

Optimization of Road Handling Priorities Using Provincial/District Roads Management System Integration and Analytical Hierarchy Process at UPT PJJ Surabaya, East Java

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Abstract

This study aims to identify the priority order for road maintenance on road sections under the Surabaya Road and Bridge Management Unit (UPT PJJ Surabaya) in East Java Province by utilizing the Provincial/District Roads Management System (PKRMS) application integrated with the Analytical Hierarchy Process (AHP) method. Additionally, the study seeks to estimate the required costs for implementing the road maintenance. The research adopts a quantitative approach with a positivist philosophy. The study population consists of 123 employees from the East Java Provincial Public Works and Highways Agency, with a sample of 33 respondents selected using purposive sampling techniques. Data were collected using a mixed-method approach, involving road condition surveys conducted through the Moving Car Observer (MCO) method and a literature review. Data analysis was conducted systematically using a combination of PKRMS and AHP. The results indicate that the top-priority road section for maintenance, based on the integration of PKRMS and AHP, is the Sumberwudi–Karang Geneng section, which obtained the highest Priority Index Score (TPI) of 56. The estimated cost required for maintaining this road section is Rp16,475,545,104.98. The integration of PKRMS and AHP provides an objective, efficient, and data-driven approach, enabling local governments to optimize budgets and extend the lifespan of road infrastructure. This study recommends that local governments consistently adopt the combination of PKRMS and AHP in road infrastructure management to ensure more targeted budget allocation and enhance transparency in decision-making processes.

Keywords: Provincial/District Road Management System, Analytical Hierarchy Process, Road Handling Priority.

1. Introduction

Road infrastructure plays a fundamental role as one of the essential elements in ensuring smooth transportation and economic activities. In a modern context, road networks not only serve as a means of transportation but also act as catalysts for enhancing the economic competitiveness of a region (Kusnadi & Warnars, 2021; Silvia, 1999). Quality road infrastructure facilitates more efficient and seamless human mobility, goods distribution, and service delivery, thereby enabling communities to access essential services, such as healthcare, education, and public services, more easily and swiftly (BPS, 2023). According to the Ministry of Public Works and Housing (PUPR), adequate road networks are crucial in connecting communities to various essential facilities and services, which, in turn, accelerate regional economic and social development (Kompas, 2023). Well-maintained roads not only ease



transportation access but also improve inter-regional connectivity, thereby reducing logistics costs and optimizing travel time.

East Java is a province with significant economic potential in various sectors, including manufacturing, agriculture, and tourism. Without efficiently connected roads, economic activities across the province would face considerable obstacles. Hence, the role of provincial road networks in East Java is critical for creating strong connectivity, supporting local economic development, and facilitating the smooth distribution of goods within and beyond Java Island (Irawan et al., 2016; Sushera et al., 2019). These roads not only ensure the smooth distribution of products and services but also play a vital role in shortening the transit time of raw materials to production centers and ensuring that finished products can be delivered promptly to various target markets (Ignasius et al., 2014).

A study (Zhang et al., 2022) highlights that road in tropical regions, such as Indonesia, are highly vulnerable to damage due to extreme environmental conditions. Roads that are inadequately protected from rainwater and flooding tend to experience structural damage more quickly. Another major challenge is the lack of consistent routine maintenance, which is a primary cause of prolonged road damage (Susila & Munadi, 2007). Poor maintenance practices allow minor damages to escalate into major problems, requiring significantly higher repair costs. This underscores the importance of scheduled and measured road maintenance to keep road infrastructure in optimal condition.

According to Saaty in his book *Decision Making for Managers* (2004), the Analytical Hierarchy Process (AHP) is a method that enables decision-makers to measure and compare various criteria, thereby producing more objective decisions (Tjendani et al., 2018). The application of AHP in the Provincial/District Roads Management System (PKRMS) offers several advantages. First, this integration facilitates more measured, data-driven decision-making, reducing the potential for subjectivity that may arise if decisions were based solely on visual observations or physical road condition data. Second, AHP allows local governments to simultaneously consider multiple critical aspects, enabling road repair priorities to be aligned with strategic needs, whether in terms of economic impact, social considerations, or road user safety (Turban et al., 2003).

