Jurnal Manajemen Pelayanan Publik Vol. 10 No. 02, June 2026
http://dx.doi.org/10.24198/jmpp.v10i2.65548

Optimizing the Maintenance of City Parks by the Public Works and Spatial Planning Office of the City of Sukabumi

[a] M. Rijal Amirulloh; [b] Faisal Sani; [c] Ahmad Fadhilah; [d] Bunga Ayu Ambarwati; [e] Syifa Nurfauziah Kamal
[a b c d e] Public Administration Study Program, Faculty of Social Sciences, Universitas Muhammadiyah Sukabumi, Indonesia

ABSTRAK

Pertumbuhan perkotaan yang pesat menciptakan tantangan besar dalam pengelolaan taman kota. Penelitian ini bertujuan untuk: (1) mengevaluasi tingkat efektivitas pemeliharaan taman kota Sukabumi saat ini, (2) mengidentifikasi kendala operasional utama, dan (3) merumuskan rekomendasi perbaikan. Menggunakan pendekatan kualitatif dengan kerangka optimasi Siringoringo, data dikumpulkan melalui observasi, wawancara, dan dokumentasi dengan pejabat Seksi Taman. Hasil menunjukkan efektivitas pemeliharaan 88-92% namun menghadapi kendala signifikan: kekurangan personel (24 petugas untuk area luas), peralatan usang (skylift tahun 2003), dan anggaran terbatas (600-800 juta rupiah per tahun). Strategi saat ini meliputi pelatihan khusus petugas, pemilihan tanaman mudah perawatan, dan sumber pendanaan beragam melalui kemitraan Corporate Social Responsibility. Penelitian merekomendasikan perbaikan menyeluruh: penambahan personel, modernisasi peralatan, dan prosedur standar untuk mencapai pengelolaan taman kota optimal. Korelasi positif antara alokasi anggaran dan efektivitas pemeliharaan menegaskan pentingnya distribusi sumber daya yang memadai untuk keberlanjutan taman kota.

ABSTRACT

Rapid urban growth creates major challenges in city park management. This study aimed to: (1) evaluate current maintenance effectiveness at Sukabumi City parks, (2) identify key operational constraints, and (3) develop improvement recommendations. By applying a qualitative approach with Siringoringo's optimization framework, data were collected through observations, interviews, and documentation with officials from the Parks Section. Results indicated a maintenance effectiveness of 88-92%, yet the organization faced significant challenges: a staff deficit (24 officers for extensive coverage), outdated equipment (a skylift from 2003), and a limited budget (approximately 600-800 million rupiah annually). Current strategies include specialized staff training, easy-to-maintain plants, and diverse funding sources through Corporate Social Responsibility partnerships. The study recommends comprehensive improvements, such as hiring more staff, equipment modernization, and standardized procedures to achieve optimal city park management. The positive correlation between budget allocation and maintenance effectiveness confirms the importance of adequate resource distribution for sustainable urban parks.

ARTICLE HISTORY
Submited: 21 07 2025
Revised: 09 10 2025
Accepted: 15 04 2026
Published: 03 06 2026

KATA KUNCI
Pemeliharaan Taman; Optimasi Pelayanan Publik; Ruang Terbuka Hijau; Pemerintah Daerah

KEYWORDS
Park Maintenance; Public Service Optimization; Green Open Space; Local Government

INTRODUCTION

The phenomenon of accelerating urbanization in Indonesia results in significant complexity in metropolitan spatial administration, especially in the provision and conservation of urban green open spaces. This challenge reflects global patterns where cities must balance development pressures with environmental sustainability. McDonald et al. (2023) in People and Nature demonstrated that achieving both urban density and nature conservation requires strategic green interventions that integrate ecological benefits with urban development goals. Their international analysis reveals that successful green infrastructure implementation depends on systematic planning approaches that address multiple urban functions simultaneously while maintaining environmental quality standards.

Correspondence M. Rijal Amirulloh Email : mrijalamirulloh@ummi.ac.id

Urban parks, as an integral component of the urban ecosystem, have a strategic function in maintaining environmental homeostasis, optimizing people's quality of life, and supporting the sustainable development paradigm. Zhang et al. (2024) indicated that urban park space environments significantly impact national health through multiple pathways, including improvement of physical and mental health, facilitation of social engagement, and support for environmental sustainability. McDonald et al. (2023) emphasized that effective green space management in dense urban environments requires optimization strategies that balance conservation objectives with practical implementation constraints, particularly relevant for Indonesian cities experiencing rapid development.

