric plan for normalization of rivers and channels, the development of green open spaces, and a sanitation network plan in the form of sewers. In addition, this map also provides directions regarding road boundaries, building boundaries, and river boundaries as part of spatial planning and land use control in the Bandung City area (Indrajit et al., 2019; Revayanti & Fasa, 2022; Romdhoni & Rashid, 2020).

In the context of controlling space utilization, the city plan line map functions as a geometric direction for the use of urban space, namely as a reference in the service of city plan information and the issuance of space utilization recommendations in the form of Spatial Planning Activity Suitability (KKPR) and site plans. Changes in the function of river and channel land due to the increase in the development of residential, trade, service, and industrial areas have resulted in sedimentation or siltation of rivers/channels, resulting in the need to evaluate the lines of the river/channel normalization plan and river boundaries, including rivers and regional channels in SWK Cibeunying Bandung City.

Methods

The study of the Line of the River/Channel and River Boundary Normalization Plan in Cibeunying, Bandung City uses a descriptive-qualitative method. The exploratory approach is used in the process of collecting data and information as well as in the process of analysis and evaluation for the formulation of handling concepts (Olawale et al., 2023). Exploration in the analysis and evaluation process is carried out to elaborate the main problems and the concepts of handling and development that exist along with the support of technical regulations in accordance with the standards. In addition, the prescriptive approach is carried out as a qualitative approach and can provide analytical descriptions to produce useful recommendations in support of a handling strategy or policy. This approach aims to evaluate and assess an alternative policy plan and then issue appropriate recommendations regarding the possible implementation of the policy and its programs

in the future.

Data collection activities will be carried out in accordance with the stages of the implementation of this study through secondary surveys and primary surveys. Secondary survey is a method of data collection by conducting data collection efforts from related agencies, both government and private, or through literature studies, while primary survey is a method of data collection that is taken directly into the field by conducting observations, questionnaires, visualizations or photography and interviews.

Analysis Method

The analysis method in the study of the Line Study of the River/Channel and River Boundary Normalization Plan in Cibeunying, Bandung City consists of several analyses including:

1) Plan Line Method,

Plan line analysis is an analysis method to harmonize several existing policies in the City of Bandung, especially in the line of the normalization plan for rivers/channels and river boundaries. Plan Line Analysis is carried out using the superimpose method. The Superimpose method is used to determine the condition of the development planning area by overlaying several maps so that the conclusion in the planning area will be seen.

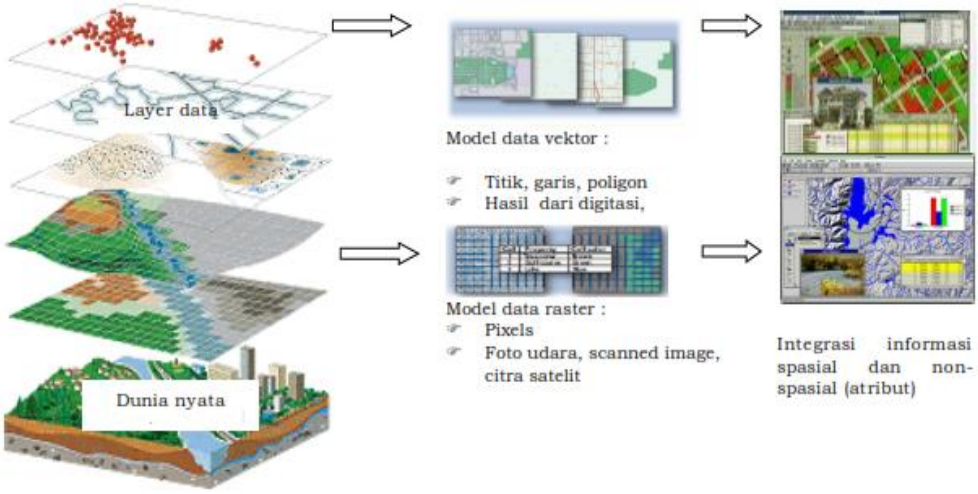


Figure 1. Superimpose Method

2) Mapping Topology Analysis Methods

Topology is a mathematical definition that describes the relationship or relationship between one spatial object and another. In geographic information systems, the relationships between spatial objects are defined according to data characteristics such as points, lines, and polygons. In making maps, the provisions regarding topology are only made based on the geometric shape of polygons (polygons) and lines (lines).

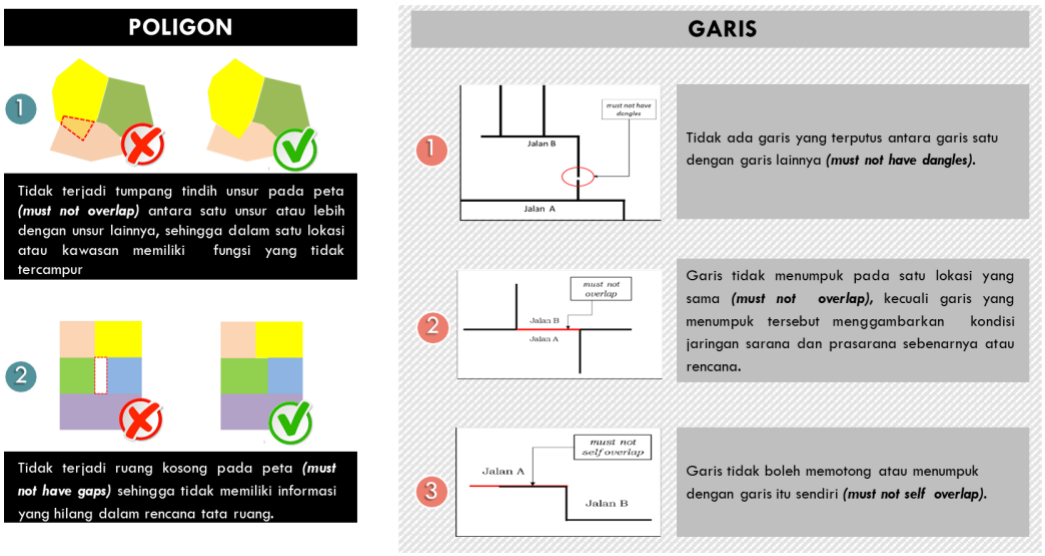


Figure 2. Mapping Topology Analysis Method.

Results

Land Use within the Planning Line Area of SWK Cibeunying, Bandung City

The land use conditions of the Bandung City plan line are described to 100 meters from the right and left of the road network. Land use in SWK Cibeunying consists of green lanes, cultivation building areas, health facility areas, public facilities areas, sports arena areas, industrial areas, government office areas, military areas, nuclear areas, cemetery areas, education areas, worship areas, tourist park areas, utility areas, railway station areas, farming spatial areas, and residential zones. For more details on the land use of the Cibeunying SWK plan line, you can see the table below;

Table 1. Land Use Line Plan for SWK Cibeunying

No.	Land Use	Districts					
		Bandung Wetan	Cibeunying Kaler	Cibeunying Kidul	Cidadap	Coblong	Sumur Bandung
1	Jalur Hijau	5.72	17.54	15.59	84.48	38.49	4.00
2	Kawasan Bangunan Budidaya	-	1.79	-	0.19	2.00	-
3	Kawasan Fasilitas Kesehatan	2.02	0.19	2.96	4.37	0.87	1.29
4	Kawasan Fasilitas Umum	12.14	1.29	0.06	2.48	2.55	7.61
5	Kawasan Gelanggang Olahraga	4.58	31.56	0.51	2.74	3.96	2.47
6	Kawasan Hutan	-	0.38	-	33.47	4.87	-
7	Kawasan Industri	0.12	0.07	14.27	0.48	0.50	1.18
8	Kawasan Kantor Pemerintah	18.66	6.46	0.82	0.04	5.38	8.09
9	Kawasan Militer	3.84	0.06	-	6.26	0.04	31.80
10	Kawasan Nuklir	-	-	-	-	44,39	-
11	Kawasan Pemakaman	0.13	17.06	1.70	3.51	2.22	-
12	Kawasan Pendidikan	21.96	9.97	13.85	46.43	20.09	12.90
13	Kawasan Peribadatan	1.91	2.90	1.16	0.32	0.88	0.96
14	Kawasan Taman Wisata	-	-	-	0.01	14.04	2.12
15	Kawasan Utilitas	1.75	1.33	0.18	0.12	2.97	
16	Kosong	0.47	0.44	4.46	0.53	2.08	1.02
17	Wilayah Stasiun Kereta Api	-	-	-	-	-	2.88
18	Wilayah Tata Ruang Tani	-	22.31	6.16	163.12	30.10	-

No.	Land Use	Districts					
		Bandung Wetan	Cibeunying Kaler	Cibeunying Kidul	Cidadap	Coblong	Sumur Bandung
19	Zona Pemukiman	267.26	345.73	348.12	418.76	543.02	267.76
20	Jalur Hijau	340.57	459.07	409.84	767.32	718.47	344.08
	Total	5.72	17.54	15.59	84.48	38.49	4.00