The integration of AHP into PKRMS also promotes a more long-term, data-oriented road management approach. With a better understanding of road conditions and clear repair priorities, governments can implement more systematic and measurable maintenance plans, ultimately extending road lifespan and maximizing the positive impact of maintenance budgets (Ahmadian et al., 2023). Furthermore, this more objective system is expected to enhance transparency in road management, as every priority decision is based on criterion weights that can be explained and accounted for.

The integration of PKRMS with the AHP method strengthens the data-driven approach in road management. AHP enables priority determination by considering criteria such as road physical condition, traffic volume, economic impact, and repair urgency. This integration ensures that decision-making is more objective, efficient, and effective. The resulting output is expected to serve as a practical guideline for local governments to optimize budgets, extend road lifespan, and support local economic growth through well-maintained infrastructure.

Based on the background issues outlined above, this study aims to: 1) Identify the priority order for road handling at UPT PJJ Surabaya road sections in East Java Province using the Provincial/District Roads Management System (PKRMS) application combined with the Analytical Hierarchy Process (AHP) method; and 2) Calculate the estimated costs required for road handling at UPT PJJ Surabaya road sections in East Java Province using the

Provincial/District Roads Management System (PKRMS) application combined with the Analytical Hierarchy Process (AHP) method.

2. Methods

The research methodology employed in this study involves several key stages, beginning with the identification of the population, which consists of 123 employees of the East Java Provincial Public Works and Highways Agency. These employees are distributed across the Secretariat, the Regulation and Control Division, the Construction and Improvement Division, the Maintenance Division, and the Surabaya Road and Bridge Management Unit. The sample was determined using purposive sampling, applying Slovin's formula to calculate the sample size. Based on this calculation, a total of 33 respondents were selected to participate in the study.

The data collection procedure utilized a mixed-method research approach, incorporating both primary and secondary data. Primary data were obtained through a road condition survey using the Moving Car Observer (MCO) method, conducted by the Regulation and Control Division. Meanwhile, secondary data were gathered from literature reviews and relevant references. This study adopted a quantitative approach underpinned by the philosophy of positivism, aiming to statistically test hypotheses using research instruments.

The data analysis technique was carried out systematically to organize and interpret the collected data. According to Bogdan, as cited in Ahyar et al. (2020), data analysis involves the process of grouping and sorting data to be presented in an informative manner. Sugiyono (2013) further elaborates that data analysis aims to classify data according to relevant criteria to yield significant results. Through this approach, the study is expected to deliver valid and relevant findings in line with its predetermined objectives.

3. Results and Discussion

3.1. Analysis of Provincial/District Roads Management System (PKRMS) Application Combined with Analytical Hierarchy Process (AHP)

After calculating the priority weight using AHP and inputting data on the Provincial Road Section in UPT PJJ Surabaya. The next step is to add MCA parameters to PKRMS based on the results of the AHP analysis.

Table 1. MCA Parameters Based on AHP Analysis Results

No	MCA Criteria on PKRMS	Weight
1	Criterion 1 (Road Condition)	43,80%
2	Criterion 2 (Road Service Level)	32,80%
3	Criterion 3 (Road Connectivity)	10,70%
5	Criterion 4 (Land Use)	7,20%
4	Criterion 5 (Priority Areas of East Java Province)	5,40%

The Road Section MCA values used in the PKRMS application refer to criterion 2 (road service level), criterion 3 (road connectivity), criterion 4 (land use) and criterion 5 (priority areas of East Java province). The value is inputted in accordance with the parameters in the PKRMS application, which uses three categories (low = 1, medium = 2, high = 3). The following is the MCA input value per UPT PJJ Surabaya road section.