The regulatory framework for green open space management in Indonesia has been comprehensively articulated through Regulation Number 26 of 2007 concerning Spatial Planning, which mandates that every urban spatial planning contains a blueprint for the provision and utilization of green open space. The implementation elaboration is described in the Regulation of the Minister of Public Works Number 05/PRT/M/2008 concerning Guidelines for the Provision and Utilization of Green Open Space in Urban Areas, which sets a minimum threshold for the provision of green open space of 30% of the urban territorial area, with a composition of 20% public green open space and 10% private green open space.

In the regional context, West Java Province, as an administrative entity with the highest demographic density of 50.345 million people, faces significant demographic pressure in the provision of green open space. This challenge reflects broader regional patterns documented across tropical Southeast Asia. Richards et al. (2017) in Landscape and Urban Planning stated that population density and wealth significantly impact both the quantity and structure of urban green space in tropical Southeast Asian cities. Their comprehensive regional analysis reveals that high population density creates substantial pressure on green space provision, while economic factors influence the accessibility and maintenance quality of urban green infrastructure.

Data from the West Java National Waste Management Information System in 2022 indicated a substantial disparity in the achievement of providing green open space between districts/cities, mirroring the regional inequalities identified by Richards et al. (2017) across Southeast Asian urban areas. Sukabumi City showed relatively optimal achievement with the percentage of green open space reaching 8.82% of the total area of 48.20 km², or an area of 4.25004 km². However, this achievement is still a deficit from the ideal target of 30% set in national regulations, consistent with Richards et al. (2017) findings regarding Southeast Asian cities that typically struggle to maintain adequate green space ratios under combined demographic and economic pressures.

Sukabumi City Government has demonstrated a strong commitment in the administration of green open space through the Sukabumi City Regional Regulation Number 2 of 2015 concerning the Provision and Utilization of Green Open Space. This regulation is a response to Regulation Number 26 of 2007, whose purpose is to overcome the impact of population growth and development, while maintaining the harmony and balance of the regional environment. Wicaksono (2019) emphasized that effective implementation of public policies requires transformation from traditional administrative approaches toward New Public Service principles that prioritize citizen engagement and collaborative governance. Based on data from the Public Works and Spatial Planning Office of Sukabumi City in 2022, there are two primary city parks as the focus of management: Alun-Alun City Park with an area of 5,990 m² and Taman Kota Lapang Merdeka with an area of 23,425 m², resulting in a total coverage of 29,415 m².

The administration and conservation of city parks in Sukabumi is the responsibility of the Parks Section, which is structurally in the Field of Planning, Construction Services, and Landscaping, by

the Sukabumi Mayor Regulation Number 144 of 2022 concerning the Position, Organizational Structure, Main Duties, Functions, and Work Procedures of the Public Works and Spatial Planning Office. However, the implementation of urban park maintenance faces multiple challenges that hinder the optimization of functionality, including limited human resources, budget constraints, and weak supervision of deviations in the function of city parks, especially in the Merdeka Field area which experiences commercial utilization irregularities that are not in accordance with the Sukabumi Mayor Regulation Number 4 of 2017 concerning the Use of Merdeka Fields. Based on these problems, the formulation of this research problem is: "How to optimize the maintenance of city parks by the Public Works and Spatial Planning Office of Sukabumi City?" This research employs Hotniar Siringoringo's optimization theory framework, which analyzes three key dimensions: objectives (maximization and minimization), decision alternatives (effectiveness and efficiency), and resource limitations (supporting resources and human resources). Bryson & George (2020) supported this approach by emphasizing that strategic management in public administration requires systematic integration of strategic thinking, stakeholder engagement, and resource optimization to create sustainable public value. The research aims to analyze and describe the optimization of urban park maintenance, identify the determinants of maintenance effectiveness, and formulate strategic recommendations for improving the quality of future maintenance.

Literature Review

Research on optimizing the maintenance of green open spaces, especially urban parks, has been the focus of attention of various researchers in recent years. This is in line with the increasing awareness of the importance of the existence of green open spaces in sustainable urban life. Forasidah (2021) conducted research on optimization in the management of public green open space in city parks in Banjarbaru City using a mixed methods approach with Henry Fayol's theory. The research uses three main dimensions, namely planning, utilization, coaching, and supervision. The findings of the study show that the efforts of the Banjarbaru City government in optimizing the management of public green open space have gone well through the implementation of green planning and design.

Anzani (2021) examined the maintenance of green open space by the Public Works and Spatial Planning Office of the City of Pekanbaru with a qualitative approach using Sofjan Assauri's theory. The research focuses on three dimensions of maintenance: preventive maintenance, corrective maintenance, and damage maintenance. The results of the study revealed that the main obstacles were the absence of Standard Operating Procedures (SOPs) and the lack of maintenance officers. Purwanti (2022) conducted a literature review to maximize the function of city parks as public open spaces using ecological theory based on the Regulation of the Minister of Public Works Number 05/PRT/M/2008. This study analyzes four main dimensions: ecological, socio-cultural, aesthetic, and economic. The results of the study show that green open space in urban areas (RTHKP) has not been utilized optimally in its ideal function.