Source: Bandung City RTRW 2022 – 2042

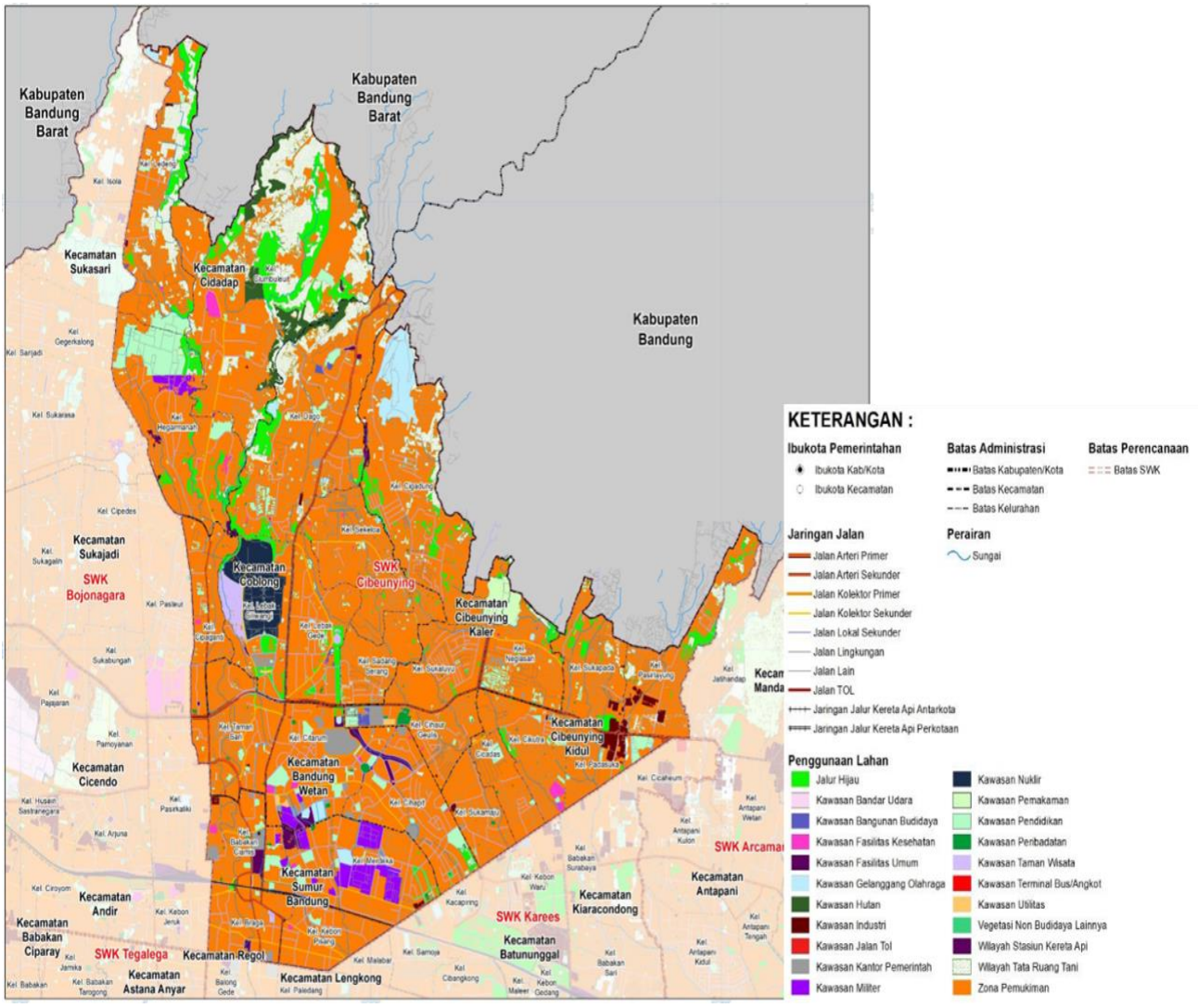


Figure 3. Land Use Map of the Cibeunying SWK Area

Planning Line of the Cibeunying SWK Area

The Cibeunying SWK Plan Line was carried out in 2009 consisting of 21 Plan Lines, including: The River Management Area (DMS) with the largest length is in Cibeunying Kidul District at 12,360.97 m, and the smallest in Coblong District with a length of 145.08 m. For the River Boundary Line Plan (GSS), the largest is located in Cidadap District with a length of 16,180.65 m and the smallest is in Bandung Wetan District at 4,143.21m. Meanwhile, the River and Channel Normalization Plan with the largest length is in Cidadap District with a length of 64,721.88 m and the smallest is in Bandung Wetan District with a length of 9,977.04 m. For more details about the 2009 Cibeunying SWK Plan Line, please see the table below:

Table 2. Planning Line Map of the Cibeunying SWK Area (2009)

No	Garisan Rencana	Bandung Wetan	Cibeunying Kaler	Cibeunying Kidul	Cidadap	Coblong	Sumur Bandung
1	Rencana Bangunan	-	-	-	7.218,86	-	-
2	Rencana Berm	1.584,88	17.694,50	5.231,14	290,01	1.150,29	649,18
3	Rencana Daerah Milik Sungai (DMS)	3.015,37	5.154,31	12.360,97	4.906,32	145,08	2.733,96
4	Rencana Dimensi	1.430,48	376,02	124,2	629,65	386,23	530,98
5	Rencana Garis Sempadan Sungai (GSS)	4.143,21	11.568,70	6.637,10	16.180,65	5.834,32	4.529,68
6	Rencana Garis Toko	-	-	1.424,00	-	-	-
7	Rencana Ijin Bangunan 1 Lantai	-	-	-	-	206,96	-
8	Rencana Ijin Terbit	11.689,60	22.618,26	1.893,67	27.422,11	26.154,67	12.148,72
9	Rencana Jalan	-	261,53	146,99	245,74	376,98	1.427,43
10	Rencana Normalisasi Sungai Dan Atau Saluran	9.977,04	23.614,29	24.683,61	64.721,88	38.195,61	18.379,76
11	Rencana Pagar (GP)	76.771,22	109.558,30	82.459,72	115.544,03	147.335,60	66.668,96
12	Rencana Perdagangan	1.166,43		882,88	822,93	1.734,50	4.619,96
13	Rencana Riool_Brandgang	44.290,29	67.411,60	38.143,97	29.360,63	75.083,79	25.565,05
14	Rencana Ruang Milik Jalan (RUMIJA)	116.602,78	210.499,64	215.497,09	232.932,03	319.588,44	96.710,34
15	Rencana Ruang Pengawasan Jalan (RUWASJA)	-	-	92,8	-	-	-
16	Rencana Ruang Terbuka Hijau (RTH)	1.101,46	2.227,90	2.777,91	1.698,06	1.909,94	851,59
17	Rencana Sempadan Bangunan (GSB)	85.301,37	176.008,64	181.156,54	197.925,31	257.852,18	63.543,71
18	Rencana Sempadan Belakang Bangunan (GSBB)	-	-	9,7	-	-	2.458,12
19	Rencana Sempadan Rel Kereta Api	-	-	-	-	-	2.980,85
20	Rencana Sepanjang Jalur Listrik Sutt_ Sutet	-	-	-	2.632,79	1.457,73	-
21	Rencana Trotoar	685,39	-	2.770,69	820,41	1.734,36	11.920,85
	Jumlah	357.759,52	646.993,71	576.292,97	703.351,39	879.146,67	315.719,14

