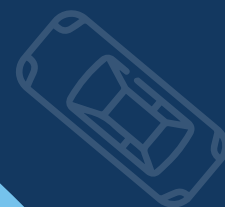




Department of Highways



Executive Summary Report

The study for the preparation of action plan
of the Department of Highways (2023 - 2027)



Executive Summary Report

The study for the preparation of action plan
of the Department of Highways

(2023-2027)



The Department of Highways is an agency under the Ministry of Transport. It has a mission and role in constructing road infrastructure to create a comprehensive and interconnected network across the country, as well as linking with neighboring countries. Furthermore, it is responsible for managing and maintaining highways within its jurisdiction to provide convenience, efficiency, and safety for road users nationwide. Recognizing the importance of internal and external changes, the Department of Highways aligns its work with the National Strategy (2018-2037) that came into effect in 2018. This strategy serves as a guideline for planning and execution. To fulfill the mission of establishing specialized units in accordance with the law, the Department of Highways develops its operational plan, which conforms to the 20-Year National Strategy (2018-2037). This strategy outlines the framework and development directions for state agencies to follow. It aims to achieve the national vision of becoming “a developed country with security, prosperity and sustainability in accordance with the Sufficiency Economy Philosophy”.

When the National Strategy came into effect, a Cabinet resolution made on December 4, 2017 classified plan into three levels. Plan level 1 is the 20-Year National Strategy with overarching goals for sustainable development based on Good Governance, which serves as a framework for various plans that conform and contribute to a common goal. Plan level 2 comprises Master Plans under the National Strategy, Country Reform Plans, National and Social Development Plans, and National Security Plans. Plan level 3 consists of Action Plans with a clear mission for each agency and aligns with Plan level 1 and 2.

For this reason, it is necessary to develop the Department of Highways’ Action Plan (2023-2027) to align with government policies and the 20-Year National Strategy. This plan will serve as a guide for driving the Department of Highways’ operations towards being suitable for the changing context. It will also be used to set the framework for policy implementation and drive the Department of Highways’ operations effectively, both within the department and in collaboration with external agencies.

The Department of Highways places great importance on long-term planning for the development of land transportation systems. It has established a framework for the main mission in four phases over a 20-year period, in line with the concept and development of land transportation systems in the future. This emphasizes the continuous execution of plans for each phase, addressing urgent fundamental transportation issues in the phase 1, aiming for sustainability in the phase 4. Additionally, it involves continuous organizational development and enhancing the efficiency of transportation to ensure that all citizens can conveniently access a comprehensive, inclusive, environmentally friendly, green and safe transport. This also includes utilizing technology and management tools as essential components in the transportation system’s development at each phase.

Moreover, there is an emphasis on the importance of ensuring alignment between the Department of Highways’ Action Plan (2023-2027) and Plan level 1, level 2, and level 3. This is aimed at ensuring that the operations are unity, promoting collaboration, reducing redundancy, and conserving the nation’s resources. Additionally, it focuses on pushing for the optimal allocation of budgets to maximize the effectiveness of strategies and plans related to the Department of Highways’ operations. As for the review of the level 1, level 2, and level 3 plans by the Office of the National Economic and Social Development Council (NESDC), the policy deployment to strategies is essential. This involves having strategies in two forms, one that is directly linked to the development objectives and is typically driven by units directly aligned with those objectives, and the other form is the supporting strategies, often carried out by units that help drive complete alignment. To provide a clearer picture, strategies are divided into two groups, which are Direct Strategy and Indirect Strategy under different levels of planning.



Strategies and Plans Relevant to DOH's Missions

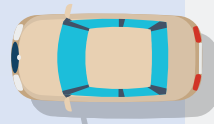
The supportive and integrated linkage between the Plan level 1 (National Strategy), Plan level 2, and Plan level 3, and the Action Plan of the Department of Highways (2023–2027)



Plan Level 1

20-Year National Strategy

Strategy 2 Competitiveness Enhancement



Plan Level 2

Master Plans under the National Strategy

- Issue (7) Infrastructure, Logistics and Digital Systems
- Issue (5) Tourism
- Issue (9) Special Economic Zones
- Issue (20) Public Services and Government Performance

National Reform Plans

Sector (5) Economy Sector

The 13th National Economic and Social Development Plan (2023 – 2027)

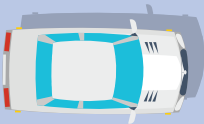
- Milestone 5 Thailand is the region's key strategic trade, investment and logistics gateway
- Milestone 1 Thailand is a leading country in high-value agricultural produce and processed agricultural products
- Milestone 2 Thailand is a sustainable quality-oriented tourist destination
- Milestone 13 Thailand has a modern, efficient, and responsive public sector

Plan Level 3

Action Plan on Thailand Logistics Development 2023 – 2027

Guideline 1: Infrastructure and Logistics Facility Improvement

Agenda



20-Year Transport System Development Strategy (2018 – 2037)

- Strategy 1 Integrated Transport Systems: Connectivity, Accessibility, Mobility
- Strategy 2 Transport Services: Safety and Reliability
- Strategy 3 Regulations & Institution: Transparency, Equity, PPP
- Strategy 4 Human Resource Development: World-Class Standard
- Strategy 5 Technology & Innovation: Research and Development (R&D)

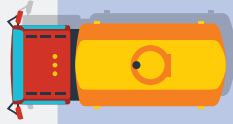
Transport Action Plan 2023 – 2027

- Strategy 1 Service Quality Enhancement of Transport System and Logistics
- Strategy 2 Develop Transportation Infrastructure to support National Development
- Strategy 3 Safety Improvement and Support Green and Environment-Friendly Transport
- Strategy 4 Modernize Organization and Processes with Efficiency and Transparency

(Draft)Transport Action Plan on the Third Thailand Logistics Development Plan (2017 – 2022)

- Guideline 1 Develop the infrastructure supporting Sustainable Development
- Guideline 2 Enhancement of Transport Service for Better Service and Accessibility of All People

Functional



DOH's Action Plan (2023 – 2027)

- Strategy 1 Develop a highway network that promotes connectivity, accessibility, and mobility in accordance with Road Hierarchy.
- Strategy 2 Maintain and manage the national highway network in a responsive manner to ensure continuous and high-quality service provision.
- Strategy 3 Enhance the efficiency and elevate safety standards within the highway network and construction and maintenance areas.
- Strategy 4 Create a new-era workforce, emphasizing proactive work and integration with all sectors, aiming to become a digital organization.
- Strategy 5 Motivate research and innovation, develop environmentally friendly and inclusive highways, and promote sustainable development goals.

Remark : Blue text represents the direct strategies
Green text represents the indirect strategies.

Approaches for formulating the strategy and tactics of the Action Plan of the Department of Highways (2023 - 2027) using the TOWS Matrix tool.

The strategy and tactics of the Action Plan of the Department of Highways (2023 - 2027) rely on the TOWS Matrix tool, which is based on the Internal Factor Analysis and External Factor Analysis of the organization, using the strengths, weaknesses, opportunities, and threats or SWOT Analysis. The environment analysis results from sub-group meetings, interviews, and surveys with personnel within the Department of Highways, as well as collecting feedback from stakeholders of the Department of Highways. The results of the analysis using the TOWS Matrix tool can be divided into 4 strategies: proactive strategy (SO), corrective strategy (WO), preventive strategy (ST), and reactive strategy (WT). These strategies can be summarized as follows:



Proactive strategy (SO)

Utilizing the organization's strengths to maximize benefits from external opportunities

- Developing the highway infrastructure to facilitate connections with various modes of transportation, including railways, water transport, and air transport, and accessing strategic target areas such as economic zones, industrial zones, and tourist destination zones
- Leveraging digital technology in the analysis, design, and construction processes to enhance service quality and improve safety for users
- Supporting employee learning through coaching and mentoring systems by collaborating with experts to create a learning experience for succession planning and sharing the expertise burden by utilizing accessible digital technology
- Applying digital technology to enhance data storage and improve efficiency in project planning, assessment, and monitoring
- Supporting the presentation of research through online media for increased visibility of research projects
- Expanding the investment model between the government and private sector into additional initiatives beyond the operation and maintenance (O&M) of the Inter - City Motorway networks, such as managing rest areas and truck parking facilities
- Developing a centralized complaint database system
- Promoting public relations and fostering collaboration with communities via online social media



Corrective strategy (WO)

Correcting or mitigating organizational weaknesses and minimizing problems to leverage the opportunities.

