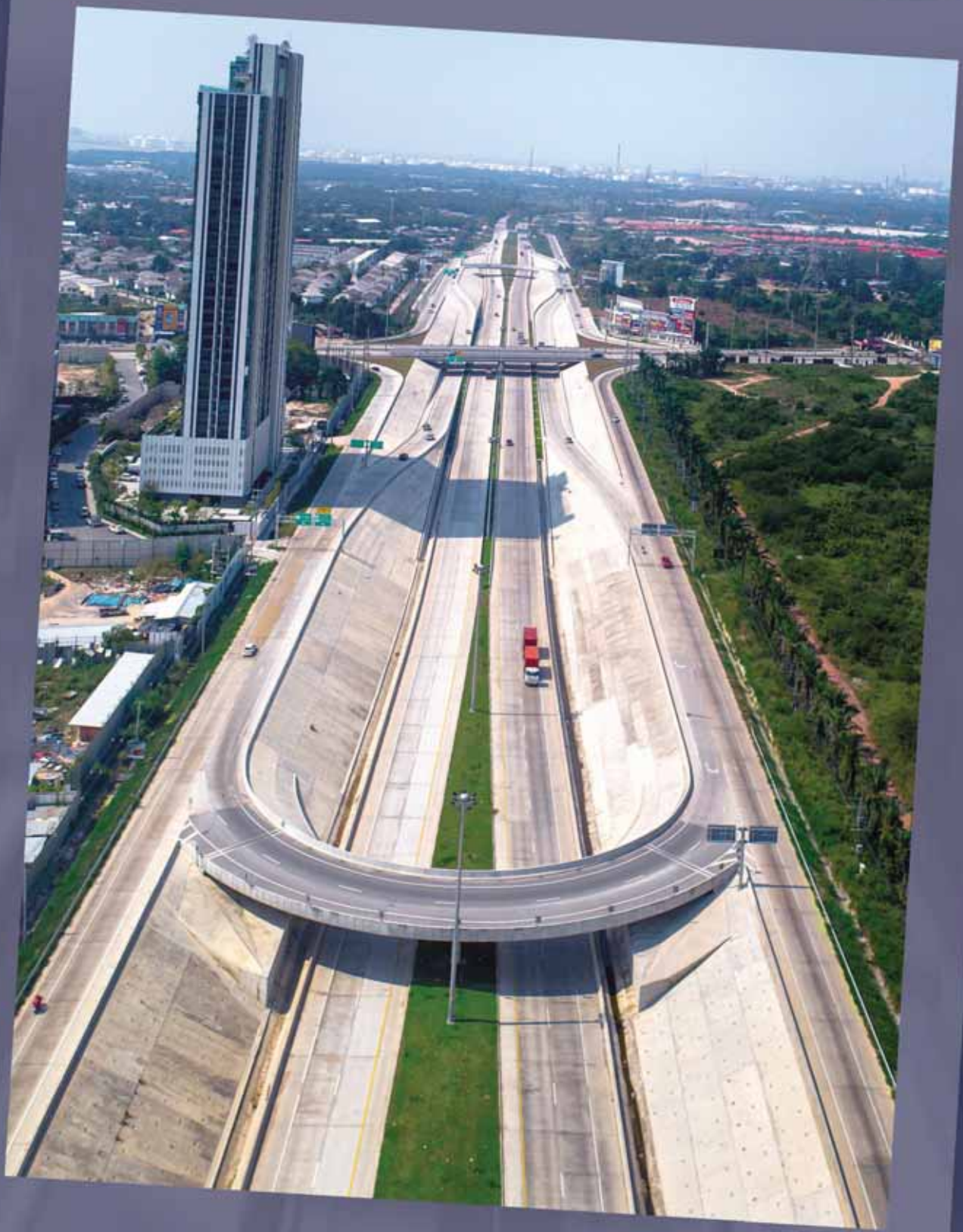


Annual Report 2022

Department of Highways





Civil servant is a person who works for people's benefits and should conscience which duty must be performed for advantage and not be performed for disadvantage. This consideration is the consequence of correct discretion which all government officers should discipline and accumulate to be the abiding personal qualification.

Amphorn Satharn Villa, Dusit Palace
the 2nd March 2022



Introduction

Since its inception on 1 April 1912, until now, as it enters its 112th year, the Department of Highways has been an agency under the Ministry of Transport dedicated to driving the mission of developing highway infrastructure to have a complete network with nationwide coverage and links with neighboring countries, as well as controlling and maintaining 1,528 highways under its responsibility with a total distance of 52,299.136 kilometers, connecting the transportation networks of land, water, air, and rail. These objectives are to support the development of the country in economic, social, cultural, technological, and security aspects. People's quality of life can be improved by making travel easy, quick, and safe. This is how the Department of Highways' vision of "a highway system that is accessible, safe, and connects the nation's infrastructure development" is put into action.

At present, the Department of Highways continues to carry out important projects for development in various fields, for instance, (1) development according to a Royal Initiative of His Majesty, namely the Vibhavadi Rangsit Road Ditches Development Project. This project aims to sustainably solve the drainage problem on Vibhavadi Rangsit Road, reduce traffic congestion, and allow people to travel in comfort and security. (2) development of the intercity motorway network, for instance, Intercity Motorway No. 6 (Bang Pa-In - Nakhon Ratchasima), Intercity Motorway No. 81 Project (Bang Yai - Kanchanaburi), Intercity Motorway No. 82 (Bang Khun Thian - Ekachai - Ban Phaeo), Intercity Motorway No. 9 (Bangkok Outer Ring Road, Bang Khun Thian-Bang Bua Thong Elevated Road, or Kanchanaphisek Outer Ring Road on the west side), which is in the process of the Cabinet's approval of a Public-Private Partnership (PPP), Intercity Motorway No. 7 Extension to connect U-Tapao international airport which is in the process of considering procurement of financing as well as preparing a master plan for the development of intercity motorways (MR - MAP) to consider laying out an intercity motorway and a railway line towards U-Tapao Airport to consider laying an intercity motorway route between cities together with a railway line. (3) highway network development to support economic expansion in special economic zones, for instance, the Eastern Economic Corridor (EEC) Development Plan. This is to increase the efficiency of the eastern seaboard area for investment and expansion of industry and tourism. It also helps increase the competitiveness of the country and supports the transportation and logistics hub of ASEAN. (4) development of a new highway network to connect the region and neighboring countries namely, the construction of the 5th Thai-Lao Friendship Bridge (Bueng Kan - Bolikhamxai) and the 6th Thai - Laos Friendship Bridge (Ubon Ratchathani - Salavan) under consideration in joint budget sources with the Lao People's Democratic Republic. (5) development

of truck rest areas and weigh stations for travel safety and prevention of damage to the highway network. (6) The development, which was part of the Minister of Transport's policy, has become a reality, and more steps are being thought of to improve the service to drivers. One example is the improvement of an automatic toll collection system without barriers (Multi-Lane Free Flow, M-Flow), which is a big change that uses technology to solve traffic problems in front of tollbooths on intercity motorways. Also, changing the maximum speed on the highway to no more than 120 kilometers per hour on routes that meet the requirements of the Ministerial Regulation on the speed of vehicles on national highways or rural roads, B.E. 2564, etc.

Aside from construction missions, the Department of Highways also has a mission to maintain roads and bridges on highways to be continuously convenient and safe. In addition, the highways and public service points have been improved to beautify the landscape in the surrounding areas according to the policy of "Colorful Transportation, Establishing Thailand." Currently, many projects have been completed and are open for service, such as the Doi Inthanon check-in point on Highway No. 213 in Chiang Mai Province and the Ping Ngu curve (Kong Ping Ngu) check-in point on Highway No. 1009 in Sakon Nakhon Province, etc. Moreover, the Department of Highways also pays attention to fully helping society and people, whether it is through the establishment of public service points to support travel, managing traffic to open special lanes in collaboration with the Highway Patrol, participating in assistance in case of accidents and solving various accidents, facilitating and ensuring travel safety during festivals and long holidays, integrating with the Provincial Waterworks Authority to distribute tap water to help people during drought situations, and taking action to reduce and prevent PM 2.5 dust, etc.

The Department of Highways is ready to drive the development of the country's transportation infrastructure in all dimensions in an efficient way to raise road safety and improve the service quality of the highway system sustainably by the government's policy. This is in line with the 20-year National Strategic Plan (2018-2037) and the 20-year Transportation Development Strategy (2018-2037), which will continue to adhere to good governance and consider the benefit of the nation and the people.

The Organizing Team





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General Prayut Chan-o-cha
Prime Minister

Minister Of Transport
Deputy Minister



Mr. Saksiam Chidchob
Minister Of Transport



Mr. Atirat Ratanasate
Deputy Minister Of Transport



Mr. Weerasak Wangsuphakijkosol
Deputy Minister Of Transport

Permanent Secretary
Deputy Permanent Secretary



Mr. Chayatan Phromsorn
Permanent Secretary



Mr. Pisak Jitviriyavasin
Deputy Permanent Secretary



Mr. Anon Luangboriboon
Deputy Permanent Secretary



Mr. Sorapong Paitoonphong
Deputy Permanent Secretary

Department of Highways Executive 2022



Mr. Sarawut Songsivilai
Director- General



Mr.Paitoon Pongchavalit
Deputy Director - General For Administration



Mr. Apichart Juntarasup
Deputy Director - General For Operations



Mr. Montri Dechasakulsom
Deputy Director - General For Engineering



Mr. Apisit Promsen
Deputy Director - General For Maintenance

Department of Highways
Executive 2022



Mr. Chatchai Chuangching
Chief Engineer For Maintenance



Mr. Narin Srisompun
Chief Engineer For Construction



Mr. Sittichai Boonsaat
Chief Engineer For Location and Design



Mr. Attasit Sawatparnich
Chief Engineer For Research and Development

Department of Highways
Current Team



Mr. Sarawut Songsivilai
Director - General



Mr. Piyapong Jiwattanakulpaisarn
Deputy Director - General For Administration



Mr.Paitoon Pongchavalit
Deputy Director - General For Operations



Mr. Montri Dechasakulsom
Deputy Director - General For Engineering



Mr. Chirapong Theppithuck
Deputy Director - General For Maintenance

Department of Highways
Current Team



Mr. Somboon Kaewlamai
Chief Engineer For Maintenance



Mr. Chavalert Lertchavanakul
Chief Engineer For Construction



Mr. Danai Ruengsorn
Chief Engineer For Highway Safety



Mr. Tanin Rirattanapong
Chief Engineer For Planning



Mr. Sittichai Boonsaat
Chief Engineer For Location and Design



Mr. Attasit Sawatparnich
Chief Engineer For Research and Development



Duties and Responsibilities

1. Enforcing highway laws and other involved laws, especially on motorways, national highways and concession highways.

2. Research and development , renovation and maintenance of the motorways, national highways and concession highways.

3. Cooperating with domestic and international organizations regarding highway issues.

4. Other duties as appointed by law, the Ministry of Transport, and the cabinet.

Government Operational Plan Phase 1 (2020–2022) of the Department of Highways

Our Vision

"a highway system that is accessible, secure,
and connects the nation's infrastructure development."

Our Mission

1. Develop a highway system that connects, provides access, and offers complete mobility to propel the nation's economic and social development.
2. Supervise serviceability and safety on the highway to meet the standard for good service quality and raise the level of safety management in the nation's transportation system.
3. Develop a good governance-based organizational management system.



(Our Value)

"H I G H W A Y S"

"High performance, Intelligent technology,
Good knowledge, Honesty, Work smart, Accountability,
Year-round commitment, and Synergy"

(1) H igh performance
(2) I ntelligent technology
(3) G ood knowledge
(4) H onesty
(5) W ork smart
(6) A ccountability
(7) Y ear-round commitment
(8) S ynergy

(Our Culture)

"D O H"



Government Action Plan

1 Highway system development

Objective: to develop a highway system that is connected, accessible, and mobile while also meeting quality standards.

Development guidelines



1) Develop and enhance the highway system to meet local, national, and regional needs.
2) Develop and enhance the highway system to support special economic zones, tourism, border trade, and stability.
3) Increase mobility on the highway system and develop connections to multimodal transport.
4) Develop and increase the efficiency of joint ventures with the private sector, design surveys, land tenure and property rights, and environmental performance.
5) Develop and enhance road standards and requirements in terms of design, construction, control, maintenance, safety, and service.
6) Develop and promote research and development, innovation, the use of technology, the building of information technology systems, and the integration of digital technology in the development of highway systems.

2 Serviceability

Objective: to maintain the highway system's serviceability to continuously meet standards.

Development guidelines



1) Develop and enhance highway system maintenance efficiency.
2) Develop and increase efficiency in solving disaster problems on highway systems.
3) Develop and increase the efficiency of vehicle weight control management for logistics and transportation systems.
4) Develop and enhance service efficiency.
5) Develop and enhance methods for maintaining landscaping, paved shoulders, and sidewalks with the help of both the local public and private sectors.
6) Develop and promote research and development, innovation, the use of technology, the building of information technology systems, and the integration of digital technology in terms of maintenance and other services on the highway system.

3 Safety



Objective: Integrated safety enhancement of highway systems.

Development guidelines

1) Develop and improve accident prevention effectiveness to increase highway safety and reduce accidents.
2) Develop and enhance accident reduction strategies to increase highway system safety and decrease the number of accidents.
3) Develop and improve the efficacy of supervising use and operations within the boundaries of paved shoulders and sidewalks, including the use of other highway assets.
4) Develop and promote public relations and education on regulations, values, and disciplines for highway safety.
5) Develop and optimize traffic systems and related track control systems.
6) Develop and promote Research and Development innovation, the construction of information technology systems, and the integration of digital technology safety on the highway system.

4 Management System

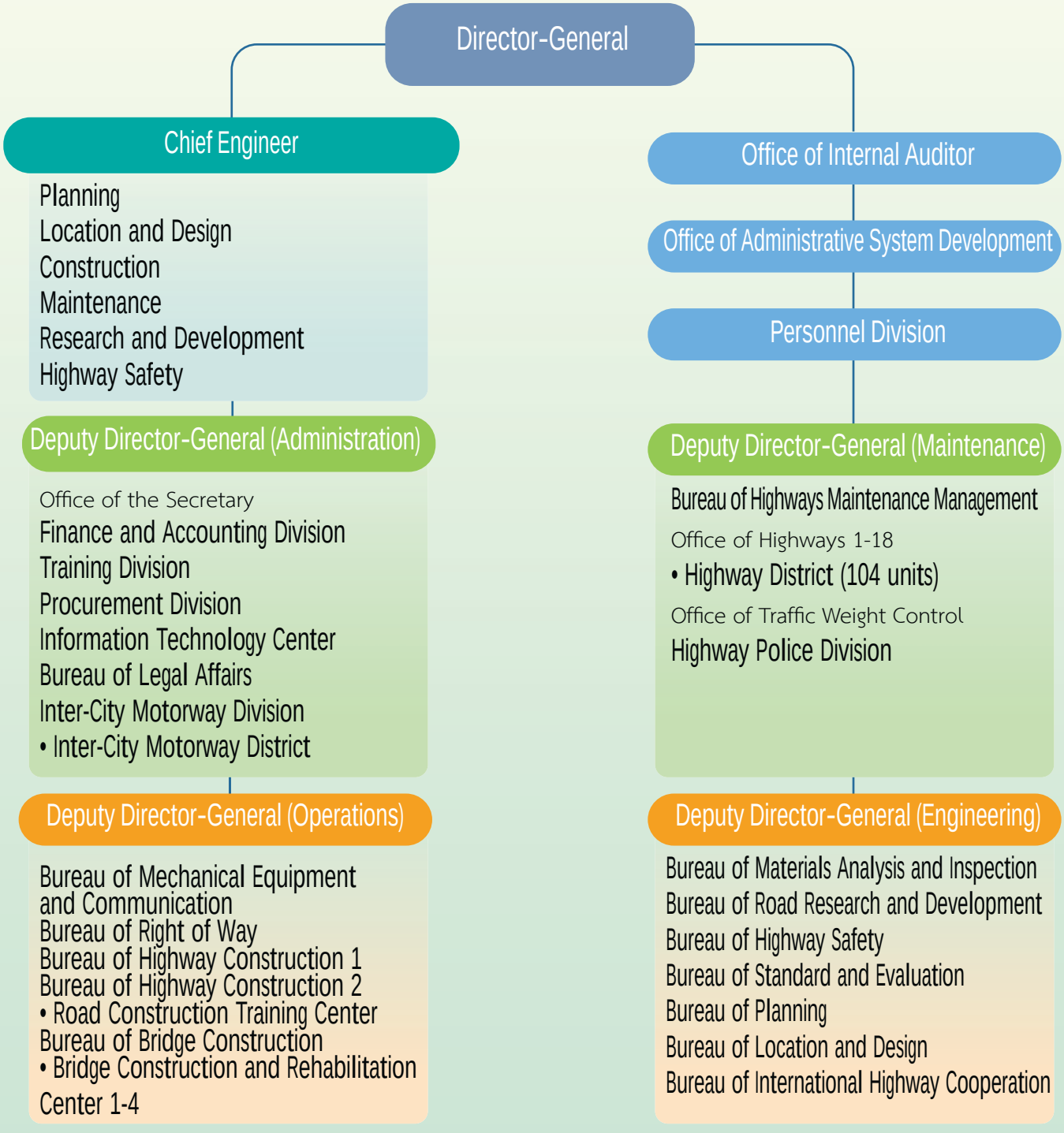


Objective: Development and promotion of organizational management systems with good governance and sustainability.

Development guidelines

1) Develop and promote the drive and monitoring of the strategy, including the development of plans, projects, and activities.
2) Improve and increase the efficiency of procurement, equipment management, public relations, and operations within the organization.
3) Develop and promote the readiness of the organization's digital technology infrastructure.
4) Develop and promote the development and management of human resources, together with the extension of knowledge and work experience.
5) Develop and promote research and development, and innovation including the improvement of laws, rules, regulations, and operational guidelines to keep up with the context of the global society.
6) Develop and promote complaint handling, environmental management, local involvement, and management systems based on good governance.

Organization Chart, Department of Highways



Organization which are set by Department of highways

- Road Construction Training Center consists of 5 Centers which are Lampang, Lom Sak, Khon Kaen, Kanchanaburi and Songkhla
- Highway Districts with International Friendship Bridge are Chiang Rai 2 Highway District, Nakhon Phanom Highway District, Nong Khai Highway District and Mukdahan Highway District



History Department of Highways

The Department of Highways was established as a department on 1 April 1912. Formerly, there was only the Department of Canals, which was subjected to the Ministry of Agriculture. Until the reign of King Rama VI, a royal decree transferred the Department of Canals to the Ministry of Public Works and renamed the "Department of Highways". The Ministry of Civil Engineering itself was also renamed the "Ministry of Communication" by a decree issued in the same year regarding bureaucracy restructuring.



On 30 September 1914, the Waterways Section of the Department of Highways was transferred to The Ministry of Agriculture, and renamed the "Royal Irrigation Department". Therefore, only the Division of Roads remained under the Department of Highways which was headed by a Director-General.