Source: Bandung City Plan Line Map, 2009

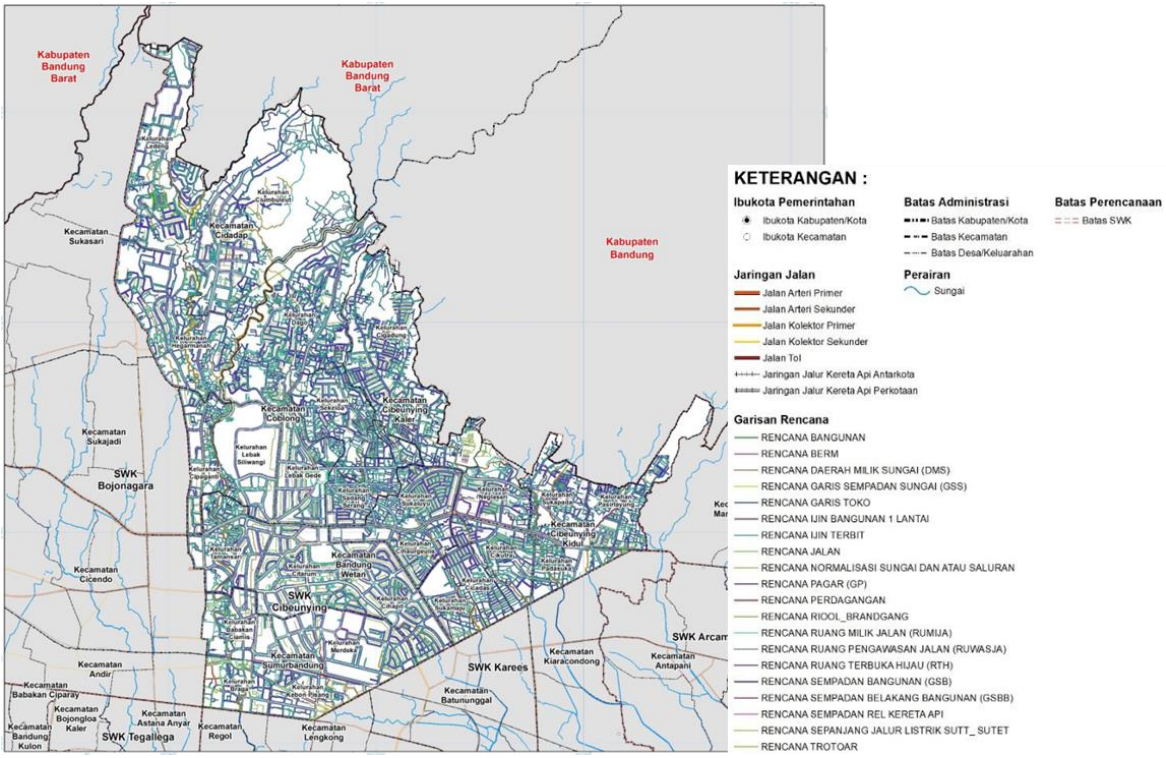


Figure 4. Urban Planning Line Map of the Cibeunying SWK Area (2009)

Normalization Plan Lines for Rivers/ Channels and Inspection Roads

River normalization is a series of actions taken to improve the natural water system of a river or waterway. The purpose of this normalization is to restore or maintain the natural state of the river, so that it can flow properly without posing a threat of flooding or erosion. In this research on the Evaluation of the Line Normalization Plan for Rivers/Channels and River Boundaries in SWK Bojonegara and Cibeunying, Bandung City, more focused on river boundary lines. The riparian zone is a buffer zone between aquatic ecosystems (rivers) and land. This zone is generally dominated by vegetation and/or wetlands. These plants are in the form of grass, shrubs, or trees along the left and/or right banks of the river. The condition of the line of the normalization plan for rivers/channels and inspection roads of SWK Cibeunying, can be seen in the table below.

Table 3. Planned River Boundary Line in the Cibeunying SWK Area

SWK	**Districts**					
Cibeunying	Bandung Wetan	Cibeunying Kaler	Cibeunying Kidul	Cidadap	Coblong	Sumur Bandung
	4.143,21	11.568,70	6.637,10	16.180,65	5.834,32	4.529,68

Source: Bandung City Plan Line Map

Table 4. River Normalization Plan in the Cibeunying SWK Area

SWK	**Districts**					
Cibeunying	Bandung Wetan	Cibeunying Kaler	Cibeunying Kidul	Cidadap	Coblong	Sumur Bandung
	9.977,04	23.614,29	24.683,61	64.721,88	38.195,61	18.379,76

Source : Bandung City Plan Line Map

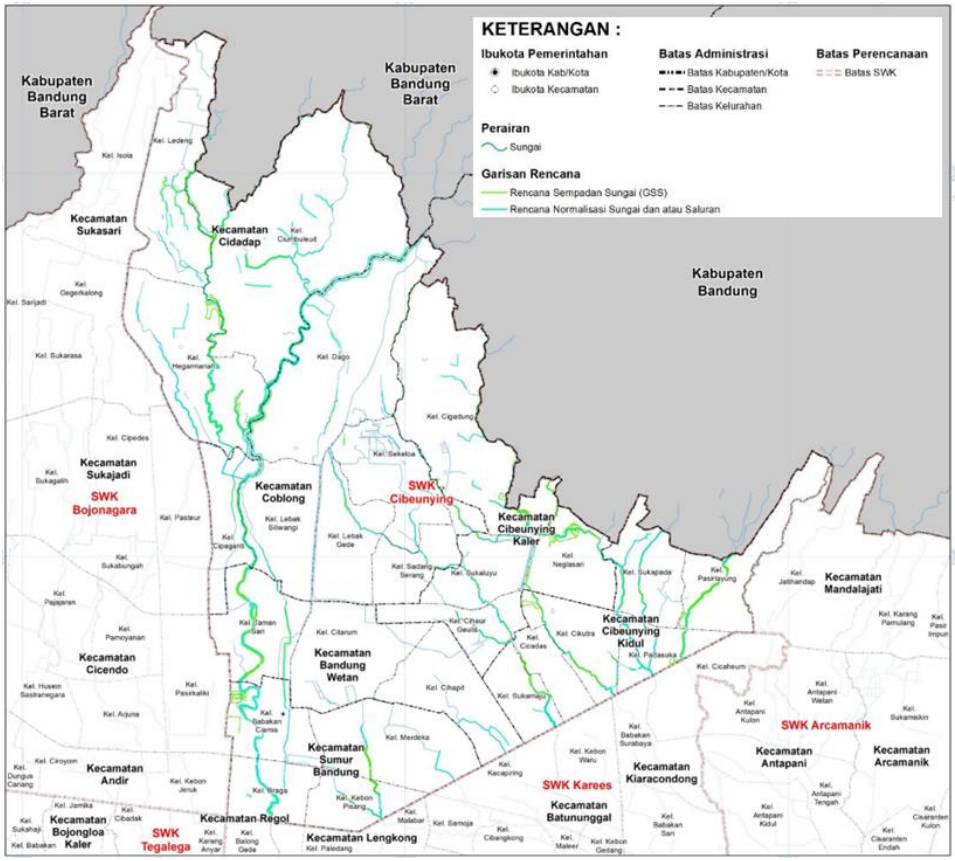


Figure 5. Boundary Plan Line Map and Normalization of the Cibeunying SWK River

Analysis of River/Channel Normalization Plan and Inspection Roads

The Line Analysis of the River/Channel and Road Normalization Plan is based on the Regulation of the Minister of Public Works and Public Housing Number 28/PRT/M/2015 concerning the Determination of River Semadan Lines. The river boundary is the space that covers the left and right of the river trough (Indonesia, 2004, 2015; Republic of Indonesia, 2014). In the Line Analysis of the River/Channel and Road Normalization Plan Inspection, there are typologies that are the focus of discussion, including:

1. Being at a flood site
2. Being in a densely populated area
3. Have an inspection road

The Line of the Normalization Plan for Rivers/Channels and Inspection Roads of SWK Cibeunying, consists of:

1. River Boundary Line Plans:
   a. Bandung Wetan District along 4,143.21 m;
   b. Cibeunying Kaler District along 11,568.70 m;
   c. Cibeunying Kidul District along 6,637.10 m;
   d. Cidadap District along 16,180.65 m;
   e. Coblong District along 5,834.32 m; and

f. Sumur Bandung District is 4,529.68 m long.

2. River Normalization Line Plan:
   a. Bandung Wetan District along 9,977.04 m;
   b. Cibeunying Kaler District along 23,614.29 m;
   c. Cibeunying Kidul District along 24,683.61 m;
   d. Cidadap District along 64,721.88 m;
   e. Coblong District along 38,195.61 m; and
   f. Sumur Bandung District is 18,379.76 m long.

