



Assessing the Feasibility of Performance-Based Contract Implementation in Neighborhood Road Maintenance in Tangerang Regency

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ABSTRACT: This study aims to examine the feasibility of implementing a Performance-Based Contract (PBC) for neighborhood road maintenance works in Tangerang Regency. The existing implementation of neighborhood road works is still dominated by conventional volume-based contracts through small-scale direct procurement packages. Although this mechanism is administratively simple and compliant with current procedures, it still faces several limitations, including high administrative workload, limited post-construction performance monitoring, and the absence of contractor responsibility for maintaining road service quality after the work is completed. This research applied a descriptive qualitative approach supported by literature review, document analysis, interviews, field observation, Likert-scale feasibility assessment, and SWOT analysis. The feasibility assessment focused on three main aspects: regulatory readiness, administrative readiness, and performance indicators. The results show that the regulatory aspect scored 87.33%, the administrative aspect scored 73.89%, and the performance indicator aspect scored 83.33%. Overall, the feasibility index reached 81.59%, which is categorized as highly feasible. These findings indicate that PBC has strong potential to be developed for neighborhood road maintenance in Tangerang Regency. However, its implementation should be carried out gradually through technical guidelines, internal standard operating procedures, baseline road condition data, measurable performance indicators, monitoring and verification mechanisms, performance-based payment arrangements, and pilot projects before wider implementation.

KEYWORDS: Performance-Based Contract, Neighborhood Road, Road Maintenance, Feasibility Study, Tangerang Regency

Received 14 June., 2026; Revised 27 June, 2026; Accepted 29 June., 2026 © The author(s) 2026.

Published with open access at www.questjournals.org

I. INTRODUCTION

Neighborhood roads are an important part of local infrastructure because they provide direct access to residential areas, public facilities, social facilities, and local economic activities. The quality of these roads affects mobility, accessibility, safety, and the overall quality of life of residents. Therefore, neighborhood road maintenance should not only focus on completing physical work, but also on ensuring that road performance can be maintained after the work is completed.

In many infrastructure projects, conventional contracts are still commonly used. This system generally emphasizes input or work volume, where payment is based on the quantity of completed work. However, this approach often provides limited incentives for contractors to maintain the long-term performance of infrastructure. In contrast, Performance-Based Contract (PBC) offers a different approach by linking payment to the achievement of certain service levels or performance indicators. Under this system, contractors are not only responsible for completing the work, but also for maintaining the required performance during the contract period.

In Tangerang Regency, neighborhood road maintenance is commonly implemented through direct procurement mechanisms with relatively small contract values, generally below IDR 200 million per package. This mechanism is considered simple, fast, and administratively practical. However, the implementation of many small packages also creates several challenges, such as a high administrative burden, limited quality

control, short implementation periods, and the absence of contractor responsibility for post-maintenance road performance. As a result, repeated road damage may still occur even after maintenance works have been completed.

The need to improve the effectiveness and efficiency of neighborhood road maintenance requires a more performance-oriented contracting model. PBC is considered relevant because it shifts the focus from merely completing work volume to achieving measurable outcomes. Through performance indicators, monitoring mechanisms, and payment arrangements based on service levels, PBC has the potential to encourage better quality control, improve contractor accountability, and support more sustainable road asset management.

However, the application of PBC at the local government level requires careful assessment. Its implementation depends not only on technical readiness, but also on regulatory support, administrative capacity, institutional readiness, performance indicators, monitoring systems, and the ability of contractors to meet service-level requirements. Therefore, a feasibility study is needed to determine whether PBC can be realistically applied to neighborhood road maintenance works in Tangerang Regency.

Based on this background, this study aims to assess the feasibility of implementing Performance-Based Contract for neighborhood road maintenance in Tangerang Regency. Specifically, this study examines the existing condition of neighborhood road maintenance implementation, analyzes the feasibility of PBC based on regulatory, administrative, and performance indicator aspects, and identifies the strengths, weaknesses, opportunities, and threats that may influence its implementation. The results of this study are expected to provide recommendations for local government in developing a more efficient, accountable, and sustainable road maintenance contracting system.

II. LITERATURE REVIEW

2.1 Neighborhood Roads and Road Maintenance

Neighborhood roads are part of the local road network that function to provide access within residential areas, including access to housing, public facilities, social facilities, and other local activities. Unlike arterial or collector roads, neighborhood roads mainly serve short-distance movements and support daily mobility at the community level. Therefore, the quality of neighborhood roads is closely related to accessibility, safety, comfort, and the quality of residential environments.