Table 2. TPI Analysis Results by Using PKRMS Application Combined with AHP

No.	Ruas Jalan	Nama Ruas	MW (5 Year) - Total Harga Maintenance (Rp. juta)	TPI Class	TPI	WorkType	Package Name	Year
1	108	SUMBERWUDI - KARANG GENENG	16,475.5	01-CONCRETE MIX	56.0	2MW	Paket 2025-MCA	1
2	072	MLIRIP - BTS. KAB. MOJOKERTO	4,973.8	01-CONCRETE MIX	27.6	2MW	Paket 2025-MCA	1
3	107	SUKODADI - SUMBERWUDI	21,683.5	01-CONCRETE MIX	24.2	2MW	Paket 2025-MCA	1
4	109	BANJARWATI - PETI'IN	27,300.7	01-CONCRETE MIX	10.4	2MW	Paket 2025-MCA	1
5	111	LEGUNDI - BTS. KAB. MOJOKERTO	31,621.3	01-CONCRETE MIX	2.5	2MW	Paket 2025-MCA	1
6	110	BTS. KOTA SURABAYA - DRIYOREJO - LEGUNDI	96,184.8	01-CONCRETE MIX	32.7	2MW	Paket 2025-MCA	1
7	070.11K	JLN. PAHLAWAN	23,519.5	01-CONCRETE MIX	11.2	2MW	Paket 2025-MCA	1
8	112	PETI'IN (BTS. KAB. LAMONGAN) - KARANGCANGKRING (BTS. KAB. LAMONGAN)	21,627.7	10-AC	53.7	2MW	Paket 2025-MCA	1
9	105	BABAT - BTS. KAB. JOMBANG	250,243.0	10-AC	28.9	2MW	Paket 2025-MCA	1
10	106	BTS. KOTA LAMONGAN - BTS. KAB. MOJOKERTO	109,713.9	10-AC	34.2	2MW	Paket 2025-MCA	1
11	069	KRIAN - BTS. KAB. MOJOKERTO	84,209.7	10-AC	3.1	2MW	Paket 2025-MCA	1
12	132.11K	JLN. MASTRIP	54,355.1	10-AC	2.0	2MW	Paket 2025-MCA	1
13	068	KRIAN BY PASS (SIMPANG EMPAT) - KRIAN (SIMPANG LIMA)	8,041.8	10-AC	7.2	2MW	Paket 2025-MCA	1
14	071	SEPANJANG - TAMAN	436.8	10-AC	1.5	2MW	Paket 2025-MCA	1
15	133.11K	JLN. JOYOBOYO	0.0	10-AC	0.0	2MW	Paket 2025-MCA	1
16	106.11K	JLN. LAMONG REJO	0.0	10-AC	0.0	2MW	Paket 2025-MCA	1
17	106.12K	JLN. ACMAD DAHLAN	0.0	10-AC	0.0	2MW	Paket 2025-MCA	1
18	106.13K	JLN. SUNAN DRAJAD	0.0	10-AC	0.0	2MW	Paket 2025-MCA	1
19	106.14K	JLN. RAYA MANTUP (JLN. GAJAH MADA)	8,819.9	10-AC	3.7	2MW	Paket 2025-MCA	1
20	132.12K	JLN. PRABU SILIWANGI	1,048.3	10-AC	1.4	2MW	Paket 2025-MCA	1
21	132.13K	JLN. GUNUNGSARI	1,223.3	10-AC	2.0	2MW	Paket 2025-MCA	1
22	070	BTS. KOTA SIDOARJO - KRIAN	123,745.5	10-AC	17.9	2MW	Paket 2025-MCA	1

Source: Researcher Processed Data, 2024

From the results of the calculation and analysis above, the priority order of road handling in UPT PJJ Surabaya based on the PKRMS application combined with the AHP method is as follows:

Table 3 Priority Order of Road Subscription UPT PJJ Surabaya with Analysis Using PKRMS Application Combined with AHP Method

No	No. Link	Section Name	TPI Value	Priority Order
1	068	Krian By-Pass (Four-Way Intersection) – Krian (Five-Way Intersection)	7.2	11
2	069	Krian – Border of Mojokerto Regency	3.1	13
3	070.11k	Jln.Pahlawan	11.2	9
4	070	Border of Sidoarjo City – Krian	17.9	8
5	071	Sepanjang – Taman	1.5	16
6	072	Mlirip – Border of Mojokerto Regency	27.6	6
7	105	Babat – Border of Jombang Regency	28.9	5
8	106.11k	Jln. Lamong Rejo	0	18
9	106.12k	Jln. Achmad Dahlan	0	18
10	106.13k	Jln. Sunan Drajad	0	18
11	106.14k	Jln. Raya Mantup (Jln. Gajah Mada)	3.7	12
12	106	Border of Lamongan City – Border of Mojokerto Regency	34.2	3
13	107	Sukodadi – Sumberwudi	24.2	7
14	108	Sumberwudi – Karang Geneng	56.0	1
15	109	Banjarwati – Peti'in	10.4	10
16	110	Border of Surabaya City – Driyorejo – Legundi	32.7	4
17	111	Legundi – Border of Mojokerto Regency	2.5	14
18	112	Peti'in (Border of Lamongan Regency) – Karangcangkring (Border of Lamongan Regency)	53.7	2
19	132.11k	Jln. MASTrip	3.1	13
20	132.12k	Jln. Prabu Siliwangi	1.4	17
21	132.13k	Jln. Gunungsari	2.0	15
22	133.11k	Jln. Joyoboyo	0	18