Recent studies in public service management have emphasized the importance of optimizing public resource allocation for green space maintenance, with growing international attention to spatial equity considerations. Yutian et al. (2024) in Landscape and Urban Planning investigated spatial access equity of urban green spaces across Chinese cities, revealing significant inequality with a Gini coefficient of 0.67 at community, subdistrict, and district levels. Their comprehensive analysis demonstrates that carrying capacity—defined by greenspace area and type—serves as the primary determinant of

accessibility, while socioeconomic factors significantly influence distribution patterns. The study found that community parks particularly struggle to serve disadvantaged groups due to insufficient supply, while comprehensive parks face general access inequalities due to high public demand exceeding available capacity.

This international evidence provides crucial comparative context for municipal green space management challenges. Marlian et al. (2021) in their research published in Jurnal Manajemen Pelayanan Publik examined the evaluation of policy implementation on public service performance, highlighting that effective resource management requires systematic monitoring and evaluation frameworks. Yogyandaru & Mayasari (2020) in Jurnal Manajemen Pelayanan Publik analyzed public policy implementation in urban management, demonstrating that successful public service delivery requires integration between policy formulation and operational capacity. Handrian et al. (2024) in Jurnal Manajemen Pelayanan Publik examined decision processes in public service innovation, emphasizing that effective service optimization requires systematic negotiation and stakeholder engagement. These Indonesian studies align with the framework of Yutian et al. (2024) by demonstrating that local government agencies must balance resource constraints with service quality expectations while addressing spatial inequalities in infrastructure maintenance services.

Zou et al. (2024) provided complementary insights into urban park assessment methodologies by demonstrating how online review data can effectively evaluate park management quality and user satisfaction. Their study of urban park equity in Beijing's Chaoyang District revealed that users prioritize convenience and cleanliness of public facilities, with recreational quality significantly influencing park distribution equity. The research demonstrated that areas near Beijing's initial greenbelt zone showed improved accessibility, emphasizing the critical role of strategic maintenance allocation in achieving equitable park services. This methodology offers valuable implications for municipal agencies seeking data-driven approaches to optimize maintenance resource distribution and monitor service quality outcomes.

Public administration in the context of green open space management focuses on two critical aspects: public service delivery and resource management optimization, operating within complex urban governance systems. Keil (2020) in Urban Studies provided a comprehensive framework for understanding urban political ecology in contemporary cities, emphasizing that effective urban management requires recognition of the interconnected political, ecological, and social dimensions that shape municipal service delivery. This political ecology perspective is particularly relevant for park maintenance, where resource allocation decisions reflect broader governance dynamics and policy priorities within urban administrative structures.

Building on this systemic understanding, effective resource management requires frameworks that account for political and ecological complexities. Marlian et al. (2021) emphasized that systematic monitoring and evaluation frameworks must consider these multidimensional aspects, particularly in infrastructure maintenance services. Roberts & Hamilton Edwards (2023) in Public Administration Review demonstrate that strategic management in public organizations requires portfolio management approaches that integrate risk assessment with public value creation, particularly in resource-constrained environments where political and ecological considerations intersect. Bryson & George (2020) defined strategic management in public administration as the systematic process of creating public value through strategic thinking, acting, and learning, emphasizing

stakeholder engagement and resource optimization.

Wicaksono (2019) argued that transforming the New Public Service requires fundamental reform in public management approaches, emphasizing citizen-centered service delivery and collaborative governance. This resource coordination aspect becomes particularly complex in park maintenance contexts where limited budgets, personnel, and equipment must be optimized within broader urban political ecology systems that influence service quality standards. Yogyandaru & Mayasari (2020) identified that local government agencies must balance resource constraints with service quality expectations, particularly in infrastructure maintenance services. In urban park maintenance contexts, this translates to strategic workforce allocation, equipment utilization optimization, and budget distribution that maximizes maintenance effectiveness.

Based on the literature review that has been described, it can be seen that previous studies have focused more on management aspects in general, maintenance from an operational technical perspective, or theoretical study of the function of urban parks. This research provides novelty by integrating the concept of optimizing Hotniar Siringoringo comprehensively in the context of urban park maintenance, especially in analyzing the role of the Public Works and Spatial Planning Office as an implementing institution. The uniqueness of this research lies in the approach that combines the dimensions of goals, alternative decisions, and resources in one complete analytical framework to optimize the maintenance of urban parks in Sukabumi City.