- Developing the highway network to support the efficient development of logistics systems
- Developing bypass roads
- Developing roadside facilities on the highway network, including truck parking areas and electric vehicle charging stations on the routes under the Department of Highways' responsibilities
- Encouraging the personnel of the Department of Highways to learn from private sector investors through mentoring programs to gain new learning experiences
- Utilizing energy-efficient lighting systems
- Developing strategic routes to the southern region
- Promoting research and development to prepare for new technologies such as automation systems that enable communication between vehicles and roads
- Prioritizing highways with high traffic volumes to develop a more flexible highway network
- Developing applications to enhance work efficiency and improve public service delivery
- Enhancing knowledge alignment with employee needs by involving employees in providing up-to-date digital technology recommendations
- Enhancing the quality of life for employees and creating a positive work environment to foster organizational commitment and increase job effectiveness
- Developing diverse learning channels and improving the efficiency of knowledge storage and transfer using digital technology
- Promoting local management and highway development to accommodate the transportation needs of everyone, reduce social disparities, and prioritize community involvement



Preventive Strategy (ST)

Utilizing the organization's strengths to avoid or mitigate the impact of external obstacles.

- Enhancing efficiency in addressing issues, complaints, environmental impacts, and promoting local engagement
- Developing the comprehensive risk management plans covering all missions
- Enhancing the efficiency in screening overweight trucks
- Providing real-time updates to the public on project progress, including the environmental impact assessment process and community involvement in various projects
- Improving the road design structures to better withstand natural disasters



Reactive Strategy (WT)

Minimizing and overcoming weaknesses and avoiding obstacles while waiting for new opportunities to arise.

- Prioritizing road maintenance to maintain service levels within limited budget
- Developing a comprehensive system for bridge maintenance at every stage
- Promoting the adoption of construction innovations for bridges that can reduce construction time and quickly restore traffic flow
- Fostering a safety culture in construction zones
- Supporting preventive road safety operations at various stages in the highway development cycle, from feasibility studies to design, construction, and maintenance
- Promoting the utilization of environmentally friendly materials research findings in road construction and maintenance



Analysis on the situations related to the missions of the Department of Highways



Currently, the Department of Highways is responsible for overseeing highways throughout the country, covering approximately 52,197 kilometers (data as of the year 2021). Meanwhile, the volume of travel on highways has increased due to changes in the economy and society, which are factors affecting the operational

situation of the Department of Highways, including construction, maintenance, and improvement of main roads to make them convenient, fast, and safe. In this regard, the current situation at the Department of Highways can be summarized as follows:

1) Issue of Highway Network Development

The highway network is a fundamental infrastructure that requires a significant budget investment and time to implement. In addition, the Ministry of Transport has policies to promote various forms of continuous transportation systems, increasing the role of road transportation in connecting with other transportation modes. Therefore, it is a challenge to plan and prioritize projects and investments appropriately within a limited budget framework. Thus, the Department of Highways should have collaboration between relevant agencies to ensure efficient work, prevent delays, use the budget effectively, and align with the needs of the citizens and changing circumstances.

1



2) Issue of Traffic Mobility on Main Highway Network

Currently, the main highway network serving urban areas must accommodate increasing traffic volumes due to urban expansion, leading to traffic congestion and decreased mobility. Therefore, the Department of Highways should analyze average speeds, traffic volumes, and their economic impacts and use them as criteria for selecting road construction projects to maximize efficiency.

2



3) Issue of Accident and Safety on Highways

The statistics of accidents on highways between the years 2011 and 2020 have shown an increasing trend, from around 11,000 incidents per year to approximately 19,000 incidents per year. These accidents result in loss of life and property. Based on accident statistics in the year 2021, the economic cost of accidents can be estimated at 22,350 million baht per year. Therefore, the Department of Highways should focus on the implementation of safety measures throughout all phases, from pre-construction to construction and post-construction.

3



4

4) Issue of Vulnerable Road Users

The vulnerable road users, including the elderly, young children, pedestrians, cyclists, and individuals with physical disabilities who travel as non-motorist, often encounter challenges when traveling on highways. Therefore, the Department of Highways should expedite the development of road infrastructure and facilities on highways to better accommodate vulnerable road users and ensure their safer access and travel on highways.





5) Issue of Impacts from Disaster and Climate Change

The current weather conditions are experiencing rapid and severe changes, leading to significant challenges for road networks in mountainous areas, including events such as floods and landslides. These events disrupt transportation routes, affecting both safety and transportation efficiency, as well as the country's economy. Therefore, the Department of Highways should establish measures for prevention and mitigation, alleviate the damage based on the severity of such events.

6) Issue of Organizational Transformation towards a Digital Organization (System & User)

Currently, technology is evolving rapidly, necessitating continuous improvements to digital technology systems. However, the development of digital skills among personnel has not kept pace with these changes, resulting in challenges when transitioning work processes into a digital organization. Therefore, the Department of Highways must enhance the digital technology capabilities of personnel at all levels and develop a centralized database system that can facilitate rapid data exchange between agencies. Additionally, there should be an elevation of government services through electronic systems.

7) Issue of Work Zone Safety

The safety in construction and maintenance work zones remains a persistent problem, with a significant increase in the severity of accidents occurring within work zones managed by the Department of Highways. Currently, accidents continue to affect department personnel, contractors, and road users traveling close to the construction and maintenance work zones, resulting in economic losses due to injuries, fatalities, property damage, traffic congestion, and project delays. Therefore, the Department of Highways should revise safety management processes in work zones and install safety equipment in these zones to enhance safety for all parties involved.

8) Issue of Challenges in Elevating Highway Maintenance Capability

Currently, the increased volume of heavy truck travel and cumulative standard load volumes on the highway network has led to greater damage to sections under the responsibility of the Department of Highways. Additionally, there are many aging bridges, over 30 years old, requiring increased budget allocation for renovations to keep them in good condition. Therefore, the Department of Highways should strategize according to the specific usage characteristics to design and select maintenance projects that are cost-effective.

9) Issue of Users Complaints

Statistics from the past four years (2018-2021) show a significant increasing trend in user complaints. This is noteworthy because road users have various channels to file complaints and express grievances. Therefore, the Department of Highways should overhaul the process of handling and managing user complaints within and outside the organization, making it swift and efficient. This should also involve creating and improving public understanding of the department's operations.

10) Issue of Guideline for Succession Planning and Enhancing Knowledge Management (Human Resource)

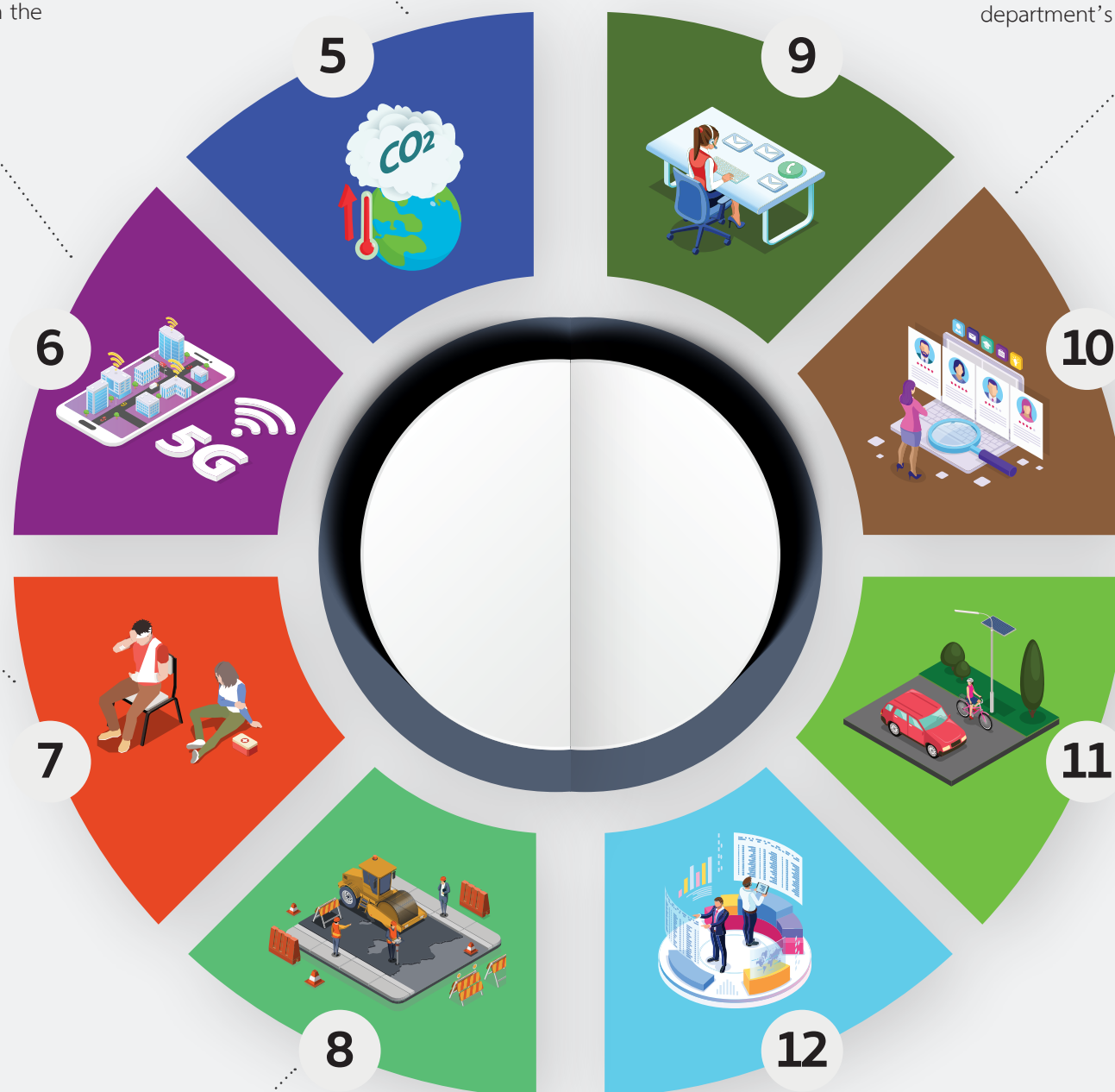
Currently, the Department of Highways has an average retirement rate of 160-200 personnel per year. Additionally, the government has a policy to reduce the number of civil servants, leading to limited opportunities for allocating staff positions according to organizational needs. There is also a challenge arising from the generation gap, which has resulted in a delayed succession planning process and a lack of expertise because a high proportion of employees retire simultaneously. Therefore, the Department of Highways should establish guidelines for succession planning and enhance knowledge management. Additionally, efforts should be made to improve the working environment to enhance the quality of life for personnel and promote learning through various channels within the constraints of a limited budget.

