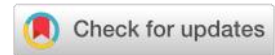




Research Article



The Role of District Governments in Handling Damage to National Roads in the Regional Autonomy

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Abstract: The problematic reality of national roads in rural and urban areas is that they are often damaged and unfit for use. This is due to nationwide road repairs that rely only on the central government's responsibility, resulting in development delays that could endanger the safety of road users. The method used in this research is social legal research to observe law in the dynamics of social life in the context of the role of district and city governments in dealing with damage to national roads. The role of the government in dealing with damage to national roads is to carry out supervision to prevent workers from committing irregularities, misappropriation, and wastage of funds, as well as to overcome obstacles that may occur during the repair process. In addition, the government has a role in carrying out road construction and accommodating policies regarding road construction. Thus, even though national roads are the responsibility of the central government, district and city governments also need to take responsibility for national roads.

Keywords: Damage; District Government; National Roads; The Role;



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INTRODUCTION

Road traffic and transportation have a strategic role in supporting national development and integration to promote general welfare. This is mandated by the 1945 Constitution of the Republic of Indonesia, which states that what is part of the national transportation system, traffic and road transportation, is mandatory and must develop its potential and work to realize traffic safety, order, and welfare to support development: economy and the development of science and technology, regional autonomy, and state administration's accountability.¹ However, there was an economic downturn in East and Southeast Asia caused by the financial and banking crises, with global GDP growth of 2.6% per year in 1996–2000, and in 2000 it reached 4%. In recent years, countries on the Southeast Asian continent themselves have experienced a healing process, with growth of around 6% in 2000. Considering these conditions, the central and regional governments need to anticipate Indonesia's involvement in world trade. This is because the local government will feel the impact

¹ Sadikin Sadikin, Sjuaid Hannan, and Ulya Sunani, 'Peran Pemerintah Daerah Dalam Pembangunan Infrastruktur Jalan Untuk Meningkatkan Kesejahteraan Masyarakat Di Kecamatan Ulumanda', *Journal Peqguruang: Conference Series*, 3.2 (2021), 834 <https://doi.org/10.35329/jp.v3i2.2215>



of economic globalization in providing employment and export and import opportunities.²

Because of this connection with the spread of the economy, transportation service infrastructure must be seen as part of the world's distribution system for passengers and goods. The efficiency and effectiveness of the transportation system are an attraction for purchases and a determinant in competitive commodity price competition for domestic products, both for domestic consumption and exports. In 2000, Indonesia's trade volume growth reached 24% in US dollars, which was on par with China and succeeded in placing Indonesia in a superior position compared to other countries in the Asia Pacific.³ This can be an essential indicator that awareness of the mobility of goods and services must be increased at the regional and international levels. However, compared to pre-crisis conditions, Indonesia's transportation infrastructure has significantly deteriorated, with around 70% of the national, provincial, and local road network systems unable to function as they should. The national distribution system has stagnated, so Indonesia's competitive advantage compared to other countries has remained strong.

The success of development in a country must be connected to the role of transportation as a means of political, economic, socio-cultural, defense and security life. Several indicators such as safety, high accessibility, sufficient capacity, regularity, smoothness, speed, easy reach, timely, comfortable, affordable rates, orderliness, safety, and low pollution are crucial aspects that can be used to see the effectiveness of a system transportation network. Therefore, the development of transportation is significant because it can support and drive the dynamics of products and support economic and regional growth.⁴ The movement of passengers from both internal and external areas is highly dependent on the road system, the economy, the distribution network, and the logistics system for goods and services. In early 1999, the utilization rate of national and provincial roads of 664.6 million passengers per km and 144 million tonnes per km per day illustrated economic mobility throughout Indonesia. This figure increased by 21% and 6.7%, respectively, compared to 1998, because a stable and reliable transportation network system greatly determines economic efficiency. Road damage will also cause significant economic and social costs in land transportation. During the financial crisis, the national situation was in a critical state. This is due to a lack of budget through the APBN as well as guidance, implementation, and supervision of the implementation of development that needs to be running at maximum quality.⁵ Coupled with efficient management, the need for more quality

² Arvind Panagariya, 'Why Northeast and Southeast Asia Must Deepen Their Engagement with India', *Asia and the Global Economy*, 2.1 (2022), 100026 <https://doi.org/10.1016/j.aglobe.2022.100026>