RESEARCH METHODS

This study uses a qualitative approach with a descriptive design to analyze the optimization of urban park maintenance by the Public Works and Spatial Planning Office of Sukabumi City. Afrizal (2014) defined qualitative research as a social science research method that collects and analyzes data in the form of human words and deeds without quantifying numerical data.

Data Sources and Data Collection Techniques

The unit of research analysis is the Public Works and Spatial Planning Office of Sukabumi City, especially the Landscaping Section under the Field of Planning, Construction Services, and Landscaping. The determination of informants uses the snowball sampling technique as explained by Neuman, beginning with initial criteria-based selection followed by referral expansion. The initial informant selection criteria include: (1) minimum 5 years of experience in park maintenance management, (2) direct involvement in operational decision-making, and (3) comprehensive knowledge of budget allocation and maintenance procedures. Starting with the Head of the Landscaping Section as the primary informant, the snowball process identified additional key informants, including 2 Maintenance Officers, 1 Budget Coordinator, and 1 Field Supervisor, resulting in a total of 5 informants. Data saturation was achieved after interviewing all identified informants when no new significant information emerged. The data collection technique uses triangulation methods that include participatory observation, in-depth interviews, and documentation to explore the informant's perspective on maintenance optimization.

Optimization Analysis Framework

Optimization analysis is conducted by three dimensions (Marlian et al., 2021): first, the objective dimension which includes aspects of maximizing effectiveness and minimizing obstacles; second, the alternative dimension of decisions, which includes effective and efficient alternatives; third, the dimension of limited resources which includes supporting resources and

human resources. (Bryson & George, 2020) emphasized that strategic management frameworks in public organizations must integrate systematic planning processes with stakeholder-centered approaches to achieve optimal public service outcomes. Handrian et al. (2024) supported this approach by demonstrating that decision processes in public organizations require structured negotiation stages to achieve optimal service innovation outcomes.

Quantitative Secondary Analysis

To strengthen the analysis, this study incorporates quantitative secondary data analysis examining the correlation between budget allocation and maintenance effectiveness. The correlation analysis uses the Pearson correlation coefficient formula:

$$r = \Sigma(Xi - \overline{X})(Yi - \overline{Y}) / \sqrt{[\Sigma(Xi - \overline{X})^2 \times \Sigma(Yi - \overline{Y})^2]}$$

Where: r = Pearson correlation coefficient; Xi = Budget allocation values (600–800 million rupiah); Yi = Maintenance effectiveness percentages (88–92%); $\overline{X}$ = Mean of budget allocation; $\overline{Y}$ = Mean of maintenance effectiveness. This quantitative analysis complements the qualitative findings by providing statistical evidence of the relationship between resource allocation and service quality outcomes. The correlation analysis helps validate the optimization framework by demonstrating the impact of financial resources on maintenance performance.

Data Validation and Analysis

Data validation is conducted through source triangulation and triangulation techniques to ensure the credibility of research findings. Data analysis follows an interactive model (Miles et al., 2014), which consists of three stages: data reduction, presentation of data in the form of a descriptive narrative, and concluding by verifying meaning from the perspective of the informant. The research was carried out at the office of the Public Works and Spatial Planning Office of Sukabumi City, located at Jalan Babakan Sirna No. 25, Warudoyong District, with a research period of four months from October to January.

RESULTS AND DISCUSSIONS

Characteristics of Research Locations

This research was carried out at the Sukabumi City Public Works and Spatial Planning Office, which is a local government entity with the authority to manage public works affairs, spatial planning, public housing, residential areas, and land. This agency is strategically located on Jalan Babakan Sirna No. 25, Warudoyong District, Sukabumi City, which makes it a coordination center for urban infrastructure development.

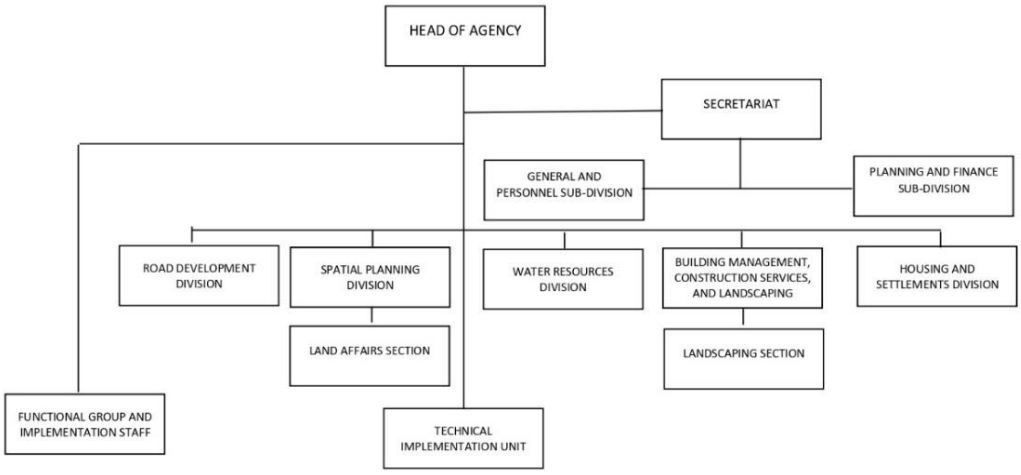
Figure 1.
Public Works and Spatial Planning Office of Sukabumi City