On 30 July 1917, after Thailand declared war against Germany, Austria and Hungary, a royal decree was issued to merge the Department of Highways with the Department of Railways under the Ministry of Commerce and Transport which was headed by the Commander of the State Railways. The purpose was to pool the engineers at the country's disposal, as many of the foreign engineers previously employed by both departments were citizens of hostile nations and had been dismissed or interned as prisoners of war. The Chief Road Work Technician was the leader of the Department of Highways at that time.

On 29 June 1932, King Rama VII, with the consent of the People's Party, merged the Ministry of Commerce and Transport with the Ministry of Agriculture. The new agency was named the "Ministry of Agriculture and Commerce". As a result, the Department of Railways, which included the Department of Highways, became a subordinate agency of the new ministry.

On 3 May 1933, at the recommendation of the cabinet, King Rama VII passed an Establishing Ministries and Departments Act B.E. 2476. Under the act, the Ministry of Agriculture and Commerce was dissolved. And the Department of Railways, which included the Department of Highways, became a unit of Ministry of Economic Affairs instead.

On 18 September 1934, King Rama VII, at the recommendation of the House of Representatives, promulgated an act transferring the authority and responsibility regarding the construction and maintenance of highways from the Department of Highways to the Department of Municipal Public Works which was subjected to the Ministry of Interior.

On 19 August 1941, in the reign of King Rama VIII, the Division of Roads was upgraded to a department and was transferred from the Department of Municipal Public Works which was a part of the Ministry of Interior, to the Ministry of Communications, under Ministerial and Department Restructuring Act B.E.2484. Although, it was upgraded, the new department did not have its own office and was still located within the compound of the Department of Municipal Public Works at the base of Pan Fa Leelart Bridge. Then, on 13 November, 1948, it was moved to Rama VI Road where the Division of Procurement of the present Department of Highways is.

On 12 March 1952, under the Ministerial and Department Restructuring Act B.E. 2495, the Department of Highways was renamed the "Department of National Highways". However, it still remained under the Ministry of Transport.



On 24 June 1955, The Department of National Highways had the opening ceremony for the office building on Si Ayutthaya Road.

On 4 May 1963, The Department of National Highways was renamed the "Department of Highways" again and transferred to the Ministry of National Development, under the Ministerial and Department Restructuring Act B.E. 2506.

On 29 September 1972, the Department of Highways was transferred to the Ministry of Transport and it has remained there until present day. The transfer was made according to the following laws:

- The National Executive Council Announcement No.216.
- The Decree divided Department of Highways, Ministry of Transport B.E.2516
- The Decree divided Department of Highways, Ministry of Transport B.E.2532
- The Decree divided Department of Highways, Ministry of Transport B.E.2533
- The Ministerial and Developmental Restructuring Act B.E.2534
- The Decree divided Department of Highways, Ministry of Transport B.E.2537
- The Decree divided Department of Highways, Ministry of Transport (No.2) B.E.2539
- The Ministerial and Developmental Restructuring Act B.E.2545
- The Ministerial division Highways Ministry of Transport B.E.2545
- The Ministerial division Highways Ministry of Transport B.E.2552
- The Ministerial division Highways Ministry of Transport B.E.2558





Finance

Report on Expenditure Budget of Fiscal Year 2022
Classified under workplan/output/project
(Regular and Capital expenditure)
As of 30 September 2022

Department of Highways, Ministry of Transport

Unit : Baht

workplan/output/project		Budget after transfer or adjustment	Retained Disbursement	%
Total		113,497,943,625.81	102,772,175,198.58	90.55
1. Workplan: Government employee workplan		5,075,901,625.81	5,061,964,801.25	99.73
Output 1	Expenditure for government employee to develop infrastructure and logistic system	5,075,901,625.81	5,061,964,801.25	99.73
2. Workplan: Basic workplan of increasing capacity of competitiveness		29,118,973,500.00	27,265,167,895.48	93.63
Output 1	Developed highway network	2,233,246,823.80	1,735,437,270.49	77.71
Output 2	Maintained highway network	22,028,766,923.20	20,959,346,565.93	95.15
Output 3	Safety highway network	4,856,959,753.00	4,570,384,059.06	94.10
Workplan: Integrated workplan for development of transport and logistic system		73,285,406,000.00	65,081,433,224.94	88.81
Output 1	Inter-City Motorway Construction Project	8,039,007,798.00	7,753,538,968.01	96.45
Output 2	Rehabilitation of Highway Network connecting between regions	7,147,289,549.00	6,919,107,864.83	96.81
Output 3	National highway network construction project	49,723,350,620.00	43,208,913,620.96	86.90
Output 4	Development project of rest area and highways weight control station	1,965,467,609.00	1,792,609,152.79	91.21
Output 5	Construction project of an overpass of highway no. 35; Thonburi-Pak Tho (Rama 2 Road)	2,615,128,282.00	2,295,226,818.05	87.77
Output 6	Enhancement project of highway safety	3,795,162,142.00	3,112,036,800.30	82.00
4. Workplan: Integrated workplan of Eastern Economic Corridor		6,017,662,500.00	5,363,609,273.91	89.13
Output 1	Highway development for supporting Eastern Economic Corridor	6,017,662,500.00	5,363,609,273.91	89.13

Remark :

Information in accordance with New GFMIS Thai, as of 17 October 2022

Department of Highways
Financial Statement
As of 30 September 2022

(Unit : Baht)

	note	2022	2021
Asset			
Current assets			
Cash and cash equivalent	5	2,372,689,534.67	2,656,884,538.53
Other short-term receivables	6	97,508,981.67	161,681,918.84
Fixed deposit		11,966.06	11,778.82
Inventories		77,614,516.28	76,536,633.60
Other current assets		1,754,144.38	1,653,400.82
Total current assets		2,549,579,143.06	2,896,768,270.61
Non-current assets			
Property, plant and equipment - net	7	84,386,216,517.35	80,209,503,595.78
Infrastructure - net	8	378,917,312,435.08	348,064,643,955.65
Intangible asset - net	9	9,375,221.86	19,869,406.02
Other non-current assets		183,676.00	334,559.10
Total non-current assets		463,313,087,850.29	428,294,351,516.55
Total assets		465,862,666,993.35	431,191,119,787.16

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

(Mr.Paitoon Pongchavalit)
Deputy Director - General Acting
Director of Finance and Accounting Division

(Mr. Sarawut Songsiviiai)
Director - General

Department of Highways
Financial Statement
As of 30 September 2022

(Unit : Baht)

	note	2022	2021
Liabilities and net assets/equity			
Liabilities			
Current liabilities			
Account payables	10	2,576,663,758.15	6,519,117,171.28
Short-term account payables (amounts to be transferred) and subsidies		100,436.85	82,814.91
Other short-term payables	11	132,603,418.02	134,526,525.72
Short-term deposits	12	6,474,384,792.54	6,858,083,344.91
Other current liabilities	13	55,314,797.16	55,599,903.98
Total liabilities		9,239,067,202.72	13,567,409,760.80
Non-current liabilities			
Long-term account payables (amounts to be transferred) and subsidies		296,480,302.80	518,883,939.09
Long-term advance from the Treasury		15,538,000.00	15,538,000.00
Total non-current liabilities		312,018,302.80	534,421,939.09
Total liabilities		9,551,085,505.52	14,101,831,699.89
Net assets/equity			
Capital		22,737,041,607.79	22,737,041,607.79
Revenue over accumulated expenses	15	433,574,539,880.04	394,352,246,479.48
Total net assets/equity		456,311,581,487.83	417,089,288,087.27
Total liabilities and net assets/equity		465,862,666,993.35	431,191,119,787.16

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

(Mr.Paitoon Pongchavalit)
Deputy Director - General Acting
Director of Finance and Accounting Division

(Mr. Sarawut Songsiviiai)
Director - General

Department of Highways
Statement of Financial Performance
As of 30 September 2022

(Unit : Baht)

	note	2022	2021
Revenue			
Budget revenue	16	123,797,410,540.94	133,176,098,774.41
Revenues from loans and other government revenues	17	120,437,389.22	571,438,695.38
Revenues from sales or services		1,431,010.47	15,339,776.30
Revenues from grants and donations	18	777,970,082.23	558,608,701.20
Other revenues	19	300,030,782.70	193,735,147.00
Total revenues		124,997,279,805.56	134,515,221,094.29
Expenses			
Personnel expenses	20	8,474,724,893.41	8,382,091,716.07
Gratuities and pensions	21	2,532,917,190.37	2,375,015,034.44
Remuneration	22	2,957,460.10	2,532,099.85
Overheads	23	36,020,343,799.24	41,005,066,676.57
Office supplies	24	751,753,584.67	662,793,297.53
Utility expenses	25	331,851,020.37	318,252,026.63
Depreciation and amortization	26	37,299,073,415.49	32,365,068,993.37
Other expenses	27	112,933,220.19	(20,959,609.95)
Total expenses		85,526,554,583.84	85,089,860,234.51
Revenue over/ (below) net expenses		39,470,725,221.72	49,425,360,859.78

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

(Mr.Paitoon Pongchavalit)
Deputy Director - General Acting
Director of Finance and Accounting Division

(Mr. Sarawut Songsiriai)
Director - General

Department of Highways
Statement of Changes in Net Assets/Equity
As of 30 September 2022

(Unit : Baht)

	Cost	Revenue over/ (below) accumulated expenses	Net Assets/ Equity
Balance on 30 September 2020 as previously reported	22,541,880,400.43	346,595,470,371.85	369,137,350,772.28
Prior period adjustments	-	(1,668,584,752.15)	(1,668,584,752.15)
Balance on 30 September 2020 after adjusted	22,541,880,400.43	344,926,885,619.70	367,468,766,020.13
Changes in Net Assets/Equity of 2021			
Change to increase/decrease equity	195,161,207.36	-	195,161,207.36
Revenue over/ (below) expenses for the period	-	49,425,360,859.78	49,425,360,859.78
Balance on 30 September 2021	22,737,041,607.79	394,352,246,479.48	417,089,288,087.27
Balance on 30 September 20201 as previously reported	22,737,041,607.79	394,352,246,479.48	417,089,288,087.27
Prior period adjustments	-	(248,431,821.16)	(248,431,821.16)
Balance on 30 September 2021 after adjusted	22,737,041,607.79	394,103,814,658.32	416,840,856,266.11
Changes in Net Assets/Equity of 2021			
Change to increase/decrease equity	-	-	-
Revenue over/ (below) expenses for the period	-	39,470,725,221.72	39,470,725,221.72
Balance on 30 September 2022	22,737,041,607.79	433,574,539,880.04	456,311,581,487.83

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

(Mr.Paitoon Pongchavalit)
Deputy Director - General Acting
Director of Finance and Accounting Division

(Mr. Sarawut Songsiviiai)
Director - General

Department of Highways
Notes to the Financial Statements
as of 30 September 2022

Note 1 General Information

Department of Highways, Ministry of Transport is the unit under Ministry of Transport. It is established in accordance with Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2484 (1941) and Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2545 (2002). It has the responsibility according to ministerial regulations on governmental segmentation of Department of Highways, Ministry of Transport B.E. 2558 (2015) in developing infrastructure, construction, and maintenance highway in order to create the highway network throughout the country as well as connecting with neighboring countries in order to provide the convenience, fast and safety highway for people. Its responsibility is also to enforce the highway law on special highways, national highways, and concession highways as well as to cooperate in highway matters with other relevant authorities both in country and aboard, including any operation according to law prescribed as a responsibility of the department or appointed by minister or the cabinet.

Department of Highways, Ministry of Transport is located on 2/486 Si Ayutthaya Road, Thung Phayathai, Ratchathewi, Bangkok 10400.

Department of Highways has 134 disbursement units which consist of 1 central unit and 133 regional units. The central unit received 8 GFMIS TERMINAL machines while the regional units received 28 GFMIS TERMINAL machines which are at Office of Highway 1-18, Road Construction Training Center, Bridge Construction and Rehabilitation Center and Saraburi Highway District. There are also 105 disbursement units for WEB ONLINE on intranet system. On 4 April 2022, the Ministry of Finance prescribed rules and procedures for operation through New GFMIS Thai system and all departments/agencies which request for withdrawing money from the Ministry of Finance shall receive, make a payment, and submit to the Ministry of Finance through New GFMIS Thai system. The Department of Highways has 307 New GFMIS Token Key to access the system and 269 usernames and passwords. Each unit in the Department of Highways shall manage the allocated budget and off-budget. These disbursement units are not the reporting units and there is no budget report separation. Therefore, account items of all disbursement units are addressed in this report.

Department of Highways is allocated fiscal budgetary year 2022 at 113,497,943,625.81 baht. It is allocated to human resource budget in the amount of 5,018,717,025.81 baht, to operating budget in the amount of 961,074,234.48 baht, to investment budget in the amount of 106,782,180,040.46 baht, to subsidy budget in the amount of 356,000 baht and to other expenditure budget in the amount of 735,616,325.06 baht.

Note 2 Financial Reporting Criteria

This financial report was prepared in accordance with State Fiscal and Financial Disciplines Act, B.E.2561 (2018). The list appeared in this financial report was under the government accounting standards and policies announced by the Ministry of Finance and the financial statements presentation in this financial report was under the guidelines for government financial statements presentation stated in the Comptroller General's Department's most urgent letter no. Kor Khor 0410.2/Wor 479 dated 2 October 2020.

These statements are based on historical costs unless they are revealed differently in accounting policies.

The financial report of Department of Highways is prepared in accordance with the government accounting standard including the accounting transactions of central and regional units except the followings.

Government accounting principles and policies under Ministry of Finance Notification on government accounting standards and policies B.E. 2561 (2018) prescribed that all government agencies shall include all financial statements of any unit under supervision in compliance with the government accounting standard No. 35 on consolidated financial statement (when becomes effective). The government financial statement in department's level must address the overview of the central unit, regional units, and all subordinate units as well as the activities of the off-budget that can be used by law without returning to the fiscal unit, revolving fund or off-budget fund under the agency. However, Ministry of Finance has not announced the enactment of government accounting standard no.35 on consolidated financial statement. Therefore, Department of Highways has not included 2 revolving funds which are not legal person in the consolidated financial statement. The 2 revolving funds are Toll Collection Fund and Equipment Revolving Fund which under the department supervision.

Note 3 New government accounting standard and policy

At present, Ministry of Finance announced the enactment of new government accounting standard and policy and revised edition of government accounting standard and policy (No. 2) B.E. 2564 (2021) which comes into force on 8 April 2021.

In effective for the accounting period starting on or after 1 October 2020.

- Government accounting standard No. 3 on accounting policy, estimated accounting adjustment and errors.
- Government accounting standard No. 23 on income from non-exchange transaction

In effective for the accounting period starting on or after 1 October 2021.

- Governmental accounting policy on tax card.

The management of Department of Highways has assessed and concluded that applying the mentioned new governmental accounting standard and policy does not significantly affect the financial report for the year that the standard in effective.

Note 4 Conclusion of significant accounting policies

4.1 Cash and cash equivalent

Cash means cash on hand, cheque, bank draft, and money order. The Department of Highways shall acknowledge the face value of cash and bank deposits and identify such items in cash and cash equivalent in financial statement.

Advance is the budget that the department received from the government in order to make an advance payment for miscellaneous expenditures of the department's operation according to the approved amount and it is controlled by the registration. When the Department of Highways used the advance, the receipt was gathered for withdrawing money from the budget to reimburse the advance. The Department has to record the advance when received money together with the advance transaction from fiscal unit and address as cash and cash equivalent in financial statement.

Fiscal deposit is the off-budget that the department deposit to Ministry of Finance. The Department shall acknowledge the face value of fiscal deposit and identify such items in cash and cash equivalent in financial statement.

Cash equivalent is short-term investments which have high liquidity to change to cash in the same amount or approximate to the original value which the difference of value is not significant.

4.2 Other short-term receivables

Loan receivable is the debtor in the department: the government officer, the government employee, or the officer lending money for the operation without interest such as debtor lending fiscal budget, debtor lending fiscal off-budget. The department will recognize these debtors according to the amount that will receive without setting doubtful debt account.

Advanced payment is money that the department pays for seller or contractor as the advance procurement or hiring cost which prescribed before signing contract or agreement. This payment cannot exceed 15% of the total payment.

Account receivable is the amount that the people overdue payment to the department, both the overdue and not yet due. However, the income appeared in present balance but the department has not received the money yet and will receive the money in the next accounting round. This includes the amount of money which the Comptroller General's Department has not paid the department.

4.3 Inventories

Inventories mean consumables for the usual operation. Generally, there are not in high price and not durable. It will be shown according to the cost by first-in-first-out.

Note 5 Cash and cash equivalent

(Unit : Baht)

	2022	2021
Cash on hand	40,000.00	30,000.00
Advance	15,538,000.00	15,538,000.00
Deposit in financial institution	889,524,260.86	1,212,944,395.44
Fixed deposit that returns in 3 months	3,786.00	3,786.00
Fiscal deposit	1,467,583,487.81	1,428,368,357.09
Total cash and cash equivalent	2,372,689,534.67	2,656,884,538.53

Cash on hand is cash which the department uses as the expense of normal operations according to the objectives of the department. It will be used for the 1st Thai-Lao Friendship Bridge (Nong Khai – Vientiane); 20,000 baht, the 3rd Thai-Lao Friendship Bridge (Nakhon Phanom – Khammouane); 10,000.00 baht, and the 2nd Thai-Myanmar Friendship Bridge crossing Moei/Tong Yin river which is responsible by Tak 2 (Mae Sot) Highway District; 10,000.00 baht.

Advance is cash which the department uses as the miscellaneous expenditures of the office according to the approved amount from the Ministry of Finance under Ministry of Finance Regulations on Advance B.E. 2562 (2019) and have to return to the fiscal unit when there are no necessary expenditures. The end of year balance is 15,538,000.00 baht which is from central unit 10,120,000.00 baht and from regional units 5,418,000.00 baht.

Fiscal deposit is the budget that the department deposit to Ministry of Finance according to prescription by law without interest and can withdraw and use according the items prescribed in the regulations about the limitation of expense.