³ Jie Zhu and others, 'Role of Sharing Economy in Energy Transition and Sustainable Economic Development in China', *Journal of Innovation and Knowledge*, 8.2 (2023), 100314 <https://doi.org/10.1016/j.jik.2023.100314>

⁴ R Didi Djadjuli, 'Peran Pemerintah Dalam Pembangunan Ekonomi Daerah', *Jurnal Dinamika: Jurnal Ilmiah Ilmu Administrasi Negara*, Vol5.2 (2018), hal. 10 <https://doi.org/10.25157/dinamika.v5i2.1409>

⁵ Ake Fernandes and Hasbullah Malau, 'Faktor Penghambat Balai Besar Pelaksanaan Jalan Nasional Wilayah Sumbar (BPJN) Dalam Melaksanakan Pengawasan Pembangunan Jalan Di Kecamatan Sijunjung Kabupaten Sijunjung', *PUBLICNESS: Journal of Public Administration Studies*, 1.2 (2022), 87–91 <https://doi.org/10.24036/publicness.v1i2.11>



supervision and implementation and overloaded vehicles are also triggers for the reduced service life of roads.

The World Bank has identified a country's challenges in developing a sustainable transportation system. These challenges include unfinished business or repairing unfinished business and anticipating various new problems due to changes in people's aspirations, the implications of global competition, and the multiple consequences of very fast motorization. Unresolved challenges include increasing access affordability, crisis handling and maintenance, increasing responsiveness to customer needs, trade liberalization bringing equal volumes of goods and higher delivery lags, and overcoming the rapid rate of motorization.⁶

The most recent related Government policy was stipulated through Presidential Decree No. 32/2011 concerning the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI) 2011-2025.⁷ The Presidential Decree states that Strengthening National Connectivity is one of the three main strategies. National Connectivity integrates the four elements of national policy, which consist of Sislognas (the National Logistics System), Sistranas (the National Transportation System), Regional Development (RPJMN/RTRWN), and Information and Communication Technology. Some of these efforts must be carried out to realize effective, efficient, and integrated national connectivity. Several elements regarding the development of the region above raise transportation problems, including operational aspects of finance, network, environment, economy, and safety. Danang Parikesit believes, regarding the issue of safety, that the issue of transportation safety and good transportation management has yet to be resolved and is a problem that has yet to be touched on in the national transportation system. Rob McInerney from the International Road Assessment Programme (iRAP) also expressed that 3,500 people died and 100 thousand were seriously injured due to road accidents daily, which is common in countries with low and middle-income per capita.⁸

Based on Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the land, air, and natural resources contained therein are controlled by the State and used for the greatest prosperity of the people. The development and utilization of roads must also be carried out so that they can reach all remote land areas with high mobility and integrate them with other modes of transportation. The Ministry of Transportation has developed the concept of the Transportation Level, which is transportation planning. The Transportation Level is an embodiment of a systematically organized transportation system consisting of all networks and modes of transportation. Regional autonomy is the background for why this level of vehicle was created. This is due to the mandate of Law Number 32

⁶ Tanmoy Palit, A. B.M.Mainul Bari, and Chitra Lekha Karmaker, 'An Integrated Principal Component Analysis and Interpretive Structural Modeling Approach for Electric Vehicle Adoption Decisions in Sustainable Transportation Systems', *Decision Analytics Journal*, 4.September (2022), 1–12 <https://doi.org/10.1016/j.dajour.2022.100119>

⁷ Gelar Ali Ahmad, 'Masterplan Percepatan Dan Perluasan Pembangunan Ekonomi Indonesia (Mp3Ei), Sengketa Agraria Dan Viktimologi : Studi Kasus Pembangunan New Yogyakarta International Airport (Nyia)', *Jurnal Ilmiah Galuh Justisi*, 6.1 (2018), 12 <https://doi.org/10.25157/jigj.v6i1.1237>

⁸ Russ Bona Frazila and others, 'Pengembangan Metode Penilaian Indikator Transportasi Berkelanjutan Di Indonesia', *Jurnal Teknik Sipil*, 28.1 (2021), 73–82 <https://doi.org/10.5614/jts.2021.28.1.8>



of 2004 concerning Regional Government, which can be realized in National Transportation Standards, Regional Transportation Arrangements, and Local Transportation Arrangements. In practice, these three Transportation Levels can be integrated by clarifying and equalizing the roles of central and regional government agencies involved in regulation, administration, and law enforcement.⁹