Based on the analysis of the line of the normalization plan for rivers/channels and inspection roads, the Cibeunying SWK was affected:

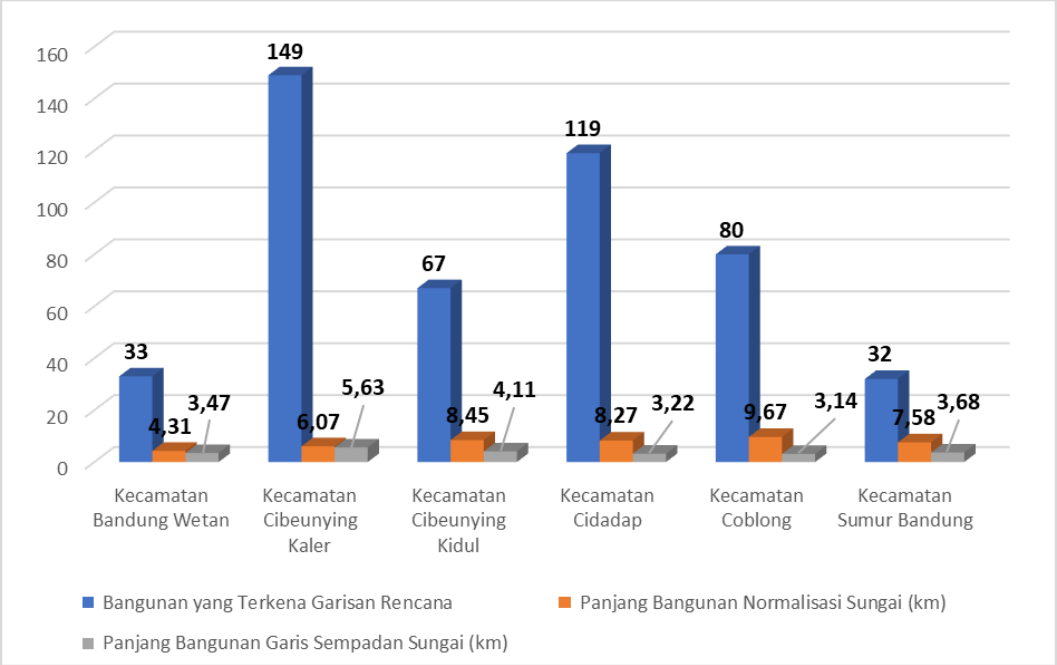
1. Buildings affected by the River Boundary Line Plan as many as 480 buildings;
2. The length of the affected river boundary line is 23.24 km;
3. Buildings affected by the River Normalization Line Plan are 837 buildings; and
4. The length of the affected river normalization line plan is 44.36 km.

Analysis of the Line of the Normalization Plan for Rivers/Channels and Inspection Roads of SWK Cibeunying for more details can be seen as follows:

Table 5. Analysis of the Line of the Normalization Plan for Rivers/Channels and Inspection Roads Affected by SWK Cibeunying

No	SWK Cibeunying	Bangunan yang Terkena		Panjang Bangunan		Panjang Bangunan	
		Normalisasi Sungai	Garis Sempadan Sungai (GSS)	Terkena	Tidak Terkena	Terkena	Tidak Terkena
Kecamatan Bandung Wetan		**46**	**33**	**4,31**	**5,85**	**3,47**	**0,67**
1	Kel. Cihapit	18	0	0,56	1,63		
2	Kel. Citarum	-	0		0,39		
3	Kel. Taman Sari	28	33	3,75	3,84	3,47	0,67
Kecamatan Cibeunying Kaler		**125**	**149**	**6,07**	**17,48**	**5,63**	**5,76**
1	Kel. Cigadung	58	77	1,71	8,6	1,61	3,39
2	Kel. Cihaur Geulis	30	24	2,47	2,81	1,42	0,38
3	Kel. Neglasari	9	35	0,43	2,6	1,62	1,53
4	Kel. Sukaluyu	28	13	1,46	3,46	0,99	0,47
Kecamatan Cibeunying Kidul		**178**	**67**	**8,45**	**16,74**	**4,11**	**2,61**
1	Kel. Cicadas	-	8	0,03	0,77	0,07	0,51
2	Kel. Cikutra	20	12	1,27	2,13	1,64	0,77
3	Kel. Padasuka	54	8	2,63	5,85	0,41	0,53
4	Kel. Pasirlayung	8	29	0,67	2,46	1,55	0,68
5	Kel. Sukamaju	29	10	1,58	0,98	0,44	0,11
6	Kel. Sukapada	67	0	2,27	4,54		0
Kecamatan Cidadap		**196**	**119**	**8,27**	**60,98**	**3,22**	**13,23**
1	Kel. Ciumbuleuit	64	42	2,4	28,07	1,19	4,71
2	Kel. Hegarmanah	114	71	5,24	25,86	1,65	4,9
3	Kel. Ledeng	18	6	0,64	7,05	0,38	3,61
Kecamatan Coblong		**220**	**80**	**9,67**	**28,61**	**3,14**	**2,69**
1	Kel. Cipaganti	33	10	2,06	3,28	0,77	0,24
2	Kel. Dago	75	30	1,58	12,91	0,53	1,32
3	Kel. Lebak Gede	13	6	1,95	1,62	0,63	0,2
4	Kel. Lebak Siliwangi	14	0	1,43	3,14	0,07	0,07
5	Kel. Sadang Serang	37	27	1,51	3,95	1,04	0,58
6	Kel. Sekeloa	48	7	1,14	3,71	0,09	0,28
Kecamatan Sumur Bandung		**72**	**32**	**7,58**	**11,07**	**3,68**	**0,94**
1	Kel. Babakan Ciamis	30	11	2,96	4,65	1,81	0,54
2	Kel. Braga	12	1	2,38	3,12	0,12	0,01
3	Kel. Kebon Pisang	14	12	1,58	2,09	1,31	0,16
4	Kel. Merdeka	16	8	0,67	1,22	0,43	0,23
Jumlah		**837**	**480**	**44,36**	**140,73**	**23,24**	**25,9**

Source: Analysis Results, 2025



Source: Analysis Results, 2025

Figure 6. Analysis Chart of Affected River/Channel Normalization Planning Lines and Inspection Roads in the Cibeunying SWK Area

KETERANGAN

Lokasi titik sungai berada di Jl.Sukaraja dan Jl.Gunung Batu, Teridentifikasi secara eksisting lebar sungai sekitar 6 meter
Nama Sungai = Sungai Cibogo
Lebar Sungai = 6 meter
Lebar Sempadan Sungai = 0 meter
Lebar Jalan di Pinggir Sungai = 2 meter (1 sisi)

SUMBER	KONDISI	LEBAR (M)
Rencana Garisan	Sungai	7
Kondisi Eksisting	Sungai	6

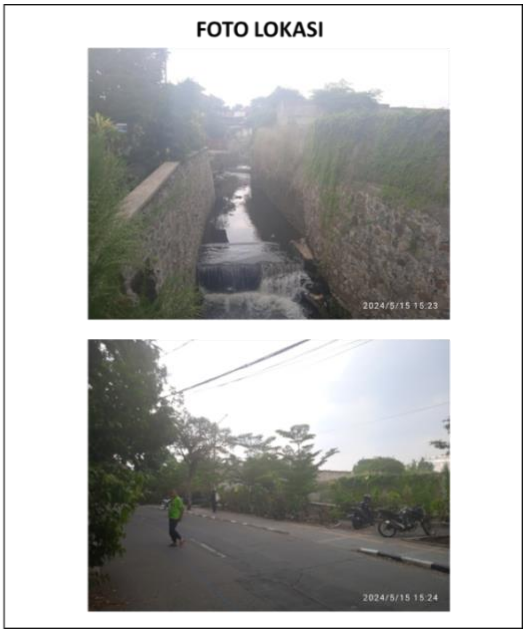
Source: Analysis Results, 2025

Figure 7. Condition of the Line of the Normalization Plan for Rivers/Channels and Inspection Roads Affected by Jl. Sukaraja and Jl. Gunung Batu

KETERANGAN

Lokasi titik sungai berada di Jl.Sukamulya, Teridentifikasi secara eksisting lebar sungai sekitar 6 meter
Nama Sungai = Sungai Cipedes
Lebar Sungai= 6 meter
Lebar Sempadan Sungai = 0 meter
Lebar Jalan di Pinggir Sungai = 6 meter (1 sisi)

SUMBER	KONDISI	LEBAR (M)
Rencana Garisan	Sungai	6
Kondisi Eksisting	Sungai	6



Source: Analysis Results, 2025

Figure 8. Condition of the Line of the Normalization Plan of Rivers/Channels and Inspection Roads Affected by Jl. Sukamulya

KETERANGAN

Lokasi titik sungai berada di Jl.Dr.Djunjunan, Teridentifikasi secara eksisting lebar sungai sekitar 4 meter
Nama Sungai = Sungai Citepus III
Lebar Sungai= 4 meter
Lebar Sempadan Sungai = 0 meter
Lebar Jalan di Pinggir Sungai = 1,5 meter (1 sisi)