Road maintenance is an important activity to ensure that roads remain functional during their service life. Maintenance activities may include routine maintenance, periodic maintenance, minor works, rehabilitation, and special works depending on the level of road damage and service needs. In the context of local government, road maintenance should be managed systematically so that damage can be identified early and handled before it develops into more serious structural damage.

2.2 Road Asset Management and Road Deterioration

Road infrastructure is a public asset that experiences gradual deterioration over time due to traffic loads, weather conditions, drainage problems, environmental factors, and limited maintenance interventions. Road asset management emphasizes the importance of maintaining road performance through a life-cycle approach. This approach aims to preserve road conditions, extend service life, and reduce long-term maintenance costs.

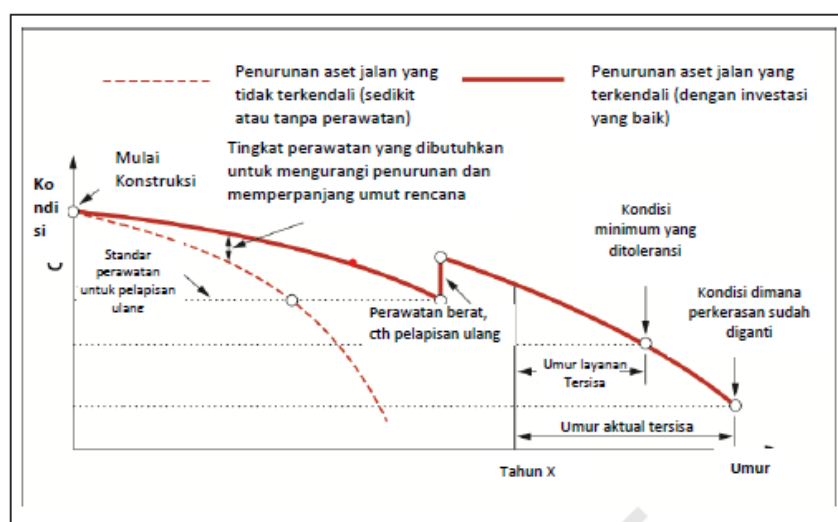


Figure 1. Typical Road Asset Deterioration Over Time

Source: Directorate General of Highways, Republic of Indonesia, Circular Letter No. 22/SE/DB/2021

Figure 1 illustrates that road conditions will decline more rapidly when maintenance is not carried out in a timely manner. Uncontrolled deterioration causes the actual service life of the road to become shorter than the planned service life. In contrast, proper and timely maintenance can keep road conditions within an acceptable service level until the end of the design period. This concept is important in the context of Performance-Based Contract because the contractor is encouraged to maintain road performance, not merely complete physical construction works.

2.3 Road Maintenance Cycle

Road infrastructure is a public asset that experiences gradual deterioration due to traffic loads, weather conditions, drainage problems, and limited maintenance interventions. Road asset management emphasizes the importance of maintaining road conditions through a life-cycle approach. This approach aims to preserve road performance, extend service life, and reduce long-term maintenance costs.

One of the important concepts in road maintenance management is the Plan–Do–Check–Act cycle. The planning stage includes identifying road conditions, determining priorities, and preparing maintenance programs. The implementation stage focuses on executing the maintenance works according to the plan. The checking stage involves inspection and evaluation of road conditions after maintenance. The action stage is used to improve future maintenance strategies based on evaluation results. This cycle supports a more continuous and performance-oriented road management system.

2.4 Performance-Based Contract in Road Maintenance

Performance-Based Contract is a contracting approach that emphasizes the achievement of specific service levels or performance indicators. In conventional contracts, payment is generally based on work volume or completed output. In contrast, PBC links payment to the ability of the contractor to meet predetermined performance standards during the contract period.

In road maintenance, PBC may include performance indicators such as pavement condition, pothole handling, drainage function, road shoulder condition, safety elements, cleanliness, and response time to road damage or public complaints. Through this mechanism, contractors are encouraged to apply more efficient methods, improve quality control, and prevent repeated road damage.

Table 1. Comparison between Conventional Contract and Performance-Based Contract

Aspect	Traditional Contracts: Force Account	Traditional Contracts: Civil Works by Private Contractors	PBCs
Common name	Force Account, executed by the government agency working as the contractor	Traditional civil works contracts executed by private contractors	PBCs executed by private contractors
Payment mode	Payment is made for the inputs used, such as fuel, labor, and materials.	Payment is made for work outputs, such as cubic meters of backfill and linear meter of pavement marking.	Payment is by lump sum, typically monthly lump-sum payments, if required service levels are fully achieved.
Contractors' capacity level required for maintenance strategy	Low	Medium	Medium to high
Contractors' motivation and responsibility	No profit motive, and little or no motivation for improving efficiency or ensuring outcomes, since full costs are paid or reimbursed.	Maximization of profits through maximization of work volume and efficient achievement of outputs, but limited responsibility for outcomes.	Maximization of profits through optimization of design, work, and inputs, while delivering the required outcomes with the minimum necessary work and input, and therefore at least cost.