Road Maintenance and Surveillance procedures are also regulated in Article 1, point 1, of the Minister of Public Works Regulation Number: 13/PRT/M/2011.¹⁰ Article 1 point 3 of Government Regulation of the Republic of Indonesia Number 34 of 2006 concerning roads and Article 1 point 12 of Law Number 22 of 2009 concerning Road Traffic and transportation. What is meant by road are all parts of the road, including auxiliary buildings intended for public traffic, anything that is on the ground level, above the ground level, below the ground level, and air, as well as above the water level, except roads, cable, or rail.

Sony Sulaksono Wibowo believes that substandard road quality or road loads exceeding the maximum designed load can cause road damage in Indonesia. That is, the road is defined as the surface layer of the soil that experiences direct contact with the prohibition of vehicles, so the damage to the road that occurs is the damage that befalls this layer. Based on Article 19 paragraph (2) of Law Number 22 of 2009 concerning Road Traffic and Transportation, vehicles with a high loading capacity are only allowed to visit arterial roads or particular class roads that can be passed by motorized vehicles with a width of more than 2,500 millimeters, a length of more than 18,000 millimeters, the largest size of 4,200 millimeters, and the heaviest payload of more than 10 tonnes.¹¹

National roads located in city or district areas are often known to suffer quite severe damage. This is because nationwide road repairs only rely on the central government's responsibility, resulting in delays that can endanger the safety of road users. The author thinks that although national roads are the responsibility of the central government, district and city governments also need to take responsibility for these national roads. In addition, several problems in the management of national roads also occur due to the need for coordination between agencies related to transportation. Various transportation problems often occur due to unclear institutional roles and functions. On the one hand, there is a conflict of authority. Still, there are responsibilities on the other side, which are also dark, so in the regulatory framework, disputes often occur. Some urgent needs that must be realized in transportation management include establishing an institution with apparent authority and the ability to integrate various aspects and elements. Installing an institution as a coordinating body may only sometimes lead to a good and well-established

⁹ Ardika Nurfurqon, 'Politik Hukum Otonomi Daerah Studi Terhadap Desentralisasi Asimetris Di Indonesia', *Khazanah Hukum*, 2.2 (2020), 73–81 <https://doi.org/10.15575/kh.v2i2.8504>

¹⁰ Naufall Fadhlur Rahman, Dewi Rintawati, and Christina Sari, 'EVALUASI KONDISI PERKERASAN JALAN MENGGUNAKAN METODE SURFACE DISTRESS INDEX (SDI) (Studi Kasus : Ruas Jalan Kebun Baru – Pulau Sangkar, Kabupaten Kerinci)', *Prosiding Seminar Intelektual Muda*, 3.1 (2021), 40–44 <https://doi.org/10.25105/psia.v3i1.13021>

¹¹ T W Rahmah and L S Muliya, 'Perlindungan Hukum Terhadap Konsumen Pengguna Transportasi Skuter Listrik (Grabwheels) Berdasarkan Undang-Undang Nomor 8 Tahun 1999 Tentang ...', *Prosiding Ilmu Hukum*, 8, 2020, 440–47 <https://doi.org/10.29313/.v6i2.21788>



institutional system. This is, of course, caused by unclear authoritative ownership. It is time for dualism to be removed from responsibility, and integration and synchronization in planning, implementation, and training can be realized soon. Therefore, clear and firm institutions are needed to learn regulations and law enforcement that can be carried out strictly, too, following the authority of the institution concerned. As long as road users are involved, the community has the right to get a sense of and guarantee safety and comfort when passing environmentally friendly traffic.

METHOD

This study uses social law research as a research approach that seeks to portray law in the dynamics of social life in a broader context. This research tries to link Law Number 38 of 2004 concerning Roads with the position of district and city governments in dealing with damage to national roads. The type of research used is a descriptive analysis that examines primary data sources in the form of the role of district and city governments in dealing with damage to national roads and secondary data in the form of laws and regulations, journal articles, books, and other legal sources. This study used data collection techniques from literature studies and observations to find the data needed for this research.

