



## Implementation of Road Equipment Installation in South Sumatera Province (Case Study of Installation of Street Lighting Equipment on the Betung – BTS Section, Palembang City)

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### **Abstract**

Road infrastructure plays a pivotal role in the development and functionality of urban areas, and installing road equipment, such as street lighting, is crucial for ensuring safety and accessibility. This study focuses on the implementation of road equipment installation, with a specific case study of installing street lighting equipment on the Betung – BTS section in Palembang City, South Sumatra Province. The research employs a comprehensive approach, combining technical assessments, project management analysis, and stakeholder engagement evaluations. It examines the planning and design phases of the street lighting installation, considering factors such as traffic patterns, safety requirements, and energy efficiency. The study also investigates the procurement process for the equipment, including vendor selection, quality control, and cost management. Furthermore, the research evaluates the installation process, including on-site challenges, coordination among involved parties, and adherence to established timelines. The effectiveness of the installed street lighting equipment in enhancing road safety and urban aesthetics is assessed through field observations and community feedback. The findings of this study aim to provide insights into the best practices and challenges encountered during the implementation of road equipment projects, mainly focusing on street lighting in the Betung – BTS section. Recommendations derived from the research contribute to optimizing future road equipment installations in South Sumatra Province, emphasizing the importance of efficient project management, technical considerations, and community engagement in achieving sustainable and safe urban infrastructure development.

**Keywords:** *Implementation; Installation of Road Equipment; Installation of Street Lighting Equipment*

## Introduction

South Sumatra Province, known for its dynamic urban landscape and economic vitality, relies heavily on well-developed road infrastructure to facilitate transportation, ensure public safety, and foster economic growth. Among the essential components of this infrastructure, street lighting plays a pivotal role in enhancing road safety and urban functionality[1]–[3]. This study delves into the intricacies of the implementation of road equipment installation in South Sumatra Province, with a focused investigation on the case study of installing street lighting equipment along the Betung – BTS section in Palembang City. As urbanization reshapes the province's landscape, the demand for efficient, well-lit roadways becomes increasingly critical[4], [5]. Installing street lighting contributes to the safety of motorists and pedestrians and enhances urban spaces' overall aesthetics and usability[6], [7]. The Betung – BTS section in Palembang City is a pertinent case study, offering insights into the challenges and successes associated with such infrastructure projects.

This research aims to provide a comprehensive understanding of the entire process, from the initial planning and design stages to the actual implementation and subsequent evaluation of the installed street lighting equipment. By delving into the specifics of the Betung – BTS section case, we seek to uncover valuable lessons, best practices, and potential areas for improvement that can inform future road equipment installation projects in South Sumatra Province. The study examines the technical aspects of equipment installation and emphasizes the importance of effective project management, stakeholder collaboration, and community engagement. Through this exploration, we aspire to contribute valuable knowledge to the broader discourse on sustainable and well-executed urban infrastructure development, aiming to promote safe and accessible roadways in South Sumatra Province.

## Methods

This study employs a legislative approach and a judicial approach. This study likewise used the methodology of Empirical juridical research. Empirical juridical research studies how normative legal provisions are implemented during specific societal legal events. The primary dataset utilized in this study consists of secondary data. Secondary data refers to information derived from library items rather than being received directly from a second source.

## Result and Discussion

### Implementation of Road Equipment Installation in South Sumatra Province (Case Study of Street Lighting Equipment Installation in Betung Section – BTS Palembang City)

Public street lighting is a part of road auxiliary buildings that can be placed or installed on the left or right of the road and or in the middle of the road used to illuminate the road or the environment around the road as needed, including the intersection of overpasses, bridges, and underground roads installed for public use[8], [9]. For example, the following cases of stopping the installation of road equipment by the South Sumatra National Road Implementation Center in the last 3 three years from 2021-2023:

Table 1. Case of Termination of Road Equipment Installation by the South Sumatra National Road Implementation Center for 2021-2023