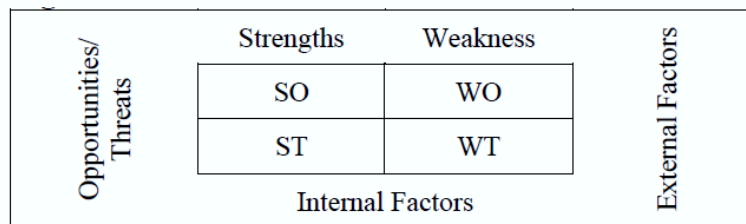
Source: World Bank Group, Quality Infrastructure Investment Partnership, and Japan Gov. (2022)

2.5 SWOT Analysis as a Feasibility Evaluation Framework

SWOT analysis is used to identify internal and external factors that may influence the implementation of PBC. Internal factors consist of strengths and weaknesses, such as institutional capacity, technical readiness, data availability, administrative procedures, and human resources. External factors consist of opportunities and threats, such as regulatory support, procurement policy direction, contractor capacity, budget availability, and possible resistance to changes in the contracting system.

In road maintenance, PBC may include performance indicators such as pavement condition, pothole handling, drainage function, road shoulder condition, safety elements, cleanliness, and response time to road

damage or public complaints. Through this mechanism, contractors are encouraged to apply more efficient methods, improve quality control, and prevent repeated road damage.



- SO strategies: taking advantage of opportunities.
- ST strategies: avoiding threats.
- WO strategies: introducing new opportunities by reduction of weaknesses.
- WT strategies: avoid threats by minimizing weaknesses.

Figure 3. SWOT Matrix

Source: SWOT analysis applications: An integrative literature review, Page 6

III. RESEARCH METHODOLOGY

This study used a descriptive qualitative approach supported by a feasibility assessment and SWOT analysis. The research was conducted in Tangerang Regency, Banten Province, focusing on neighborhood road maintenance works under the authority of the Department of Housing, Settlement, and Cemetery of Tangerang Regency. The object of this study was the feasibility of implementing Performance-Based Contract (PBC) as an alternative contracting model for neighborhood road maintenance.

The data used in this study consisted of primary and secondary data. Primary data were obtained through interviews, field observation, and respondent assessment. Secondary data were obtained from regulations, procurement documents, planning documents, technical standards, contract documents, road maintenance documents, and previous studies related to road maintenance and performance-based contracting. Data collection was conducted through document study, interviews, field observation, and a Likert-scale assessment.

Document study was used to examine the regulatory, administrative, and technical basis of neighborhood road maintenance. Interviews were conducted with selected respondents who had direct involvement in procurement, implementation, supervision, and evaluation of neighborhood road maintenance works. Field observation was carried out to obtain direct information regarding the physical condition of road works, field implementation methods, and post-maintenance conditions.

To support the second research objective, namely assessing the feasibility of PBC implementation, a five-point Likert scale was used. The assessment focused on three main aspects: regulatory readiness, administrative readiness, and performance indicators. The Likert-scale results were used as supporting data to strengthen the descriptive qualitative analysis, not as the main quantitative analysis.

Table 2. Likert Scale and Feasibility Category

Assessment Component	Description
Likert scale score	5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

Source: Sugiyono. (2021). Quantitative, qualitative, and R&D research methods. Alfabeta.

The respondents' Likert-scale scores were calculated by summing each response score and comparing it with the maximum possible score. The result was then converted into a percentage to determine the feasibility level of implementing Performance-Based Contract (PBC). This conversion allows the score to be interpreted into qualitative categories.

In this study, the feasibility index was used to classify each assessed aspect, namely regulatory, administrative, and performance indicator aspects, into five categories: very infeasible, infeasible, moderately feasible, feasible, and highly feasible.

Table 3 Feasibility Index Category

Index (%)	Category
0–20	Very Infeasible
21–40	Infeasible
41–60	Moderately Feasible
61–80	Feasible
81–100	Highly Feasible

Source: Suhardi Rahman & Vitalocca (2021)

Respondents were selected using purposive sampling because this study required in-depth information from parties who had direct knowledge, experience, and involvement in the project cycle of neighborhood road maintenance. The respondents consisted of six key actors representing the owner, technical implementation, procurement, supervision, and service provider perspectives.