RESULT AND DISCUSSION

The Current Conception of The Transportation System

Transportation is the process of transporting people or goods from the place of origin of the transportation activity to the destination where the action ends. Manheim argues that the transportation system is a unity of several elements of physical infrastructure, transportation facilities, operating systems, and management systems that are interrelated and interact to create layers of physical objects, such as people and goods, from places of origin to places of destination.¹² Kanafani also revealed that the need for transportation spreads within an area to overcome the interaction of social and economic activities.¹³

The increasing flow of urbanization and population growth in fast-growing urban areas, especially in developing countries, has significantly increased the demand for motorized vehicles.¹⁴ This high use of motorized vehicles can eventually have several negative impacts that must be considered. Schipper and Erikson state that motorized vehicles have several negative consequences: environmental pollution, security, spatial problems, congestion, emissions, energy use, etc. This concludes that more thought is needed to deal with the issues that arise from using motorized vehicles so that they do not cause worse and prolonged conditions.

¹² Shiyuan Zheng and Changmin Jiang, 'Real Options in Transportation Research: A Review', *Transport Economics and Management*, 1.April (2023), 22–31 <https://doi.org/10.1016/j.team.2023.06.001>

¹³ Sarah L. Canham and others, 'Transportation Needs and Mobility Patterns of Persons Experiencing Homelessness Following Shelter Decentralization', *Evaluation and Program Planning*, 99.August 2022 (2023), 102306 <https://doi.org/10.1016/j.evalprogplan.2023.102306>

¹⁴ Shweta Jain and others, 'Urban Heat Island Intensity and Its Mitigation Strategies in the Fast-Growing Urban Area', *Journal of Urban Management*, 9.1 (2020), 54–66 <https://doi.org/10.1016/j.jum.2019.09.004>



One of the concepts of a sustainable transportation system is the thought that arises due to the desire for a better condition, which is humans' primary need.¹⁵ The meaning contained in this system refers more to several sources that have concluded that a sustainable transportation system can accommodate as much accessibility as possible with minimal negative impacts. It is realized that if, from the start, the government administrators want to implement a sustainable transportation system, the transportation problem will be manageable. A sustainable transportation system is something that is very crucial and something that must be seen from various sides that support it. A transportation system links goods, passengers, facilities, and infrastructure that interacts with goods naturally and artificially. The transportation system consists of five main things: (1) Humans as subjects in need; (2) Goods as required. (3) Facilities such as vehicles or means of transportation (4) Infrastructure as a means of transportation (roads and terminals) (5) Organisation and operating system that coordinate transportation infrastructure and facility components.¹⁶

As defined in the Long Term Development Plan, or RPJP, and the Medium Term Development Plan, or RPJM, Indonesia's future development plans to improve people's welfare place development infrastructure as one of the priority areas of development plans. The 2010-2014 RPJM stipulates 11 national priority areas, one of which is the infrastructure sector, including federal transportation, to develop infrastructure with the carrying capacity and driving force for equitable economic and social growth. The latest Government policy has been stipulated in Presidential Decree No. 32/2011 concerning the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI) 2011–2025.

The Presidential Decree states that Strengthening National Connectivity is one of the three main strategies. National Connectivity is the process of integrating the four elements of national policy: Sislognas (Sistem Logistik Nasional), Sistranas (Sistem Transportasi Nasional), RPJMN/RTRWN, or Regional Development, and Information and Communication Technology. This effort must be immediately implemented for effective, efficient, and integrated national connectivity. Various aspects of the development of the area above have resulted in transportation problems consisting of financial, economic, operational network, environmental, and safety factors. In the transportation sector, which the RPJM guides, the Ministry of Transportation is responsible for the formation and implementation of the Medium-Term Development Plan and the planning and implementation of development programs in all aspects of the operation and development of the transportation sector. The principle of some of these strategic policies is to have the main objectives of the transportation sector formulated in SISTRANAS and RPJMN/RTRWN.¹⁷

A RUTR (*Rencana Umum Tata Ruang*) is a guideline for long-term development in an area or region.¹⁸ The development of transportation facilities in the RUTR is

¹⁵ Shahzeb Ansari and others, 'Impact of Post-Covid-19 on Driver Behaviour: A Perspective towards Pandemic-Sustained Transportation', *Journal of Transport and Health*, 28.December 2022 (2023), 101563 <https://doi.org/10.1016/j.jth.2022.101563>