Source: Researcher Processed Data, 2024

Comparison of the priority order of road handling in the Provincial Road Section UPT PJJ Surabaya can be seen in Table 4 below:

Table 4. Comparison of Road Handling Priority Order UPT PJJ Surabaya

No.	No. Link	Nama Ruas	Urutan Prioritas AHP	Urutan Prioritas PKRMS	Urutan Prioritas PKRMS kombinasi AHP
1	068	KRIAN BY PASS (SIMPANG EMPAT) - KRIAN (SIMPANG LIMA)	15	11	11
2	069	KRIAN - BTS. KAB. MOJOKERTO	7	13	13
3	070	BTS. KOTA SIDOARJO - KRIAN	10	8	8
4	070.11K	JLN. PAHLAWAN	15	9	9
5	071	SEPANJANG - TAMAN	17	16	16
6	072	MLIRIP - BTS. KAB. MOJOKERTO	12	3	6
7	105	BABAT - BTS. KAB. JOMBANG	1	4	5
8	106	BTS. KOTA LAMONGAN - BTS. KAB. MOJOKERTO	2	5	3
9	106.11K	JLN. LAMONG REJO	18	19	18
10	106.12K	JLN. ACMAD DAHLAN	20	19	18
11	106.13K	JLN. SUNAN DRAJAD	19	19	18
12	106.14K	JLN. RAYA MANTUP (JLN. GAJAH MADA)	14	12	12
13	107	SUKODADI - SUMBERWUDI	3	7	7
14	108	SUMBERWUDI - KARANG GENENG	5	1	1
15	109	BANJARWATI - PETIIN	8	10	10
16	110	BTS. KOTA SURABAYA - DRIYOREJO - LEGUNDI	11	6	4
17	111	LEGUNDI - BTS. KAB. MOJOKERTO	9	14	14
18	112	PETIIN (BTS. KAB. LAMONGAN) - KARANGCANGKRING (BTS. KAB. LAMONGAN)	6	2	2
19	132.11K	JLN. MASTRIP	4	17	13
20	132.12K	JLN. PRABU SILIWANGI	13	18	17
21	132.13K	JLN. GUNUNGSARI	15	15	15
22	133.11K	JLN. JOYOBOYO	16	19	18

Source: Researcher Processed Data, 2024

The estimated costs required for road handling in the UPT PJJ Surabaya Road Section based on the results of the analysis using the PKRMS application are as follows:

Table 5. Estimated Cost of Road Handling in UPT PJJ Surabaya Road Section

No.	Ruas Jalan	Nama Ruas	MW (5 Year) - Total Harga Maintenance (Rp Juta)
1	108	SUMBERWUDI - KARANG GENENG	16,475,545,104.98
2	072	MLIRIP - BTS. KAB. MOJOKERTO	4,973,783,874.51
3	107	SUKODADI - SUMBERWUDI	21,683,491,912.84
4	109	BANJARWATI - PETIIN	27,300,701,416.02
5	111	LEGUNDI - BTS. KAB. MOJOKERTO	31,621,343,078.61
6	110	BTS. KOTA SURABAYA - DRIYOREJO - LEGUNDI	96,184,818,481.45
7	070.11K	JLN. PAHLAWAN	23,519,458,068.85
8	112	PETIIN (BTS. KAB. LAMONGAN) - KARANGCANGKRING (BTS. KAB. LAMONGAN)	21,627,706,787.11
9	105	BABAT - BTS. KAB. JOMBANG	250,243,030,334.47
10	106	BTS. KOTA LAMONGAN - BTS. KAB. MOJOKERTO	109,713,882,080.08
11	069	KRIAN - BTS. KAB. MOJOKERTO	84,209,680,023.19
12	132.11K	JLN. MASTRIP	54,355,098,022.46
13	068	KRIAN BY PASS (SIMPANG EMPAT) - KRIAN (SIMPANG LIMA)	8,041,752,075.20
14	071	SEPANJANG - TAMAN	436,775,695.80
15	133.11K	JLN. JOYOBOYO	-
16	106.11K	JLN. LAMONG REJO	-
17	106.12K	JLN. ACMAD DAHLAN	-
18	106.13K	JLN. SUNAN DRAJAD	-
19	106.14K	JLN. RAYA MANTUP (JLN. GAJAH MADA)	8,819,943,908.69
20	132.12K	JLN. PRABU SILIWANGI	1,048,261,596.68
21	132.13K	JLN. GUNUNGSARI	1,223,250,732.42
22	070	BTS. KOTA SIDOARJO - KRIAN	123,745,468,017.58