The collected data were analyzed using descriptive analysis, feasibility assessment, and SWOT analysis. Descriptive analysis was used to explain the existing condition of neighborhood road maintenance implementation in Tangerang Regency. The feasibility assessment was used to measure the readiness of PBC implementation based on regulatory, administrative, and performance indicator aspects. SWOT analysis was used to identify strengths, weaknesses, opportunities, and threats that may influence PBC implementation. The combination of these methods was used to formulate practical and gradual strategies for implementing Performance-Based Contract in neighborhood road maintenance works in Tangerang Regency.

IV. RESULTS AND DISCUSSION

4.1 Existing Condition of Neighborhood Road Maintenance in Tangerang Regency

The first research objective was to identify the existing condition of neighborhood road maintenance works in Tangerang Regency. Based on the study results, neighborhood road maintenance is routinely implemented by the Tangerang Regency Government through the Department of Housing, Settlement, and Cemetery. The works are generally carried out in residential areas as part of the improvement of housing infrastructure, facilities, and utilities. This indicates that neighborhood roads are not only treated as transportation infrastructure, but also as an important component of residential service quality.

Each year, Tangerang Regency implements approximately 150 to 200 neighborhood road maintenance packages distributed across several districts. These packages are generally implemented through a direct procurement mechanism, with a maximum package value of IDR 200 million. The works commonly include paving block, hotmix, and concrete pavement, with road widths ranging from 3 to 10 meters and varying road lengths depending on field conditions. The implementation period is generally around 30 calendar days. This pattern shows that the existing system is relatively simple and familiar to local government officials and service providers, but it also creates challenges because the works are fragmented into many small packages.

From the administrative perspective, the existing implementation is supported by several basic documents, such as the terms of reference, cost estimate, technical drawings, procurement invitation, contract or work order, supervision reports, and handover documents. These documents show that the administrative foundation of neighborhood road maintenance is already available. However, the current documents are still mostly designed for conventional contracts and physical output completion. They have not fully included performance indicators, baseline road condition data, performance verification forms, response time requirements, or payment deductions based on service-level achievement.

Institutionally, neighborhood road maintenance is managed under the Department of Housing, Settlement, and Cemetery, particularly through the Housing Division. The governance process begins with community proposals, Musrenbang proposals, and other planning inputs. These proposals are then processed through internal disposition, data collection, field survey, technical verification, budgeting, procurement, implementation, supervision, and handover. This process shows that the institutional workflow has already been established, but it is still mainly focused on annual planning and construction completion.

The supervision mechanism has also been implemented through existing procedures. Before construction begins, coordination is carried out with service providers, followed by location checking, preparation meetings, and Mutual Checking 0%. During the implementation stage, supervision focuses on work progress, conformity with technical specifications, and completion of physical outputs. At the end of the work, the process is completed through inspection and handover. This mechanism shows that construction-period supervision already exists, but post-maintenance performance monitoring is still limited. After the work is handed over, the road condition is not yet systematically monitored based on measurable service indicators.

One of the important findings in the existing system is the presence of public complaints regarding road damage after maintenance works are completed. The complaints include cracks in concrete pavement,

potholes in hotmix pavement, rutting or wheel path deformation in hotmix pavement, and damage to road supporting facilities such as U-Ditch. In 2025, hotmix works recorded the highest number of complaints, followed by concrete works and U-Ditch works. This indicates that road surface quality, especially hotmix and concrete pavement, should become a major concern in post-maintenance performance evaluation.

Based on these findings, the main problem of the existing system is not the absence of administrative procedures. The existing system already has regulations, institutional structure, planning procedures, supervision procedures, technical documents, contract documents, supervision reports, and handover documents. The main problem lies in the limited orientation toward post-maintenance road performance. The success of the work is still mostly assessed based on physical completion, volume realization, compliance with specifications, and administrative handover. Meanwhile, the sustainability of road performance after the work is completed has not yet become the main basis of contract evaluation.

Therefore, the existing condition of neighborhood road maintenance in Tangerang Regency shows both readiness and gaps. The readiness can be seen from the availability of routine implementation experience, administrative documents, institutional roles, and field supervision practices. The gaps can be seen from the absence of a continuous road condition database, limited post-maintenance monitoring, the lack of performance-based indicators in contract documents, and the absence of contractor responsibility for maintaining road service levels after the work is completed. These findings provide the basis for considering Performance-Based Contract as an alternative model to improve accountability, service quality, and sustainability in neighborhood road maintenance.