11) Issue of Adapting Highway Development to be Environmentally Friendly and Sustainable (Green & Sustainable Highway)

The environmental and sustainability concerns are critical on a global scale and are outlined as one of the key goals in The 13th National Economic and Social Development Plan, aiming to promote sustainable economic growth. In terms of this, the Department of Highways should consider environmental issues more seriously and implement measures that align with environmentally friendly missions. These measures may include using materials with low carbon footprints, recycling waste materials in construction, using LED lighting, harnessing solar energy for traffic management and control, etc.

12) Issue of Research & Innovation

Considering that research efforts from 2002 to 2022 have been predominantly focused on engineering-related work, with limited progression in translating research into practical applications, the Department of Highways should establish a research direction that aligns with future changes. This should include efforts to promote and support staff excellence in research, along with continuous and appropriate budget allocation to facilitate these endeavors.



Development



Management



Connect



Safety





Action plan of the Department of Highways (2023–2027)



Our Vision



To develop and manage the highway network that is convenient, connected, accessible, safe, and environmentally friendly, according to Road Hierarchy standards, benefiting all groups of people. ”

Our vision, as presented above, encompasses the following key points:



Process-oriented issue:

Striving to develop and manage the highway network according to Road Hierarchy.



Outcome-oriented issue:

Supporting national development through the development of a highway network that is “convenient, connected, accessible, safe, environmentally friendly, and enhances social opportunities for all groups of people.”



Our Mission



Develop a Highway Network that promotes connectivity, accessibility, and mobility to drive the country’s economy and society.



Maintain and enhance the safety, and management level of the highway network to ensure continuous service readiness in accordance with quality standards.



Manage an organization that strives to become digital, adaptable to change, environmentally conscious, and inclusive of all groups, aiming for sustainable development goals.



Our Value

HIGHWAYS



Create works by blending technology with appropriate knowledge, honesty, work with awareness, take responsibility for the mission, be dedicated to providing services, and work altogether as one. ”

H

High
Performance

I

Intelligent
Technology

G

Good
Knowledge

H

Honesty

W

Work Smart

A

Accountability

Y

Year-Round
Commitment

S

Synergy

Our Culture

D

eliver Good Service to People

Strive to provide excellent service to the public.

O

bligate Governance and Sustainability

Uphold the principles of governance and sustainability.

H

old Accountability for Interests of Nation and People

Maintain responsibility for the interests of the nation and its citizens.



Action Plan: Strategic Goals, Objectives, Strategies, Key Performance Indicators, and Targets



1

Highway Network Development



Strategic goal

Develop a highway network that promotes connectivity, accessibility, and mobility in accordance with Road Hierarchy.



Objectives

1) Develop a highway network that can connect and provide complete and continuous access to economic areas and other forms of transport connections as well as supporting the change of transportation mode to rail and water transportation to make traveling and transporting of goods convenient. This can also support economic and urban community expansion and reduce logistics costs.

2) Develop and improve the highway network to enhance flexibility and ability to support travel and transport of goods efficiently in order to solve traffic problems and reduce losses from delays on the highway network.



3) Develop the highway network and facilities to support walking activities, road crossing, and other activities of vulnerable road users conveniently and safely.

4) Develop the highway network to increase mobility and accessibility in accordance with road hierarchy.



Strategies

Strategy 1.1: Develop the national highway networks and inter-city motorway to support economic areas, tourist destinations, and border checkpoints.

Strategy 1.2: Develop and enhance missing links in the highway network to connect economic areas, transportation stations, railway stations, ports, inland ports, airports, and cargo collection and distribution points in line with the improvement of the national highway networks to support the connection at entry and exit point of the inter-city motorway system.

Strategy 1.3: Develop and improve highways, bridges, tunnels, overpasses, bypasses, railroad crossings, and manage users' needs for travel and freight transportation to solve traffic congestion and bottlenecks.

Strategy 1.4: Enhance the physical appearance and components of highways passing through community areas, agricultural areas, tourist destinations, and important

locations to provide convenience and safety for all road users.

Strategy 1.5: Develop highway network standards in accordance with road hierarchy and apply them to determine development patterns for main and secondary highways, including intersection points and various entry and exit management.

Key Performance Indicators, and Targets of the Action Plan in the Highway Network Development

No.	KPI	Base value	Target value (fiscal year)				
			2023	2024	2025	2026	2027
Objective-Based KPI (Output-Based KPI)							
1.1	The number of missing links to enhance accessibility to the national highway network, supporting economic connectivity that are ready to commence construction (Unit: no. of projects)	5*	3 projects within 5 years				
1.2	The number and distance of developing national highways and inter-city motorways network to support special economic zones, tourist destinations, and border checkpoints						
1.2.1	The number of highway bypasses ready to commence construction (Unit: no. of projects)	7*	3 projects within 5 years				
1.2.2	The number of new highways ready to commence construction (Unit: kilometers)	30	200 km within 5 years				
1.2.3	The number of inter-city motorways ready to commence construction (Unit: no. of projects)	2	3 projects within 5 years				
1.2.4	The number of bridges, underpasses, tunnels, and intersections ready to commence construction (Unit: locations)	10	11	12	13	14	15
1.2.5	The length of the national highway network with improved or expanded traffic lanes ready to commence construction (Unit: kilometers)	75	75	75	80	80	85
1.3	The number of community areas, agricultural areas, tourist destinations, and important locations that have been improved for the convenience and safety of all road users						
1.3.1	The number of community areas that have been improved for the convenience and safety of all road users (Unit: locations)	60	60	60	65	65	70
1.3.2	The number of agricultural areas that have been improved for the convenience and safety of all road users (Unit: locations)	60	60	60	65	65	70
1.3.3	The number of tourist destinations and important locations that have been improved for the convenience and safety of all road users (Unit: locations)	50	50	50	55	55	60
1.4	The number of organizations that have applied the Road Hierarchy for highway development (Unit: organizations)	-	4 organizations within 5 years				
Strategy-Based KPI (Outcome-Based KPI)							
1.1	Accessibility to the national highway networks (Unit: percentage)	-	Increased by no less than 5% within 5 years				

The information used for calculations and the calculation methods are detailed in the appendix of the Department of Highways' Action Plan (2023-2027).

Remark: *The target values are less than the base value since the national highways have been continuously developed so that they can cover all major area of the country. Therefore, the development of new missing links and highway bypasses tend to decrease.



2

Maintenance and Management of the National Highway Network



Strategic Goal

Maintain and manage the national highway network in a responsive manner to ensure continuous and high-quality service provision.



Objectives

1) Maintain and repair roads and bridges at each level of the Road Hierarchy to meet the specified quality and safety standards.

2) Efficiently manage traffic and routes to facilitate users in all situations, including normal conditions, construction areas, and during emergencies and disasters.

3) Implement sustainable solutions for disaster management using technology, innovation, and efficient management systems.

4) Control vehicle weights in accordance with international laws and standards to extend the lifespan of road infrastructure and reduce maintenance budget burdens.



Strategies

Strategy 2.1: Manage Road and bridge maintenance at each level of the Road Hierarchy using inspection data and engineering assessment.