Fiscal deposit in amount of 1,467,583,487.81 baht (1,428,368,357.09 baht for 2564 fiscal year) is the off-budget which has limitation to pay to person or other agency in accordance with the objective prescribed in law which the origin of that fiscal deposit. The department cannot use it in usual operation but has to hold it for pay according to the objective which is as follows;

Note 5 Cash and cash equivalent (continued)

(Unit : Baht)

	2022	2021
Received goods/ receipts	17,868.00	-
Deposit/working capital	258,717,483.43	174,615,204.99
Other deposits	294,336,824.17	584,857,950.43
Other securities	210,574,234.42	186,477,774.78
Revenue from advance of service	55,314,797.16	55,595,691.63
Deferred income	5,112,084.00	117,112,084.00
Revenue from providing services to the outsider	769,251.41	707,039.88
Revenue from off-budget	242,987,656.72	169,235,568.31
Revenue from operation subsidy from local government	445,000.00	-
Revenue from other operation subsidy	203,520,881.89	-
Revenue from investment subsidy	110,919,279.78	139,767,043.07
Revenue from donation	84,868,126.83	-
Total fiscal deposit	1,467,583,487.81	1,428,368,357.09

Note 6 Other short-term receivables

(Unit : Baht)

	2022	2021
Fiscal budget receivables	1,262,740.00	1,097,680.00
Advance	14,310,064.00	13,246,646.00
Accrued income-the outsider	8,296.85	7,464.91
Accrued income from the Comptroller's General Department	81,927,880.82	147,330,127.93
Total other short-term receivables	97,508,981.67	161,681,918.84

Loan receivables and account receivables as of the end of year classified by age of debt as follows;

(Unit : Baht)

	Not due pay	overdue Not exceeding 15 days	overdue exceeding 15 days	Total
Loan receivables				
in fiscal year :				
2565	1,262,740.00	-	-	1,262,740.00
2564	1,097,680.00	-	-	1,097,680.00

Note 7 Property, plant and equipment - net

30 September 2022

(Unit : Baht)

	Cost				Accumulated Depreciation				Property, plant and equipment
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Net
Land with land ownership	66,253,572,177.15	3,358,734,944.11	-	69,612,307,121.26	-	-	-	-	69,612,307,121.26
Land without details	2,708,937,746.85	-	-	2,708,937,746.85		-	-	-	- 2,708,937,746.85
Living building	1,909,866,905.67	155,791,571.77	-	2,065,658,477.44	431,029,536.69	75,147,757.42	-	506,177,294.11	1,559,481,183.33
Office building	2,224,154,886.85	123,881,068.51	-	2,348,035,955.36	334,440,193.88	73,099,818.82	-	407,540,012.70	1,940,495,942.66
Other building	758,210,608.82	25,744,712.02	-	783,955,320.84	531,551,471.73	40,505,909.02	-	572,057,380.75	211,897,940.09
Plant	6,284,740,625.29	1,198,175,385.32	-	7,482,916,010.61	1,240,231,149.59	585,720,277.86	-	1,825,951,427.45	5,656,964,583.16
Building and plant without details	1,628,565,594.37	-	5,538,543.00	1,623,027,051.37	1,244,509,196.88	16,184,028.74	-	1,260,693,225.62	362,333,825.75
Durable goods : office	507,456,925.08	42,520,709.31	-	549,977,634.39	295,090,287.68	43,362,091.83	-	338,452,379.51	211,525,254.88
Durable goods : vehicle and transportation	1,656,047,283.54	131,775,719.81	-	1,787,823,003.35	1,026,013,914.90	142,225,425.72	-	1,168,239,340.62	619,583,662.73
Durable goods : electric and radio	257,653,985.30	56,250,422.60	-	313,904,407.90	99,633,550.31	34,995,852.28	-	134,629,402.59	179,275,005.31
Durable goods : advertising and publication	331,667,743.80	95,330,960.21	-	426,998,704.01	179,248,094.44	70,598,149.12	-	249,846,243.56	177,152,460.45
Durable goods : factory	55,238,232.13	3,609,672.00	-	58,847,904.13	33,391,310.20	5,327,423.53	-	38,718,733.73	20,129,170.40
Durable goods : construction	750,254,384.88	174,687,309.37	-	924,941,694.25	520,691,090.90	130,348,713.85	-	651,039,804.75	273,901,889.50
Durable goods : survey	981,617,352.80	85,581,744.26	-	1,067,199,097.06	489,771,568.92	84,557,632.55	-	574,329,201.47	492,869,895.59
Durable goods : science and medical service	178,672,858.83	-	51,751,182.74	126,921,676.09	146,952,376.05	-	30,883,773.98	116,068,602.07	10,853,074.02
Durable goods : computer	802,064,461.13	126,078,494.68	-	928,142,955.81	663,626,993.31	69,313,141.01	-	732,940,134.32	195,202,821.49
Durable goods : house and kitchen work	25,825,714.37	-	612,958.06	25,212,756.31	21,659,577.42	636,459.26	-	22,296,036.68	2,916,719.63
Other durable goods	45,800,537.19	15,000.00	-	45,815,537.19	36,330,550.83	2,420,781.57	-	38,751,332.40	7,064,204.79
Durable without details	1,062,362,103.42	-	6,775,934.00	1,055,586,169.42	919,035,667.96	-	6,773,514.00	912,262,153.96	143,324,015.46
Total	88,422,710,127.47	5,578,177,713.97	64,678,617.80	93,936,209,223.64	8,213,206,531.69	1,374,443,462.58	37,657,287.98	9,549,992,706.29	84,386,216,517.35

Note 7 Property, plant and equipment – net (continued)

30 September 2021

(Unit : Baht)

	Cost				Accumulated Depreciation				Property, plant and equipment
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Net
Land with land ownership	50,694,728,205.21	15,675,796,218.33	116,952,246.39	66,253,572,177.15	-	-	-	-	66,253,572,177.15
Land without details	3,824,488,970.63	-	1,115,551,223.78	2,708,937,746.85	-	-	-	-	2,708,937,746.85
Living building	1,651,038,080.43	307,404,072.48	48,575,247.24	1,909,866,905.67	368,682,420.58	63,985,931.61	1,638,815.50	431,029,536.69	1,478,837,368.98
Office building	1,315,946,100.32	1,003,408,299.90	95,199,513.37	2,224,154,886.85	254,555,276.68	82,316,237.02	2,431,319.82	334,440,193.88	1,889,714,692.97
Other building	695,625,006.46	80,052,620.07	17,467,017.71	758,210,608.82	488,732,820.57	45,273,492.14	2,454,840.98	531,551,471.73	226,659,137.09
Plant	2,789,817,656.84	3,945,285,927.70	450,362,959.25	6,284,740,625.29	648,416,948.38	594,380,501.98	2,566,300.77	1,240,231,149.59	5,044,509,475.70
Building and plant without details	1,635,878,154.37	-	7,312,560.00	1,628,565,594.37	1,230,799,088.35	20,968,489.86	7,258,381.33	1,244,509,196.88	384,056,397.49
Durable goods : office	426,556,956.30	410,482,212.86	329,582,244.08	507,456,925.08	249,564,289.86	55,081,207.07	9,555,209.25	295,090,287.68	212,366,637.40
Durable goods : vehicle and transportation	1,388,538,808.54	310,961,439.77	43,452,964.77	1,656,047,283.54	879,194,363.48	149,111,497.08	2,291,945.66	1,026,013,914.90	630,033,368.64
Durable goods : electric and radio	152,459,012.68	143,816,615.12	38,621,642.50	257,653,985.30	54,829,697.44	45,306,860.54	503,007.67	99,633,550.31	158,020,434.99
Durable goods : advertising and publication	190,557,926.97	216,750,204.61	75,640,387.78	331,667,743.80	128,255,344.89	53,167,735.95	2,174,986.40	179,248,094.44	152,419,649.36
Durable goods : factory	48,479,517.53	8,661,764.60	1,903,050.00	55,238,232.13	29,289,540.94	4,585,863.18	484,093.92	33,391,310.20	21,846,921.93
Durable goods : construction	710,694,189.33	52,820,955.71	13,260,760.16	750,254,384.88	454,083,114.91	71,227,658.91	4,619,682.92	520,691,090.90	229,563,293.98
Durable goods : survey	655,223,286.29	358,808,069.25	32,414,002.74	981,617,352.80	395,224,482.70	95,676,955.74	1,129,869.52	489,771,568.92	491,845,783.88
Durable goods : science and medical service	177,588,569.47	1,696,452.00	612,162.64	178,672,858.83	134,075,179.46	13,439,758.84	562,562.25	146,952,376.05	31,720,482.78
Durable goods : computer	696,940,693.15	131,617,556.37	26,493,788.39	802,064,461.13	600,174,237.56	76,906,888.85	13,454,133.10	663,626,993.31	138,437,467.82
Durable goods : house and kitchen work	24,846,301.48	2,391,485.05	1,412,072.16	25,825,714.37	20,191,852.05	2,652,924.09	1,185,198.72	21,659,577.42	4,166,136.95
Other durable goods	35,295,792.00	25,954,735.19	15,449,990.00	45,800,537.19	34,458,654.96	1,917,884.87	45,989.00	36,330,550.83	9,469,986.36
Durable without details	1,074,907,474.65	8,291,025.33	20,836,396.56	1,062,362,103.42	931,014,904.97	6,029,690.33	18,008,927.34	919,035,667.96	143,326,435.46
Total	68,189,610,702.65	22,684,199,654.34	2,451,100,229.52	88,422,710,127.47	6,901,542,217.78	1,382,029,578.06	70,365,264.15	8,213,206,531.69	80,209,503,595.78

Note 8 Infrastructure asset - net

30 September 2022

(Unit : Baht)

	Cost				Accumulated Depreciation				Infrastructure asset - net
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Net
Road	394,664,219,116.57	59,199,317,768.47	-	453,863,536,885.04	262,592,678,291.72	33,491,670,129.55	-	296,084,348,421.27	157,779,188,463.77
Bridge	93,097,678,460.50	3,322,439,297.56	-	96,420,117,758.06	15,075,154,352.56	2,451,967,769.57	-	17,527,122,122.13	78,892,995,635.93
Infrastructure asset without details	14,206,421,909.15	-	13,821,525.34	14,192,600,383.81	6,733,150,468.27	52,030,781.86	-	6,785,181,250.13	7,407,419,133.68
During construction work	130,497,307,581.98	4,340,401,619.72	-	134,837,709,201.70	-	-	-	-	134,837,709,201.70
Break during construction work	-	-	-	-	-	-	-	-	-
Total	632,465,627,068.20	66,862,158,685.75	13,821,525.34	699,313,964,228.61	284,400,983,112.55	35,995,668,680.98	-	320,396,651,793.53	378,917,312,435.08

Note 8 Infrastructure asset - net

30 September 2021

(Unit : Baht)

	Cost				Accumulated Depreciation				Infrastructure asset - net
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Net
Road	336,904,333,773.37	127,818,491,661.52	70,058,606,318.32	394,664,219,116.57	232,679,624,628.42	44,449,661,701.70	14,536,608,038.40	262,592,678,291.72	132,071,540,824.85
Bridge	80,722,357,578.43	47,989,601,604.70	35,614,280,722.63	93,097,678,460.50	12,544,914,754.73	4,088,171,401.09	1,557,931,803.26	15,075,154,352.56	78,022,524,107.94
Infrastructure asset without details	14,247,512,543.89	53,786,702.57	94,877,337.31	14,206,421,909.15	6,596,443,482.47	180,950,599.20	44,243,613.40	6,733,150,468.27	7,473,271,440.88
During construction work	138,711,591,571.47	83,069,681,813.53	91,283,965,803.02	130,497,307,581.98	-	-	-	-	130,497,307,581.98
Break during construction work	121,384,843.84	84,443,623,911.04	84,565,008,754.88	-	-	-	-	-	-
Total	570,707,180,311.00	343,375,185,693.36	281,616,738,936.16	632,465,627,068.20	251,820,982,865.62	48,718,783,701.99	16,138,783,455.06	284,400,983,112.55	348,064,643,955.65

Note 9 Intangible asset - net

30 September 2022

(Unit : Baht)

	Cost				Accumulated Depreciation				Intangible asset - net
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Beginning balance
Computer program	229,466,154.94	3,600,354.00	-	233,066,508.94	209,596,748.92	14,094,538.16	-	223,691,287.08	9,375,221.86
Total	229,466,154.94	3,600,354.00	-	233,066,508.94	209,596,748.92	14,094,538.16	-	223,691,287.08	9,375,221.8

Note 9 Intangible asset - net

30 September 2021

(Unit : Baht)

	Cost				Accumulated Depreciation				Intangible asset - net
	Beginning balance	increased	deducted	Ending balance	Beginning balance	increased	deducted	Ending balance	Beginning balance
Computer program	214,601,413.94	15,673,567.00	808,826.00	229,466,154.94	191,116,900.23	18,718,031.25	238,182.56	209,596,748.92	19,869,406.02
Total	214,601,413.94	15,673,567.00	808,826.00	229,466,154.94	191,116,900.23	18,718,031.25	238,182.56	209,596,748.92	19,869,406.02

Note 10 Account payable

(Unit : Baht)

	2022	2021
Account payable - the outsider	2,576,462,214.15	6,518,782,612.18
Received goods/ receipts	201,544.00	334,559.10
Total account payables	2,576,663,758.15	6,519,117,171.28

Note 11 Other short-term payable

(Unit : Baht)

	2022	2021
Other payables - the government agency	7,455,225.46	7,575,541.62
Unpaid utilities	3,942,403.24	2,782,906.99
Unpaid receipts	119,988,747.15	124,168,077.11
Other unpaid expenses - the government agency	1,177,547.17	-
Other unpaid expenses - the outsider	39,495.00	-
Total other short-term payables	132,603,418.02	134,526,525.72

Note 12 Short-term deposit

(Unit : Baht)

	2022	2021
Deposit - working capital	259,052,125.83	174,615,204.99
Other deposits	1,125,225,383.60	1,751,406,852.45
Project collateral money	4,846,036,090.71	4,733,836,387.99
Other collateral money	244,071,192.40	198,224,899.48
Total short-term deposit	6,474,384,792.54	6,858,083,344.91

Note 13 Other revolving debt

(หน่วย : บาท)

	2022	2021
Service advance income	55,314,797.16	55,595,691.63
Other revolving debt	-	4,212.35
Total other revolving debt	55,314,797.16	55,599,903.98

Department of Highways has constructed sport field, golf course and sport training center for Sports Authority of Thailand at the agreement amount of 1,451,641,900.- baht. The department already received the construction expenses at 1,417,863,254.82 baht which was disbursed at the amount of 1,364,610,283.27 baht and remains at the amount of 53,252,971.55 baht. Moreover, the department has constructed high speed rail for State Railway of Thailand in the agree budget of 371,684,847.10 baht which already received the construction budget at the amount of 288,336,861.43 baht which was disbursed at the amount of 286,275,035.82 baht and remains at the amount of 2,061,825.61 baht. The total remaining is at the amount of 55,314,797.16 baht. It is a fiscal deposit together with service advance income as follows.

(Unit : Baht)

Construction Projects	Budget according to MoU	Received budget	Remained budget	Disbursement
1. National sport training, Amphor Muaklek, Saraburi province	115,707,000.00	115,707,000.00	115,707,000.00	-
2. Sport field, Sakon Nakhon province	150,966,700.00	150,966,700.00	150,966,700.00	-
3. Sport field, Sa Kaeo province	161,814,700.00	161,814,700.00	161,814,700.00	-
4. Sport field, Samut Prakan province	151,887,200.00	151,887,200.00	151,887,200.00	-
5. Sport field, Narathiwat province	177,220,500.00	177,220,500.00	128,034,958.92	49,185,541.08
6. Sport field, Saraburi province	100,000,000.00	100,000,000.00	99,999,516.50	483.50
7. Sport field, Lampang province (Koh Kha)	107,944,000.00	74,165,354.82	70,098,407.85	4,066,946.97
8. Sport field, Maha Sarakham province	168,133,200.00	168,133,200.00	168,133,200.00	-
9. Sport field, Amnat Charoen province	167,079,700.00	167,079,700.00	167,079,700.00	-
10. Sport field, Phetchabun province	150,888,900.00	150,888,900.00	150,888,900.00	-
Total	1,451,641,900.00	1,417,863,254.82	1,364,610,283.27	53,252,971.55
11. High Speed Rail section Bkk.-Nong Khai stage 1 : section Bkk.-Nong Khai) phase 1 Klang Dong-Pang Asoke (distance of 3.5 km.)	371,684,847.10	288,336,861.43	286,275,035.82	2,061,825.61
Grand total	1,823,326,747.10	1,706,200,116.25	1,650,885,319.09	55,314,797.16

Note 15 Revenue over accumulated expenses

(Unit : Baht)

	2022	2021
Brought forward revenue over accumulated expenses	394,352,246,479.48	346,595,470,371.85
Plus (deduct) Prior period adjustments		
Prior period adjustments	(248,431,821.16)	(1,668,584,752.15)
Brought forward revenue over accumulated expenses after adjustments	394,103,814,658.32	344,926,885,619.70
Revenue higher than present year expenses	39,470,725,221.72	49,425,360,859.78
Total revenue over accumulated expenses	433,574,539,880.04	394,352,246,479.48

Note 16 Fiscal revenue

(Unit : Baht)

	2022	2021
Revenue from present fiscal year		
Revenue from human resource budget	5,010,660,828.46	5,011,468,536.13
Revenue from operation budget	894,662,248.39	927,178,661.58
Revenue from investment budget	90,741,959,824.77	93,567,318,461.56
Revenue from subsidy budget	356,000.00	356,000.00
Revenue from central budget	4,177,037,173.05	2,968,548,568.77
Revenue from other expense budget	553,249,818.25	409,089,559.55
Deduct return over disbursement	42,041,817.14	36,435,503.20
Grand total present revenue from fiscal budget - net	101,335,884,075.78	102,847,524,284.39
Revenue from last fiscal year (reserved money for withdraw over the fiscal year which withdraw in present year)		
Revenue from operation budget	60,417,989.13	64,808,278.27
Revenue from investment budget	20,720,693,124.44	28,421,237,384.20
Revenue from subsidy budget	1,949,136.08	2,661,000.00
Revenue from central budget	1,460,438,814.43	1,605,723,917.41
Revenue from other expense budget	218,027,401.08	234,378,088.42
Deduct return over disbursement	-	234,178.28
Total revenue from last fiscal years	22,461,526,465.16	30,328,574,490.02
Grand total revenue	123,797,410,540.94	133,176,098,774.41

Note 17 Revenue from loan and other government revenue

(Unit : Baht)

	2022	2021
ADB 3582 – THA loan project	120,437,389.22	571,438,695.38
Total revenue from loan	120,437,389.22	571,438,695.38

ADB 3582 – THA loan project is the loan project from Asian Development Bank in the amount of 90.80 US Million. It aims for the construction of 4-lane highway widening project (phase 2) which use the loan the associated fiscal budget in 50:50 ratio. The project has begun on 27 August 2018 and will be ended on 30 September 2022. There is loan disbursement in fiscal year B.E.2565 (2022) in the amount of 120,437,389.22 baht. The total ADB 3582-THA accrued loan disbursement is 2,842,539,275.99 baht.