SUMBER	KONDISI	LEBAR (M)
Rencana Garisan	Sungai	7
Kondisi Eksisting	Sungai	4

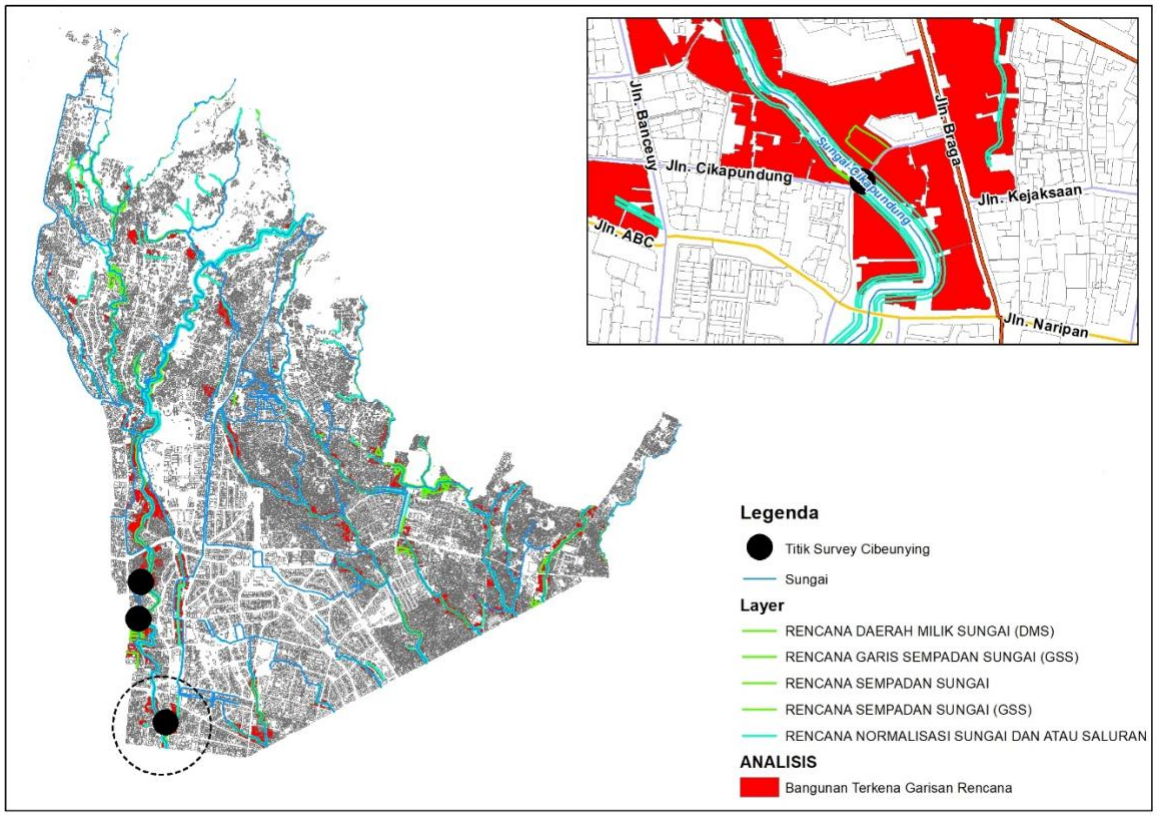
Source: Analysis Results, 2025

Figure 9. Condition of the Line of the Normalization Plan of Rivers/Channels and Inspection Roads Affected by Jl. Dr. Djunjunan

Table 6. Analysis of the Line of the Normalization Plan of Rivers/Channels and Inspection Roads of SWK Cibeunying

No.	Nama Sungai	Tipologi	Nama Lokasi	Kode Blad	Titik koordinat	Kondisi Eksisting (foto)	Lebar Sungai			Lebar Sempadan		
							Lebar Garisan Rencana (m)	Lebar Eksisting (m)	Kesesuaian	Lebar Garisan Rencana (m)	Lebar Sempadan Eksisting (m)	Kesesuaian
1	Sungai Cikapundung	Sungai Bertanggul & Kawasan Permukiman Padat	Gang Cikapundung	7J-3	-6.918324 - 107.6085808		20	12	Tidak sesuai	5	0	Tidak sesuai
2	Sungai Cikapundung	Sugai Bertanggul & Kawasan Rawan Banjir	Jl. Pajajaran	6I-2	-6.907266 - 107.6055049		20	15	Tidak sesuai	5	0	Tidak sesuai
3	Sungai Cikapundung	Sungai Bertanggul, Kawasan Rawan Banjir & Kawasan Permukiman Padat	Jl. Tamansari Bawah	6H-4	-6.902923 - 107.6057433		20	13	Tidak sesuai	5	0	Tidak sesuai

Source: Analysis Results, 2025

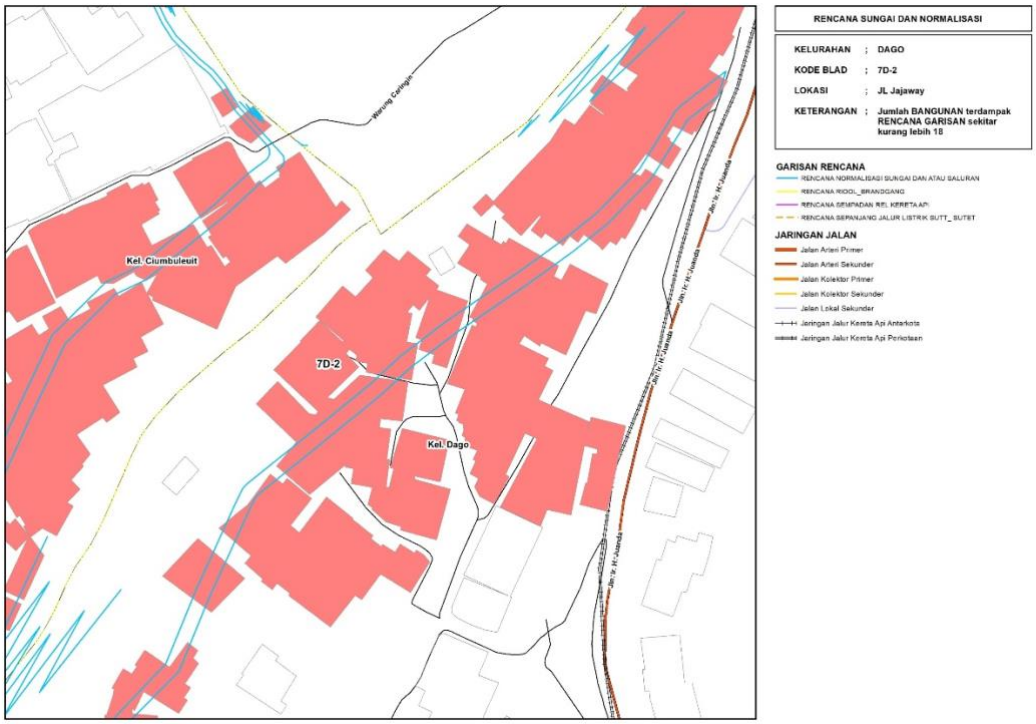


Source: Analysis Results, 2025

Figure 10. Line Analysis Map of the Normalization Plan of Rivers/Channels and Inspection Roads of SWK Cibeunying

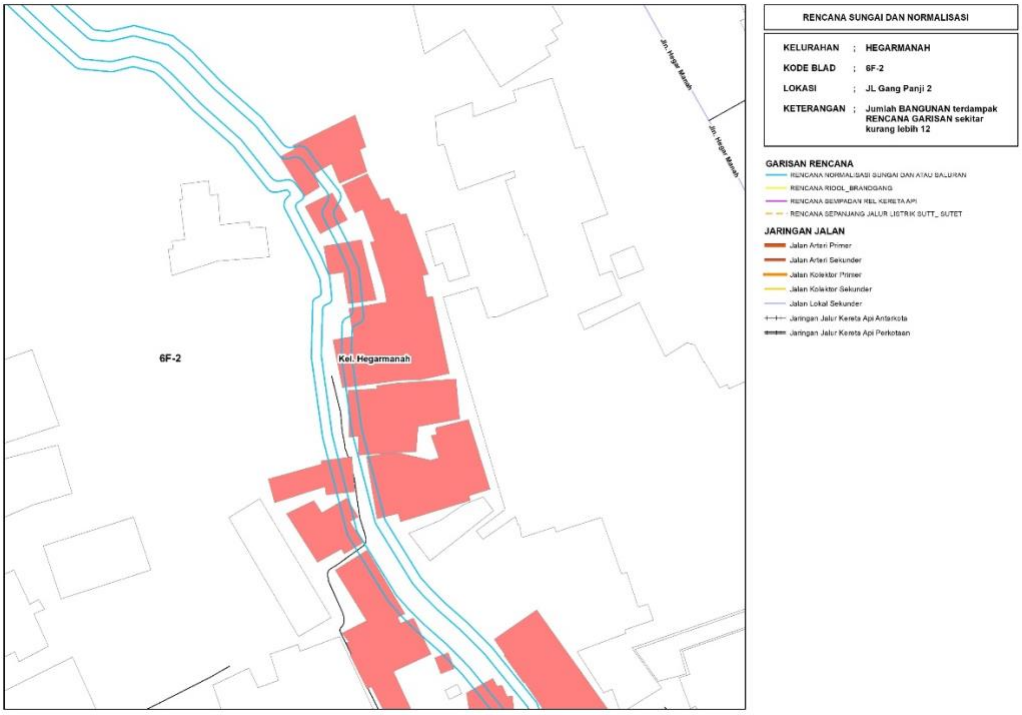
Source: Analysis Results, 2025

Figure 11. Line Analysis Map of River/Channel Normalization Plan and Inspection Roads SWK Cibeunying Jl. Cibeunying Permai V