4.2 Feasibility of Performance-Based Contract Implementation

The second research objective was to assess the feasibility of implementing Performance-Based Contract (PBC) for neighborhood road maintenance works in Tangerang Regency. The feasibility assessment was conducted based on three main aspects: regulatory readiness, administrative readiness, and performance indicators. These aspects were selected because the implementation of PBC requires not only a legal basis, but also adequate administrative capacity and measurable service-level indicators.

4.2.1 Regulatory Aspect

From the regulatory aspect, the implementation of PBC for neighborhood road maintenance is considered possible because government procurement regulations have provided room for performance-based contracting. Regulation of the National Public Procurement Agency (LKPP) No. 5 of 2022, particularly Appendix IX, recognizes performance-based contracts as contracts based on the achievement of certain service levels. This provides an initial legal basis for applying PBC to construction-related works, including neighborhood road maintenance, as long as the service levels and performance indicators are clearly defined.

At the local level, the Regent Circular Letter of Tangerang Regency No. 20 of 2024 concerning procurement consolidation also supports the possibility of developing PBC indirectly. The circular letter does not specifically regulate PBC, but it encourages the consolidation of similar procurement packages to improve efficiency, reduce transaction costs, and improve procurement quality. This is relevant because PBC is more suitable when several small road maintenance packages are consolidated into a larger work cluster with clear service-level obligations.

However, the regulatory finding also shows that PBC cannot be implemented only by referring to the general procurement framework. It still requires technical guidelines, internal standard operating procedures, performance-based contract documents, measurable indicators, monitoring mechanisms, verification procedures, payment arrangements, and disincentive provisions. Therefore, the regulatory aspect is highly feasible, but it still needs operational strengthening at the local government level.

Table 4. Regulatory Feasibility Score

Assessment Item	PPK	PPTK	PPBJ	Supervising Consultant	Contractor I	Contractor II	Total
R1	5	4	5	4	4	5	27
R2	5	4	5	4	4	5	27
R3	4	4	5	4	3	5	25
R4	4	4	5	4	3	5	25
R5	5	4	5	4	4	5	27
Total Score							131
Maximum Score							150
Percentage							87.33%
Category							Highly Feasible

Source: Processed by the author based on respondent interviews, 2026.

The regulatory aspect obtained a total score of 131 out of a maximum score of 150, or 87.33%. This result indicates that respondents generally assessed the regulatory aspect positively. The highest scores were found in R1, R2, and R5, each with a score of 27. This shows that respondents considered the existing procurement regulations to provide room for PBC implementation, LKPP Regulation No. 5 of 2022 to be usable as an initial basis, and local government to have the authority to prepare internal guidelines or SOP. Meanwhile, R3 and R4 received slightly lower scores, which indicates that respondents were still cautious about possible regulatory obstacles and the application of performance-based payment mechanisms.

4.2.2 Administrative Aspect

From the administrative aspect, the existing neighborhood road maintenance system in Tangerang Regency already has several basic administrative documents. These include terms of reference, cost estimates, owner estimates, technical drawings, procurement documents, contracts, supervision reports, and handover documents. These documents provide an initial foundation for developing PBC. However, the existing administrative system is still mainly oriented toward physical output and contract completion, not toward service-level achievement after the work is completed.

If PBC is implemented, the administrative system must be strengthened at all procurement stages. The planning stage must include technical studies, risk analysis, minimum service standards, baseline road condition data, and maintenance cost estimation. The procurement preparation stage must include performance specifications, performance indicators, monitoring data, response time, payment mechanisms, dispute settlement mechanisms, and a draft PBC contract. The contract implementation stage must include monitoring, verification, disincentives, and performance-based payment mechanisms.

Table 5. Administrative Feasibility Analysis for PBC Implementation

No.	Administrative Component	Existing Condition	Requirement for PBC
1	Procurement planning	Planning is conducted through activity proposals, preliminary surveys, verification, budgeting, SIPD input, and preparation of technical documents.	Planning must include specific needs identification, technical studies, price analysis, risk analysis, minimum service standards, baseline road condition data, and maintenance cost estimation during the service period.
2	Procurement preparation	Terms of reference, cost estimates, owner estimates, technical drawings, and supporting documents are already available.	Procurement documents must include performance specifications, performance indicators, monitoring data, response time, payment methods, dispute settlement mechanisms, and a draft PBC contract.
3	Selection preparation	Provider selection is already conducted in accordance with government procurement procedures.	Selection documents must include provider requirements, evaluation methods, technical qualifications, selection schedules, and documents suitable for performance-based contracts.
4	Selection implementation	Provider selection follows government procurement regulations based on the type and value of the work package.	The selection process must assess the provider's ability to meet performance indicators, technical capacity, managerial capacity, and maintenance capability during the contract period.
5	Contract implementation	Existing contracts regulate scope of work, contract value, implementation time, supervision, payment, and handover.	The contract must include service period, baseline road condition, performance indicators, periodic monitoring, performance verification, response time, disincentives, and performance-based payment.
6	Handover stage	Handover is conducted through inspection of work results and handover minutes as the basis for administrative completion and payment.	Handover must not only assess physical completion, but also the fulfillment of performance indicators, monitoring results, verification minutes, and maintenance obligations during the service period.