Note 18 Revenue from other subsidy and donation

(Unit : Baht)

	2022	2021
Revenue from operation subsidy from local government	2,323,050.00	415,350.00
Revenue from other operation subsidy	302,835,758.88	5,257,679.00
Revenue from other investment subsidies	154,805,781.87	145,875,212.96
Revenue from donation	131,477,340.37	31,463,850.15
Revenue from transferred asset between agencies	186,528,151.11	375,596,609.09
Total other subsidies and donation	777,970,082.23	558,608,701.20

Note 19 Other revenues

(Unit : Baht)

	2022	2021
Off-budget revenue	300,029,397.00	193,417,175.00
Other revenues	1,385.70	317,972.00
Total other revenues	300,030,782.70	193,735,147.00
Off-budget revenue consists of		
Revenue from traffic fine - Office of Highways Traffic weight Control, Highway Police	109,531,648.00	84,266,230.00
Revenue from tolls of		
1st Thai - Lao Friendship bridge (Nong Khai-Vientiane)	17,672,105.00	14,934,470.00
2nd Thai - Lao Friendship bridge (Mukdahan-Savannakhet)	29,695,250.00	28,346,775.00
3rd Thai - Lao Friendship bridge (Nakhon Phanom - Khammouane)	29,784,950.00	34,318,100.00
4th Thai - Lao Friendship bridge (Chiang Khong - Huay Xai)	18,013,475.00	20,240,425.00
2nd Thai - Myanmar Friendship bridge crossing Moei/Tong Yin river	44,533,300.00	11,311,175.00
Compensation for land - State Railway of Thailand	50,798,669.00	-
Total off-budget revenues	300,029,397.00	193,417,175.00
Other revenues consist of		
- Received return of maintenance expense from LAO PDR Friendship bridge (Nong Khai-Viantiane)	-	317,972.00
- Received return of social security of September 2021 from Friendship bridge (Nong Khai-Viantiane)	10.00	-
- Received return of temporary wages of September 2021 from 2nd Thai-Myanmar Friendship bridge crossing Moei/Tong Yin river	1,375.70	-
Total other revenues	1,385.70	317,972.00

Note 20 Human resource expenses

(Unit : Baht)

	2022	2021
Salary	3,370,500,929.56	3,343,400,431.06
Overtime	423,164,610.24	389,893,965.42
Wage	3,089,877,937.45	3,145,891,835.68
Government employee's compensation	943,062,746.36	898,038,319.66
Living expenses	9,095,552.52	10,139,330.64
Medical expenses	312,573,070.58	288,836,145.50
Children education allowance	41,668,072.76	34,625,820.63
Funeral allowance	7,092,063.37	7,490,716.32
Government Pension Fund's member compensation	51,450,729.44	50,457,838.71
Government Pension Fund's subsidy	77,175,352.60	75,686,757.98
Government Permanent Employee Registered Provident Fund's subsidy	19,737,774.77	22,036,149.01
Social Security Fund's subsidy	115,851,590.70	101,766,580.05
Compensation Fund's subsidy	6,669,642.54	6,746,739.46
House rent	2,436,491.88	2,240,695.62
Other human resource expenses	4,368,328.64	4,840,390.33
Total human resource expenses	8,474,724,893.41	8,382,091,716.07

Note 21 Gratuity and pension

(Unit : Baht)

	2022	2021
Pension	1,323,439,856.03	1,259,561,386.56
Living allowance for pensioners	102,027,121.83	105,856,862.66
Gratuity	663,473,198.82	616,616,235.78
Inherited gratuity	74,638,751.39	58,012,638.07
Living allowance gratuity	78,197,159.00	70,470,013.00
Medical expenses	278,579,225.18	254,669,956.96
Children education allowance	2,578,496.75	1,705,017.50
Other gratuities and pensions	9,983,381.37	8,122,923.91
Total gratuity and pension	2,532,917,190.37	2,375,015,034.44

Note 22 Compensation

(Unit : Baht)

	2022	2021
Job compensation	2,914,560.10	2,532,099.85
Other compensations	42,900.00	-
Total compensation	2,957,460.10	2,532,099.85

Note 23 Expenses

(Unit : Baht)

	2022	2021
Training expenses - in country	10,701,022.62	12,347,399.77
Training expenses - aboard	2,411,732.52	2,410,946.59
Training expenses - the outsiders	235,142.20	118,855.00
Transportation expenses - in country	216,999,516.50	241,145,505.52
Transportation expenses - aboard	32,110.00	-
Maintenance expenses	32,846,981,455.49	38,797,356,350.50
Service fee	228,261,441.98	191,332,505.52
Fee	29,112,105.88	47,059,052.42
Consultant fee	1,496,467,994.50	807,289,567.72
Meeting expenses	8,217,813.60	7,691,690.03
Rental fee	561,941,260.86	534,465,936.51
Returned expense as revenue	133,368.35	834,690.30
Advertisement	25,976,874.00	22,636,415.00
Other expenses	592,871,960.74	340,377,761.69
Total expenses	36,020,343,799.24	41,005,066,676.57

Note 24 Material expense

(Unit : Baht)

	2022	2021
Material expenses	605,936,022.11	538,972,322.19
Fuel expenses	121,146,668.39	100,883,004.38
Durable goods value lower than criteria	24,670,894.17	22,937,970.96
Total material expenses	751,753,584.67	662,793,297.53

Note 25 Utilities expense

(Unit : Baht)

	2022	2021
Electric fee	160,652,917.83	149,364,411.73
Water and groundwater fee	16,986,749.20	16,742,134.08
Telephone fee	4,182,108.28	5,352,925.15
Communication and telecommunication fee	87,965,486.05	92,005,164.99
Post and telegraph and transportation fee	62,063,759.01	54,787,390.68
Total utilities expenses	331,851,020.37	318,252,026.63

Note 26 Depreciation and amortization

(Unit : Baht)

	2022	2021
Building and plant	750,158,756.97	488,024,025.35
Durable goods	516,526,300.25	435,296,799.13
Infrastructure asset	36,018,683,107.88	31,426,309,009.10
Intangible asset	13,705,250.39	15,439,159.79
Total depreciation and amortization	37,299,073,415.49	32,365,068,993.37

Note 27 Other expenses

(Unit : Baht)

	2022	2021
Net profit/loss from asset selling	47,408,332.82	16,663,062.85
Secret government budget for national security	1,000,000.00	1,000,000.00
Other expenses	20,372,772.46	19,486,881.61
Expenses between agencies - adjust fiscal deposit	2,826,281,946.72	3,139,917,823.63
Deduct revenue between agencies - agencies received off-budget money	2,782,129,831.81	3,198,027,378.04
Total other expenses	112,933,220.19	(20,959,609.95)

Department of Highways
Financial Statement
As of 30 September 2022

(Unit : Baht)

	2022	2021
Asset		
Current assets		
Cash and cash equivalent	2,372,689,534.67	2,656,884,538.53
Other short - term receivables	97,508,981.67	161,681,918.84
Fixed deposit	11,966.06	11,778.82
Inventories	77,614,516.28	76,536,633.60
Other current assets	1,754,144.38	1,653,400.82
Total current assets	2,549,579,143.06	2,896,768,270.61
Non-current assets		
Property, plant and equipment - net	84,386,216,517.35	80,209,503,595.78
Infrastructure - net	378,917,312,435.08	348,064,643,955.65
Intangible asset - net	9,375,221.86	19,869,406.02
Other non - current assets	183,676.00	334,559.10
Total non - current assets	463,313,087,850.29	428,294,351,516.55
Total assets	465,862,666,993.35	431,191,119,787.16

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

Department of Highways
Financial Statement
As of 30 September 2022

(Unit : Baht)

	2022	2021
Liabilities and net assets/equity		
Liabilities		
Current liabilities		
Account payables	2,576,663,758.15	6,519,117,171.28
Short-term account payables (amounts to be transferred) and subsidies	100,436.85	82,814.91
Other short-term payables	132,603,418.02	134,526,525.72
Short-term deposits	6,474,384,792.54	6,858,083,344.91
Other current liabilities	55,314,797.16	55,599,903.98
Total liabilities	9,239,067,202.72	13,567,409,760.80
Non-current liabilities		
Long-term account payables (amounts to be transferred) and subsidies	296,480,302.80	518,883,939.09
Long-term advance from the Treasury	15,538,000.00	15,538,000.00
Total non-current liabilities	312,018,302.80	534,421,939.09
Total liabilities	9,551,085,505.52	14,101,831,699.89
Net assets/equity		
Capital	22,737,041,607.79	22,737,041,607.79
Revenue over accumulated expenses	433,574,539,880.04	394,352,246,479.48
Total net assets/equity	456,311,581,487.83	417,089,288,087.27
Total liabilities and net assets/equity	465,862,666,993.35	431,191,119,787.16

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

Department of Highways
Statement of Financial Performance
As of 30 September 2022

(Unit : Baht)

	2022	2021
Revenue		
Budget revenue	123,797,410,540.94	133,176,098,774.41
Revenues from loans and other government revenues	120,437,389.22	571,438,695.38
Revenues from sales or services	1,431,010.47	15,339,776.30
Revenues from grants and donations	777,970,082.23	558,608,701.20
Other revenues	300,030,782.70	193,735,147.00
Total revenues	124,997,279,805.56	134,515,221,094.29
Expenses		
Personnel expenses	8,474,724,893.41	8,382,091,716.07
Gratuities and pensions	2,532,917,190.37	2,375,015,034.44
Remuneration	2,957,460.10	2,532,099.85
Overheads	36,020,343,799.24	41,005,066,676.57
Office supplies	751,753,584.67	662,793,297.53
Utility expenses	331,851,020.37	318,252,026.63
Depreciation and amortization	37,299,073,415.49	32,365,068,993.37
Other expenses	112,933,220.19	(20,959,609.95)
Total expenses	85,526,554,583.84	85,089,860,234.51
Revenue over/ (below) net expenses	39,470,725,221.72	49,425,360,859.78

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand

Department of Highways
Statement of Changes in Net Assets/Equity
As of 30 September 2022

(Unit : Baht)

	Cost	Revenue over/ (below) accumulated expenses	Net Assets/ Equity
Balance on 30 September 2020 as previously reported	22,541,880,400.43	346,595,470,371.85	369,137,350,772.28
Prior period adjustments	-	(1,668,584,752.15)	(1,668,584,752.15)
Balance on 30 September 2020 after adjusted	22,541,880,400.43	344,926,885,619.70	367,468,766,020.13
Changes in Net Assets/Equity of 2021			
Change to increase/decrease equity	195,161,207.36		195,161,207.36
Revenue over/ (below) expenses for the period	-	49,425,360,859.78	49,425,360,859.78
Balance on 30 September 2021	22,737,041,607.79	394,352,246,479.48	417,089,288,087.27
Balance on 30 September 20201 as previously reported	22,737,041,607.79	394,352,246,479.48	417,089,288,087.27
Prior period adjustments	-	(248,431,821.16)	(248,431,821.16)
Balance on 30 September 2021 after adjusted	22,737,041,607.79	394,103,814,658.32	416,840,856,266.11
Changes in Net Assets/Equity of 2021			
Change to increase/decrease equity	-	-	-
Revenue over/ (below) expenses for the period	-	39,470,725,221.72	39,470,725,221.72
Balance on 30 September 2022	22,737,041,607.79	433,574,539,880.04	456,311,581,487.83

Remark: This statement has not audited and certified by State Audit Office of the Kingdom of Thailand



Total other expenses

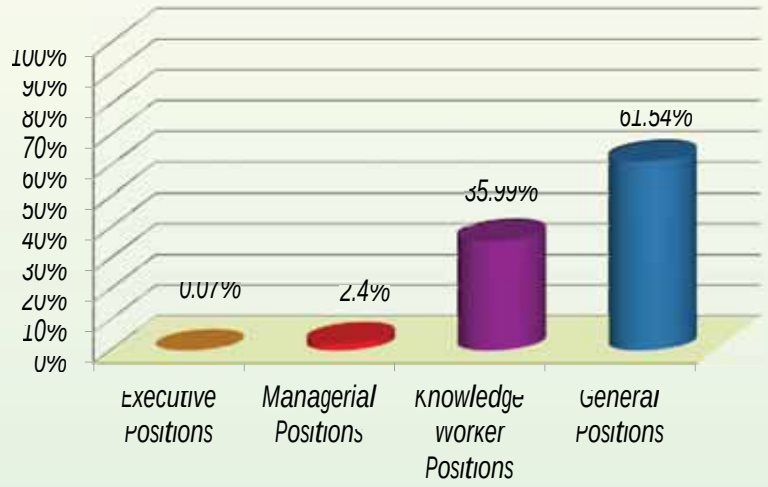
Manpower, Department of Highways

1. Fact

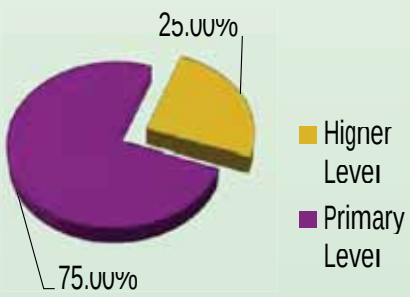
Department of Highways' Manpower, Dated 30 September 2022
Total 40,255 persons



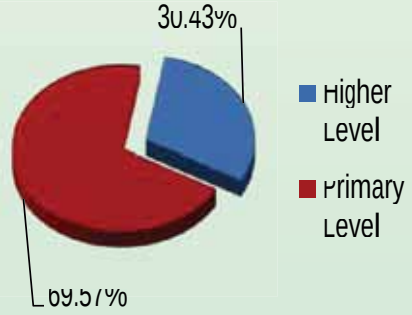
Officials' Manpower, Dated 30 September 2022 (Classified by Position and Level of Position)



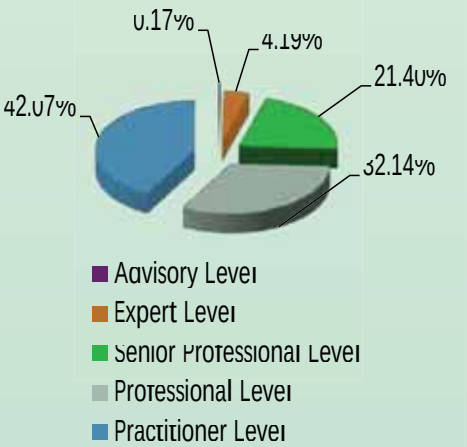
Executive Positions



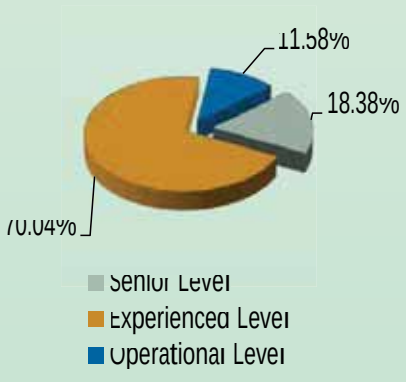
Managerial Positions



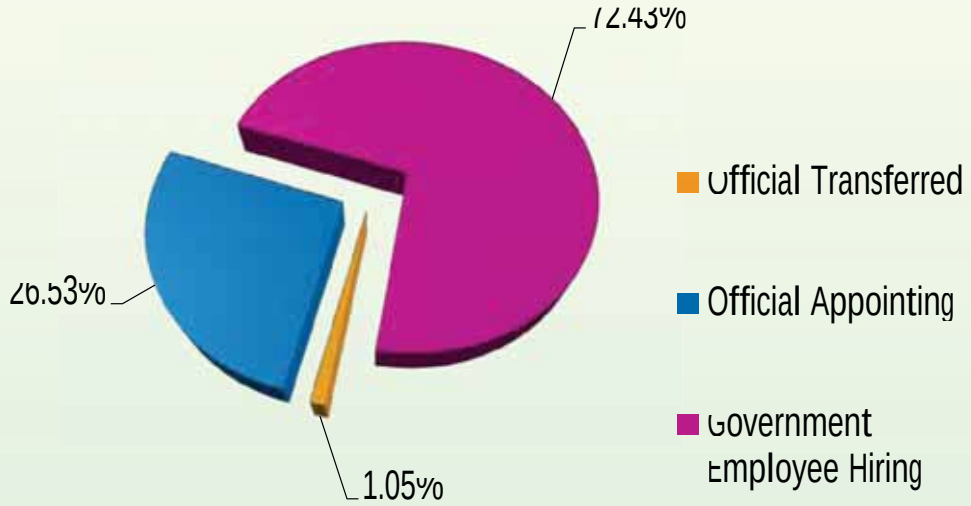
Kmowledge Worker Positions



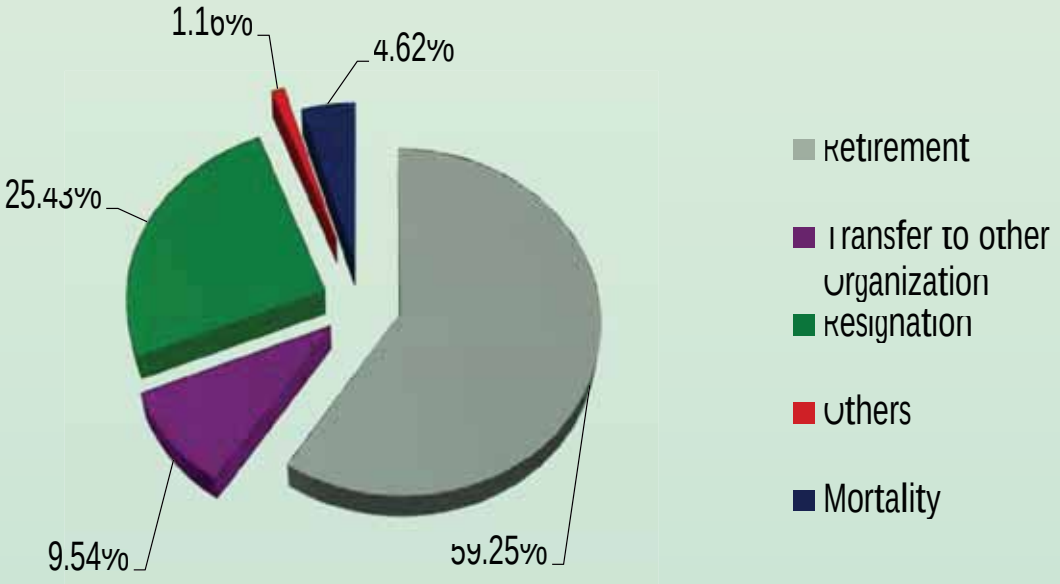
General Positions



Officials and Government Employees Recruitment of the DOH, Fiscal Year 2022



DOH's Officials Loosing Rate, Fiscal Year 2022



2. The implementation in 2022 (The Outstanding Achievement)

Human Resource Management has played a crucial role to support the goal of the DOH to be achieved. It is covered strategic planning, human resource management, organizing human resource management system, supervision of personnel information, personnel welfare and benefits offering, personal plan and management, recruiting and appointing of personnel, disciplinary inquiry, promoting morality and ethics of personnel, promoting welfare and quality of life, performance assessment for promoting and other actions relating to human resource management policy, excluding human resource development. In the fiscal year 2022, the Department of Highways has conducted human resource management as follows.

1. Review and set up a strategic plan for the Human Resource Management for the Department of Highways A.D. 2017 - 2021 (Fiscal Year 2022, revised version), as well as drive the project implementation or activities according to the strategic plan. As a result, it will focus on strategic human resource management, and develop the capacity of the personnel of the Department of Highways. To promote and support the vision and mission of the Department of Highways to achieve goals with high efficiency. It is necessary to follow up on performance results from divisions responsible for schemes or activities according to strategic plans regularly every 6 months and 12 months to assure that activities or schemes are achieved successfully as goals are set.

2. Review and determine the criteria or guidelines related to human resource management.

2.1 Criteria and method for employees' performance evaluation for appointment to general positions from the senior level as top-down ranking, announced on 15 November 2021, by preparing the criteria and guidelines for evaluating persons for appointment to general positions, Experienced Level, and Senior Level. This shall be in accordance with the criteria set forth in the Office of the Civil Service Commission No. Nor Ror 1006/W.13, dated 13 August 2021, titled "Criteria and method on Appointment, Promotion, and Transfer for civil officials as General Positions". The aforementioned criteria have been already announced to all agencies.