Source: Researcher Processed Data, 2024

3.2. Analysis and Interpretation of Results

3.2.1. Analysis Using PKRMS

The results of the analysis using the Provincial/District Roads Management System (PKRMS) application show that road condition data in the UPT PJJ Surabaya area provides detailed information related to the physical condition of the road, average daily traffic volume (LHR), maintenance history, and estimated repair cost requirements. The PKRMS system categorizes road conditions into four categories: good, moderate, lightly damaged, and severely damaged, based on technical parameters such as International Roughness Index (IRI) and pavement stability level.

Some key points from the PKRMS analysis are as follows:

1. **Road Condition:** PKRMS data shows that road conditions in the UPT PJJ Surabaya area fall into four categories: good, medium, lightly damaged and severely damaged. The majority of roads in the severely damaged category are located in areas with high traffic volumes, such as connecting routes between major areas.
2. **Average Daily Traffic Volume (LHR):** The PKRMS identifies the roads with the highest usage rates, showing that roads such as [example road section] have a much higher LHR than the provincial average, making them a top priority for repair.
3. **Road Inventory:** Road inventory information includes pavement type (asphalt or concrete), road width, and maintenance history. Roads with asphalt pavement are more susceptible to damage due to high rainfall in the region.
4. **Estimated Cost Requirements:** PKRMS also provides cost estimates for each road section based on the level of damage. For example, severely damaged road sections require an average cost of IDR x million/km for full maintenance and reconstruction.

The analysis results indicate that road sections with severe damage and high traffic volumes require primary attention due to their significant impact on regional connectivity, economic activities, and road user safety. However, the Provincial/District Roads Management System (PKRMS) is unable to directly provide a priority scale, particularly when considering multi-aspect criteria such as economic impact and strategic connectivity.

Based on the PKRMS analysis, one of the road sections under the jurisdiction of the Surabaya Road and Bridge Management Unit (UPT PJJ Surabaya) identified as the top priority for repair is the Sumberwudi–Karang Geneng section (Link 108) due to its severe damage and high traffic volume.

3.2.2. Analysis Using AHP

The Analytical Hierarchy Process (AHP) method is used to give priority weight to criteria that influence decision-making (Machfudiyanto et al., 2019). The weights of the main criteria in the AHP analysis in this study are as follows:

1. **Physical Condition of the Road:** This criterion has the highest weight, indicating that the level of road deterioration is the most critical factor in determining priorities. Roads with severe damage such as large cracks, potholes, or deformation of the surface layer are given a high weight due to their impact on road user safety.
2. **Volume Capacity Ratio:** Roads with high daily traffic are given second priority. Roads connecting economic centers and urban areas have higher traffic volumes than roads in rural areas.
3. **Connectivity:** Roads that connect strategic areas, such as ports, airports, or industrial areas, receive a high weighting due to their important role in regional mobility.

4. Land Use: The contribution of roads to socio-culture, agriculture & plantations and industry)
5. Priority Areas of East Java Province: The role of roads in supporting the creation of priority areas in East Java Province.

The AHP analysis identified road physical condition as the most dominant criterion, followed by the volume capacity ratio (VCR) and connectivity. This finding indicates that road repairs should prioritize sections with severe damage and high traffic volumes.

Based on the AHP method analysis, one of the road sections in the Surabaya Road and Bridge Management Unit (UPT PJJ Surabaya) area identified as the top priority for repair is the Babat–Jombang Regency Border section (Link 105), due to its severe damage, high traffic volume, and its role as an inter-regency connectivity route in East Java Province.