¹⁶ D Wahyudin, 'Peluang Dan Tantangan "Big Data" Dalam Membangun "Smart City" Untuk Sistem Transportasi', *Jurnal Reformasi Administrasi*, 5.1 (2018), 109–15 <https://doi.org/10.31334/reformasi.v5i2.270>

¹⁷ Tukimun, 'Analisis Kinerja Infrastruktur Moda Transportasi Udara Di Kalimantan Timur', *Jurnal Kacapuri*, 5.1 (2022), 131–39 <https://doi.org/10.31602/jk.v5i1.7395>

¹⁸ Rohaya Putri, Dwight M, and Ingerid, 'Evaluasi Rencana Tata Ruang Wilayah Kotamobagu Tahun 2014 - 2034', *Spasial*, 6.1 (2019), 68–77 <https://doi.org/10.35793/sp.v6i1.22821>



intended to meet the needs of physical transportation planning, including the following: (1) Creating an integrated transportation system with roads, rail, air, and sea, (2) Increasing ease of access and mobility within the city area (3) Expand and improve the transportation network and take appropriate measures for managing traffic to reduce congestion and travel speed. (4) Create transportation facilities and infrastructure to improve inter-city and inner-city road systems.

The Role of District and City Governments in Handling Road Damage

Regency and city governments have the authority to make policies that provide services, increase participation, and promote community empowerment, improving people's welfare, including development planning in a district or city area. Infrastructure plays an essential role as one of the drivers of economic growth and development where adequate infrastructure, such as road infrastructure, is needed. The conditions and geographical conditions of Indonesia, which consist of thousands of small and large islands and waters that consist primarily of seas, rivers, and lakes, allow transportation to be carried out by land, water, and air to reach all parts of Indonesia, which is one of the crucial reasons why the development of road infrastructure is sufficient. Apart from that, the needs for comfort, safety, and smoothness are other things that are no less important in transportation, which supports the implementation of development in the form of spreading development needs, equitable distribution of action, and distribution of development results in various sectors to all corners of the country, for example, the industrial sector, trade, tourism, and education.¹⁹

In general economic and non-economic development, transportation plays a crucial role. Some economic goals include developing a national industry, increasing national income, and maintaining and creating employment opportunities for residents and communities. Apart from having financial objectives, there are also non-economic objectives, which include enhancing national defense, integrity, and security. The meaning of the importance of transportation must also be followed by efforts to develop a transportation regulatory system that can realize the availability of transportation services that are in line with the level of traffic demand and transportation services that are orderly, safe, comfortable, regular, and smooth for residents and communities. In addition to other elements such as drivers, road conditions, and the environment, so that the transportation system can be implemented in an orderly, safe, comfortable, tidy, and smooth manner, it must pay attention to the condition of the vehicle's technical facilities. This is because many transportation accidents are caused by the condition of vehicles that are not considered motorized vehicles on the road.²⁰

Cross-road transportation in Indonesia holds a position that is so strategic and crucial that the state must control the process of its implementation. Likewise, the government also carries out the development process to realize Road Traffic and

¹⁹ Adelia Maharani and others, 'Peran Pemerintah Kota Dalam Menanggulangi Kecelakaan Lalu Lintas Di Kota Bandar Lampung Akibat Kerusakan Infrastruktur Jalan', *JURNAL HUKUM, POLITIK DAN ILMU SOSIAL*, 2.3 (2023), 184–86 <https://doi.org/10.55606/jhpis.v2i3.1903>

²⁰ Erni Safitri, Junaidi Junaidi, and Erfit Erfit, 'Analisis Disparitas Pembangunan Antar Kabupaten/Kotadi Provinsi Jambi (Segi Ekonomi Dan Non Ekonomi)', *Jurnal Paradigma Ekonomika*, 16.1 (2021), 141–50 <https://doi.org/10.22437/jpe.v16i1.10156>



Transportation that is safe, fast, orderly, smooth, safe, comfortable, and efficient. Land traffic is the most critical aspect of life because almost all community activities are related to it. Problems surrounding traffic can not only hamper people's life arrangements but can also overhaul the economy. Therefore, it is necessary to increase traffic safety and road transportation so that the products produced can continue to grow and develop and that people can carry out all their activities properly, smoothly, safely, and comfortably.²¹