Source: Research Documentation (2024)

Figure 1 shows the Public Works and Spatial Planning Office of Sukabumi City building, which serves as the coordination center for urban infrastructure development, including city park maintenance operations.

The organizational structure of this service follows the hierarchy that has been stipulated in the Mayor Regulation Number 144 of 2022. The organization is led by the Head of the Agency, who oversees several strategic areas, including the Building Planning, Construction Services, and Landscaping Sectors, which specifically handle the maintenance of the city's green open spaces. This field has a Landscaping Section that plays a vital role in the implementation of urban landscaping policies, including planning, implementing, and evaluating park maintenance programs.

Figure 2.
Organizational Structure



Source: Mayor Regulation Number 144 of 2022

Figure 2 illustrates the organizational hierarchy with the Head of Agency overseeing strategic sectors, including Planning, Construction Services, and Landscaping which handles city park maintenance operations.

Based on applicable regulations, the main tasks of the agency include the preparation of technical policies, the implementation of development programs, and performance evaluation in the field of landscaping and green open spaces. The strategic functions carried out include the formulation of technical standards, cross-sectoral coordination, and the provision of public services related to urban landscaping management. The complexity of this task demands resource optimization and effective coordination between work units to achieve sustainable urban development goals.

Objective Dimension in the Context of Maximization

Analysis of the objective dimension shows that efforts to maximize the maintenance of urban parks have been implemented through various comprehensive strategies. Bryson & George (2020) emphasized that strategic management in public administration requires systematic approaches to maximize organizational effectiveness while optimizing resource utilization and stakeholder engagement. As explained by Marlian et al. (2021), optimization requires systematic resource management and performance monitoring to achieve satisfactory results. In this

context, the Head of Parks revealed that the aspect of landscaping has a fundamental role in the development of the urban environment, with a strategy that includes improving the quality of green open space and community welfare. The implementation of maximization can be seen from the specialization of the workforce based on competence, where there are three specialist officers and cleaning specialists. This approach optimizes the effectiveness of maintenance by utilizing the specific skills of each personnel. The use of machine technology in the maintenance process shows modernization efforts aimed at improving productivity and quality of work results.

The achievement of maintenance performance reaching 88-92% indicates relatively high effectiveness, although below the ideal 100% target due to plant diversity complexity requiring specific treatments. Variations in maintenance budgets between 600-800 million rupiah per year affect program effectiveness. Main challenges include limited nursery facilities, plant health centers, and high visitor volume pressure, especially at Lapang Merdeka and Alun-Alun, indicating the need for increased infrastructure and human resource capacity.

Minimization Strategies in Resource Optimization

The minimization dimension in optimizing the maintenance of urban parks is realized through an approach to the efficiency of limited resource use. The concept of minimization aims to achieve optimal results with minimal resources through systematic resource management. The implementation of this strategy can be seen from a clear division of labor between softscape (plant management) and hardscape (maintenance of the park building structure). Choosing plant types that are easy to care for, such as daffodils, is a strategy to minimize long-term maintenance burdens. This decision is based on considerations of operational cost efficiency and ease of maintenance, thereby reducing the intensity of maintenance interventions required. This approach is in line with the principle of sustainability in the management of public spaces, where the selection of landscape elements is adjusted to the available maintenance capacity.

Coordination between work units, although still facing commitment constraints, shows efforts to minimize duplication of work and optimize resource utilization. The division of duties between rangers, task forces, and regular officers reflects a specialization strategy that aims to maximize effectiveness by minimizing overlap in functions. Budget constraints force managers to optimize every available fund allocation. This encourages innovation in maintenance methods and prioritization of programs based on the impact generated. Despite facing financial constraints, efforts to maintain aesthetic standards and park functionality remain a top priority in the implementation of the minimization strategy.