3.2.3. Integration between PKRMS and AHP

The integration between PKRMS and AHP resulted in a more comprehensive prioritization of road treatments. The integration process include as follows:

1. Road Condition: Data from PKRMS is used to provide preliminary information on the level of physical deterioration of roads.
2. Multi-Criteria Prioritization: AHP results are used to set priorities based on a combination of factors of road condition, volume capacity ratio, connectivity, land use and priority areas of East Java Province.
3. Cost Estimation: Information from PKRMS related to cost estimation is adjusted to the priorities generated from AHP, so that the government can plan the budget more efficiently.

The integrated analysis indicates that road sections within the jurisdiction of the Surabaya Road and Bridge Management Unit (UPT PJJ Surabaya) with severe damage, high traffic volumes, and significant economic impact are prioritized for repair. The Sumberwudi–Karang Geneng road section (Link 108) was identified as the top priority for road maintenance based on the integration of PKRMS and AHP results, due to its severe damage and the combination of key factors, including road condition, volume capacity ratio, connectivity, land use, and the strategic priority area of East Java Province. The estimated cost required for repairing this road section is Rp. 16,475,545,104.98.

4. Conclusion

The priority ranking for road handling at UPT PJJ Surabaya road sections in East Java Province, using the Provincial/District Roads Management System (PKRMS) application combined with the Analytical Hierarchy Process (AHP) method, is as follows: Sumberwudi – Karang Geneng Road with a TPI score of 56, Peti'in Road (Lamongan Regency Border) – Karangcangkring (Lamongan Regency Border) with a TPI score of 53.7, Lamongan City Border – Mojokerto Regency Border Road with a TPI score of 34.2, Surabaya City Border – Driyorejo – Legundi Road with a TPI score of 32.7, Babat – Jombang Regency Border Road with a TPI score of 28.9, Mlirip – Mojokerto Regency Border Road with a TPI score of 27.6, Sukodadi – Sumberwudi Road with a TPI score of 24.2, Sidoarjo City Border – Krian Road with a TPI score of 17.9, Banjarwati – Peti'in Road with a TPI score of 10.4, Krian Bypass (Four-Way Intersection) – Krian (Five-Way Intersection) Road with a TPI score of 7.2, Mantup Road (Gajah Mada Road) with a TPI score of 3.7, Krian – Mojokerto Regency Border Road with a TPI score of 3.1, Legundi – Mojokerto Regency Border Road with a TPI score of 2.5,

Gunungsari Road with a TPI score of 2, Sepanjang – Taman Road with a TPU score of 1.5, Prabu Siliwangi Road with a TPI score of 1.4, and Lamong Rejo Road, Achmad Dahlan Road, Sunan Drajad Road, and Joyoboyo Road with a TPI score of 0.

The estimated costs for road handling at UPT PJJ Surabaya road sections in East Java Province using the PKRMS application combined with the AHP method are as follows: Sumberwudi – Karang Geneng Road Rp. 16,475,545,104.98, Peti'in Road (Lamongan Regency Border) – Karangcangkring (Lamongan Regency Border) Rp. 21,627,706,787.11, Lamongan City Border – Mojokerto Regency Border Road Rp. 109,713,882,080.08, Surabaya City Border – Driyorejo – Legundi Road Rp. 96,184,818,481.45, Babat – Jombang Regency Border Road Rp. 250,243,030,334.47, Mlirip – Mojokerto Regency Border Road Rp. 4,973,783,874.51, Sukodadi – Sumberwudi Road Rp. 21,683,874.51, Sidoarjo City Border – Krian Road Rp. 123,745,468,017.58, Banjarwati – Peti'in Road Rp. 27,300,701,416.02, Krian Bypass (Four-Way Intersection) – Krian (Five-Way Intersection) Road Rp. 8,041,752,075.20, Mantup Road (Gajah Mada Road) Rp. 8,819,943,908.69, Krian – Mojokerto Regency Border Road Rp. 84,209,680,023.19, Legundi – Mojokerto Regency Border Road Rp. 31,621,343,078.61, Gunungsari Road Rp. 1,223,250,732.42, Sepanjang – Taman Road Rp. 436,775,695.80, Prabu Siliwangi Road Rp. 1,048,261,596.68, while no costs are allocated for Lamong Rejo Road, Achmad Dahlan Road, Sunan Drajad Road, and Joyoboyo Road.

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