The existence of traffic has roles and functions that follow the goals of national development, namely to form a just and prosperous society both materially and non-materially in the form of spirituality based on Pancasila and the 1945 Constitution of the Republic of Indonesia. Agreement and safe and smooth traffic can affect all sides of life, strengthen unity and integrity, and facilitate equity flow in various developments and trade results. People need to be able to move from one place to another quickly, comfortably, and safely. These needs can be fulfilled with supporting facilities and adequate means of transportation. There is a guarantee of a sound safety system. Namely, there is a balance between the number of means of transport provided and the number of needs of the community, and there is a guarantee of safety in road traffic and transportation. However, it is hard to deny that since the beginning of 2000, the speed, comfort, and safety required by people who use transportation services have tended to make them apprehensive. This then causes community mobilization to be limited and stagnate. As a result, the performance of transportation has decreased, and the social rights of the community have yet to be fulfilled, which in turn has impacted other development activities such as the economy, politics, culture, and others.²²

Road Traffic and Transportation safety are the most frequently targeted in developed and developing countries. Improving Road Traffic and Transportation safety is an absolute thing that must be endeavored, and it is challenging to bargain for. One Road Traffic and Transportation issue is road traffic and transportation safety. Human behavior and Human Resources are the problems of Road Traffic and Transportation, both Human Resources from drivers, Human Resources from the community, and Human Resources from Highway Traffic and Transportation officers.²³

The development of the Road Traffic and Transportation system in Indonesia so far has often received criticism because it always attacks the physical side (hardware) and is considered to pay less attention to the development of traffic regulations and the development of Human Resources in the government apparatus in the Traffic and

²¹ Nurhasan Ismail, 'Efektivitas Undang-Undang Lalu Lintas Dan Angkutan Jalan Meminimalisir Fatalitas Kecelakaan Lalu Lintas', *Journal of Indonesia Road Safety*, 1.1 (2018), 17 <https://doi.org/10.19184/korlantas-jirs.v1i1.14771>

²² Ikhsan Risniawan Putra, Febri Yuliani, and Hasim As'ari, 'Implementasi Kebijakan Penyelenggaraan Lalu Lintas Dan Angkutan Jalan (Studi Kasus Penyediaan Perlengkapan Jalan Umum Yang Berstatus Sebagai Jalan Kota Di Kecamatan Pekanbaru Kota)', *Jurnal Niara*, 14.3 (2021), 284-91 <https://doi.org/10.31849/niara.v14i3.6449>

²³ Haris Kondang Pradana and Nurbaedah, 'IMPLEMENTASI PASAL 297 UNDANG-UNDANG RI NO 22 TAHUN 2009 TENTANG LALU LINTAS DAN ANGKUTAN JALAN TERHADAP BALAPAN LIAR ANAK REMAJA', *Jurnal Ilmu Hukum*, 12.1 (2023), 71-75 <https://doi.org/10.32503/mizan.v12i1.4053>



Transportation sector. The balance between the modes of transportation in Traffic and Road Transportation that are available to meet the needs of the community is a must-consider role in Road Traffic and Transportation, which is strategic because it has a significant pathway for people's lives in various fields such as politics, economy, culture, and others.²⁴

Logically, accidents can occur due to vehicles that are not roadworthy, reckless drivers passing over markers, driving vehicles above average, and other factors. But usually, traffic laws state that traffic violations trigger accidents. Several factors constitute law violations and can have a logical consequence in an accident. Based on this description, it can be interpreted that there is a relationship between the law as a rule that must be obeyed and behavior that does not limit the rules and then ends in an accident. Thus, the objects studied in traffic laws are norms and behavior. Article 24 of Law No. 22 of 2009 concerning Road Traffic and Transportation states that the government, as the road operator, must fulfill its obligations, including the cross-cross. Paragraph (2): If it has not been possible to repair the damaged road, as referred to in paragraph (1), the road operator must place signs on the damaged street to prevent traffic accidents.²⁵

As regulated in Law Number 38 of 2004 concerning Roads. Roads are a transportation infrastructure that has an essential role in the fields of economy, politics, social culture, environment, defense, and security, and roads must be used as much as possible for the benefit of society. The highway is a specific part of the path that can be passed by vehicles and meets certain conditions, closely related to local cars and the safety and comfort demanded on a trip. The determination of road classes on each road segment is carried out by (1) the Government, which regulates national roads. (2) The provincial Government regulates provincial roads. (2) The regency government regulates district roads, or the city government regulates city roads.