2.2 Criteria and method for employees' performance evaluation for appointment to knowledge worker positions from the expert level as top-down ranking, announced on 15 November 2021, by preparing the criteria and guidelines for evaluating persons for appointment to academic positions, Professional Level, Senior Professional Level and Expert Level (as prescribed by the regulations only). This shall be in accordance with the criteria set forth in the letter of the Office of the Civil Service Commission No. Nor Ror 1006/W. 14 dated 11 August 2021.

2.3 Criteria for selecting government officials for appointment as General Administration Officer, Practitioner Level/Professional Level (Head of General Administration), by preparing criteria and guidelines for selecting civil servants to be appointed as Head of General Administration in accordance with the criteria as in the letter of the Office of the Civil Service Commission No. Nor Ror 1006/W. 13 dated 11 August 2021, titled Criteria and method on Appointment, Promotion, and Transfer for civil officials as General Positions". The aforementioned criteria have been already announced to all agencies.

2.4 Requirements and conditions for accepting academic position allowances Positions in the line of work that the Office of the Civil Service Commissionconsiders have the right to get position allowances by developing the rules and procedures for obtaining position allowances must be expert level and qualified with experience, abilities, and competencies. Regarding the Department of Highways, in accordance with the Office of the Civil Service Commission's letter No. 1006/w. 6 dated 10 March, 2022, as two cases. For instance, Professional level (radiologist, professional nurse, electrical communication engineer, civil engineer, mechanical engineer, electrical engineer), as well as in the case of academic positions, expert level. The aforementioned criteria have been already announced to all agencies.

2.5 Guidelines for the transfer of government officials holding academic positions, practitioner level to be appointed to a job at the same level in other fields of employment and are not included in the same position group. Regarding this, guidelines recommended for the assessment of government officials with the knowledge, skills, and competence necessary for the job to be appointed, who will provide the most benefit to the government and the Department of Highways, will be found through methods of evaluating persons and their performance, including necessary forms. All agencies are already aware of the aforementioned requirements.

3. Equalize the status of employees in the Department of Highways, in accordance with the agency's flexibility in managing human resources and its evolving missions. Additionally, the organizations beneath have the manpower with the established normative framework. For instance, positions for civil engineers to work for or specialize in the Engineering Department, Highway District, etc., would be allocated to assist in the improvement of civil servant positions for the greatest advantage of the organization.

4. Modify the designation of civil service jobs in accordance with the standards and procedures outlined in the Office of the Civil Service Commission letter No. Nor Ror 1008/W. 2 dated 19 February 2015 (W. 2/2015), to ensure consistency of changed mission of the Department of Highways and creating progress in the field for personnel in the jurisdiction. For instance, the determination of the position of Legal Officer, Senior Professional Level under the Offices of Highways 3rd, 4th, 9th, and 17th. The designation of Civil Engineer positions, Practitioner Level or Professional Level under the Inter-city Motorway Division, Bureau of Bridge Construction, Bureau of Highways Maintenance Management, Bureau of Materials, Analysis and Inspection, and Highways District. Additionally, the positioning of Finance and Accounting Analyst and Supply Analyst under the general administration, Highways District. Moreover, the positioning of an Electrician, Senior Level under the electrical section, Office of Highways, etc.

5. Adoption of policies for management and developing the workforce by the government A.D. 2019- 2022. Regarding this, Human Resource Management will consider vacancy from retired officials at the end of the fiscal year 2021, having held 195 positions. All of which were civil servant positions that has been allocated back in the amount of 121 positions, civil servant positions that must be replaced by other forms of employment (government employees) in the amount of 28 positions, and the positions of civil servants allocated to the Ministry of Transport in the amount of 46 positions, which are in the process of being proposed the sub-committee of the Ministry of Transport to seek approval form the board of committee.

6. Proceed with allocating the 125 positions at the remuneration rates for government officials approved by the Budget Bureau (new rate) for the fiscal year 2022, consisting of 22 positions for Legal Officers, 2 positions of Computer Technical Officers, and 84 positions for Civil Services. There are 2 electrical and communication staff positions, 5 machine driver and machine operator positions, and 10 service staff positions. Likewise, there are 2 positions for electrical and communication employees, 5 positions for driver and machine operators, and 10 positions for service workers.

7. Selection of government scholarship students to be recruited as civil servants, according to the letter of the Office of the Civil Service Commission No. Nor Ror 1004.1/W.16, dated 11 December 2008. There are 2 cases of government scholarship student recruitment: case 1 involves the recruitment of government scholarship students in accordance with the needs of government sectors or government agencies for the year 2022 (private grants at the degree level: recruitment prior to beginning the studies) for 1 grant scholarship only, and case 2 involves the recruitment of government scholarship students in a project to develop the scientific workforce (Science Excellence Scholarship of Thailand) for 1 grant scholarship only.

8. To select the Department of Highways' top employees and transportation prototypes for the year 2021.

8.1 The "Prototype of Transport" award is a prestigious award given by the Ministry of Transport. Awarded to employees of the Ministry of Transport who exhibit adherence and act honorably. Honesty, transparency, and a willingness to defend moral principles while standing up for them when necessary are qualities that promote national defense reform plans and the suppression of corruption and misbehavior in accordance with the national strategy for their prevention and eradication Civil officials who satisfy the aforementioned requirements have been nominated by the Department of Highways under Corruption Phase 3 (2017-2021) and the 1st National Moral Promotion Master Plan (2016-2021). The Department of Highways was chosen to present to the Ministry of Transport and was selected to be a model of transport for the year 2021, namely Mr. Chatchai Chuangching, Chief Engineer, Professional Advisor in Civil Engineering (Maintenance), Civil Engineer, Advisory Level.

8.2 The Department of Highways honors annually selected employees who exhibit exceptional behavior and performance with the "Outstanding Civil Servant of the Department of Highways" award in accordance with the standards and requirements established by the Ministry of Education. For the year 2021, the Department of Highways held a plaque presentation ceremony to recognize 5 outstanding civil servants, as well as 10 honorable mentions and 14 recipients of honorary certificates on 1 April 2022, at Therdsak





Sedthamanop Seminar Room. The ceremony also included presenting a list of outstanding civil servants from the Department of Highways to the Ministry of Education for the year 2022, namely Mr. Auckpath Sawangsuriya, an expert civil engineer, Bureau of Road Research and Development, Mr. Kreetha Dechpin, Senior Professional Civil Engineer, Bureau of Planning, and Mr. Pisit Chansorn, heavy machinery driver, Chor. 2, Lom Sak Road Construction and Training Center.

9. Offer financial support welfare in accordance with the Department of Highways' welfare regulations. Regarding the distribution of allowances to the Department of Highways welfare employees, A.D. 2011. For instance, the cost in instances of death from an accident while performing responsibilities for 8 cases is 240,000 Baht, the cost in case of serious injury while performing duties for 81 cases is 197,500 Baht, and the cost in case of direct damage from fire, flood, or disaster for 102 cases is 143,000 Baht.

10. Continue to create and market polo shirts bearing the Department of Highways' emblem. (yellow, white, and navy-blue shirts) to raise money for the Department of Highways' Welfare Fund in honor of the 110th anniversary. This supports are more consistent and effective employee welfare provision, which encourages the improvement of the quality of life for employees of the Department of Highways. A database of orders, payments, deliveries, and proof storage has been made as well as the ability to place orders using online surveys (Google Forms). As a result, be methodical and accomplish the goals when distributing polo shirts.



11. Encourage the employees to uphold moral and ethical standards, as well as campaign for the prevention and suppression of corruption and misconduct in the public sector as follows:

11.1 Lead the implementation of the anti-corruption and misconduct action plan and advance the morals and ethics of the Department of Highways in the fiscal year 2022. To accomplish this, it is vital to organize programs or events that encourage moral and ethical awareness among Department of Highways employees. Additionally, a dedication to moral behavior, conducting oneself appropriately and working within the confines of the law, realizing the significance of taking part in the prevention and suppression of corruption in the public sector, as well as having a working knowledge of principles of good governance. At least twice a year, operational results will be examined to provide a report for external organizations such as the Ministry of Transport, the Office of the Civil Service Commission, etc.

11.2 Plan ongoing campaigns to advance culture, morals, ethics, and the prevention and suppression of corruption and misconduct in the public sector continuously. Examples include swearing-in ceremonies to uphold the law and the oath of loyalty ceremonies to be a good civil servant. Activities to make charitable contributions on 1 April 2022, the 110th anniversary of the Department of Highways' founding, include Thai cloth-draping activities and key religious celebrations, etc.

11.3 Improve the "Promoting Morality, Transparency, and Preventing Corruption" page layout on the Department of Highways website. A case study of disciplinary offenses and disciplinary action from an announcement made by the Department of Highways on steps to prevent conflicts of interest within the department, as well as public relations to advance morality and ethics, including preventing and stifling corruption and misconduct in the public sector, awareness of civil servant discipline, honesty, follow the father, ethical infographic as standards 2019, etc.













12. Implement the Integrity and Transparency Assessment (ITA) guidelines for the fiscal year 2022. The assessment was conducted using 3 tools: 1. Internal Integrity and Transparency Assessment (IIT) for Department of Highways employees; 2. External Integrity and Transparency Assessment: (EIT) a scale assessing external stakeholders' perceptions of the public visitors or users of the Department of Highways services 3. Open Data Integrity and Transparency Assessment (OIT) and 4. Integrity and Transparency Assessment System - (ITAS) which records the assessment data in the information technology system to support the assessment of integrity and transparency in the operation of government agencies in accordance with the assessment guidelines prescribed by the Office of the NACC completely within the specified timeframe. The assessment's outcome was 90.92 percent for the fiscal year 2022, which is achieving both the target figure and the indicator established by the Ministry of Transport.

13. The Civil Service Commission will proceed to recruit the Ethics Committee of the Department of Highways in accordance with Article 6 of the requirements on the ethical preservation process: mechanism and enforcement of the Civil Service. The Office of the Civil Service Commission (OCSC) announced on 18 April 2022 that the Civil Service Commission will appoint the Ethics Committee of the Department of Highways. As a result, duties and authority are in accordance with regulation 7's clause. The committee is consisting of Mr. Sopan Manakul, the board chairman, Mrs. Siriporn Thiendam, and Mr. Komol Dejkawinlert, both are distinguished committees from outer government sector, Mr. Montri Dechasakulsom, a committee as Executive or Managerial Positions, Mr. Kanchit Kusol, a committee from the Department of Highways, Mrs. Priyanuch Techanorraraj, a committee from DOH, and Mr. Paitoon Pongchavalit, a committee and secretary of board.

14. Implementation of the policies and procedures outlined by the Office of the Civil Service Commission (OCSC) and the Comptroller General's Department for civil servants, permanent employees, government employees, and temporary employees who are working in the Coronavirus Disease (COVID-19) pandemic. The rules and regulations are circulated to agencies under DOH for acceptance and legal compliance. The structure and instructions for reporting data on COVID-19-infected individuals on the first and sixteenth of each month will be revised for efficiency. Additionally, it mandated ongoing reporting in compliance with the standards established by the Comptroller General's Department and the Office of the Civil Service Commission.

15. Improve and develop the Departmental Personnel Information System: DPIS at the Department level. To accomplish this, analyze, design, and develop sub-programs or work processes to support decision-making and perform human resource management tasks, such as the government performance appraisal program, individual KPI assessments program, reporting program for royal insignia requests, and improving the DPIS program's license and permit application, among others. The administrator team is working proactively by publicizing information to the public, publicizing the system manuals, answering questions, and solving problems through various channels such as the DPIS program, line group "DPIS, Department of Highways", Facebook of the personnel division, etc.

16. Apply Information Technology to support workforce or business operations, such as reporting newly hired civil servants via video conference (Google Meet) or running a committee meeting for performance evaluation for academic positions at the professional and expert levels via the online system, Zoom Cloud Meetings. Additionally, accept a transfer request form via the online system (Google Form, etc.).



Human resource development

The Department of Highways places emphasis on the development of personnel's potential. Competent and potential will be the significant mechanisms for developing and supporting the Department of Highways to achieve its vision of an organization with a highway system that is convenient and safe to connect with the country's infrastructure development sustainably. In the fiscal year 2022, the Department of Highways is still facing the spread of the Coronavirus Disease 2019 (COVID-19) and the evolving trend of digital technology, which is a risk factor for the organization's human resource development operations. The Training Division, which is in charge of human resource development for the Department of Highways, has promoted and supported the development of digital technology systems for modern learning, such as adapting the operational style to the concept of "New Normal Operations" by using digital technology as a tool to drive the process and learning method to be flexible and suitable for the situation, as well as supporting the development of human resources in a hybrid model that focuses on success without limitation of place or time by connecting with a telecommunications network for personnel of all positions to gain access to the development of knowledge and skills by learning online or live-streaming in conjunction with attending classroom classes or onsite, as well as professionally driving the Department of Highways' missions and operational goals. Thus, the Training Division made a human resource development plan for the Department of Highways that considered the forementioned changes and the government's personnel development guidelines. For example, the plan focuses on developing organizational knowledge and digital literacy skills to make government work more efficient in the future, as well as strategic and leadership skills to support the new way of doing public services, including strengthening the mindset of personnel at all levels to understand changes and be ready to learn more and develop a growth mindset. The human resource development framework for the Department of Highways in the fiscal year 2022 can be summarized as follows:

1. Personnel promotion and development

The Department of Highways strengthens and develops personnel to be ready to keep up with the changes in government practices according to government policies and digital technology through a variety of learning processes, taking into account the efficiency and achievement of the operational goals of the Department of Highways as well as the benefits of learning for self-sustainability development and equitable career growth of personnel.

1.1 Human resource development based on policies and strategies consists of the executive seminar program of the Department of Highways for the fiscal year 2022, held twice, once in November 2021 and once in September 2022. The objective is to communicate and convey government policies for the executives of the Department of Highways to be aware of the guidelines and procedures to drive joint missions. In addition, the development of human resources according to policies and strategies consists of a training program to enhance the efficiency of the newly appointed Highway District Director, a training program for project engineers (Batch 4), and a training program for civil servant development programs during probation (Batch 31-33). These projects of the Department of Highways organize annually to increase knowledge, and skills, and promote potential according to the core competencies of jobs that are in line with the policy and direction of the Department of Highways administration. COVID-19 will continue to spread even into the fiscal year 2022, so a new design is required to reduce the risk of infection. The Training Division, therefore, has to design a learning method to meet the new normal working situation by bringing various tools and technology systems to support the collaboration between project staff, speakers, and trainees in hybrid learning to be able to maintain a form in which the personnel of the Department of Highways can participate in exchanging knowledge, concepts, and experiences in real-time from discussions on problems, case studies, study visits, teaching, and reviewing work practices with speakers, supervisors or experts involved in concrete work through the Zoom Cloud Meeting system.



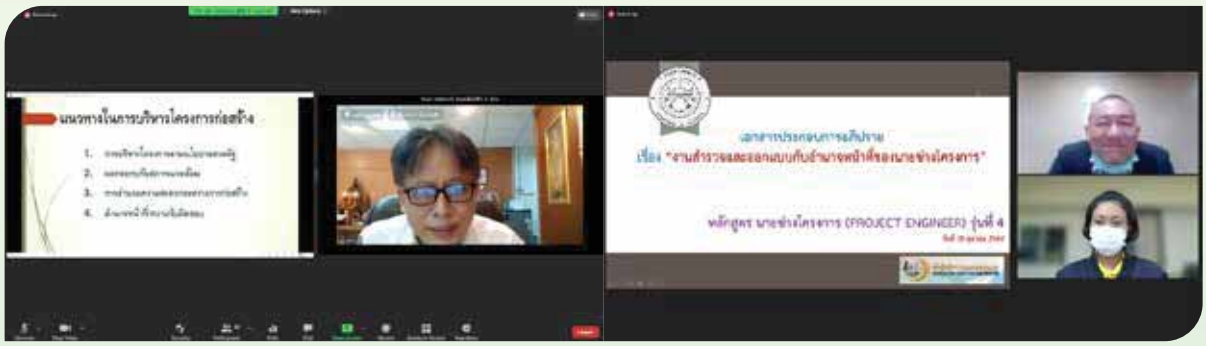
The Department of Highways Executive Seminar at Manus Corvanich Meeting Room, the Department of Highways



The Department of Highways Executive Seminar at Central Lab, the Department of Highways



The training program to enhance the efficiency of the newly appointed Highway District Director



The training program for project engineers, Batch 4

1.2 Promotion and development of engineering work: The purpose of promoting and developing engineering work is to ensure that the Department of Highways' staff development is systematic, ongoing, and consistent with the organization's current and future capabilities and the infrastructure's mission. This includes the need to modify management practices to comply with highway standards and government regulations. For instance, Training Course for Highway Engineering of Department of Highways, (Batch 11), Training Course for New Civil Engineer (Batch 24), Training course for New Chief of Highway Depot (Batch 2), a training course on safety inspection during construction, the Department of Highways Electrician Efficiency Enhancement Training Course, the Safety Management Workshop in Highway Maintenance Areas (Batch 1-10), is a development of knowledge and skills in traffic management and accident management in the area for Highway Technician across the country correctly to be legal and specified highway standards. This workshop aims to reduce the loss of life and potential property of highway operators and road users by using a hybrid learning model that focuses on practice to enhance the experience of situations that involve accident simulation in the work area.



Training Course for electricity personnel efficiency enhancement



Training Course for Highway Engineering of Department of Highway, (Batch 11),



Workshop on the Safety Management in Highway Maintenance Areas

1.3 Administrative promotion and development The Department of Highways aims to provide personnel in all fields with the opportunity to develop their potential, knowledge, and necessary skills according to the job advancement development mechanism and government policy direction to increase their ability to perform operations in support of operational missions within the context of the Department of Highways. Therefore, a training course has been established to develop various competencies. The target groups are both engineers and supporting positions to jointly lead the agency's main missions. For example, the Training Course for DOH Manager (primary level, batch 11), the Training Course for DOH Manager (intermediate level, batch 21), Training Course on Negotiation and Conflict Management Potential Development (batch 2), Training Course on Professional Presentation Skills, the Training Course on communication development of the Public Relations Network Development in the fiscal year 2022, etc.



Training Course for DOH Manager
(intermediate level, batch 21)



Training Course on Communication Development of the Public Relations Network of the Department of Highways

1.4 Organizational learning promotion

The Department of Highways supports the development of human resources and related work systems to promote continuous learning. With the view that promoting learning is noteworthy, it is significant to create a mechanism to maximize the potential of personnel with knowledge and experience, or intellectual capital used to develop procedures and create innovations within the Department of Highways. The promotion of learning by the Department of Highways covers individual learning, learning in small groups, and knowledge management in the form of a community of practitioners to support a learning organization. At present, the Department of Highways has set guidelines to promote learning and knowledge exchange through the implementation of important knowledge management projects to continuously drive practical results throughout the fiscal year with the help of the Organizational Knowledge Management System Development Committee of the Department of Highways, which is led by the Deputy Director General for Administration, who is the chairman of the board. The committee manage people, processes, and technology to improve and share practices, create synergies, and use and spread knowledge effectively. For example, a workshop on the use of information systems for knowledge management in the Department of Highways (KM DOH Website) to help agencies in the Department of Highways store and systematically find knowledge, the 10th-11th community practitioner learning exchange project on procurement and supply management, a project to encourage learning to create innovation in the organization ("Creativity to Corporate Innovation for Executives"), batch 1-2, the Department of Highways Knowledge Management Seminar on Knowledge Management 4.0 Practical Section (KM in Action), batch 2-3, etc.