Source: Processed by the author based on respondent interviews and LKPP Regulation No. 5 of 2022, Appendix IX, 2026.

The administrative aspect was then assessed using a Likert-scale questionnaire. The results show that this aspect received a total score of 133 out of a maximum score of 180, or 73.89%. This means that the administrative aspect is categorized as feasible. The result shows that the existing administrative system can support the initial development of PBC, but several instruments must still be strengthened.

Table 6. Administrative Feasibility Score

Assessment Item	PPK	PPTK	PPBJ	Supervising Consultant	Contractor I	Contractor II	Total
A1	4	4	4	4	3	4	23
A2	4	3	4	4	3	4	22
A3	4	4	4	3	3	4	22
A4	3	3	3	3	4	4	20
A5	4	4	4	4	3	4	23
A6	4	4	4	4	3	4	23
Total Score							133
Maximum Score							180
Percentage							73.89%
Category							Feasible

Source: Processed by the author based on respondent interviews, 2026.

The highest scores were found in A1, A5, and A6, each with a score of 23. This indicates that the existing documents can still be developed to support PBC, the existing supervision system has the potential to be directed toward performance-based monitoring, and PBC is considered capable of reducing administrative workload caused by many small work packages. The lowest score was found in A4, with a score of 20, which relates to the administrative capacity of service providers. This indicates that respondents were still cautious about the readiness of local contractors to understand and implement performance-based contracts. Therefore, administrative readiness must be strengthened through SOP preparation, PBC document formats, human resource capacity building, provider socialization, and clearer monitoring and payment mechanisms.

4.2.3 Performance Indicator Aspect

The performance indicator aspect was assessed to determine whether neighborhood road maintenance works can be measured based on clear, measurable, and verifiable indicators. In the existing conventional system, work success is generally assessed from the completion of work volume, conformity with technical specifications, and administrative handover. In contrast, PBC requires the contractor to maintain a certain service level during the contract period.

The study found that several technical documents are already available, such as terms of reference, cost estimates, technical drawings, supervision reports, and work documentation. However, these documents do not yet fully regulate post-maintenance performance indicators, such as road surface damage, potholes, cracks, rutting, drainage function, response time, provider reporting, and performance verification. Therefore, technical documents must be adjusted so that they can be used not only for physical implementation, but also for measuring service performance during the maintenance period.

Table 7. Performance Indicator Feasibility Analysis for PBC Implementation

No.	Performance Indicator Component	Existing Condition	Requirement for PBC
1	Initial road condition data or baseline	Initial data are available through surveys, photos, measurements, drawings, supervision reports, and public complaints, but they are not yet arranged as a standardized baseline.	A standardized baseline is needed, including location, road length and width, pavement type, surface condition, damage points, drainage condition, photo documentation, and maintenance history.
2	Objective road performance indicators	Road performance is still mostly assessed through visual supervision, work documentation, and handover results.	Objective, simple, and verifiable indicators are needed, such as road surface condition, damage level, surface peeling, service comfort, and minimum service thresholds.
3	Potholes	Potholes can already be identified through field supervision and public complaints, but they are not yet used as contract performance indicators.	Pothole indicators are needed based on severity, location, dimension, photo documentation, and response time.
4	Road cracks	Cracks are found in neighborhood road works, but they are not yet specifically measured as post-maintenance performance indicators.	Crack indicators are needed based on severity, damage development pattern, photo documentation, and handling requirements.
5	Rutting or wheel-path deformation	Rutting can be visually identified, but it is not yet used as a basis for provider performance evaluation.	Rutting indicators are needed based on severity, visual inspection, field measurement if needed, documentation, and handling obligations.
6	Road drainage	Drainage or U-Ditch is part of road supporting facilities, but it is not always	Drainage indicators are needed, including flow condition, channel damage, blockage, dimension,