Strategy 2.2: Establish traffic and incident management centers that integrate data and collaborative work from surveillance, incident detection, incident response, and incident prevention, to anticipate and respond to future events.

Strategy 2.3: Develop mechanisms for the integration of data, work practices,

budgets, personnel, tools, machinery and technology in traffic and disaster management.

Strategy 2.4: Focus on sustainable problem solving of recurring incidents and disasters using Big Data and engineering models.

Strategy 2.5: Enhance capacity and develop a modernized vehicle weight control system covering the entire national highway network while revising and addressing problematic regulations and obstacles.

Key Performance Indicators, and Targets of the Action Plan in Maintenance and Management of National Highway Network

No.	KPI	Base value	Target value (fiscal year)				
			2023	2024	2025	2026	2027
Objective-Based KPI (Output-Based KPI)							
2.1	The distance of the highways that have been maintained according to their service life cycle (Unit: kilometers)	2,800	2,900	3,000	3,100	3,200	3,300
2.2	The number of bridges that have been maintained according to their service life cycle (Unit: bridges)	3	4	4	4	5	5
2.3	Percentage of response to incidents within the specified time frame in the inter-city motorway networks (Unit: percentage)	85-90	91	92	93	94	95
2.4	Percentage of access to disaster-stricken areas within the specified time frame in the highway network (Unit: percentage)	-	80	80	80	80	80
2.5	Percentage of days that the weight inspection station can provide service each year (Unit: percentage)	-	86	87	88	89	90
2.6	The number of additional vehicle weight control systems provided each year and the number of trucks that undergo weight inspections at the weight inspection station						
2.6.1	The number of additional vehicle weight control systems opened for service (Unit: locations)	4	10	10	10	10	10
2.6.2	The number of trucks undergoing weight inspections at the weight inspection station and the vehicle weight control system (Unit: million vehicles)	30	31	32	33	34	35
Strategy-Based KPI (Outcome-Based KPI)							
2.1	Percentage of distance on the highway with an international roughness index meeting the standard threshold (Unit: percentage)	87.73	>85	>85	>85	>85	>85
2.2	Percentage of bridges meeting the standard condition rating (Unit: percentage)	93.7	>70	>80	>80	>85	>85

The information used for calculations and the calculation methods are detailed in the appendix of the Department of Highways' Action Plan (2023-2027).



3

Safety



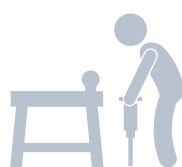
Strategic Goal

Enhance the efficiency and elevate safety standards within the highway network and construction and maintenance areas.



Objectives

- 1) Establish safety standards for each level of the road hierarchy and implement necessary improvements to meet those standards.
- 2) Implement proactive measures to prevent and reduce accidents on the highway network.
- 3) Manage and reduce the severity of accidents, especially those leading to fatalities and injuries on highways.



- 4) Develop mechanisms to drive and support safety standard upgrades to prevent accidents in construction and maintenance areas.



Strategies

Strategy 3.1: Improve design standards and safety equipment installation for safety standards specified for each level of road hierarchy.

Strategy 3.2: Implement engineering measures with a focus on prevention and correction of each type of accident severity, including speed-related accidents, roadside hazard accidents, intersection-related accidents, collision at crossroads, slippery road accidents, rear-end collisions accidents, pedestrian accidents, and motorcycle accidents.

Strategy 3.3: Address black spots on highways, emphasizing the use of collision diagram statistics to determine patterns or methods for improving unsafe conditions on the road.

Strategy 3.4: Define work procedures and establish clear budget and personnel mechanisms for road safety audits, from planning and design to construction and post-opening stages.

Strategy 3.5: Take relevant actions to promote and support law enforcement in managing highway accident issues.

Strategy 3.6: Develop skills and instill the value of safety management in construction and maintenance areas in personnel involved at all levels.

Strategy 3.7: Establish work procedures, budget and personnel mechanisms for safety management in construction and maintenance areas to meet standardized requirements.

Key Performance Indicators, and Targets of the Action Plan in Safety

No.	KPI	Base value	Target value (fiscal year)				
			2023	2024	2025	2026	2027
Objective-Based KPI (Output-Based KPI)							
3.1	Percentage of locations that have actually implemented road hazard prevention improvements compared to the annual target (Unit: percentage)	-	100	100	100	100	100
3.2	Percentage of risk spots and black spots on the highway network that have actually implemented improvements compared to the annual target (Unit: percentage)	-	105	105	105	105	105
3.3	The number of trucks that use truck rest area (Unit: vehicles)	379,570	390,000	400,000	410,000	420,000	430,000
3.4	Percentage of large-scale highway construction or improvement projects that have undergone Road Safety Audits (RSA) before opening (Unit: percentage)	-	-	60	70	80	90
Strategy-Based KPI (Outcome-Based KPI)							
3.1	Percentage of decreased black spots on the highway (Unit: percentage)	-	-	25	50	60	70
3.2	Severity Index (Unit: cases per 100 accidents)	12.92	12.50	12.25	12.00	11.75	11.50
3.3	The number of fatalities per vehicle kilometers traveled (VKT) on the highway network (Unit: cases per 100 million VKT)	0.93	0.88	0.84	0.80	0.76	0.72
3.4	Percentage of accident rate in work zones and maintenance areas per number of working days that have decreased (Unit: percentage)	-	-	Decreased 5% from the previous year	Decreased 5% from the previous year	Decreased 5% from the previous year	Decreased 5% from the previous year
3.5	Percentage of fatality rate from accidents in work zones and maintenance areas per number of working days that have decreased (Unit: percentage)	-	-	Decreased 5% from the previous year	Decreased 5% from the previous year	Decreased 5% from the previous year	Decreased 5% from the previous year
3.6	The number of DOH’s personnel who lost their lives in traffic accidents while on duty (Unit: cases)	-	-	0	0	0	0

The information used for calculations and the calculation methods are detailed in the appendix of the Department of Highways' Action Plan (2023-2027).



4

Organizational Management



Strategic Goal

Create a new-era workforce, emphasizing proactive work and integration with all sectors, aiming to become a digital organization.



Objectives

- 1) Develop a workforce for the new era capable of adapting to changing global situations.
- 2) Become an organization responsible for all people based on understanding and good governance principles.
- 3) Integrate digital culture into all organizational activities (Value Chain).
- 4) Foster a proactive working culture and harmonize with all sectors.

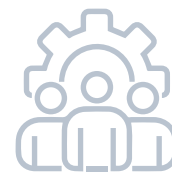


Strategies

Strategy 4.1 Develop the thinking, skills, and attitudes of the workforce to promote lifelong learning and enhance the quality of life within the organization.

Strategy 4.2 Develop digital knowledge, understanding, and digital literacy skills for the workforce to support the adoption of digital culture in their work.

Strategy 4.3 Transform the organization using digital transformation tools in work processes and data management for analysis and utility.



Strategy 4.4 Enhance electronic services (e-Services) for public service.

Strategy 4.5 Upgrade proactive public relations of organization's operation and performance result by emphasizing public understanding of road usage and citizen responsibilities under the law.

Strategy 4.6 Improve monitoring of operations and budget allocation using information systems.

Strategy 4.7 Establish work processes, budget and personnel mechanisms for risk management.

Strategy 4.8 Review, amend, and improve laws, regulations, and standards to enhance efficiency and adapt to current situations while accommodating changes.

Key Performance Indicators, and Targets of the Action Plan in Organizational Management

No.	KPI	Base value	Target value (fiscal year)				
			2023	2024	2025	2026	2027
Objective-Based KPI (Output-Based KPI)							
4.1	Percentage of successful implementation of the annual Human Resource Development Plan (Unit: percentage)	86.36	72	74	76	78	80
4.2	The number of organizations that have activities aimed at creating a favorable working environment as specified in the activities (Unit: organizations)	-	5	8	11	14	17
4.3	The number of systems providing public services developed according to Digital Government Services principles, Public Services, Smart Back Office (Unit: systems)	1	Increased by no less than 5 systems within 5 years				
4.4	Percentage of success among target group personnel who have undergone training assessments in the areas of spatial management (Smart PR) and legal matters, regulations, and rules (Unit: percentage)	-	60	60	60	60	60
Strategy-Based KPI (Outcome-Based KPI)							
4.1	Level of satisfaction in terms of the quality of life of personnel (Unit: percentage)	-	71	72	73	74	75
4.2	Level of readiness for the development of digital government within the DOH (Unit: percentage)	62.14	65	70	72	75	75
4.3	Level of achievement in managing and addressing complaints/grievances within the DOH's self-operated activities (until resolution) (Unit: percentage)	-	70	75	78	80	85

The information used for calculations and the calculation methods are detailed in the appendix of the Department of Highways' Action Plan (2023-2027).