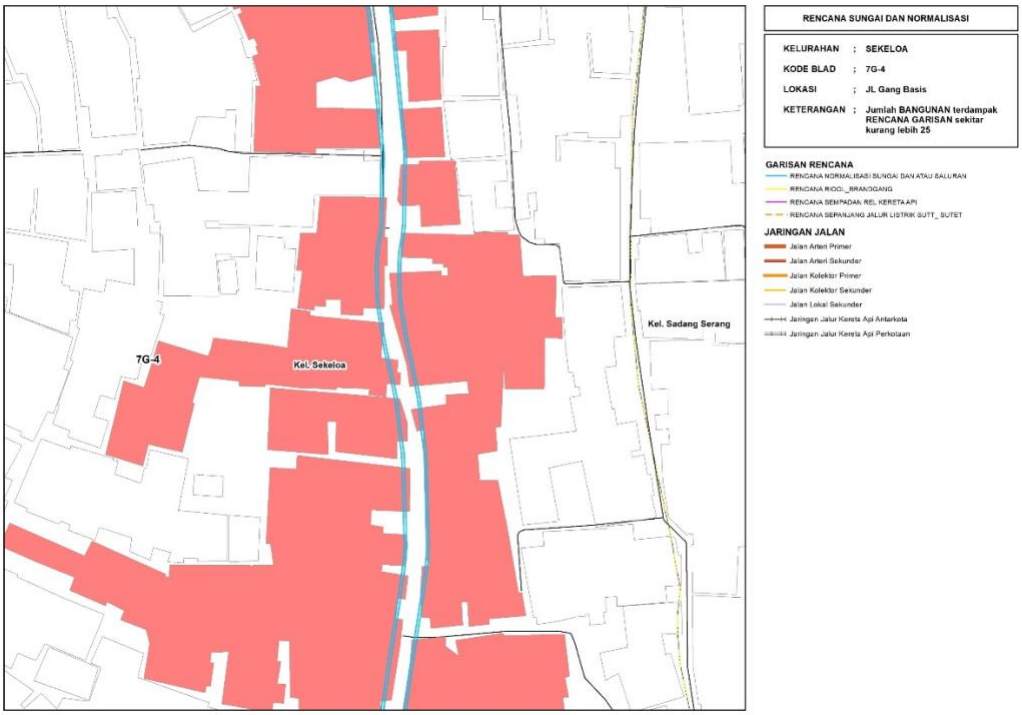
Source: Analysis Results, 2025

Figure 12. Analysis Map of the Line of Normalization Plan for Rivers/Channels and Inspection Roads SWK Cibeunying Jl. Jajaway



Source: Analysis Results, 2025

Figure 13. Line Analysis Map of River/Channel Normalization Plan and Inspection Roads SWK Cibeunying Jl. Gang Panji 2



Source: Analysis Results, 2025

Figure 14. Line Analysis Map of River/Channel and Road Normalization Plan SWK Cibeunying Jl Gang Basis

Recommended Line of Normalization Plan for Rivers/Channels and River Boundaries

The Study of the Line of the River/Channel and Inspection Road Normalization Plan is based on the Minister of Public Works and Public Housing No. 28/PRT/M/2015 concerning the Determination of River Boundary Lines. The river boundary is a space that covers the left and right of the river trough (Novilyansa et al., 2024; Safaria et al., 2021). For rivers with embankments located in urban areas, the recommended boundaries should be at least 3 meters wide from the left and right of the river trough, and for non-embanked rivers, it is recommended to have a minimum boundary width of 10 meters from the left and right of the river trough (Dunne & Jerolmack, 2020). As for rivers that have an existing river boundary width that does not match or is shorter than the width of the line plan, the river boundary width recommendations are adjusted to the existing one.

Based on the results of the study, there is a width of Normalization of Rivers/Channels and Inspection Roads with conditions that are not in accordance with the plan line at SWK Cibeunying, consisting of:

1. Normalization of the river along 44.36 km and affected buildings as many as 837 units; and
2. The River Boundary Line is 23.24 km long with 480 affected buildings.

For more details on the recommendations of the River/Channel and Inspection Road Normalization Plan Line at SWK Cibeunying Bandung City, it can be seen as follows:

Table 7. Recommendations for Directions for Handling Rivers/Channels and Inspection Roads SWK Cibeunying Bandung City Normalization Lines

No.	Nama Sungai	Topologi	Nama Lokasi	Kode Blad	Titik koordinat	Kondisi Eksisting (foto)	Lebar Sungai			Lebar Sempadan			Aturan Perman PUPR No 28/ PRT/ M/ 2015 tentang Garis Sempadan Sungai	Arahan RTRW	Rekomendasi Lebar Badan Sungai	Rekomendasi Kesesuaian
							Lebar Garisan Rencana (m)	Lebar Eksisting (m)	Kesesuaian	Lebar Garisan Rencana (m)	Lebar Sempadan Eksisting (m)	Kesesuaian				
1	Sungai Cikapundung	Sungai Bertanggul & Kawasan Permukiman Padat	Gang Cikapundung	7J-3	-6.918324 - 107.6085808		20	12	Tidak sesuai	5	0	Tidak sesuai	3	Sungai Permanen	Mengikuti Eksisting	Merujuk ke Aturan Perman PUPR No 28/ PRT/ M/ 2015 tentang Garis Sempadan Sungai
2	Sungai Cikapundung	Sugai Bertanggul & Kawasan Rawan Banjir	Jl. Pajajaran	6I-2	-6.907266 - 107.6055049		20	15	Tidak sesuai	5	0	Tidak sesuai	3	Sungai Permanen	Mengikuti Eksisting	Merujuk ke Aturan Perman PUPR No 28/ PRT/ M/ 2015 tentang Garis Sempadan Sungai
3	Sungai Cikapundung	Sungai Bertanggul, Kawasan Rawan Banjir & Kawasan Permukiman Padat	Jl. Tamansari Bawah	6H-4	-6.902923 - 107.6057433		20	13	Tidak sesuai	5	0	Tidak sesuai	3	Sungai Permanen	Mengikuti Eksisting	Merujuk ke Aturan Perman PUPR No 28/ PRT/ M/ 2015 tentang Garis Sempadan Sungai

Source: Analysis Results, 2025

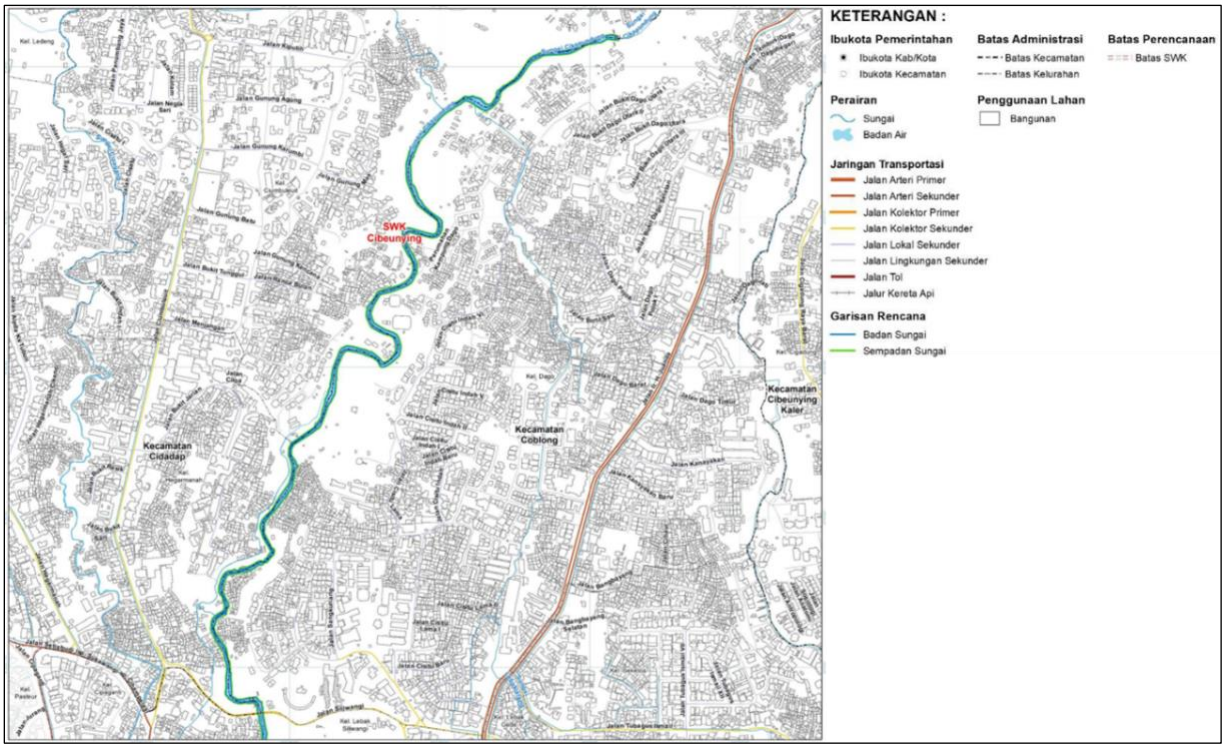


Figure 15. Boundary Plan Line Map and Normalization of the Cibeunying SWK River (Segment Jl. Ir. H. Juanda - Jl. Siliwangi)