Evaluation of Effective Decision Alternatives

Analysis of alternative effective decisions shows that the Public Works and Spatial Planning Office of Sukabumi City still needs to improve the formulation and implementation of park maintenance policies. Wicaksono (2019) stated that effective public management reform requires transforming traditional bureaucratic approaches toward citizen-centered service delivery, particularly in local government infrastructure management. Handrian et al. (2024) demonstrate that effective decision processes in public service innovation require systematic negotiation between stakeholders and clear communication channels to ensure optimal service delivery. The concept of effectiveness in this context refers to the ability to achieve desired goals optimally and measurably.

Identifying the need for a budget increase is an alternative strategic decision that needs to be considered, particularly in the context of contemporary fiscal pressures facing municipal

governments. Smith (2021) in Environment and Planning A examined the challenges of sustaining municipal parks under neoliberal austerity conditions, highlighting how local governments increasingly turn to commercialization and private partnerships as survival strategies amid reduced public funding. The study reveals that while such approaches can provide financial relief, they also raise critical concerns about public access equity and the fundamental nature of parks as public goods.

Drawing from Smith's (2021) analysis, the proposal to increase budget allocation to local governments, accompanied by the exploration of alternative funding sources through Corporate Social Responsibility (CSR) of private companies, represents a balanced approach to addressing Sukabumi's financial limitations while maintaining public interest priorities. However, Smith's (2021) findings suggested that such partnerships require careful structuring to avoid the contested commercialization that can undermine public accessibility and social equity functions of urban parks. This diversification of funding sources can provide greater flexibility in the implementation of comprehensive maintenance programs while preserving the essential public character of green spaces, particularly important given the current budget constraints of 600-800 million rupiah annually.

Naveed et al. (2025) provided critical insights into managing these public-private tensions by examining how wicked problems and value co-destruction can emerge in public service ecosystems when there are competing priorities between public and private stakeholders. Their framework emphasizes that successful navigation of public-private partnerships in municipal services requires systematic attention to potential value conflicts and the development of governance mechanisms that preserve public service integrity while leveraging private sector resources. This perspective is particularly relevant for CSR-based park maintenance funding, where maintaining public accessibility and service equity must be balanced against private sector interests and expectations.

Restructuring and adding a workforce are crucial alternative decisions given the high volume of visitors and the complexity of maintenance tasks. A study of the ratio of officers per coverage area shows the need to increase the number of personnel to maintain maintenance quality standards. With only 24 officers on duty at the Merdeka Field, there is a significant gap between the needs and availability of human resources. The development of training and capacity-building programs for maintenance officers is a long-term investment that can increase operational effectiveness. Improved technical competence in handling different types of plants and the operation of modern equipment will contribute to improving the quality of maintenance output.

Optimization of Efficient Decision Alternatives

Evaluation of the efficiency of alternative decisions shows that the management of the maintenance budget of 600-800 million rupiah per year has been implemented relatively optimally, although there is still room for improvement. This budget optimization challenge reflects broader international patterns of fiscal constraints affecting municipal park management. Xizi et al. (2024) in Landscape Architecture Frontiers analyzed the implications of fiscal austerity on public nature in Japan, demonstrating how local governments have implemented public-private partnerships (PPP) initiatives to ensure park sustainability while revitalizing urban spaces amid declining public budgets. Their study reveals that while such approaches alleviate government financial burdens, they require systematic governance frameworks to preserve public accessibility and prevent erosion of public interest.

Drawing from Xizi et al. (2024) international framework, efficient decision-making in Sukabumi's context must consider both immediate resource optimization and long-term sustainability of public access. Handrian et al. (2024) emphasized that efficient decision-making in public service delivery requires systematic negotiation processes that consider multiple stakeholder perspectives and resource constraints. Efficiency in this context should be measured not only from the ratio between inputs (resources used) and outputs (results achieved) but also from the sustainability of funding models and their impact on maintaining the public character of green spaces. Cost-effectiveness analysis shows the need for a comprehensive evaluation of each budget component to ensure targeted allocation while preserving essential public service functions.

Time efficiency requires careful coordination of maintenance activities including pruning, fertilizing, and cleaning, to avoid community disruption. Integrated scheduling systems can increase productivity and reduce downtime. Maintenance quality shows 88-92% success rates, indicating the need for stricter standardization and detailed SOPs. Risk management requires proactive approaches to anticipate weather factors, plant pests, and vandalism while maintaining program continuity.

Analysis of Supporting Resource Limitations

Evaluation of supporting resources revealed that there is a significant gap between operational needs and the availability of supporting facilities. Skylift vehicles that have been in operation since 2003 indicate conditions that are no longer adequate to meet modern maintenance standards. The age of the equipment that has reached two decades indicates the need for a replacement program and modernization of the operational fleet. The limited infrastructure of nursery and plant health centers has an impact on the ability to regenerate and treat diseased or damaged plants. These facilities are a crucial element in a sustainable maintenance system, where the availability of replacement seeds and plant rehabilitation capabilities can reduce long-term replacement costs. The development of this facility requires substantial infrastructure investment but provides a return on investment in the form of long-term operational efficiency.