5

Research, Environment, and Sustainable Development



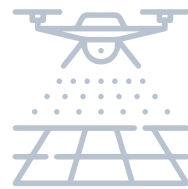
Strategic Goal

Motivate research and innovation, develop environmentally friendly and inclusive highways, and promote sustainable development goals.



Objectives

- 1) Achieve research and innovation results applicable throughout the value chain concretely.
- 2) Develop a working mechanism focusing on environmentally friendly and inclusive highway development.
- 3) Utilize Sustainable Development Goals (SDGs) as targets for related missions.



Strategies

Strategy 5.1: Support and motivate research and innovation for mission-specific research, knowledge creation research, and innovation developed from practitioners for continuous and clear results application, in addition to the promotion of research and innovation utilization and expansion.

Strategy 5.2: Apply new-age technology and innovation in operations, such as using Unmanned Aerial Vehicles (UAV) for surveying and designing traffic management through Building Information Modelling (BIM) in the maintenance and safety enhancement.

Strategy 5.3: Establish networks and Memorandum of Understanding (MOU) with government agencies, private sectors, educational institutions, and international organizations to promote research and innovation development.

Strategy 5.4: Develop, improve, and maintain the highway network and manage construction areas including the maintenance for equitable access and utilization.

Strategy 5.5: Develop green highway corridors from the design, construction, operation, and maintenance to minimize environmental impact, utilize valuable resources, and conserve energy.

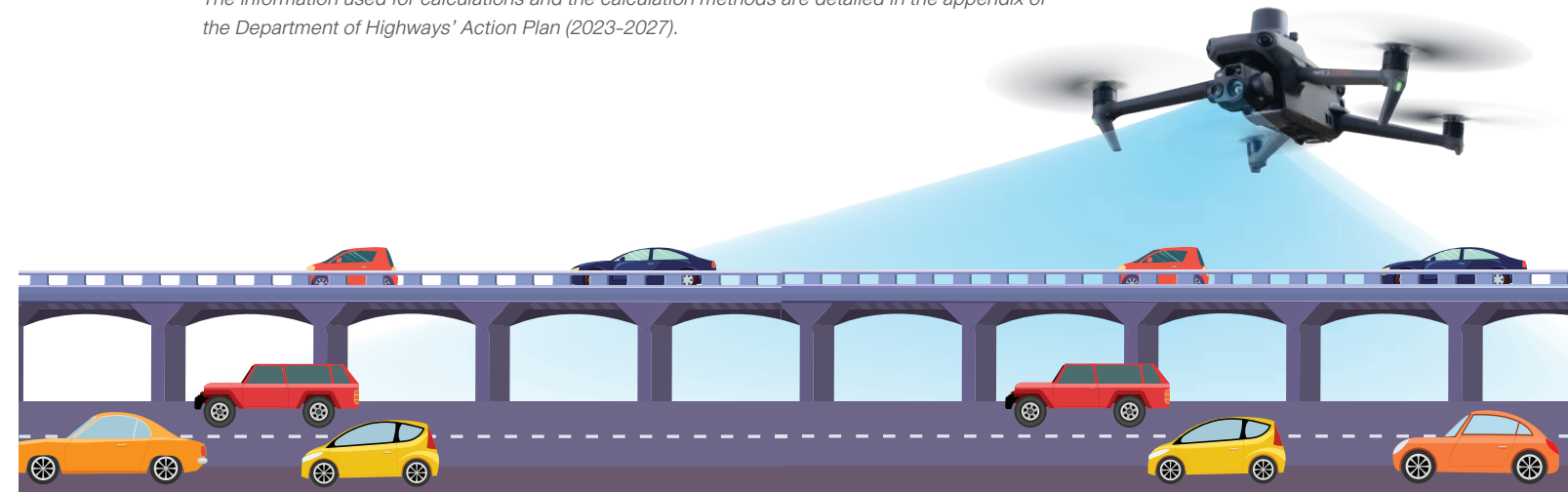
Strategy 5.6: Promote the use of alternative materials, recycled materials, and reused materials friendly to the environment, as well as work processes that reduce energy consumption, Carbon dioxide (CO₂) and greenhouse gas emissions in construction and bridge works.

Strategy 5.7: Instill environmental conservation values in personnel involved at all levels.

Key Performance Indicators, and Targets of the Action Plan in the Research Environmental, and Sustainable Development

No.	KPI	Base value	Target value (fiscal year)				
			2023	2024	2025	2026	2027
Objective-Based KPI (Output-Based KPI)							
5.1	Research and innovation outputs that can be applied in the activities of the DOH (Unit: number)	-	2	2	2	2	2
5.2	The number of roads implementing green highway principles and/or universal design brought towards the actual construction (Unit: number of roads)	-	Increased at least 3 roads within 5 years				
5.3	The number of environmentally friendly design projects aligned with sustainable development principles, landscape architecture, and approved community identities for actual implementation (Unit: number)	-	2	2	2	2	2
Strategy-Based KPI (Outcome-Based KPI)							
5.1	Percentage of success in improving roads and increasing space for everyone (Unit: percentage)	-	80	80	80	80	80

The information used for calculations and the calculation methods are detailed in the appendix of the Department of Highways' Action Plan (2023-2027).





Projects and activities are presented in the Department of Highways' action plan (2023-2027)

- Development of inter-city motorway supporting economic area, tourist attractions and border passes
- Development of highways connecting to international highway networks
- Development of highways and bridges supporting the Eastern Economic Corridor
- Development of highways supporting the economic areas
- Development and management of rest area along the inter-city motorways
- Development of highways and bridges connecting to other transport modes
- Development of highways for enhancing the mobility of networks
- Development of bridges for enhancing the mobility of networks
- Development of highways in urban areas supporting all people
- Development of highways for increasing highway efficiency
- Development of highways for increasing road shoulders
- Development of highways for regional development
- Management of road hierarchy for enhancing the efficiency and safety
- Highway maintenance and rehabilitation
- Bridge maintenance
- Incident and disaster management (Dispersion of traffic and accident data)
- Improvement of structures from incidents and disaster on prone area and vulnerable networks
- Development of vehicle weight control system on highways
- Development of weight control stations
- Improvement and amendment activities of laws
- Highway safety activities supporting road hierarchy
- Highway safety activities for reducing accident severity
- Development of rest areas
- Rectification of risk spots and black spots
- Road safety audits
- Incident and disaster management (Law enforcement for increasing highway safety)
- Development of personal skills
- Improvement of work process supporting digital technology
- Development of electronic services
- Enhancement of public relation and management of complaints
- Enhancement of monitoring and evaluation process
- Enhancement of integration among agencies
- Promotion and mobilization of research and innovation
- Enhancement of highway operation by technology and innovation
- Incident and disaster management (traffic, incident and disaster management for increasing convenience and safety on highways)
- Network creation activities for development of research and innovation
- Development, improvement, and maintenance of highway network supporting all people
- Promotion on eco-friendly and energy-friendly highway materials
- Instillment of personal values, such as skill development training project and value instillment of safety management in construction and maintenance area project.
- Skill development.
- Other projects, such as in-house consultant hiring projects.



Strategy 1 Highway Network Development

Strategic Goal : Develop a highway network that promotes connectivity, accessibility, and mobility in accordance with Road Hierarchy

Strategy

Projects/Activities that support

Strategy 1.1: Develop the national highway networks and inter-city motorway to support economic areas, tourist destinations, and border checkpoints.

- Development of inter-city motorway supporting economic area, tourist attractions and border passes
- Development of highways connecting to international highway networks
- Development of highways and bridges supporting the Eastern Economic Corridor
- Development of highways supporting the economic areas
- Development and management of rest area along the inter-city motorways

Strategy 1.2: Develop and enhance missing links in the highway network to connect economic areas, transportation stations, railway stations, ports, inland ports, airports, and cargo collection and distribution points in line with the improvement of the national highway networks to support the connection at entry and exit point of the inter-city motorway system.

- Development of highways and bridges connecting to other transport modes

Strategy 1.3: Develop and improve highways, bridges, tunnels, overpasses, bypasses, railroad crossings, and manage user's need for travel and freight transportation to solve traffic congestion and bottlenecks.

- Development of highways for enhancing the mobility of networks
- Development of bridges for enhancing the mobility of networks

Strategy 1.4: Enhance the physical appearance and components of highways passing through community areas, agricultural areas, tourist destinations, and important locations to provide convenience and safety for all road users.

- Development of highways in urban areas supporting all people
- Development of highways for increasing highway efficiency
- Development of highways for increasing road shoulders
- Development of highways for regional development

Strategy 1.5: Develop highway network standards in accordance with road hierarchy and apply them to determine development patterns for main and secondary highways, including intersection points and various entry and exit management.

- Management of road hierarchy for enhancing the efficiency and safety



Strategy 2 Maintenance and Management of the National Highway Network

Strategic Goal : Maintain and manage the national highway network in a responsive manner to ensure continuous and high-quality service provision.