A community practitioner learning exchange project on procurement and supply management.



A workshop project Implementation of Information System for Knowledge Management in the Department of Highways (KM DOH Website)



1.5 Promoting morals and ethics and improving the quality of life. Government personnel plays an important role in driving the country's administration to be orderly for the benefit of the people and the country's progress. Therefore, for operations to achieve such goals, government personnel must know their responsibilities and adhere to ethics, sacrifice, and the public mind. In addition, the Civil Service Code of Ethics of 2009 stipulates that government agencies have to promote incentives for civil servants. It aims to make civil servants and government officials at all levels have quality along with virtue. The Department of Highways has foreseen the importance of enhancing the correct understanding of religious principles to make personnel aware of the value and dignity of being a good government official, including the consciousness to work for the national interest. Therefore, a project to promote morality and ethics and continually improve the quality of life is organized annually. In the fiscal year 2022, we organized a project to promote morality and ethics and improve the quality of life through the discussion of moral principles. Virtue leads the way in performing duties for the people via the online Zoom system to instill in personnel adherence to morality and ethics, which are key competencies for government personnel, and use them as guidelines for performing duties for the people.

2. Promotion of human resource development cooperation: Throughout the past, the Department of Highways placed importance on personnel development to have competence in both the mission of the organization and knowledge and skills that are up-to-date, with the idea that for the operation of the Department of Highways to achieve its goals, personnel needs to be developed to be well-rounded in terms of knowledge, functional competence, up-to-date knowledge of digital technology changes, and potential leadership competency that requires integration from all sectors. Therefore, the Department of Highways has studied the needs and expanded the scope of academic cooperation with external agencies in both road engineering and supporting work by sending personnel to train and further study and by proceeding to apply for the allocation of Royal Government Thai Scholarships to prepare quality manpower for the bureaucratic system, including sending personnel to train outside agencies. For example, the Primary-Level Executives Courseof the Ministry of Transport (Batch 13), the Intermediate Level Executives course of the Ministry of Transport (Batch 17) a Higher-Level Executive Training Course of the Office of the Civil Service Commission. And organize a special lecture in conjunction The Council of Engineers on basic knowledge of civil engineering for associate engineers and civil engineers. The Department of Highways has developed cooperation with the Council of Engineers from providing academic cooperation to being accredited by the Council of Engineers as a host organization for Continuing Professional Development (CPD) since 2018 until now, are all examples. Most recently, it was renewed as a Continuing Professional Development (CPD) host organization on 8 October 2021.

For the best interest of the personnel in applying for the promotion of engineering professionals according to the requirements of the Council of Engineers, the Department of Highways has recorded the participation in the Continuing Professional Development (CPD) activities of those who have passed the course. The course passers can use the Professional Development Unit (PDU) accumulated from training and curricular activities organized by the Training Division as additional points or test score multipliers in the Professional Proficiency Test to upgrade their license level with the Council of Engineers. The courses or activities of the Department of Highways in the fiscal year 2022 can be calculated as the professional development unit score as follows:

Recording of participation in continuing professional development (CPD) activities, the fiscal Year 2022 (Information as of 4 Nov 2022)

No.	Courses or Activities	No. of PDU	No. of people receiving PDU
	Training/seminar in road engineering		
1	Training Course for Project Engineer, Batch 4	12.5	42
2	Training course on Construction Safety Inspection	11.5	40
3	Training Course for Increasing Efficiency of New Chief of Highway District	50.5	10
4	Annual seminar of the Bureau of Materials Analysis and Inspection, Department of Highways	14	205
	Management Training/Seminar		
5	Training Course for DOH Manager (intermediate level, batch 21	42.5	23
6	Training Course on Professional Presentation Skills	9	20
7	Training Course for Communication Development of the Public Relations Network of the Department of Highways	12	2
8	Workshop on Preparation of the Public Sector Management Quality Award 4.0 (PMQA 4.0) of the Department of Highways	24	92
9	Workshop on Criteria for Applying for the Public Sector Excellence Awards	12	323
10	Workshop on the Preparation of Good Corporate Governance Policies for the Department of Highways	6	323
11	Workshop on the Preparation of Indicators and Target Values from the Organization Level to the Department Level and the Individual Level of the Department of Highways (KPI Cascading)	36	323
	Promoting learning in the organization		
12	Department of Highways Knowledge Management Seminar on Knowledge Management 4.0 Practical section (KM in Action), Batch 2 - 3	6.5	234
13	Workshop using an information system for knowledge management in the Department of Highways (KM DOH Website), Batch 1 - 6	1.5	316
14	Project to promote learning to create innovation in the organization: "Creativity to Corporate Innovation for Executives" Batch 1 - 2	3	154
15	The 1^{0th} - 11th Community of Practice (CoP) Learning Exchange Project on Procurement and Supplies Management	6	190
	Training through E-Learning		
16	Road Maintenance	3	51
17	English	5	31
18	Road Safety Inspections in Road Maintenance	1.5	45
19	Highway Construction Supervision	15	191
20	Safety Management (Traffic Signs)	1	131
21	Safety Management (Traffic Signs on the Road)	2	109
	Total	275	2,855

In terms of international cooperation, the Department of Highways continues to work on technical cooperation with ASEAN member countries so that civil engineers can learn more about how international highway networks work. Divisions within the Department of Highways have cooperated in organizing a briefing and study visit project for the executives from the Department of Public Works, Ministry of Works, Malaysian Highway Authority, and the Road Engineering Association of Malaysia to exchange academic knowledge and technology used in construction materials.



Arrangement of study visits to Malaysian agencies in the field of work

3. Method development of Learning channels and disseminating knowledge for driving human resource development work to support the changing learning style of personnel. The pandemic of COVID-19 over the past three years, coupled with the development of information technology, is a significant factor influencing the organization's ability to adapt to the current era. The Training Division, therefore, needs to adjust its way of working to be flexible and change its learning style. This has led to the creation of a system to help Department of Highways' employees learn how to keep up with the changes by using digital technology to carry out a wider range of human resource development activities in all areas of operation. These include the following:

3.1 using digital technology to support human resource development activities, such as organizing meetings and training with the Zoom Cloud Meeting system, which includes system management to provide a meeting room and online training services, supervision during the meeting and training, and video recording throughout the meeting and training to be used as a reference in the work of the personnel involved. Another example is increasing communication channels to make work more efficient. This is done by using IT tools and systems in the process, which reduces the number of steps in different operations and makes them easier and faster. For example, online channels can be used for advertising courses, the admissions system, document distribution, access to training program resources, getting a certificate, and assessing courses.

3.2 the development of digital technology to drive and support the work according to the mission of disseminating knowledge and providing academic services by applying modern technology and expanding the internet's speed to support e-learning. In addition, improving the development of human resource development programs and databases for the dissemination of knowledge, academic information, and information so that personnel can access knowledge anywhere, anytime, such as through the creation of a website to support learning styles for a greater variety of personnel (www.trainingdoh.com). Moreover, dissemination of training course content and learning materials in the form of video files via online channels (Facebook: Training DOH and Youtube: Training DOH) as well as the creation of electronic books (e-books) distributed through the website and online media of the Training Division, etc.



3.3 E-Learning Project: The Department of Highways supports the learning of personnel in the form of e-learning as a channel for self-development and promotes unlimited learning that can be learned anywhere and at any time. The course contents are in line with the Government Personnel Development Guidelines 2020-2022 of the Office of the Civil Service Commission as follows:

- Knowledge Development category: Road Maintenance, Road Safety Inspection in Road Maintenance Work, Traffic Sign Installation During Construction, Highway Construction Supervision, Road Safety Management (Traffic Sign Category), Road Safety Management (Traffic Sign and Markings)

- The category of development of the mindset: Time management techniques.

- Digital Skills Category: Innovation Management Courses

- Language skills: English courses.

4. Results of human resource development for the fiscal year 2022

The Department of Highways has a total of 81 human resources development projects or courses.

Participants in the project or course totaled 8,421 people, with a total budget of 8,892,837 baht as follows:

Course type	Course	Certified people	budget (baht)
Project based on the human resource development plan	21	2,406	2,138,635
projects not included in the Human Resource Development Plan	9	1,098	3,548,442
Training/seminar projects according to the agreement in the consulting contract/according to the conditions in the sales contract/on request	42	4,096	3,205,760
E-Learning program	9	1,021	-
Total	81	8,421	8,892,837

Human resource development outcomes categorized by the human resource development model

Training/Seminar	72 projects
E-Learning	9 projects
Knowledge Management	4 projects
Sending personnel to train outside agencies	3 projects
Digital media to improve personnel knowledge (Facebook and Youtube: Training DOH)	259 videos



Office of Administrative System Development

Performance based on indicators.

1. Summary of assessment of government sectors' performance based on improving public sector efficiency for fiscal year 2022, Department of Highways.

Department of Highways has assessed government sectors based on improving public sector efficiency for fiscal year 2022. The results of assessment are summarized as follows.

Indicator	Weight (100%)	Objective			Working Performance	Score received
		Minimum (50)	Standard (75)	High Level (100)		
Performance Based Assessment (70%)						
1. Number of road accident death per hundred thousand population	10	28.89 person (per hundred thousand population)	28.37 person (per hundred thousand population)	27.85 person (per hundred thousand population)	25.84 person (per hundred thousand population)	100
2. Percentage of distance on highways with an international roughness index of road, with is better than the specified criteria (IRI not over 3.5 Meter per Kilometer)	40	82% (Working Performance 2022)	84.5% (Mean between primary and advanced targets.)	87% (Targets as budget documents)	87.73%	100
3. Several hazardous road locations fixed	20	3,241 places	3,251 places	3,266 places	3,275 places	100
Potential Based Assessment (30%)						
1. Asking for permission for vehicles to use on special highways, national highways, and concession highways through the system Special Type Vehicles Permit Service (SVS Online)	15	Issue documents as electronic documents (E-Licence/ E-Certificate/ E-Document) via Mobile or Website	Issue documents as electronic documents (E-Licence/ E-Certificate/ E-Document) as Electronic Transactions Development Agency (ETDA) standard via Mobile or Website. Users can print it out	It ready for service, and there are a number of users through the system not less than xx percent of the total number of service users.	Able to issue documents as Electronic Transactions Development Agency (ETDA) standard. Service can be started from 16 August 2022, and there are 10 companies using the system, determine as 55 percent of the total number of service users of 18 companies.	100
2. Assessing the status of an agency as a bureaucratic system 4.0 (PMQA 4.0)	15	380 (Average score group 3 :351-399 scores)	405.23 Score as year 2021)	413.33 (Score as year 2021+2%)	Score 424.53	100

Source: https://esar.opdc.go.th/officer/2565

Outstanding Performance

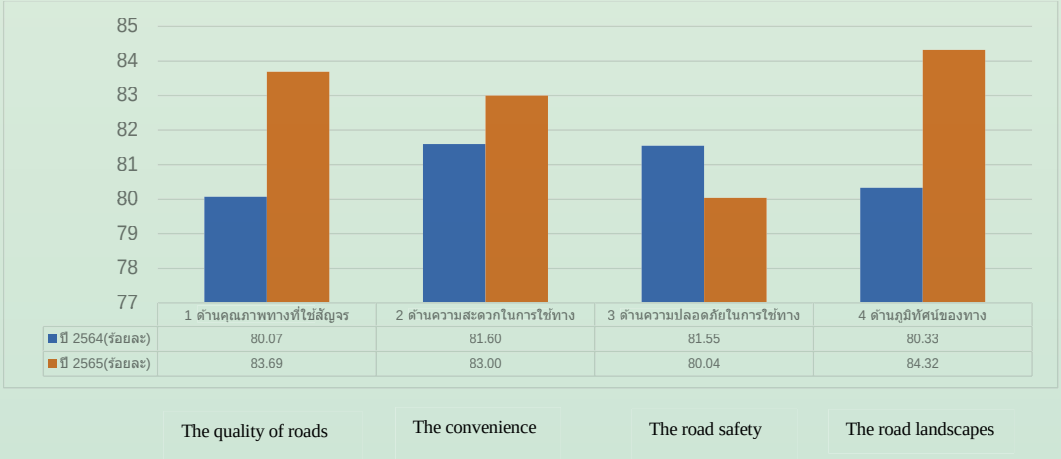
2. A Survey of road users' satisfaction on road network of Department of Highways, Fiscal Year 2022

Office of Administrative System Development has had a survey of road users' satisfaction on road network of Department of Highways which is an overview survey of road users' satisfaction. Additionally, the survey was measured in 4 aspects as follows: 1. The quality of roads 2. The convenience 3. The road safety 4. The road landscapes. Data collection method with sample by using a questionnaire, covering all 77 provinces and 104 Highways districts all over the country.

In summary, the overall satisfaction of road users on road network of the Department of Highways in all 4 aspects, equally was 82.78%. Satisfaction in various aspects can be orderly sort of percentages from highest to lowest as follows:

1. The road landscapes, users on road network of the Department of Highways were satisfied at a high level. Accounted for 84.32 %
2. The quality of the roads, users on road network of the Department of Highways were satisfied at a high level. Accounted for 83.69 %
3. The convenience of using road, users on road network of the Department of Highways were satisfied at a high level. Accounted for 83.00 %
4. The road safety, users on road network of the Department of Highways were satisfied at a high level. Accounted for 80.04 %

Bar Diagram: Comparison on road users' satisfaction on road network of Department of Highways between fiscal year 2021 and fiscal year 2022



From the chart comparing the satisfaction of road users on network of the Department of Highways during the fiscal year 2021 and 2022, it was found that road users' satisfaction has increasingly significant from the year 2021 for 3 factors affecting road users, for instance, the quality of roads, the convenience, and the road landscapes. However, the road users' satisfaction shows that the road safety is decreasing from the year 2021, but it still at a high level of satisfaction.



Highway development planning

Highway development planning is one of the main significant missions of the Department of Highways, consisting of

- defining and analyzing strategies and goals for highway and intercity motorway network development.
- Study and plan the development of highways in the short, medium, and long terms to be used as a framework for consideration, selection, and prioritization of projects.
- feasibility study on the project's engineering, economics, and environmental impact.

This is to be used as information for deciding to consider investing in a project, formulating requirements for highway network systems, managing the highway system information (highway type, highway numbering system, and control distance), conducting a highway investment analysis study (annual budget, loans, and other sources of funds), analyzing and preparing implementation plans and budgets for the Department of Highways, including allowing the private sector to participate in investment to develop strategic investment plans for various projects, and then following up on project performance and evaluation to perceive the results and the value of the project, as well as problems and obstacles both in the past and expected to occur in the future, to improve and revise the guidelines for the development of highways.

For the fiscal year 2022, the Department of Highways has had major highway development planning projects as follows:

1. Project: Intercity Motorway No.7, the Extension to connect U-Tapao International Airport, Chonburi Province

Intercity Motorway No. 7, the extension to connect U-Tapao International Airport, is one of the significant projects of the Eastern Economic Corridor (EEC) that will help complete the transportation network. Connecting transportation from Bangkok and its vicinity to the eastern region conveniently by water, land, rail, and air, creating a seamless connection of transportation systems that can support the flow of traffic that will occur in the future with flexibility and efficiency, will enhance the services of the U-Tapao International Airport Project to upgrade to the third main commercial international airport. Also, as the Eastern Economic Corridor grows, Thailand becomes an important port and business hub. This helps Thailand become an aviation hub and a commercial entryway to Asia.

The project entails the construction of a new elevated highway with four lanes according to motorway standards, full access control, and a ground-level service way to facilitate pedestrian movement beneath the elevated highway. This includes the construction of a turning lane and interchange at the intersection with Highway No. 3 (Sukhumvit Road), where the number of traffic lanes will increase from four to eight because the extension connects this airport to U-Tapao. Outside the U-Tapao toll plaza, it is part of the entrance and exit for Intercity Motorway No. 7 between Pattaya and Map Ta Phut. Therefore, it is not necessary to construct a

toll plaza to collect additional toll fees from motorists along the extension to U-Tapao Airport. In addition, on 14 June 2022, the Cabinet approved the project for a total of 4,508,000,000 baht, as outlined in the public debt management plan. The construction will be completed by the end of the fiscal year 2022, in time for the opening of U-Tapao Airport.

2. Economic, engineering, and environmental feasibility studies for the Loei Bypass construction project, Loei Province

Loei Bypass Construction Project, Loei Province, is a project that helps facilitate speedy travel and solves the problem of congested and dense traffic in the city of Loei, which cannot expand more traffic lanes due to the limitation of the right of way. This also helps to reduce the amount of traffic that goes through the city of Loei, especially large trucks, and supports the province's tourism by connecting to Chiang Khan District and Phu Ruea District, as well as strengthening the road transportation network of Loei Province, which connects to Lao PDR via the Friendship Bridge over the Heung Thai-Lao River. It is also a project that is in line with the 20-year national strategy on building the country's competitiveness and the 12th National Economic and Social Development Plan (2017–2022) on infrastructure development and logistics systems. In addition, it is the implementation of the resolutions made at the official cabinet meeting held off-site in Nong Khai Province on 13 December 2018.

The Loei bypass construction project, Loei Province, is a new construction line that resembles a ring road around the city of Loei and will have far-reaching consequences. Consequently, it is essential to consider the operation's suitable form, route, and environmental impact. In addition, it is essential to conduct public relations and public participation in the project area in a comprehensive manner. Additionally, the economic value of the investment must be considered for this project. The Department of Highways has completed a feasibility study on economics, engineering, and environmental impact. According to the results of the study, it was found that the route to the west was appropriate to proceed first. It will effectively solve the city's congested and heavy traffic problem. Currently, this project has been allocated a budget for 2023 for the detailed survey and design work. Subsequently,



a request for the issuance of a royal decree and a budget allocation for land ownership will be proposed before submitting a request for budget support for the construction of the project.

3. Economic, engineering, and environmental feasibility studies for the Uttaradit Bypass construction project, Uttaradit Province

The Uttaradit Bypass Construction Project, Uttaradit Province, is a project that helps to facilitate and speed up travel and solve the problem of congested and dense traffic in the city of Uttaradit. This also helps to reduce the amount of traffic that will pass through the city of Uttaradit, especially large trucks, and supports the province's tourism in terms of historical civilizations, for instance, the secret legend city, the birthplace of national heroes Phraya Phichai Dap Hak and Bo Lek Nam Phi, and supports tourist attractions ecologically, including the Sirikit Dam, Phu Soi Dao National Park, and Ton Sak Yai National Park. This also strengthens the road transport network of Uttaradit Province, connecting it to Paklay City, Xayaburi Province, the Lao People's Democratic Republic through the Phu Du border checkpoint to make it more complete. Moreover, it is a project that is in line with the 20-year national strategy on building

competitiveness in the country and the 13th National Economic and Social Development Plan (2023–2027) on infrastructure development and logistics systems. In addition, it is an implementation of the Cabinet resolution of 18 September 2018, which approved the push for the Luang Prabang-Indochina-Mawlamyai Economic Corridor Project. These are for connecting the Lao PDR, Thailand, Karen State, and Mon State of the Republic of the Union of Myanmar.