Suboptimal fleet management indicates the need for systematic equipment maintenance and monitoring systems. Preventive maintenance schedules can extend equipment lifecycle and reduce repair costs. Integrated inventory management and computerized maintenance systems can facilitate scheduling, usage tracking, and data-driven performance analysis through digitalization.

Human Resource Optimization

Human resource analysis shows an imbalance between the workload that must be handled and the number of personnel available. With only 24 officers on duty at Merdeka Field, there is significant operational pressure, especially during peak usage periods such as weekends and holidays. The low ratio of officers per coverage area has an impact on maintenance quality and responsiveness to urgent maintenance needs. An organizational structure that divides tasks between regular officers, task forces, and rangers shows specialization efforts based on functions and competencies. However, the effectiveness of this division of tasks is still hampered by the limited number of personnel in each category. Regular officers who handle routine maintenance require greater support to be able to maintain the expected quality standards.

Human resource capacity development through training and skill development programs is not optimal, even though the complexity of park maintenance tasks requires specific technical competencies. Knowledge of the characteristics of different types of plants, pruning techniques,

pest control, and landscape maintenance requires structured continuous learning. Investment in human capital development can significantly increase productivity and output quality. Wicaksono (2019) argued that transforming public management requires fundamental changes in human resource development approaches, emphasizing continuous learning and collaborative governance to achieve effective public service delivery.

Performance management and career development systems for maintenance officers need to be developed to increase the motivation and retention of quality human resources. Park (2022) in Public Administration Review demonstrates that performance-related pay (PRP) effectiveness in the public sector depends significantly on three critical factors: target clarity, pay design appropriateness, and organizational context suitability. In the context of Sukabumi's park maintenance, this framework is particularly relevant given that performance indicators such as the current 88-92% effectiveness rate can be directly measured and improved through structured incentive systems.

Park (2022) findings indicated that performance-based rewards are most effective when organizational outcomes are easily observable, which aligns well with park maintenance operations where cleanliness standards, equipment functionality, and visitor satisfaction can be directly assessed. The study also emphasizes that successful PRP implementation requires careful attention to employee characteristics and organizational contexts, which is crucial for addressing the identified staff shortage (24 current vs. 35 optimal officers). Recognition programs and incentive systems based on measurable maintenance quality targets could serve dual purposes of improving individual productivity and enhancing staff retention through performance-driven motivation. This approach aligns with optimization theory that emphasizes the importance of alignment between individual goals and organizational objectives while providing practical mechanisms for closing the 8-12% performance gap identified in current maintenance operations.

Table 1.
Maintenance Effectiveness and Resource Allocation Analysis

Performance Indicator	Current Status	Optimal Target	Gap Analysis
Maintenance Effectiveness	88-92%	100%	8-12% deficit
Personnel Count	24 officers	35 officers	11 officers shortage
Annual Budget	600-800 million rupiah	1 billion rupiah	200-400 million deficit
Equipment Age (Skylift)	21 years	Maximum 10 years	11 years overdue
Officer-to-Area Ratio	1,226 m²/officer	840 m²/officer	386 m² excess coverage

Source: Public Works and Spatial Planning Office of Sukabumi City (2024)

Table 1 demonstrates significant gaps between current resource allocation and optimal requirements for effective park maintenance, particularly highlighting staffing deficiencies and equipment obsolescence that directly impact service quality outcomes. The analysis reveals that maintenance effectiveness falls short of optimal standards primarily due to insufficient human

resources and aging equipment, necessitating immediate strategic interventions to achieve sustainable park management.

CONCLUSIONS

The implementation of optimizing the maintenance of urban green open spaces by local government agencies faces insufficient staffing and outdated equipment that requires a comprehensive improvement approach. The correlation analysis shows a significant imbalance between institutional capacity and operational burden, reflected in the achievement of 88-92% effectiveness, which has not reached the optimal standard. The objective dimension shows a strategy of maximization through specialization of competence and minimization through the selective efficiency of landscape vegetation, but is hampered by the limitations of supporting infrastructure and obsolescence of operational equipment. Alternative strategic decisions lead to diversification of funding sources and restructuring of human resources. The main constraints in the form of staff shortages (24 officers for an extensive area) and deterioration of operational equipment indicate the urgency of systemic revitalization. The positive correlation between budget allocation and the level of maintenance effectiveness emphasizes the importance of optimizing the distribution of financial resources to achieve sustainability in the management of metropolitan green open spaces. The study recommends immediate implementation of three priority actions: increasing personnel to achieve optimal staff-to-area ratios, modernizing maintenance equipment particularly the aging skylift fleet, and establishing Corporate Social Responsibility partnerships to diversify funding sources beyond government budget allocations.