Strategy	Projects/Activities that support
Strategy 2.1: Manage Road and bridge maintenance at each level of the Road Hierarchy using inspection data and engineering assessment.	• Highway maintenance and rehabilitation • Bridge maintenance
Strategy 2.2: Establish traffic and incident management centers that integrate data and collaborative work from surveillance, incident detection, incident response, and incident prevention, to anticipate and respond to future events.	• Incident and disaster management (Dispersion of traffic and accident data)
Strategy 2.3: Develop mechanisms for the integration of data, work practices, budgets, personnel, tools, machinery and technology in traffic and disaster management.	• Incident and disaster management (Dispersion of traffic and accident data)
Strategy 2.4: Focus on sustainable problem solving of recurring incidents and disasters using Big Data and engineering models.	• Improvement of structures from incidents and disaster on prone area and vulnerable networks
Strategy 2.5: Enhance capacity and develop a modernized vehicle weight control system covering the entire national highway network while revising and addressing problematic regulations and obstacles.	• Development of vehicle weight control system on highways • Development of weight control stations • Improvement and amendment activities of laws



Strategy 3 Safety

Strategic Goal : Enhance the efficiency and elevate safety standards within the highway network and construction and maintenance areas.

Strategy	Projects/Activities that support
Strategy 3.1: Improve design standards and safety equipment installation for safety standards specified for each level of road hierarchy.	• Highway safety activities supporting road hierarchy
Strategy 3.2: Implement engineering measures with a focus on prevention and correction of each type of accident severity, including speed-related accidents, roadside hazard accidents, intersection related accidents, collision at crossroad, slippery road accidents, rear-end collisions accidents, pedestrian accidents, and motorcycle accidents.	• Highway safety activities for reducing accident severity • Development of rest areas
Strategy 3.3: Address black spots on highways, emphasizing the use of collision diagram statistics to determine patterns or methods for improving unsafe conditions on the road.	• Rectification of risk spots and black spots
Strategy 3.4: Define work procedures and establish clear budget and personnel mechanisms for road safety audits, from planning and design to construction and post-opening stages.	• Road safety audits
Strategy 3.5: Take relevant actions to promote and support law enforcement in managing highway accident issues.	• Incident and disaster management (Law enforcement for increasing highway safety)
Strategy 3.6: Develop skills and instill the value of safety management in construction and maintenance areas in personnel involved at all levels.	• Development of personal skills and Instill values
Strategy 3.7: Establish work procedures, budget and personnel mechanisms for safety management in construction and maintenance areas to meet standardized requirements.	• Other projects, such as the In-House consulting project, aim to enhance road safety, among other things.



Strategy 4 Organizational Management

Strategic Goal : Create a new-era workforce, emphasizing proactive work and integration with all sectors, aiming to become a digital organization.

Strategy	Projects/Activities that support
Strategy 4.1 Develop the thinking, skills, and attitudes of the workforce to promote lifelong learning and enhance the quality of life within the organization.	• Development of personal skills
Strategy 4.2 Develop digital knowledge, understanding, and digital literacy skills for the workforce to support the adoption of digital culture in their work.	• Development of personal skills
Strategy 4.3 Transform the organization using digital transformation tools in work processes and data management for analysis and utility.	• Improvement of work process supporting digital technology
Strategy 4.4 Enhance electronic services (e-Services) for public service.	• Development of electronic services
Strategy 4.5 Upgrade proactive public relations of organization's operation and result by emphasizing public understanding of road usage and citizen responsibilities under the law.	• Enhancement of public relation and management of complaints
Strategy 4.6 Improve monitoring of operations and budget allocation using information systems.	• Enhancement of monitoring and evaluation process
Strategy 4.7 Establish work processes, budget, and personnel mechanisms for risk management.	• Enhancement of integration among agencies
Strategy 4.8 Review, amend, and improve laws, regulations, and standards to enhance efficiency and adapt to current situations while accommodating changes.	• Legislative Amendment and Improvement Activities



Strategy 5 Research, Environment, and Sustainable Development

Strategic Goal : Motivate research and innovation, develop environmentally friendly and inclusive highways, and promote sustainable development goals.

Strategy	Projects/Activities that support
Strategy 5.1: Support and motivate research and innovation for mission-specific research, knowledge creation research, and innovation developed from practitioners for continuous and clear results application, in addition to the promotion of research and innovation utilization, and expansion.	• Promotion and mobilization of research and innovation
Strategy 5.2: Apply new-age technology and innovation in operations, such as using Unmanned Aerial Vehicles (UAV) for surveying and designing traffic management through Building Information Modelling (BIM) in the maintenance and safety enhancement.	• Incident and disaster management (traffic, incident and disaster management for increasing convenience and safety on highways) • Enhancement of highway operation by technology and innovation
Strategy 5.3: Establish networks and Memorandum of Understanding (MOU) with government agencies, private sectors, educational institutions, and international organizations to promote research and innovation development.	• Network creation activities for development of research and innovation
Strategy 5.4: Develop, improve, and maintain the highway network and manage construction areas including the maintenance for equitable access and utilization.	• Development, improvement, and maintenance of highway network supporting all people
Strategy 5.5: Develop green highway corridors from the design, construction, operation, and maintenance to minimize environmental impact, utilize valuable resources, and conserve energy.	• Other projects, such as the study of implementing global sustainability assessment systems like Green Roads for highway development, are among the activities that define the scope of the project design for potentially capable highway development.
Strategy 5.6: Promote the use of alternative materials, recycled materials, and reused materials friendly to the environment, as well as work processes that reduce energy consumption, Carbon dioxide (CO2) and greenhouse gas emissions in construction and bridge works.	• Promotion on eco-friendly and energy-friendly highway materials
Strategy 5.7: Instill environmental conservation values in personnel involved at all levels.	• Instillment of personal values



Planning and construction



Mission 1:

Establish criteria for improving roads according to the road hierarchy and use them in related procedures.

Mission 2:

Drive the development of the inter-city motorway network forward to provide a convenient, safe, modern, and seamless travel experience to the road users.

Mission 3:

Construct a mountain tunnel on the main road network

Mission 4:

Promote technology and innovation in bridge construction that can shorten construction time and restore traffic surface more quickly.

Mission 5:

Upgrade the operations and maintenance (O&M) at truck stops on national highways that reduce the burden on government budgets and personnel.

Maintaining service levels

Mission 6:

Increase mobility in front of toll gates with the M-Flow system on intercity motorway.

Mission 7:

Enhance the Traffic and Accident Management Center to fully cover the missions of the Department of Highways.

Mission 8:

Develop a bridge maintenance system.

Innovation and technology

Mission 13:

Apply modern technology in the survey and design work

Mission 14:

Introduce the E-Service system into operations in the mission of the Department of Highways

Laws and regulations

Mission 12:

Amend the Highway Act B.E.2535 and the Concession Highway Act B.E.2542



Goals and directions for the next 5 years (2023-2027) of the Department of Highways

Organizational administration and management

Mission 11:

Build Human Resource Development Center in the southern region.

Safety

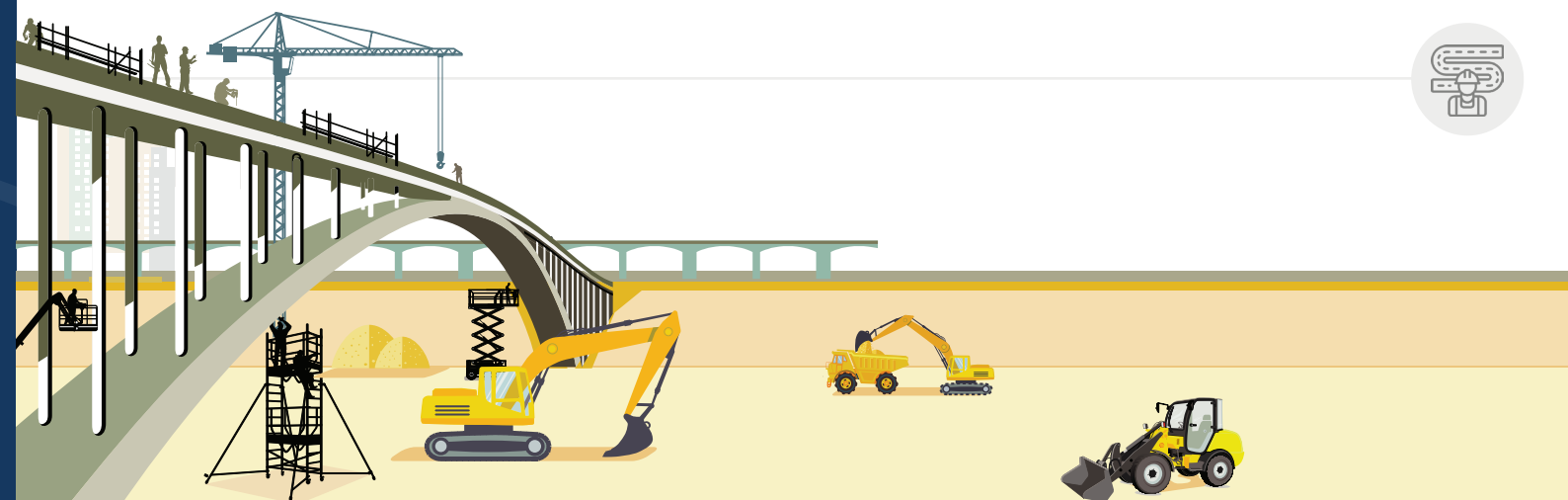


Mission 9:

Develop a roadside safety management system for roadside work.