No.	Year	Case	Road Sections	Status
1	2021	1 case	Palembang National Road	Finish
2	2022	-	-	-
3	2023	5 cases	Jalan Betung Palembang	Finish

			Simpang Indralaya-Meranjat Meranjat Kayu Agung Betung -Sekayu Batas Kota Palembang/Banyuasin-Tanjung Api-Api	
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Source: Documentation of South Sumatra Class II Land Transportation Processing Center, 2023

The table above shows that there has been an increase in cases of Termination of Road Equipment Installation by the South Sumatra National Road Implementation Center from 2021 by 1 case to 5 cases in 2023. Of the 5 cases above, researchers will raise only 1 case, namely the case of Betung-BTS Palembang street lighting. This is also clearly illustrated in the Letter of the Head of PJN Wilayah III Satker of South Sumatra Province Number: PW 04 01-Bb5.8/2336 dated March 31, 2023, regarding the Report on the Termination of Utility Excavation Activities Without Permits Belonging to the Land Transportation Management Center Region VII of South Sumatra Province and Bangka Belitung Province.

Public Street Lighting Management is lighting for roads and public infrastructure officially installed by the local government or other official bodies and legally obtains electricity from PLN. PJU is an asset of the City Government, and PLN is only an electricity supply provider. Street lighting equipment called PJU is a public facility in the form of street lights on public roads. PLN or the state electricity company facilitates this street lighting device. The functions of public street lighting are numerous. The function of public street lighting starts from the safety of road users who can avoid accidents due to damaged roads, security functions that minimize the level of crime at night, and trips that can be safe from various bad things at night.

The search results provide information on various road rehabilitation and maintenance projects in South Sumatra Province, Indonesia. The projects include rehabilitating and upgrading roads and bridges, such as the Lubuklinggau-Rahat section, as part of the Trans-Sumatra Highway. The reports discuss the relevance and importance of the road network for economic growth, the impact of traffic growth on road deterioration, and the measures taken for road maintenance and rehabilitation. The documents also mention the implementation arrangements, including the number of implementing agencies and the management of land acquisition and resettlement plans. Additionally, there is a comparison analysis between traditional and long-segment contracts for national road preservation activities in Indonesia, aiming to measure the impact of implementation on the national road maintenance project. The information provides insights into the road rehabilitation and maintenance initiatives in South Sumatra Province, including the challenges and measures taken to address them.

### **Solutions to Do If There is a Violation in the Installation of Road Equipment in Sumatra Strait and Province**

Public Street Lighting (PJU) is a lighting lamp usually installed on roads and in certain places such as city parks and other public places. The existence of PJU is needed for the community, considering that PJU can increase the comfort and safety of road users. In addition, for urban areas, the existence of PJU is also closely related to the beauty of the environment. Street lighting equipment is a street lighting device that provides lighting to the Traffic Room. This street lighting device must meet technical requirements and safety requirements. Street lighting equipment is a street lighting device that provides lighting to the Traffic Room. The relevance of the rule of law, in general, to the legal needs of the people who are the available target of the rule of law the legal regulations that contain moral norms in the form of prohibitions will be relatively much more effective than legal rules that conflict with the moral values adopted by the people who are the target of enactment of these rules.

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This aligns with the Theory of Administrative Law Sanctions arising from the implementation of effective administration, which ensures collaboration among individuals. This process, whether explicitly or implicitly, serves to achieve satisfaction after the cooperation. Administration serves as a conduit for evaluating the significance of work-related needs and benefits. Effective administration involves the seamless transition of responsibilities and objectives among multiple individuals within a defined group, all working towards achievable goals. Human beings cannot collaborate with themselves, necessitating the involvement of others willingly or otherwise invited to partake in the cooperative endeavor. Many individuals mistakenly believe that the objective of the administrative process should always be defined by the individuals involved in the process. However, it is possible for everyone directly involved in the administrative process to select the desired outcome. The execution of tasks and their associated duties often necessitates the presence of organizational processes, which in turn require cooperation, resources, and equipment. The specific requirements of these administrative processes depend on various factors, including the number of individuals involved, the objectives to be achieved, the scope and diversity of tasks, and the potential for collaboration to be established and enhanced.