Highways can be classified into four classifications: according to road function, class, and terrain, and classification according to road training authorities. The classification is organized into three, namely (1) Arterial roads, roads that serve the primary transportation system with long-distance characteristics, high average travel speed, and the number of access roads is efficiently limited. (2) Collector roads serve collector/divider transport with medium-distance travel characteristics, a moderate average speed, and a limited number of access roads. (3) Local roads serve local transportation with short-distance travel characteristics, a low average speed, and unlimited access roads.

Meanwhile, the secondary road network system is a road network system whose role is to serve the distribution of goods and services for people in urban areas. The

²⁴ Isaac Oyeyemi Olayode, Lagouge Kwanda Tartibu, and Modestus Okechukwu Okwu, 'Prediction and Modeling of Traffic Flow of Human-Driven Vehicles at a Signalized Road Intersection Using Artificial Neural Network Model: A South African Road Transportation System Scenario', *Transportation Engineering*, 6 (2021), 100095 <https://doi.org/10.1016/j.treng.2021.100095>

²⁵ Ryan Dodo Hutagalung, 'Model Pertanggungjawaban Pidana Pada Pasal 273 Undang-Undang Nomor 22 Tahun 2009 Tentang Lalu Lintas Dan Angkutan Jalan', *Philosophia Law Review*, 1.2 (2021), 126–50 <https://doi.org/10.56591/pilar.v1i2.12864>



secondary road network system consists of (1) Secondary arterial roads, roads connecting the primary area with the first secondary area, connecting the first secondary area with the first secondary area, or connecting the first secondary area with the second secondary area. (2) Secondary collector roads connect the second place to the second place or the second place to the second place. (3) Secondary local roads, roads connecting the first secondary area with housing, the second secondary area with housing, the third secondary area, and so on up to housing.

A road's ability to accept traffic loads is related to classification according to road class, which is stated in the heaviest axle load in tonnes. Road terrain is classified based on the condition that most of the slope of the terrain is measured perpendicular to the contour lines. According to the guidance authority, the classification consists of national, provincial, regency/city, and village roads. National roads are arterial and collector roads in the primary road network system that connect provincial capitals, national strategic roads, and toll roads.²⁶

In 2004, the road network was implemented with about 340,000 km of roads. 34,628 km of roads are under the state's responsibility, 649 km of toll roads, 37,164 km are under the province's obligation, and 266,564 km of sides are the responsibility of districts/cities. Of the 81% of that amount, namely along 28,050 km of national roads, they were in sufficient condition, while the rest suffered heavy, moderate, and mild damage. At that time, the average speed on national roads was 44.3 km/hour. Likewise, the condition of provincial highways, which reach 46,499 kilometers, 62.8 percent of them are in prime condition.

Several progresses have been made in the development of road transportation up to 2009, namely the maintenance of 136,127 km of national roads, the maintenance of 161,054 m of bridges, the increased capacity and structure of 15,702 km of national highways, and the maintenance of bridges on the East Sumatra, North Sumatra, and Java crosses. South Kalimantan, West Sulawesi, and other routes with a length of 45,231 m also succeeded in constructing roads on the borders of the border with a distance of 670.2 km, construction of roads on remote/frontier islands with a length of 571.8 km, construction of the Suramadu Bridge; as well as land acquisition for toll road construction. Increased capacity of the national road network in lane kilometers from 73,620 in 2004 to 82,189 lane kilometers at the end of 2008, with prime road conditions reaching 83.23 percent, 4618 km lightly damaged (13.34 percent), and 1,190 km heavily damaged (3.44 percent) and an average speed of 46 km/h. At the same time, the total length of toll roads operating is 693.27 km, comprising 22 sections. This is the result of the efforts that have been made to improve the performance of road transportation.

In 2010-2014, the road transportation development target consisted of 4 points. The four points include (1) Increasing and maintaining capacity, carrying capacity, and quality of road infrastructure services in areas that are experiencing rapid economic development with a target of completing the construction of strategic crossroads along 19,370 km, especially across Sumatra, Java, Bali, Kalimantan, Sulawesi, NTB,

²⁶ Setya Wijayanta and others, 'Batas Aman Muatan Sumbu Roda Dan Temperatur Tromol Ditinjau Dari Ambang Batas Efisiensi Rem Mobil Pick Up Futura', *Jurnal Keselamatan Transportasi Jalan (Indonesian Journal of Road Safety)*, 6.2 (2019), 120–35 <https://doi.org/10.46447/kjt.v6i2.36>



NTT, and Papua. (2) Increasing equal distribution of facilities for all groups in areas being and yet to be developed in each island's main corridors, rural areas, border areas, remote areas, and small islands. (3) Active and actual participation of the government, BUMN, and the private sector in the delivery of road infrastructure services. (4) Provide a funding mechanism for road preservation and establish a traffic transport forum.