Mission 10:

Enhance work zone safety.



1 Planning and construction

Mission 1

Establish criteria for improving roads according to the road hierarchy and use them in related procedures.



Goal within the year 2027:

The road hierarchy principle will be applied in project analysis and development planning, survey and design work, and safety facilitation.



Mission 2

Drive the development of the inter-city motorway network forward to provide a convenient, safe, modern, and seamless travel experience to the road users.



Goal within the year 2027:

- 1) There will be the construction of at least 3 new inter-city motorways.
- 2) The 3 inter-city motorways under construction will be fully operational as per the planned schedule.
- 3) The 27 rest areas along the inter-city motorways under the private sector selection process will be operational according to the planned schedule.



Mission 3

Construct a mountain tunnel on the main road network



Goal within the year 2027:

The Department of Highways will begin construction on the mountain tunnel on the national highway to bypass Krabi City within the year 2027.





Mission 4 Promote technology and innovation in bridge construction that can shorten construction time and restore traffic surface more quickly.



Goal within the year 2027:

A minimum of 3 construction projects for bridges with each contract values exceeding 500 million baht will have a construction duration not exceeding 1 year and 6 months, as specified in the contract. The construction techniques which capable of reducing the construction duration must be specified in the bidding condition.

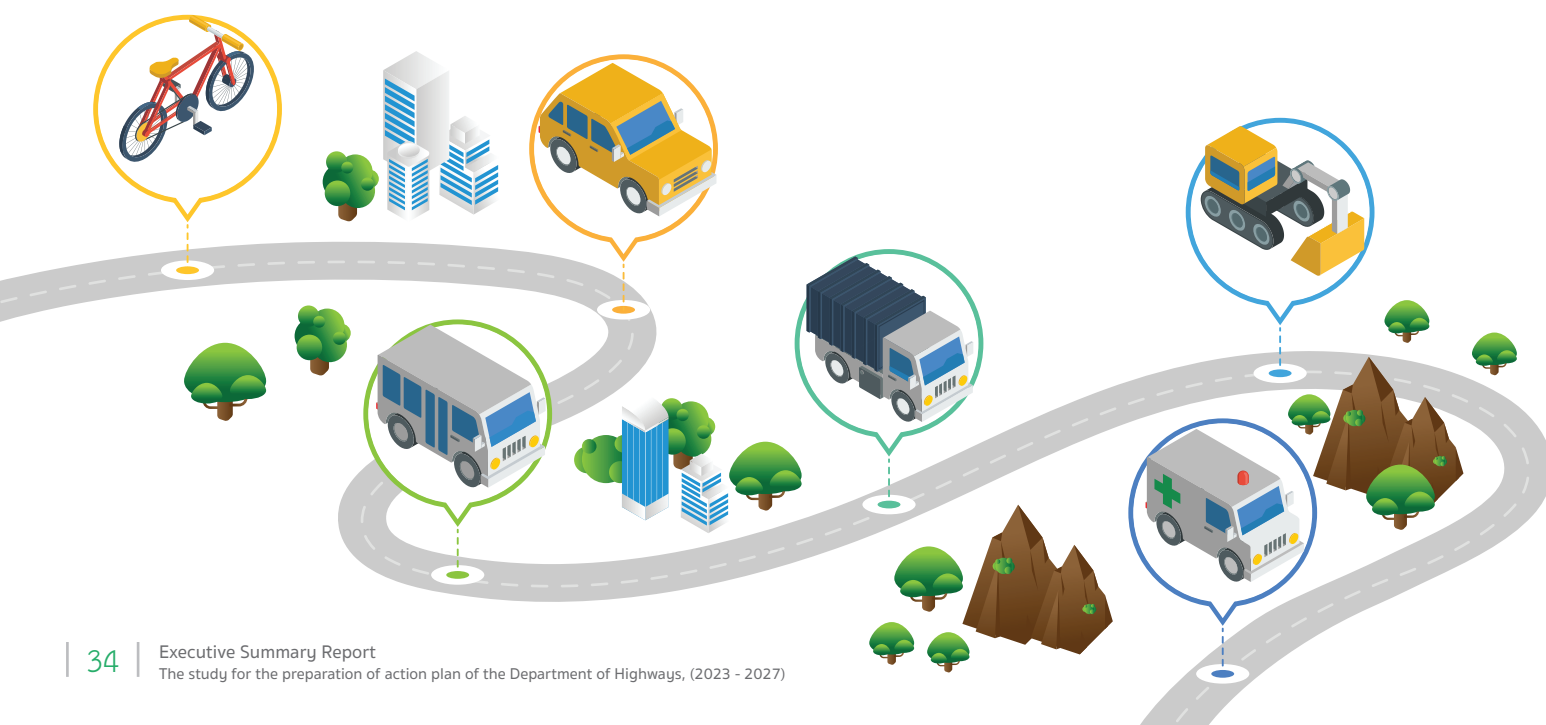


Mission 5 Upgrade the operations and maintenance (O&M) at truck stops on national highways that reduce the burden on government budgets and personnel.



Goal within the year 2027:

Public Private Partnership (PPP) investment project on the operation and maintenance (O&M) at truck stop on national highways would be signed for at least 1 project.



2 Maintaining service levels

Mission 6 Increase mobility in front of toll gates with the M-Flow system on intercity motorway.



Goal within the year 2027:

Installation of an automatic toll collection system of M-Flow on 35 inter-city motorway gates that are scheduled to be operational will be complete.



Mission 7 Enhance the Traffic and Accident Management Center to fully cover the missions of the Department of Highways.



Goal within the year 2027:

The Traffic and Accident Management Center would have a comprehensive and continuous role covering the complete range of tasks of the Department of Highways, 24 hours a day, 365 days a year. This includes monitoring, surveillance, and reporting of traffic congestion, road accidents, emergencies, and other significant incidents. It also involves coordinating and providing information to support decision-making by field units in managing traffic congestion, accidents, crisis situations, or urgent emergencies, as well as supporting relevant data analysis to inform central management decisions on critical matters.



Mission 8 Develop a bridge maintenance system.



Goal within the year 2027:

A comprehensive system and mechanism for managing the maintenance of bridges will be developed to cover all related processes, including design, construction, maintenance, safety facilitation, environmental impact monitoring, and budget allocation. Clear responsibilities would be assigned to individuals or entities to ensure effective execution.





3 Safety

Mission 9 Develop a roadside safety management system for roadside work.



Goal within the year 2027:

The Department of Highways develop the Roadside Safety Management system to “reduce the severity” of accidents caused by Roadside Hazards.



Mission 10 Enhance work zone safety.



Goal within the year 2027:

Construction projects, either located within community areas or with traffic volumes exceeding 8,000 vehicles per day (as per the Department of Highways’ standards) will be required to make a Traffic Control Plan in order to manage traffic during construction.



4 Organizational administration and management

Mission 11 Build Human Resource Development Center in the southern region.



Goal within the year 2027:

The Department of Highways will have the capability to complete the construction of the Human Resources Development Center in the southern region (Phuket Province).



5 Laws and regulations

Mission 12 Amend the Highway Act B.E.2535 and the Concession Highway Act B.E.2542



Goal within the year 2027:

The Department of highways will stimulate the amendment of the Highway Act B.E.2535 and the Concession Highway Act B.E.2542



6 Innovation and technology

Mission 13 Apply modern technology in the survey and design work

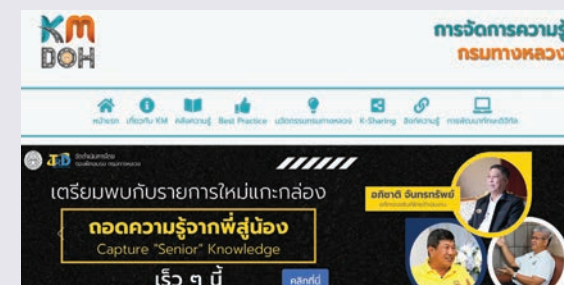


Goal within the year 2027:

Building Information Modeling (BIM) and Virtual Reality (VR) systems will be utilized to ensure comprehensive planning and design processes, including design, construction, maintenance, and monitoring for at least one project.