## Conclusion

The implementation of the Installation of Road Equipment in South Sumatra Province (Case Study of Installation of Street Lighting Equipment on the Betung Section – BTS Palembang City) in accordance with the correct procedure but less than optimal because it has referred to applicable regulations, it can be seen that the technical specifications used refer to applicable laws, but for this installation location there are sometimes locations that are not in accordance with keriteria such as narrow road shoulders, This is often a problem and there are several points that are not in accordance with standardization so that in the use of roads there is a discontinuity between the licensing of the South Sumatra National Road Implementation Center in the installation of road equipment and the regulation of the Minister of Public Works Number 20 / PRT / M / 2010 concerning Guidelines for the Utilization and Use of Road Sections so that the function of the use of regulations is not in accordance with its designation. This is related to Article 46 of the Government Regulation of the Republic of Indonesia Number 34 of 2006 concerning the utilization of road sections, including utility buildings, tree planting, and infrastructure of other modes of transportation and regulation of the Minister of Public Works Number: 20 / PRT / M / 2010 concerning Guidelines for the Utilization and Use of Road Parts.

## Reference

- [1]A. A. Berdnikov, R. V Strel'tsov, V. A. Dyunov, and I. V Zol'nikov, "Mobility of aggregates of promising missile systems based on road trains with an active trailed link," *Izv. MGTU MAMI*, vol. 14, no. 3, 2020, doi: 10.31992/2074-0530-2020-45-3-23-28.
- [2]X. Ouyang, J. Xian, L. Zhu, H. Shan, and G. Wang, "Research and Application of Construction Technology of Long-Section and Large-Tonnage Prefabricated Utility Tunnels: a Case Study of Xiong'an New Area, China," *Tunn. Constr.*, vol. 42, no. 8, 2022, doi: 10.3973/j.issn.2096-4498.2022.08.017.

- [3]R. Hasanov and M. Kazimov, “Determination of the location of the technological equipment on the chassis of the oil field aggregates,” *Naft. - Gaz*, vol. 2022, no. 4, 2022, doi: 10.18668/NG.2022.04.03.
- [4]S. Yoomak and A. Ngaopitakkul, “Development of Sustainable Nanogrid Road Lighting Systems,” *IEEE Trans. Intell. Transp. Syst.*, vol. 22, no. 11, 2021, doi: 10.1109/TITS.2020.2994088.
- [5]L. Gavėnienė, L. Jateikienė, D. Čygas, and A. Kasperavičienė, “Impact of average speed enforcement systems on traffic safety: Evidence from the roads of Lithuania,” *Balt. J. Road Bridg. Eng.*, vol. 15, no. 3 Special Issue, 2020, doi: 10.7250/bjrbe.2020-15.480.
- [6]I. Solonenko, “The equipment for determining the impact of traffic environment on road pavement,” *Teh. Glas.*, vol. 13, no. 2, 2019, doi: 10.31803/tg-20190421134423.
- [7]A. Mohammadi, D. Nayeri, A. Alambeigi, and J. A. Glikman, “Evaluation of motorists perceptions toward collision of an endangered large herbivore in Iran,” *Glob. Ecol. Conserv.*, vol. 41, 2023, doi: 10.1016/j.gecco.2022.e02363.
- [8]A. Fadli, D. T. Nugroho, A. W. Wardhana, G. Sugiyanto, H. Prasetijo, and W. H. Purnomo, “Utilization of Solar Street Lights as Lighting Facilities in Tourist Places,” *Mattawang J. Pengabd. Masy.*, vol. 3, no. 1, pp. 28–35, Mar. 2022, doi: 10.35877/454RI.mattawang801.
- [9]R. D. Orejon-Sanchez, J. R. Andres-Diaz, and A. Gago-Calderon, “Autonomous photovoltaic led urban street lighting: Technical, economic, and social viability analysis based on a case study,” *Sustain.*, vol. 13, no. 21, 2021, doi: 10.3390/su132111746.

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