No.	Performance Indicator Component	Existing Condition	Requirement for PBC
		assessed as a road service performance indicator.	waterlogging, and field documentation.
7	Road supporting facilities	Supporting facilities may be included in work packages, but not all are included in performance evaluation indicators.	Supporting facilities included in the contract must be defined, along with minimum condition standards during the service period.
8	Road condition monitoring during service period	Monitoring is mostly carried out through work supervision, public reports, and incidental inspections.	Periodic monitoring is needed through scheduled inspections, incidental inspections based on public reports, damage records, photo documentation, and follow-up priorities.
9	Performance verification	Verification is still oriented toward physical progress, installed volume, work quality, and handover.	Objective performance verification is needed through verification minutes, monitoring reports, damage data, field photos, damage measurements, follow-up recommendations, and performance achievement recapitulation.
10	Payment deductions or sanctions	Existing contracts do not directly link payment with performance indicators.	Payment must be linked to performance achievement, including deductions, penalties, disincentives, or re-maintenance obligations when indicators are not fulfilled.

Source: Processed by the author based on respondent interviews, LKPP Regulation No. 5 of 2022, and the CRMS Road Maintenance Guidelines, 2026.

The performance indicator aspect obtained a total score of 250 out of a maximum score of 300, or 83.33%. This means that this aspect is categorized as highly feasible. The result shows that most respondents agreed that neighborhood road performance can be measured through certain indicators, as long as the indicators are clearly formulated and can be verified in the field.

Table 8. Performance Indicator Feasibility Score

Assessment Item	PPK	PPTK	PPBJ	Supervising Consultant	Contractor I	Contractor II	Total
K1	4	4	4	4	4	4	24
K2	4	4	4	4	4	4	24
K3	4	5	4	5	5	5	28
K4	4	5	4	5	5	5	28
K5	4	4	3	4	4	4	23
K6	4	5	4	4	4	4	25
K7	4	4	3	4	4	4	23
K8	4	5	4	5	4	4	26
K9	3	4	4	4	4	4	23
K10	5	4	4	5	4	4	26
Total Score							250
Maximum Score							300
Percentage							83.33%
Category							Highly Feasible

Source: Processed by the author based on respondent interviews, 2026.

The highest scores were found in K3 and K4, each with a score of 28. This shows that potholes and road cracks are considered the easiest indicators to use in assessing contractor performance. These indicators are visually identifiable, measurable, easy to document through photographs, and often become the focus of supervision and public complaints. Meanwhile, K5, K7, and K9 received relatively lower scores, each with a score of 23. These items relate to rutting, supporting facilities, and performance verification. This finding indicates that these indicators still require stronger technical definitions and verification mechanisms before being applied in PBC.

4.2.4 Final Feasibility Assessment

The final feasibility assessment summarizes the results of the three main aspects: regulatory readiness, administrative readiness, and performance indicators. The results show that regulatory readiness and

performance indicators are categorized as highly feasible, while administrative readiness is categorized as feasible. This means that PBC has a strong basis for development in Tangerang Regency, but its implementation still requires gradual preparation.

Table 9. Final Feasibility Assessment of PBC Implementation

No.	Feasibility Aspect	Obtained Score	Maximum Score	Percentage	Feasibility Category	Main Finding
1	Regulatory aspect	131	150	87.33%	Highly feasible	Regulations provide room for PBC implementation, but local technical guidelines or internal SOP are still needed.
2	Administrative aspect	133	180	73.89%	Feasible	Basic documents are available, but PBC document formats, role division, monitoring, verification, and payment mechanisms need to be strengthened.
3	Performance indicator aspect	250	300	83.33%	Highly feasible	Performance indicators can be formulated, but baseline data, damage classification, monitoring methods, and clear verification mechanisms are needed.
	Total	514	630	81.59%	Highly feasible	PBC can be developed by strengthening the contract model, SOP, baseline data, performance indicators, monitoring, and verification.

Source: Processed by the author based on respondent interviews and Likert-scale tabulation, 2026.

Based on the final recapitulation, the total score of PBC feasibility was 514 out of 630, or 81.59%. This result is categorized as highly feasible. Therefore, PBC can be considered a relevant alternative contracting model for neighborhood road maintenance in Tangerang Regency. However, this result does not mean that PBC can be implemented immediately for all work packages. The implementation should be carried out gradually through the preparation of a contract model, internal SOP, baseline road condition data, performance indicators, monitoring and verification mechanisms, provider socialization, and pilot projects in selected road segments or work clusters.