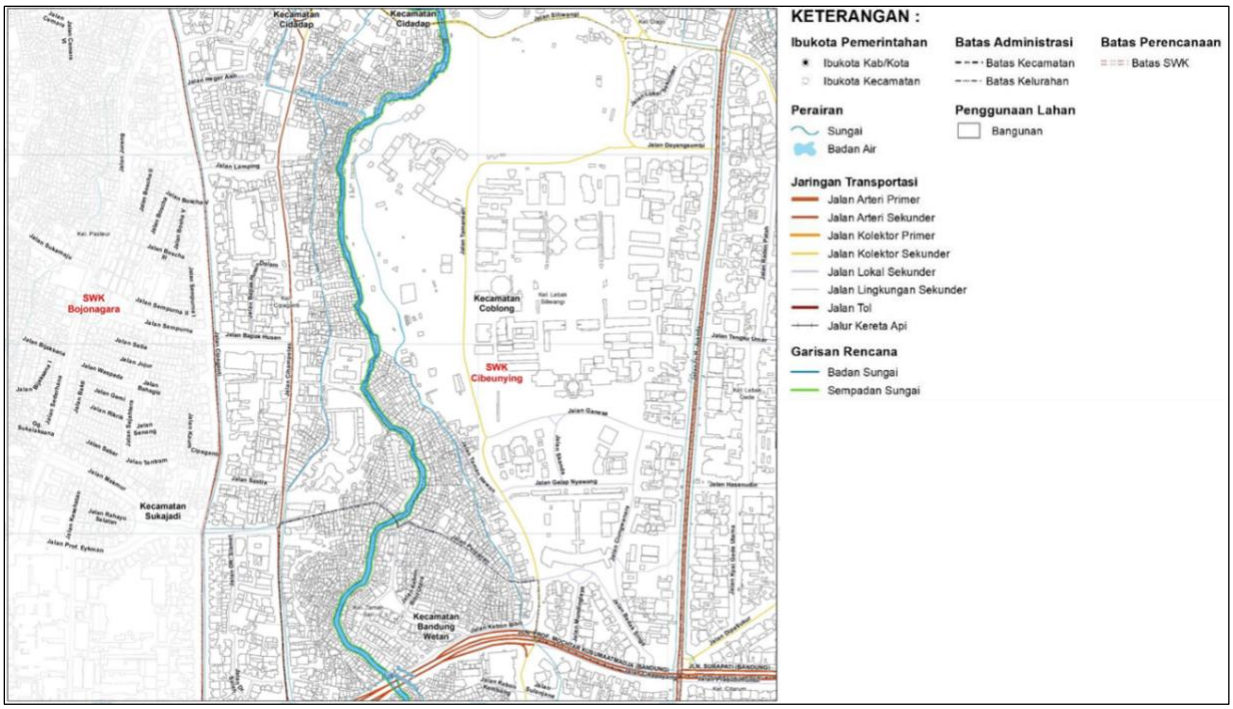


Figure 16. Boundary Plan Line Map and Normalization of the SWK Cibeunying River (Segment Jl. Siliwangi - Jl. Prof. Mochtar Kusumaatmadja)

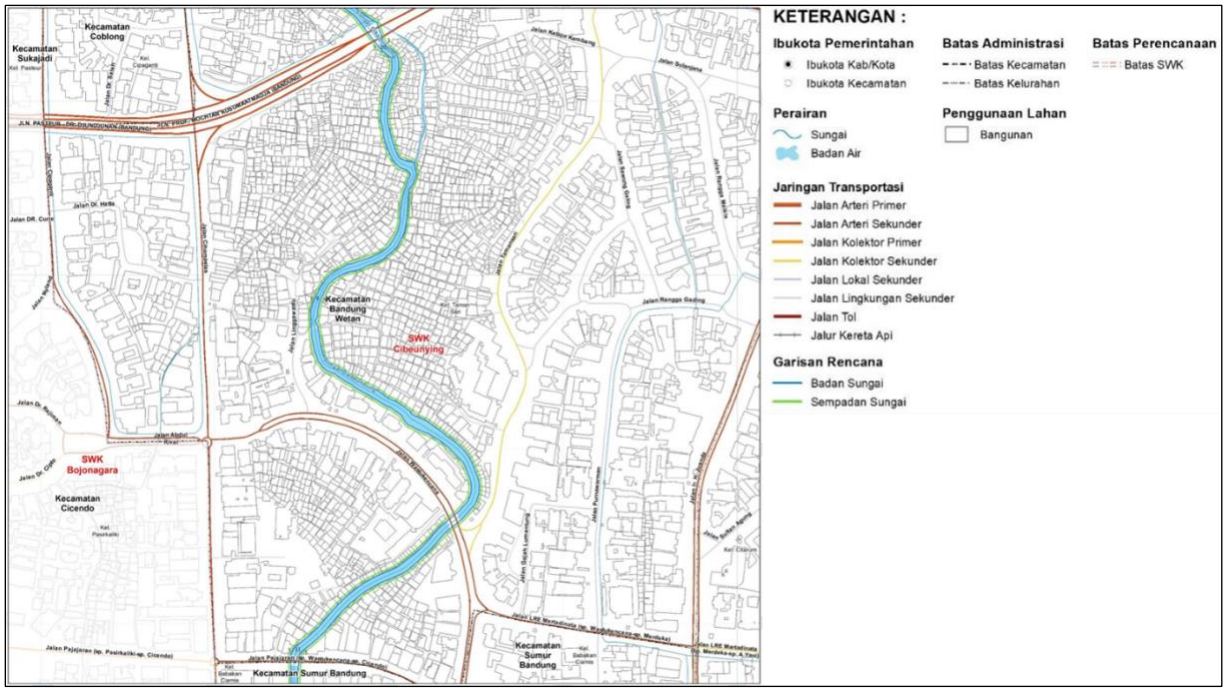


Figure 17. Boundary Plan Line Map and Normalization of the Cibeunying SWK River (Segment Jl. Prof. Mochtar Kusumaatmadja - Jl. Pajajaran)

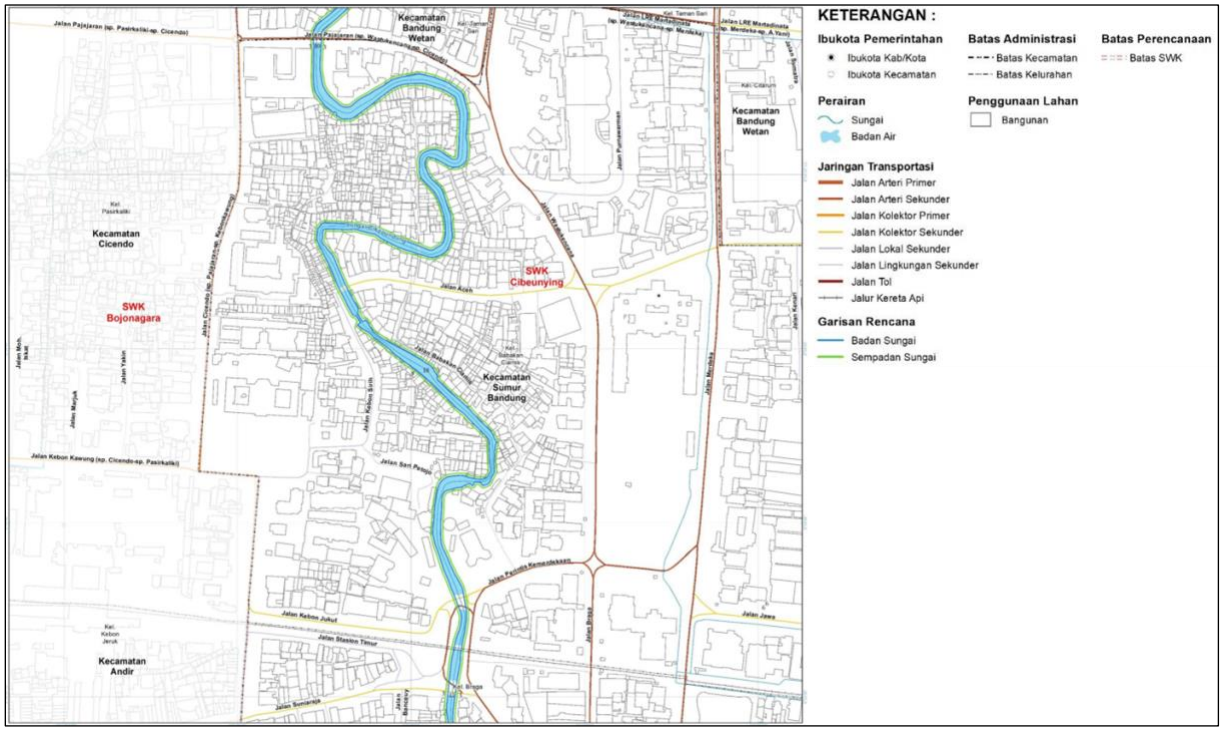


Figure 18. Boundary Plan Line Map and Normalization of the SWK Cibeunying River (Segment Jl. Pajajaran - Jl. Suniaraja)