The Uttaradit Bypass Construction Project, Uttaradit Province, is a new way of construction a ring road around Uttaradit City, which will cause a wide range of effects. Therefore, it is necessary to consider the form, route, and environmental impact of the operation to be appropriate, and it is necessary to carry out public relations and conduct public participation in the project area thoroughly. Additionally, the economic value of the investment in the project must be considered. The Department of Highways is conducting a feasibility study that examines the project's economic, engineering, and environmental impacts.

4. Highway Development Evaluation for Transport Integration Planning According to National Strategic Goals

Project monitoring and evaluation are involved in every step of the highway project development process, whether planning a project, construction, operation control, or maintenance after the construction is completed. Therefore, project evaluation is considered an important mechanism to control the operation of the Department of Highways based on the stated objectives and goals, especially in the current implementation of various projects. It must be consistent with the goals and directions for national reform outlined in the national strategy under the vision that aims for Thailand to be stable, prosperous, sustainable, and a developed country based on the sufficiency economy philosophy.

Due to the consistency of policies, strategies, action plans, and the development of highway projects, there are complexities in many dimensions, such as the dimensions of the target and the people involved, dimensions in the impact assessment process, dimensions of the level of impact, and dimensions in terms of the duration of the impact, etc. These cause limitations in evaluating the success of highway project development. As a result, assessment objectives, assessment methodology, data collection, and project evaluations and reports may be insufficient and vague. These may have an impact on the agency's future highway development planning, rendering it incompatible with national strategic objectives. Thus, the Department of Highways is working on a project to evaluate highway development for planning transportation integration based on national strategic goals for analyzing the relationship between action plans and implementation of various projects of the Department of Highways with the target issues under the national strategy, including master plans and other development plans, setting goals and indicators, obtaining a project assessment method that is universal, appropriate, and effective, being a guideline for examining and evaluating the success of highway project development, achieving concrete transportation goals, including being a guideline for proposing and developing new projects that meet the goals, and developing the country effectively in line with the direction set by the national strategy. Currently, the Department of Highways has completed the assessment of highway development.

5. The Environmental Impact Assessment of the Intercity Motorway Project in the section of the Western Bangkok Outer Ring Road (Bang Khun Thian-Bang Pa-in) consists of roads connecting the western and eastern outer ring roads, as well as parallel bridges across the Chao Phraya River.

The Department of Highways has the plan to develop the Western Outer Ring Road from Bang Khun Thian to Bang Pa-in as an intercity motorway with complete access control to correspond with the outer ring roads of Bangkok in the east and south with complete access control. As well as able to connect with the 3 intercity motorway networks as follows: (1) Bang Pa-in - Nakhon Ratchasima intercity motorway project (2) Bang Yai - Kanchanaburi intercity motorway project (3) Bang Khun Thian – Ban Phaeo intercity motorway project. These projects result in convenient and faster travel and transportation, lower travel and transportation costs, and increased trade competitiveness for the country.

The Western Bangkok Outer Ring Road Intercity Motorway (Bang Khun Thian - Bang Pa-In) includes roads connecting the western and eastern outer ring roads and a parallel bridge over the Chao Phraya River, covering Bangkok, Nonthaburi, Pathum Thani,

and Phra Nakhon Si Ayutthaya Provinces. The project starts at km 0+000 and ends at km 90+526, totaling a distance of 75.101 km., which is divided into 3 phases. Phase 1: Outer Ring Road, Western Bangkok (Bang Khun Thian - Bang Pa-in) (Sta.0+000 to Sta.86+300). Phase 2: Road connecting the western and eastern outer ring roads (Sta.86+300 to Sta.90+526). Phase 3: A parallel bridge crossing the river Chao Phraya (Sta.73+800 to Sta.75+700). It was found that there are ancient sites within 1 kilometer of the middle of the project route. According to highway law, if the area is located near an ancient site, archaeological site, historic site, or historical park under the act on ancient sites, antiques, objects of art, and national museums within a distance of one kilometer, the Department of Highways must prepare an Environmental Impact Assessment (EIA) report. As a result, it is within the scope of having to prepare an Environmental Impact Assessment (EIA) report before project development, based on the Ministry of Natural Resources and Environment's notification on the specification of projects, activities, or operations that require the preparation of environmental impact assessment reports, as well as the criteria, methods, and conditions for preparing the environmental impact assessment report. Consequently, the Department of Highways has hired a group of consultants to do an environmental impact assessment of the Western Bangkok Outer Ring Road Intercity Motorway (Bang Khun Thian-Bang Pa-In), which includes roads connecting the western and eastern outer ring roads and a parallel bridge over the Chao Phraya River, so that the development of the project has as little of an effect as possible on the natural resources and people who live in the project area. Now the study has been completed in all 3 phases and is under consideration by the expert committee considering the environmental impact assessment (EIA) in the 3rd phase.

6. Development of the main carriageway construction project to be 4 lanes, Phase 2

After the construction of the 4-lane main highway, Phase 1, was completed, in 1996, the Cabinet approved the Ministry of Transport, the Department of Highways, to prepare a plan for the construction of the 4-lane main highway, Phase 2. At present, the aforementioned action plan covers the construction of standardized main roads with 4 lanes across all regions of the country, totaling 11 networks with a total distance of 5,246.21 kilometers as follows:



The 1st network: Nakhon Sawan - Phitsanulok - Denchai District - Phrae - Ngao District (including Phrae - Nan)

The 2nd network: Mae Sot District - Tak - Sukhothai - Phitsanulok - Lom Sak District - Chum Phae District - Khon Kaen - Kalasin - Mukdahan

The 3rd network: Saraburi - Phetchabun - Lom Sak District – Loei

The 4th network: Ban Hin Kong - Nakhon Nayok - Prachin Buri - Aranyaprathet District - Thai/Cambodian border

The 5th network: Nakhon Pathom - Suphan Buri - Pa Mok District - Saraburi (including Kanchanaburi - Suphan Buri)

The 6th network: Nakhon Sawan - Chaiyaphum - Ban Phai District - Maha Sarakham - Roi Et - Yasothon - Ubon Ratchathani - Chong Mek

The 7th network: Sattahip District - Phanom Sarakham District - Kabinburi District - Pak Thong Chai District - Chokchai District - Nang Rong District - Prasat District - Ubon Ratchathani - Mukdahan (including Sikhio District - Chokchai District)

The 8th network: Surat Thani - Nakhon Si Thammarat - Songkhla - Hat Yai District (including Songkhla - Chana District)

The 9th network: Phuket - Phang Nga - Krabi - Trang - Phatthalung (including Huai Yot District - Nakhon Si Thammarat)

The 10th network: Loei - Udon Thani - Sakon Nakhon - Nakhon Phanom

The 11th network: Other networks include Sak Lek District - Wang Thong District, Sukhothai - Sawankhalok, Sikhiu District - Chaiyaphum, Kaeng Khro District - Chum Phae District, Chumphon – Ranong, and the Surat Thani - Phang Nga line

At present, the performance has progressed as follows:

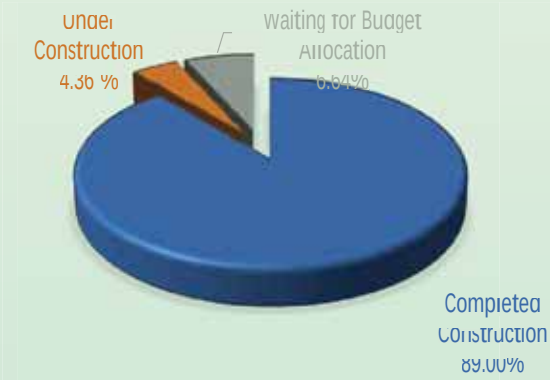
Unit: distance (kilometers)

Network No.	Completed Construction	Under Construction (*)	Waiting for Budget Allocation (**)	Total
1	527.46	16.15	20.00	563.61
2	752.36	-	80.73	833.09
3	280.21	-	111.83	392.04
4	196.00	-	-	196.00
5	229.24	-	-	229.24
6	396.85	110.82	136.01	643.67
7	917.36	-	-	917.36
8	343.16	-	-	343.16
9	386.74	-	-	386.74
10	285.12	32.79	-	317.91
11	354.27	69.13	-	423.40
Total	4,668.77	228.89	348.57	5,246.22
Percentage	89.00	4.36	6.64	100.00

Status: September 2022

Note: (*) Including 3 projects that the Cabinet has approved to use foreign loans (50% proportion) on 18 October 2016

(**) Some projects may require foreign loans to operate



7. Highway Development Project to Support the Special Economic Zone (SEZ)

The government has set a policy to develop special economic zones in 10 provinces, according to the announcements of the Special Economic Zone Policy Committee (SEC) No. 1/2015 and 2/2015 to build a production base linked to the ASEAN region and develop border cities. It opens up new economic areas to connect trade and investment with neighboring countries thoroughly, spreads prosperity to the region, reduces social and income inequality, improves the quality of life of people in border areas, and solves border security problems.

The Department of Highways, therefore, plans to develop road infrastructure to support the development of the area with an operational plan from 2014 to 2028, totaling 47 projects over a distance of 1,016.540 kilometers. 29 projects have been completed, covering a distance of 798.916 kilometers. Under construction are 15 projects, covering a distance of 136.349 kilometers. There are also three projects planned for the future, totaling 81.275 kilometers.

The Cabinet resolved on 20 September 2022, approving the designation of the Special Economic Corridor in four regions, consisting of

1) Northern Economic Corridor (NEC - Creative LANNA) comprises Chiang Rai, Chiang Mai, Lamphun, and Lampang.

2) Northeastern Economic Corridor (NeEC - Bioeconomy) comprises Khon Kaen, Nakhon Ratchasima, Udon Thani, and Nong Khai.

3) Central–Western Economic Corridor (CWEC) comprises Phra Nakhon Si Ayutthaya, Nakhon Pathom, Suphanburi, and Kanchanaburi.

4) The Southern Economic Corridor (SEC) comprises Chumphon, Ranong, Surat Thani, and Nakhon Si Thammarat.

The Department of Highways has planned to develop road infrastructure to support the development of the Special Economic Corridor in the future as follows:

1) Northern Economic Corridor (NEC) comprises 25 projects

2) Northeastern Economic Corridor (NeEC) comprises 20 projects

3) Southern Economic Corridor (SEC) comprises 13 projects

8. Highway development project to support the development of the Eastern Economic Corridor (EEC)

The Eastern Economic Corridor (EEC) Development Project is a strategic area-based development plan that carries on the ongoing Eastern Seaboard Development Plan. The primary objective of the government is to encourage investment to modernize the nation's industry, increase its competitiveness, and foster long-term economic growth. The provinces covered by the Eastern Special Development Zone Act B.E. 2561 are Chonburi, Rayong, and Chachoengsao.

The Department of Highways has planned to develop road infrastructure to support the development of the Eastern Economic Corridor. There are 64 projects in operation from 2014 to 2023: 27 projects completed, 21 projects under construction, and 16 projects in the future.

9. Preparation of the annual budget plan

Each year, the Department of Highways prepares plans to submit a budget request according to the needs of the Budget Bureau for collection and consideration by the process. These plans are consistent with the strategy, the development of transportation, and the urgent need to address the problem of travelers experiencing discomfort. In the fiscal year 2022, the Department of Highways has been allocated a budget to develop and improve the highway network, which is classified according to the nature of the plan as follows:

9.1 the large-scale construction projects

In the fiscal year 2022, the Department of Highways has considered budget allocations for new projects under the integrated development of transport and logistics systems, totaling 15 projects, as follows:

No.	Plans/Projects/Outputs/Activities	No. of projects	Construction cost (million baht)	Budget 2022 (million baht)
1	National highway network construction project	13	4,050	810
	1.1 Highway construction activities connecting transportation systems	1	300	60
	1.2 National highway construction activities	9	3,060	612
	1.3 Construction activities of interchanges, bridges, and tunnels	1	150	30
	1.4 Construction of a bridge over the railroad intersection	1	240	48
	1.5 Activities to solve traffic problems for the Bangkok Metropolitan Region and the main cities	1	300	60
2	Inter-regional highway network rehabilitation project	2	440	88
	2.1 Main highway service enhancement activities	2	440	88
Total		15	4,490	898

9.2 The small-scale construction projects

The Department of Highways has also implemented a highway improvement construction project that can be completed within a period of less than a year using a not-very-high budget to solve or relieve specific problems and be in line with the needs and necessities of the area. For instance, the problem of traffic congestion in the neighborhood is comprehensive and located throughout the region of the country. This is to keep the highways in good shape so that they meet standards and so that people who use the route can get services easily, quickly, and safely. This is part of the highway construction project to support spatial development, which includes:





9.2.1 Highway development activities in urban areas are intended to improve the route that passes through the community where people live to increase the efficiency of commuting through the community and facilitate the safety of traveling within the community as well.

9.2.2 Bridge and drainage system development activities include the construction and improvement of bridges and small drainage buildings to meet highway standards.





9.2.3 Construction activities to increase road shoulders Most of the current road construction projects are aimed at making roads more efficient, which is necessary and right. Activities to raise standards and improve highway efficiency, for example, are projects that make highways more efficient in various ways, primarily taking into account the relatively high volume of traffic, and are constructed to solve problems caused by the growth of communities on both sides of the road. But there is still another section of the road that is important in a different way and has not been built, improved, or developed as it should be, i.e., "a road without a shoulder."





9.2.4 Construction activities to increase highway efficiency Due to the problems of carrying out large construction projects that require a large amount of budget in the implementation, there are diverse steps to consider, and the objectives of large-scale projects focus on solving problems along the travel route, which are not able to solve the problems that occur in some areas with urgent action needed every year. Activities to raise the standard and increase the efficiency of highways are small-scale construction projects that can develop and solve problems in the main and important highway networks efficiently, achieving the highest goal of cost-effectiveness and benefiting the nation and the people as a whole before a large construction project is underway. Such as highway improvement work to

promote economy, trade, and tourism; solving highway problems that look like bottlenecks; etc. At present, the nature of such problems has increased due to many factors working together, such as the expansion of the community and the development of areas on both sides, the increase in traffic volume from the general travel of the route users, and the transportation of goods within the community as well as inter-provincial and regional transportation as well as at the national level.





9.2.5 Highway construction activities for regional development are plans used to develop highways at the regional and national levels. There are integrated highway developments in many sectors, both public and private. There are also plans to build highways based on different strategies for how each region is doing in a lot of ways at once, such as tourism strategy, promotion of the development of special economic zones, the development of transportation networks that connect new economic areas, the development of border economic areas, etc. Regional Area Development Programs will help the government's policies that are in line with the strategies listed above to reach their goals.

In the fiscal year 2022, the details of operations are as follows:

No.	Activity	Plans	
		No. of Plans	Million Baht
1	Highway development in urban areas	63	2,276.30
2	Bridge and drainage system development activities	40	530.50
3	Construction activities to increase road shoulders	17	707.50
4	Construction activities to increase highway efficiency	128	5,659.30
5	Highway construction activities for regional development	77	3,713.00
Total		325	12,886.60

10. Project evaluation

Evaluation is a crucial instrument for determining whether an organization's mission has been accomplished and has more or less desired goals, whether effective or not. The results of the evaluation will be informative and indicative of success, including suggestions for overcoming problems and obstacles encountered. This will result in the organization's continued growth and improvement. Evaluation of the mission performance of the Department of Highways divided the indicators used in the assessment into 2 levels. (1) Indicators at the overall level of the organization which has been specified in the action plan of the Department of Highways Phase 1 (2020 - 2022) and (2) indicators at the project level for monitoring and evaluating the achievement of goals and indicators set in the action plan, as well as the worthiness of the government's budget expenditures for efficiency, effectiveness, and maximum benefit, including the implementation of government agencies' missions that must be consistent with the goals set out in the national strategy, the master plan under the national strategy, the country reform plan, the National Economic and Social Development Plan, and government policies.

The current evaluation missions of the Bureau of Planning will focus on evaluating the Department of Highways' performance in carrying out its mission to provide services to motorists on the highway network, such as travel flexibility, highway quality, safety, etc. By adopting the project evaluation guidelines of the Organization for Economic Co-operation and Development (OECD) and the Japan International Cooperation Agency (JICA), there will be an evaluation when the operation is completed and has been in service for about 3–5 years. The assessment will be considered in five dimensions as follows:

❖ **Relevance and Coherence Dimension:** This dimension will consider the consistent alignment of objectives and operations with policies, strategic plans, and strategies related.

❖ **Efficiency Dimension:** This is a comparison between the performance of the personnel and the defined plans, for example, productivity, implementation period, project implementation costs, etc.

❖ **Effectiveness Dimension:** It is an evaluation of the success of the operation with the specified objectives by using appropriate indicators, both quantitatively and qualitatively.

❖ **Impact Dimension:** This evaluates the positive and negative economic, social, and environmental effects that result from the operation's implementation for a specified period after its completion.

❖ **Sustainability Dimension:** It is an assessment of the capacity to manage after the completion of a project, such as the management structure, the personnel qualifications of the person in charge, the maintenance plan, the allocated budget, etc., as well as the assessment of potential risks and support for the Sustainable Development Goals (SDGs).

In the fiscal year 2022, the Bureau of Planning, Department of Highways, with the help of the Project Evaluation Group, has selected the appropriate projects to evaluate their performance, which consists of 2 parts as follows:

1. The evaluation is based on a report analyzing the level of operational success from Budget Bureau expenditures, which evaluates both efficiency and effectiveness across multiple dimensions, including quantitative, qualitative, periodic, and expenditure, which consists of
   - Highway productivity is maintained.
   - Highway productivity is safe.
   - National Highway Network Construction Project
   - Inter-Regional Highway Network Rehabilitation Project
   - Highway Safety Enhancement Project
   - Highway development project to support the Eastern Economic Corridor

2. Project ex-post evaluation in terms of consistency, efficiency, effectiveness, impact, and sustainability, including the value of the project as well as problem analysis, obstacles, and solutions, including recommendations for follow-up and evaluation of the projects of the Project Evaluation Group for the Bureau of Planning over the past year are as follows:
   - Construction of a bridge across the intersection of Highway No. 11 and Highway No. 12 (Indochina Intersection), Phitsanulok.
   - Highway Construction No. 338 Pinklao - Nakhon Chai Si (parallel road construction) between Sta.24+200 – Sta.27+050 LT

• Underpass construction project at the intersection of Highway No. 11 and Highway No. 1045 (Wang Si Sub Intersection), Uttaradit.