Mission 14 Introduce the E-Service system into operations in the mission of the Department of Highways



Goal within the year 2027:

E-Service system will be integrated into the Department of Highways’ operations to enhance public and user convenience. These systems allow for the successful completion of at least 5 service-related tasks.





Risk Management



The Department of Highways has established administrative processes for action plan and risk management plans as important strategic tools to support the Department of Highways in achieving the goals according to the action plan. The Department of Highways has begun to develop a risk management system

within the organization since the fiscal year 2006 with the objective of reducing or avoiding risk factors possibly causing damage or loss to the organization and ensuring that the organization can operate according to the determined strategic goals.



From the aforementioned risk factors, risks were prioritized through a brainstorming meeting. Opinions gathered from both large groups and small groups along with the organization executives found that there are risk factors which gauged at a significant level. The mentioned risk factors are as follows:



1. Delay in budget disbursement due to obstacles in the area, such as delayed delivery of the area problems regarding the infrastructure problems with encroaching on official boundaries regarding restricted wood



2. Construction costs exceed plans or cost overruns occur.



3. Routes closure and damaged road which unable to use for more than 24 hours because of external factors such as natural disasters.



4. Accidents at the Work Zone

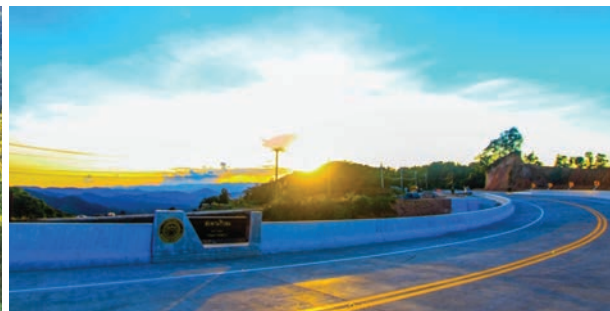


5. Damage to the reputation and image of the organization and lack of confidence in the operations of the Department of Highways



6. Road conditions do not meet the required standard or match the characteristics of the area.

The risk assessment results can be summarized and found that the risks must be managed from 2023-2027 by creating a risk management plan in the context. There are a total of 5 factors in the Department of Highways' action plan. The details of the risk management plan can be summarized as follows.



Risk Factors	Risk Level	Risk Control Activities	Key Risk Indicators (KRI)	Unit	Targets	Primary responsible unit
Strategic Issue 1: Develop a highway network that promotes connectivity, accessibility, and mobility in accordance with road hierarchy.						
Delay in budget disbursement due to obstacles in the area, such as delayed delivery of the area problems regarding the infrastructure problems with encroaching on official boundaries regarding restricted wood	Very high	Follow up on other delay problems such as opposition from the public, the contractor delayed the process, edition on construction drawings, etc.	Percentage of budget disbursement according to the disbursement plan	Percentage	Higher than 90%	Bureau of Highway Construction 1, Bureau of Highway Construction 2, Bureau of Bridge Construction, Bureau of International Highways Cooperation, Office of Traffic Weight Control, Finance and Accounting Division, Bureau of Planning
Construction costs exceed plans or cost overruns occurs.	High	1. Implement cause analysis, tracking and resolution of issues. 2. Follow up and solve problems	Proportion of projects with cost overrun.	Percentage	Decreased 2% from the previous year	Bureau of Planning, Bureau of Highway Construction 1, Bureau of Highway Construction 2, Office of Traffic Weight Control, Bureau of Bridge Construction
Strategic Issue 2: Maintain and manage the national highway network in a responsive manner to ensure continuous and high-quality service provision.						
Routes closure and damaged road which unable to use for more than 24 hours because of external factors such as natural disasters.	Very high	1. Review/Analyze disaster statistics. 2. Formulate monitoring and surveillance measures. 3. Evaluate the effectiveness of emergency road closure response.	The time required to access roads affected by disasters	Hours	Less than 1 hour	Office of Highways, Highway District, Bureau of Highways Maintenance Management
Strategic Issue 3: Enhance the efficiency and elevate safety standards within the highway network and construction and maintenance areas.						
Accidents at the Work Zone	Very high	1. Monitor and inspect safety in construction areas. 2. Prepare a database and maintain statistics on incidents that occur in construction project sites. 3. Define accident reduction approaches.	The rate of incidents in construction and maintenance areas per working day.	Percentage	Decreased 5% from the previous year	Bureau of Highway Construction 1, Bureau of Highway Construction 2, Bureau of Bridge Construction, Office of Traffic Weight Control, Bureau of International Highways Cooperation, Bureau of Highway Safety
Strategic Issue 4: Create a new-era workforce, emphasizing proactive work and integration with all sectors, aiming to become a digital organization.						
Damage to the reputation and image of the organization and lack of confidence in the operations of the Department of Highways	Very high	1. Monitor and investigate issues that impact the Department of Highways' reputation. 2. Address contemporary issues	Percentage of timely responses to current situations	Percentage	100	Office of The Secretary
Strategic Issue 5: Motivate research and innovation, develop environmentally friendly and inclusive highways, and promote sustainable development goals.						
Road conditions do not meet the required standards or match the characteristics of the area	Moderate	Risk mitigation measures have not been specified because the risk factors are at a moderate level.	Research and innovation achievements that can be applied in the activities of the Department of Highways	Quantity	More than 2 issues	Bureau of Road Research and Development

Recommendations from consultants for the development of the Department of Highways' action plan in the Road Hierarchy



Road Hierarchy

- Establish standards for intersection design based on the road hierarchy of highways intersecting. This should serve as guidelines for designing new highway intersections and also consider the appropriateness of current intersection types. For example, highways of Link 1 and 2 which prioritize traffic flow, may need to consider grade-separated interchanges or overpasses.
- Define conditions for requesting connections at different road hierarchy levels, specifying whether they can connect directly to the highway or must pass through a frontage road. Develop standardized connection designs for each hierarchy level, outlining minimum requirements for the connection type.
- Establish criteria for designating areas as urban or non-urban zones. This could take into account factors such as land use on both sides of the road or pedestrian usage patterns to align highways that pass through urban areas with urban street design principles. This ensures the provision of amenities and safety measures for all road users, including sidewalks, pedestrian crossings, and safe speed limits.
- Review the safety of U-turn points on Link 1 and 2 highways. Consider converting level U-turn points into underpass U-turns, flyovers, or roundabouts to reduce the risk of side collisions resulting from reduced crossing points and increase travel flexibility for highways that connect regions or provinces.



Personnel and organization

- Foster knowledge, understanding, and awareness of the Department of Highways' action plan for the years 2023-2027 and the risk management plan for the years 2023-2027.
- Restructure the organization to encompass missions that are newly challenging and reduce redundancies.



Risk management planning

- Establish an organizational-level risk management committee and a working group to assist in the execution and oversight of risk management in line with each strategic objective. Clearly define their roles and responsibilities to facilitate the effective implementation of the risk management plan for the years 2023-2027 towards the concrete practice.
- Specify a clear process for risk management reviews to be conducted at least once a year.
- Develop an information technology system that supports data collection, tracking, and assessment of risk levels, as well as an Early Warning System. Ensure that the system is operational, provides real-time data, and reports on incidents. Present this information to the risk management committee every six months.



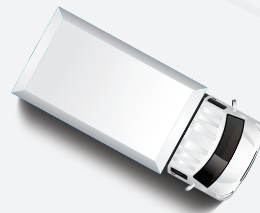
Policies

- Establish the approaches and a framework for new management practices that can accommodate changes in the government's operational policies in the future.
- Request additional budget allocations from the Budget Bureau to align with the strategies and key performance indicators outlined in the Department of Highways' action plan for the years 2023-2027.
- Research and incorporate additional quantitative data-driven issues into other challenging and evolving areas, such as the integration of cutting-edge technology to enhance operational efficiency in various missions. Additionally, consider issues related to legal reform and law enforcement in response to changing circumstances.



Situational analysis related to the Department of Highways' mission

- Based on the quantitative fact sheet analysis, there are several issues that require action in both the short and long term and have not yet been addressed. These may include legislative and regulatory improvements, as well as defining and adjusting the responsibilities and authorities of relevant agencies to align with the missions set as important goals for the future. Additionally, requests for additional budget allocation should be aligned with the mission.
- Relevant agencies should expedite the adoption and application of proposed guidelines and recommendations, with a focus on improving operational efficiency. This might include developing the capabilities and quality of the workforce and elevating operations to be more adaptable to new innovations and emerging technologies.



Executive Summary Report

The study for the preparation of action plan
of the Department of Highways

(2023-2027)



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