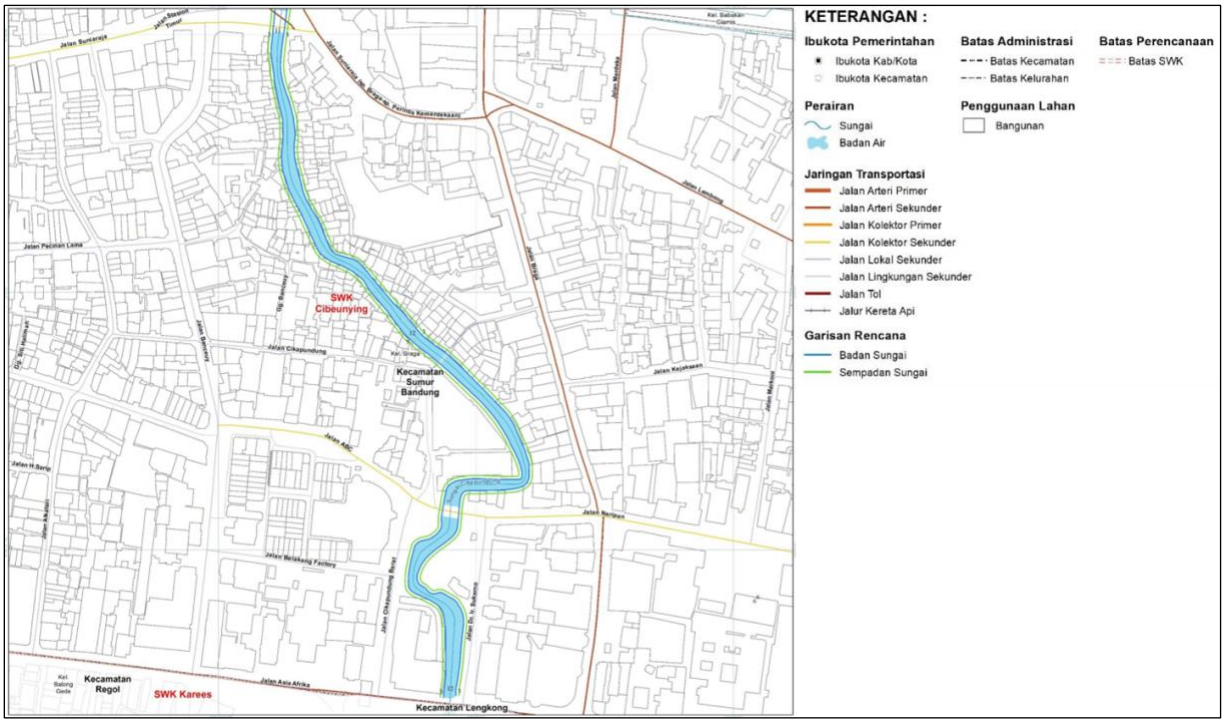


Figure 19. Boundary Plan Line Map and Normalization of the SWK Cibeunying River (Segment Jl. Suniaraja - Jl. Asia Africa).

Conclusion

The City Planning Line Map functions as a geometric guideline for urban spatial utilization and serves as a reference for providing spatial planning information and issuing recommendations for spatial utilization in the form of Spatial Planning Activity Suitability (KKPR). The optimization of urban infrastructure planning should be supported by adaptive and implementable policies that align with the vision of spatial planning while ensuring the protection of community rights to safe, comfortable, productive, and sustainable urban spaces.

The implementation of river boundary planning in river normalization activities has implications for land ownership and land tenure rights. When existing land use does not conform to the planned river boundary lines, adjustments should be carried out through appropriate compensation or relocation mechanisms. Therefore, it is necessary to identify land ownership and control within areas or zones containing urban infrastructure. In several cases, certain areas or infrastructure objects already have responsible managing entities, and it is important to distinguish between land utilization carried out legally and utilization without formal rights by the community.

References

Dunne, K. B. J., & Jerolmack, D. J. (2020). What sets river width? *Science Advances, 6*(41), eabc1505. https://doi.org/10.1126/sciadv.abc1505

Indonesia. (2004). *Undang-Undang Republik Indonesia Nomor 38 Tahun 2004 tentang Jalan*. Kementerian Pekerjaan Umum dan Perumahan Rakyat.

Indonesia. (2007). *Undang-Undang Republik Indonesia Nomor 26 Tahun 2007 tentang Penataan Ruang*. Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional (ATR/BPN).

Indonesia. (2015). *Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 28/PRT/M/2015 tentang Penetapan Garis Sempadan Sungai dan*

Danau. Kementerian Pekerjaan Umum dan Perumahan Rakyat.
Indonesia. (2021). *Peraturan Pemerintah Republik Indonesia Nomor 21 Tahun 2021 tentang Penyelenggaraan Penataan Ruang*.
Indonesia. (2022). *Peraturan Daerah Kota Bandung Nomor 5 Tahun 2022 tentang Rencana Tata Ruang Wilayah (RTRW) Kota Bandung Tahun 2022–2042*.
Indrajit, A., Van Loenen, B., & Van Oosterom, P. (2019). Assessing spatial information themes in the spatial information infrastructure for participatory urban planning monitoring: Indonesian cities. *ISPRS International Journal of Geo-Information, 8*(7), 305. https://doi.org/10.3390/ijgi8070305
Janita, E. S., & Kartidjo, W. (2023). The effect of relocating street hawkers on urban vitality in the Malioboro tourism area, Yogyakarta. *Sosioteknologi, 22*(2).
Jatayu, A., Saizen, I., Rustiadi, E., Pribadi, D. O., & Juanda, B. (2022). Urban form dynamics and modelling towards sustainable hinterland development in North Cianjur, Jakarta–Bandung mega-urban region. *Sustainability, 14*(2), 907. https://doi.org/10.3390/su14020907
Letlape, B. (2023). Determining how the MDB's work can enhance the realisation of the objectives of the National Spatial Development Framework (NSDF), Integrated Urban Development Framework (IUDF), and Spatial Planning and Land Use Management Act (SPLUMA) and vice versa. *Municipal Demarcation Board Research Report*, 1–46.
Novilyansa, E., Wulandari, C., & Bakri, S. (2024). A study on the implementation of land use policies in river boundaries in Indonesia. *Justicia Sains: Jurnal Ilmu Hukum, 9*(2), 520–529.
Olawale, S. R., Chinagozi, O. G., & Joe, O. N. (2023). Exploratory research design in management science: A review of literature on conduct and application. *International Journal of Research and Innovation in Social Science, 7*(4), 1384–1395.
Rahmasary, A. N., Koop, S. H. A., & Leeuwen, C. J. (2020). Assessing Bandung's governance challenges of water, waste, and climate change: Lessons from urban Indonesia. *Integrated Environmental Assessment and Management, 17*(2), 434–444. https://doi.org/10.1002/ieam.4356
Republik Indonesia. (2014). *Peraturan Menteri Pekerjaan Umum Nomor 12/PRT/M/2014 tentang Penyelenggaraan Sistem Drainase Perkotaan*. Kementerian Pekerjaan Umum dan Perumahan Rakyat.
Revayanti, I. (2024). *Evaluasi garisan rencana Kota Bandung 1*. Dinas Cipta Karya, Bina Konstruksi dan Tata Ruang Kota Bandung.
Revayanti, I., & Avianti, W. (2026). Analisis dampak ekonomi penerapan green infrastructure pada skala rumah tangga perkotaan. *Jurnal Ekonomi, Akuntansi dan Manajemen Nusantara (JEAMA), 4*(3), 517–524.
Revayanti, I., & Fasa, A. S. (2022). Kajian persiapan pengendalian pemanfaatan ruang DAS Citarum di wilayah Kabupaten Karawang. *Geoplanart, 4*(2), 116–128.
Romdhoni, M. F., & Rashid, M. (2020). Urban geometry: City shape and spatial layout of six Indonesian government centers. *DIMENSI (Journal of Architecture and Built Environment), 47*(2), 71–86.
Safaria, F., Gunawan, G., & Susetyaningsih, A. (2021). Pemanfaatan sempadan sungai sebagai ruang terbuka hijau. *Jurnal Konstruksi, 19*(1), 179–190.