The increasing number of vehicles makes the streets seem more crowded and complete, so it is not uncommon to find many reckless road drivers when driving because of the hot weather and congested roads. Traffic accidents can also occur if road congestion is not matched by going knowledge. In addition to the driver's lack of driving knowledge, unfavorable road conditions cause road accidents. Damage to this road, for example, in the form of cracking or cracks, in the form of grooves or waves, and damage in the form of furrows/depressions in the longitudinal direction of the road around the vehicle's wheel tracks (rutting),²⁷ there is also bleeding or a layer of asphalt on the road surface. There are also potholes in the form of holes. This damage usually occurs on road surfaces that use asphalt concrete as a surface layer. Usually, road damage like this is caused by many factors, such as the wheel load of heavy vehicles passing by or repeatedly crossing, high groundwater conditions, construction, and planning errors. The causes of road damage include ²⁸ 1) Inappropriate planning methods, such as a mismatch between pavement thickness and load, and inadequate drainage planning. (2) Material processing does not follow procedures. (3) The composition of raw materials does not meet the requirements. (4) Compaction of the subgrade is not following procedures. (5) Maintenance needs to be carried out correctly and on time. (6) Overloading or excessive vehicle loads that pass repeatedly. (7) Spill non-adhesive materials such as oil, water, and waste on the road surface. (8) Heavy rainfall. (9) The nature of the subgrade is expansive. (10) The quality of materials does not meet specifications.

Therefore, the role of the district/city government is crucial in dealing with damage to national roads. Each region has its right to autonomy with the enactment of Law Number 32 of 2004 concerning Government and Law Number 33 of 2004 concerning the Balance of Central and Regional Finances. This causes a delegation of authority when implementing a policy, such as policies governing road infrastructure. Law Number 13 of 1980 concerning roads explains that: (a) Roads are one of the transportation infrastructures, a crucial element in developing national life and fostering national unity and integrity. (b) Roads have an essential role in realizing a balanced development between regions. (c) The government has rights and obligations in fostering and managing roads to fulfill the role of roads as excellent and proper facilities. (d) There is a need for a law to regulate road matters to guarantee the implementation of the road's role and its development. In road repair, the government must supervise setting performance measures and making decisions supporting the expected results. The importance of carrying out this supervision is to

²⁷ Guansheng Yin and others, 'Crack Identification Method of Highway Tunnel Based on Image Processing', *Journal of Traffic and Transportation Engineering (English Edition)*, 10.3 (2023), 469–84 <https://doi.org/10.1016/j.jtte.2022.06.006>

²⁸ Surya Eka Priana, 'Analisa Faktor Penyebab Kerusakan Jalan (Studi Kasus Ruas Jalan Lingkar Utara Kota Padang Panjang)', *Rang Teknik Journal*, 1.1 (2018) <https://doi.org/10.31869/rtj.v1i1.609>



avoid irregularities committed by workers, misappropriation, and wastage of funds and to overcome obstacles that may occur during the repair process.

CONCLUSION

The Roads are a connecting infrastructure and one of the most crucial factors in developing an even and balanced regional life and development. However, national roads tend to be easily damaged due to several factors, including the lack of accuracy of planning methods, for example, the mismatch between pavement thickness and load, the lack of drainage planning, the mismatch of processing materials with procedures, the inappropriate composition of materials with requirements, and inappropriate subgrade compaction. With operations and maintenance carried out at inconvenient times, vehicles with excessive loads or overloading repeatedly pass non-adhesive materials such as oil, water, airborne waste that spills on the road surface, and so on. The role of the government in dealing with damage to national roads is to carry out supervision to prevent workers from committing irregularities, misappropriation, and wastage of funds, as well as to overcome obstacles that may occur during the repair process. In addition, the government has a role in road construction so that the road can fulfill its proper position, and laws are needed to regulate road matters.

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