4.3 SWOT Identification of PBC Implementation

The SWOT analysis was conducted to identify internal and external factors that influence the implementation of PBC in neighborhood road maintenance. Internal factors consist of strengths and weaknesses, while external factors consist of opportunities and threats. The strengths identified in this study include the local government’s experience in managing routine neighborhood road works, the availability of basic technical and administrative documents, the existence of an established organizational structure, and the experience of technical teams and local service providers.

The weaknesses include limited understanding of PBC, the absence of a sustainable road condition database, the lack of standardized baseline data, and the absence of specific SOP and monitoring formats for performance-based contracts. From the external side, opportunities include regulatory support, the need to improve road service quality, the use of digital documentation and monitoring technology, public complaints as field information, and the possibility of consolidating work packages into clusters. Meanwhile, the threats include diverse field conditions, potential differences in interpretation among parties, disputes over the causes of road damage, contractor concerns regarding additional responsibilities, and audit risks if documentation and technical evidence are incomplete.

Table 4. SWOT Matrix for PBC Implementation

Internal / External Factors	Opportunities (O)	Threats (T)
Strengths (S)	SO Strategy: Use the local government’s experience, existing technical documents, established organizational structure, and local service provider capacity to develop a PBC model that fits the context of Tangerang Regency. Existing documents such as terms of reference, cost estimates, technical drawings, contracts, supervision reports, and handover documents can be used as an initial basis for PBC preparation.	ST Strategy: Use the existing institutional structure, field supervision experience, and available project documents to reduce implementation risks, avoid different interpretations, and strengthen technical evidence in case of audit or dispute.
Weaknesses	WO Strategy: Use regulatory opportunities, digital	WT Strategy: Minimize weaknesses and

(W)	documentation, public complaints, and package consolidation to overcome weaknesses by preparing internal SOP, baseline road condition data, monitoring forms, verification reports, and performance-based payment mechanisms.	avoid threats by starting with small-scale pilot projects, using simple and measurable indicators, strengthening contractor understanding, clarifying risk allocation, and improving documentation before wider implementation.
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Source: Author 2026

The SWOT results show that the implementation of PBC in Tangerang Regency is possible, but it requires careful preparation. The most appropriate strategy is a gradual implementation strategy through pilot projects. The pilot project should be supported by clear technical guidelines, baseline road condition data, measurable performance indicators, monitoring and verification procedures, risk allocation, and payment mechanisms based on service-level achievement. Therefore, PBC should not be applied directly on a large scale, but should be tested first in selected road segments or work clusters.

V. CONCLUSION

This study concludes that the existing implementation of neighborhood road maintenance in Tangerang Regency is still dominated by conventional volume-based contracts through direct procurement mechanisms with relatively small work packages. From the technical perspective, the works have been carried out based on planning documents and applicable specifications. However, the implementation is still mainly oriented toward physical completion rather than the achievement of post-maintenance road service performance. From the administrative and institutional perspectives, procurement, supervision, and handover procedures have been implemented according to existing regulations, but systematic post-maintenance monitoring and continuous road condition data management are not yet fully available.

The feasibility assessment shows that the implementation of Performance-Based Contract (PBC) for neighborhood road maintenance in Tangerang Regency is highly feasible to be developed. The regulatory aspect obtained 87.33%, the administrative aspect obtained 73.89%, and the performance indicator aspect obtained 83.33%. Overall, the feasibility index reached 81.59%, which is categorized as highly feasible. These results indicate that PBC has a strong potential to improve the accountability, efficiency, and sustainability of neighborhood road maintenance. Nevertheless, PBC should not be implemented directly for all work packages because several supporting elements still need to be strengthened.

The SWOT analysis shows that Tangerang Regency has several internal strengths, such as routine experience in implementing neighborhood road works, available technical and administrative documents, established institutional roles, and field supervision experience. However, several weaknesses remain, including limited baseline road condition data, the absence of specific PBC guidelines, limited post-maintenance monitoring, and the lack of performance-based payment mechanisms. External opportunities include regulatory support, procurement consolidation, digital monitoring, and the need to improve road service quality. Meanwhile, potential threats include contractor readiness, different interpretations of performance indicators, audit risks, and possible disputes over road damage responsibility.

Based on these findings, PBC can be considered a relevant alternative contracting model for neighborhood road maintenance in Tangerang Regency. Its implementation should be carried out gradually through the preparation of technical guidelines, internal standard operating procedures, baseline road condition data, measurable performance indicators, monitoring and verification mechanisms, performance-based payment arrangements, and capacity building for both government officials and service providers. The initial implementation should begin with a pilot project in selected road segments or small work clusters before being expanded to a wider scope.

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