REFERENCES

Afrizal, M. A. (2014). Metode Penelitian Kualitatif: Sebuah Upaya Mendukung Penelitian Kualitatif dalam Berbagai Disiplin Ilmu. *Jakarta, Indonesia: PT Raja Grafindo Persada*.

Anzani, M. (2021). *Pemeliharaan Ruang Terbuka Hijau Oleh Dinas Pekerjaan Umum Dan Penataan Ruang Kota Pekanbaru*. Universitas Islam Riau.

Bryson, J., & George, B. (2020). Strategic management in public administration. In *Oxford research encyclopedia of politics*.

Forasidah, F. (2021). Optimization in the Management of A City Park's Public Green Open Space in the City of Banjarbaru. *PubBis*, *5*(2), 124–138.

Handrian, E., Putera, R. E., Asrinaldi, A., & Zetra, A. (2024). The Negotiation Stage: Decision Process of Public Service Innovation for Community Complaints in Pekanbaru. *Jurnal Manajemen Pelayanan Publik*, *8*(2), 460–473.

Keil, R. (2020). An urban political ecology for a world of cities. *Urban Studies*, *57*(11), 2357–2370.

Marlian, S., Sumadinata, W. S., & Sari, D. S. (2021). The Evaluation of Policy Implementation on ASN Performance Appraisal System. *Jurnal Manajemen Pelayanan Publik*, *4*(2), 177–195.

McDonald, R. I., Aronson, M. F. J., Beatley, T., Beller, E., Bazo, M., Grossinger, R., Jessup, K., Mansur, A. V, Puppim de Oliveira, J. A., & Panlasigui, S. (2023). Denser and greener cities: Green interventions to achieve both urban density and nature. *People and Nature*, *5*(1), 84–102.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook. 3rd*. Thousand Oaks, CA: Sage.

Naveed, S., Farooqi, M. R., & Salman, Y. (2025). Wicked problems and value co-destruction in service ecosystems: navigating the tension between public and private value. *International Journal of Public Sector Management*.

Park, J. (2022). What makes performance-related pay effective in the public sector? Target, pay design, and context. *Review of Public Personnel Administration*, *42*(3), 416–443.

Purwanti, S. (2022). Memaksimalkan fungsi taman kota sebagai ruang terbuka publik. *Jurnal Jendela Inovasi Daerah*, *5*(1), 56–70.

Richards, D. R., Passy, P., & Oh, R. R. Y. (2017). Impacts of population density and wealth on the quantity and structure of urban green space in tropical Southeast Asia. *Landscape and Urban Planning*, *157*, 553–560.

Roberts, P., & Hamilton Edwards, L. (2023). Portfolio management: A new direction in public sector strategic management research and practice. *Public Administration Review*, *83*(4), 947–959.

Smith, A. (2021). Sustaining municipal parks in an era of neoliberal austerity: The contested commercialisation of Gunnersbury Park. *Environment and Planning A: Economy and Space*, *53*(4), 704–722.

Wicaksono, K. W. (2019). Transforming the spirit of new public service into public management reform in Indonesia. *Jurnal Manajemen Pelayanan Publik*, *2*(1), 24.

Xizi, X. U., Fumihiko, S., & Kai, Z. (2024). The Implications of Population Decline and Fiscal Austerity on Public Nature: Insights From the Evolution of Urban Park Management System in Japan. *Landscape Architecture Frontiers*, *12*(4).

Yogyandaru, S. W., & Mayasari, I. (2020). Analysis on Fees Exemption Policy of Land and BuildingRights Acquisition in Jakarta. *Jurnal Manajemen Pelayanan Publik*, *4*(1), 35–50.

Yutian, L. U., Running, C., Bin, C., & Jiayu, W. U. (2024). Inclusive green environment for all? An investigation of spatial access equity of urban green space and associated socioeconomic drivers in China. *Landscape and Urban Planning*, *241*, 104926.

Zhang, W., Yang, B., Wang, R., & Guo, X. (2024). An analysis of the effects of different urban park space environment construction on national health. *Frontiers in Environmental Science*, *12*, 1433319.

Zou, N., Mi, X., Xiao, Y., Li, Y., & Hu, N. (2024). Assessing urban park equity in Chaoyang District, Beijing using online review data. *Scientific Reports*, *14*(1), 1160.