• Highway Construction No. 3648, Klaeng Bypass Road between Sta.00+000 – Sta.11+533













Highway Construction

The construction project on highway no. 319 Prachin Buri - Phanom Sarakham (Nong Bua Mu - Phanom Sarakham Section 1)

The Bureau of Highway Construction 1 has completed the construction project on highway no. 319 route Nong Bua Mu - Phanom Sarakham. The detail of the project consists of expanding traffic lanes from 4 to 6 lanes which have the traffic lane width is 3.5 meters with raised median barrier. The length of the project is 8.23 kilometers that starting from KM.22+300 and finishing at KM.30+538. The project budget is approximately 795,198,000.00 baht.

Highway no. 319 originates from Prachin Buri to Phanom Sarakham. This route links Chachoengsao province, Prachin Buri province and Nakhon Nayok province. This project provides the network to increase the efficiency and serve transport in the Eastern Economic Corridor (EEC).

Now this construction project was completed. It helps to develop highway network to increase potential in transportation to be convenience, fast and safe. It links Prachin Buri province and Amphoe Phanom Sarakham, Chachoengsao province. It also supports the national strategies in many aspects and logistics system in the Eastern Economic Corridor (EEC) area.









The construction project on highway no. 11 In Buri intersection – Sak Lek (In Buri intersection – Nong Bua Thong section 2)

The Bureau of Highway Construction 1 has completed the construction project on highway no. 11 route In Buri intersection – Nong Bua Thong. The detail of the project is consists of expanding traffic lanes from 2 to 4 lanes which have the traffic lane width is 3.5 meters with concrete barrier. The length of the project is 13.40 kilometers that starting from KM.14+600 and finishing at KM.28+000. The project budget is approximate 1,205,277,789.72 baht.

Highway no. 11 originates from In Buri intersection to Chiang Mai. This route links the central region and north region of Thailand. This project provides the network to increase the efficiency and serve transport in the Greater Mekong Subregion Economic Co – Operation (GMS).





The construction project on highway no. 2 Nakhon Ratchasima – Highway no. 2067 (Ban Bing), Nakhon Ratchasima Province

The Bureau of Highway Construction 2 has completed the construction project on highway no. 2 route Nakhon Ratchasima – Highway no. 2067 (Ban Bing). The detail of the project is consists of expanding traffic lanes from 4 to 6 lanes with depressed median barrier. The length of the project is 16.219 kilometers, that starting from KM.166+281 and finishing at KM.177+500.

Highway no. 2 between km.161+281 – km.177+500 is the main route to north eastern region of Thailand. It links from Nakhon Ratchasima to Khon Kaen province and the nearby areas. This project provides the network to increase the efficiency and serve transport in the north eastern region and reduce traffic congestion and also support the economics, social and tourism in the region.









The construction project on highway no. 202, Yasothon – Amnat Chareon (Yasothon – Ban Nam Plik)

The Bureau of Highway Construction 2 has constructed the construction project on highway no. 202 route Yasothon – Ban Nam Plik. The detail of the project is consists of expanding traffic lanes from 2 to 4 lanes with the asphalt concrete pavement. The project has been divided into 2 section as followed; Section 1 is 16.350 kilometers long, starting from KM.267+630 - KM.283+980. Section 2 is 16.443 kilometers long, starting from KM.283+980 – KM.300+423.

Highway no. 202 Yasothon - Amnat Chareon (Yasothon – Ban Nam Plik) originates from Yasothon to Amnat Chareon province. This route run through many residential and commercial areas that increase the traffic. However, this project will provide the network to increase the efficiency and serve transport in the North Eastern region.

The construction project on motorway no.6 Bang Pa-in - Saraburi - Nakhon Ratchasima section 18

The Bureau of Bridge Construction has constructed a motorway no. 6 Bang Pa-in - Saraburi - Nakhon Ratchasima section 18. The length of the project is 1.97 kilometers, starting from KM.72+328 and finishing at KM.74+300. The detail of the project consists of 2 Segmental Box Girder bridges which have the traffic lane 16.60 meters width with barrier and traffic safety devices.

The motorway no. 6 originates from Bang Pa-in to Nakhon Ratchasima. This project is an important route that link Bangkok and the central region connect with the center of ASEAN and link to neighboring countries such as Laos, Vietnam, Cambodia, and Yunnan Province (China). Moreover, this project will help to reduce traffic congestion on highway no.1 and highway no.2 especially on long weekend holidays. This project has a total distance of 196 kilometers.









The construction project on motorway no.6 Bang Pa-in - Saraburi - Nakhon Ratchasima section 19

The Bureau of Bridge Construction has constructed a motorway no. 6 Bang Pa-in - Saraburi - Nakhon Ratchasima section 19. The length of the project is 2.70 kilometers, starting from KM.74+300 and finishing at KM.77+000. The detail of the project consists of 2 Segmental Box Girder bridges which have the traffic lane 16.60 meters width with barrier and traffic safety devices.

The motorway no. 6 originates from Bang Pa-in to Nakhon Ratchasima. This project is an important route that link Bangkok and the central region connect with the center of ASEAN and link to neighboring countries such as Laos, Vietnam, Cambodia and Yunnan Province (China). Moreover, this project will help to reduce traffic congestion on highway no.1 and highway no.2 especially on long weekend holidays. This project has a total distance of 196 kilometers.



International Highway Cooperation

The Department of Highways not only handles the operation related to the development of domestic highways but also has significant responsibilities in international highway development. This international highway development aligns with the national strategy of enhancing national competitiveness through developing infrastructure and connecting Thailand with other countries.

The international highway development tasks carried out by the Department of Highways are being conducted under the cooperation in two practices. These are:

1. Multilateral Cooperation

- Association of Southeast Asian Nations (ASEAN)
- Greater Mekong Subregion Economic Cooperation (GMS)
- Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS)
- Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
- Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

2. Bilateral Cooperation, specifically with the countries that share a border with Thailand, including:

- Myanmar
- Lao PDR
- Cambodia
- Malaysia

In addition to improve the physical road network to support seamless cross-border transport of goods and people, the Department of Highways also engages in collaborative projects in form of Technical Assistance (TA) with international partners. The objective of these collaborations is to provide opportunities to exchange knowledge, experiences, and beneficial practices to enhance the capabilities of personnel for higher work performance. During the fiscal year 2022, the Department of Highways emphasised the significance of international road development, which was reflected in the implementation of various projects as follows.

1. The Fifth Thai–Lao Friendship Bridge (Bueng Kan–Bolikhamxai)



The Fifth Thai–Lao Friendship Bridge (Bueng Kan–Bolikhamxai) and its network is the highway development project to support connecting with Lao PDR, Thailand's neighboring country, and to support the transport connectivity under the framework of economic cooperation in the Greater Mekong Subregion (GMS) and the Ayeyawady - Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS). Project alignment starts at Km. 123+430 on National Highway No. 222 in Mueang Bueng Kan District, Bueng Kan Province and later cross the municipal road, Rural Road No. Bor Kor 3013 and National Highway No.212. It will then cross the Mekong River via the Fifth Thai–Lao Friendship Bridge (Bueng Kan–Bolikhamxai) to Lao PDR. The route comes to an end at Highway No. 13 (R13) in Lao PDR which can link to Highway No. 8 (R8) that enable further connection to Viet Nam and Southern China. The total length of the project is 16.34 km. As of September 2022, the project is under construction with a progress of 56%.

28 October 2022, the Department of Highways held the Groundbreaking Ceremony of the Fifth Thai–Lao Friendship Bridge (Bueng Kan–Bolikhamxai). The ceremony was presided over by H.E. General Prayut Chan-o-cha, Prime Minister of the Kingdom of Thailand, and H.E. Mr. Phankham Viphavanh, Prime Minister of the Lao People's Democratic Republic, along with high-level government officials from both Thailand and Lao PDR.













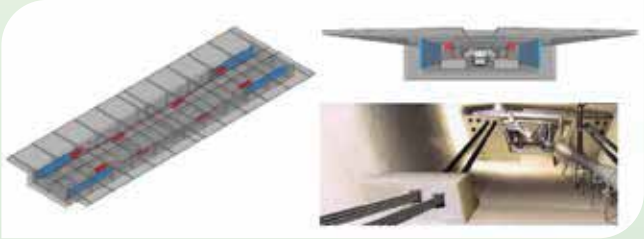
2. The Inspection, Health Monitoring and Retrofit Planning for Friendship Bridge (Nong Khai-Vientiane) Phase 1 (Urgent)

The DOH hired a consulting company to carry out the Inspection, Health Monitoring and Retrofit Planning for Friendship Bridge (Nong Khai-Vientiane) Phase 1 (Urgent).

The objectives of a project are.

- To inspect the current condition and load capacity of the bridge
- To install monitoring system to the bridge
- To suggest retrofit planning for the bridge

The results of the project indicate that the bridge has deteriorated since the time of its construction. Crack repairing and strengthening is, therefore, necessary in order to prolong the bridge longevity and increase load capacity to accommodate U20 trains (not exceeding 15 tons per axel).



3. Project for Capacity Development on Tunnel Project Management in Thailand

The project to develop the capacity on Tunnel Project Management in Thailand is a distinctive Technical Cooperation Project between the Department of Highways, Thailand and the Japan International Cooperation Agency (JICA). On 20 February 2020, the Director-General of Department of Highways and the representative from JICA signed the Minutes of Meeting (MOM) which specified the overall scope of Technical Cooperation Project. Then, on 26 March 2020,







Department of Highways has been granted approval in essence from the Department of Treaties and Legal Affairs, Ministry of Foreign Affairs for signing the Record of Discussions (R/D) with JICA and the approval from Minister of Transport on 29 April 2020 to pursue a project with JICA.

The duration of the project is expected to be approximately 4 years. For operations, the experts from Japan have been stationed at the office in Department of Highways since January 2021 and are responsible for conducting the project operations. Japanese experts will provide consulting services including advice and training on tunnel management for Department of Highways personnel in the areas of planning, surveying, design, contract management, construction, cost estimation, inspection, and maintenance. This will lead to an improvement in the personnel's capacity on tunnel construction processes, allowing the Department of Highways to manage such projects efficiently and self-reliantly in the future. Project outcomes also support the plan for national highway and intercity motorway development in Thailand.

The 2nd Technical Seminar on Project for Capacity Development on Tunnel Project Management in Thailand was held on 27 September 2022 at the Department of Highways and via video conference to mainly transfer knowledge and technology between Japanese experts and Thai engineers, enhance their expertise and prepare for future development of tunnel projects in Thailand. The 2nd Technical Seminar was attended by 207 people from the Central and Regional offices of Department of Highways, JICA headquarters, State Railway of Thailand, Expressway Authority of Thailand, Asian Institute of Technology, Thailand Underground and Tunnelling Group (TUTG), Geological Society of Thailand, and other private institutions.







Inter-city Motorway

The Ministry of Transport (MOT) has a policy to improve the quality of public services with digital technology to reduce the congestion of cars around the toll plazas. The Inter-city Motorway Division under the Department of Highways has developed an automatic toll collection system without barriers which is called "M-Flow system" according to the policy of the Ministry of Transport to solve the problem of traffic jams in front of toll plazas on inter-city motorways and to facilitate the public in transportation. The M-Flow system is set to open for the public using in Motorway No.9, Bang Pa-in - Bang Plee, at Thanyaburi 1 Toll Plaza, Thanyaburi 2 Toll Plaza, Thap Chang 1 Toll Plaza and Thap Chang 2 Toll Plaza, from February 2022 and will be extended to operate on the Department of Highways' motorway network and all expressways of the Expressway Authority of Thailand.

The results of the M-Flow system service on the Inter-city Motorway No.9 can be summarized as follows:

- As of 15 February 2022, the members of the M-Flow system are less than 30,000 members, but currently the service has been in use for 8 months (as of 14 October 2022), there are 408,109 members in the M-Flow system (the number of vehicles that bind an account in the M-Flow system are in total of 482,120 vehicles)
- The number of vehicles using the M-Flow system has accumulated more than 20 million vehicles.
- The proportion of the number of vehicles used in the M-Flow system is 35% of the total number of vehicles.



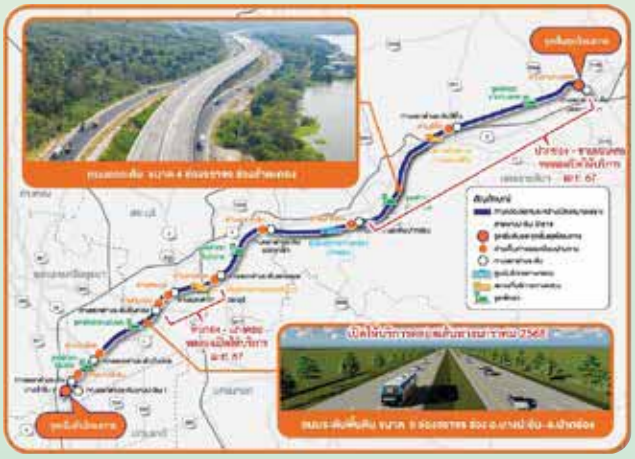




The Inter-city Motorway Project No.6, Bang Pa-in - Nakhon Ratchasima (M6)

The Inter-city Motorway Project No.6 has a total distance of approximately 196 kilometers with a starting point connecting to the outer ring road of Bangkok (Kanchanapisek Road), northern part connecting to Bang Pa-in District, Phra Nakhon Si Ayutthaya Province and ending at the bypass of Nakhon Ratchasima, Nakhon Ratchasima Province. Currently, the Department of Highways is in the process of civil works construction, which is divided into 40 contracts (96.88% completion). Along the route there will be interchanges at different levels to connect to 10 major highway projects as follows:

1) Bang Pa-In 1 Interchange;
2) Bang Pa-In 2 Interchange;
3) Wang Noi Interchange;
4) Hin Kong Interchange;
5) Saraburi Interchange;
6) Kaeng Khoi Interchange;
7) Muak Lek Interchange;
8) Pak Chong Interchange;
9) Si Khio Interchange; and
10) Nakhon Ratchasima Interchange.



with 9 toll plazas including:

1) Bang Pa-In Toll Plaza
2) Wang Noi Toll Plaza
3) Hin Kong Toll Plaza
4) Saraburi Toll Plaza
5) Kaeng Khoi Toll Plaza
6) Muak Lek Toll Plaza
7) Pak Chong Toll Plaza
8) Sikhio Toll Plaza
9) Kham Talay So Toll Plaza

and 8 rest areas and other facilities have been provided for road users along the project route which is divided into 3 types:



Construction

It is a new route of construction according to the Motorway Standard, with 4-6 traffic lanes, designed to use durable concrete surfaces with low maintenance. The general road width is approximately 70 meters (the area where the service way is designed will increase the width of the exit boundary by 20 meters on each side), with traffic lane width of 3.60 meters, the width of the inner shoulder will be 1.50 meters, and the width of the outer shoulder will be 3.00 meters as detailed below.

- Bang Pa-in District - Pak Chong District (km.0+000 - km.109+500) designed as a motorway on land with 6 traffic lanes.
- Pak Chong District - Mueang Nakhon Ratchasima District (km.109+500 - km.+196+000) designed as a motorway on land with 4 traffic lanes.

All routes have been designed to have underpasses and crosswalks to reduce the impact on the people in the area. In addition, based on the suitability of the area, a large elevation span is designed as follows:

- Elevated highway with 6 traffic lanes at km. 40-km.47 section in the area of Saraburi bypass;
- Elevated highway with 6 traffic lanes at km. 69-km.75 section in the area of TPI Cement Plant;
- Elevated highway with 6 traffic lanes at km.82 - km.84, in the area of Dairy Farming Promotion Organization; and
- Elevated highway with 4 traffic lanes at km.125- km.143 in the area of Lam Takhong.





Toll Collection System

In relation to collection of toll fees, the Department of Highways has used a Closed System which charges fees according to the distance-based fee. The Department of Highways has determined the method of collecting tolls in cash (Manual Toll Collection: MTC) and Multi-lane free flow (M-Flow).

Weighing System

Weighing system at the toll plaza is used to screen trucks that carry goods which weigh more than the legal limit that may damage road structures. The weighing system consists of Dynamic or Weighing in Motion System (WIM) and Static Weighbridge. Trucks will pass through Weighing in Motion System (WIM) first, if the weight is not over the limit, such truck will be allowed to use the motorway. The overweight truck must be weighed again at the Static Weighbridge (SWB) to examine the exact weight.

Opening Plan

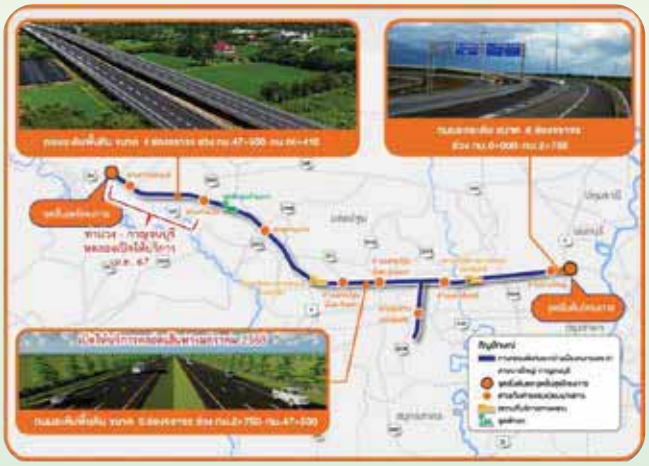
April 2024 - Trial service
January 2025 - Provide full service along the routy

The Inter-city Motorway No.81, Bang Yai - Kanchanaburi (M81)

The route has a total distance of approximately 96 kilometers with a starting point connecting to the Bangkok Outer Ring Road (Kanchanapisek Road), in the west connecting to Bang Yai District, Nonthaburi Province and ending at Highway No.324 (Kanchanaburi Road - Phanom Thuan District), Kanchanaburi Province. The Department of Highways is currently in the process of civil works construction which is divided into 25 contracts (86% completion).

Along the route there will be interchanges at different levels to connect the project with 8 major highways as follows:

1) Bang Yai Interchange connecting with Motorway No.9 (Highway No.302);
2) Nakhonchaisri Interchange (Highway No.3323)
3) Nakhonchaisri Intersection (Motorway No.91)
4) Eastern Nakhon Pathom Interchange (Highway No.3036)
5) West Nakhon Pathom Interchange (Highway No.321)
6) Tha Maka Interchange (Highway No.3394)
7) Tha Muang Interchange (Highway No.3081)
8) Kanchanaburi Interchange (Highway No.324)





with 8 toll plazas as follows:

1) Bang Yai Toll Plaza
2) Nakhonchaisri Toll Plaza
3) Sisa Thong Toll Plaza
4) Eastern Nakhon Pathom Toll Plaza
5) Nakhon Pathom Toll Plaza on the west side
6) Tha Maka Toll Plaza
7) Tha Muang Toll Plaza
8) Kanchanaburi Toll Plaza

In addition, there are 3 rest areas provided to service the road users directly along the project route which are divided into 2 types:

1) 2 Service areas on highways
   - Nakhonchaisri District, km.19+500
   - Mueang Nakhon Pathom District, km.47+500
2) 1 Rest stop
   - Tha Maka District, km.70+900

Construction

It is a new way of construction according to the Motorway Standard, size 4-6 traffic lanes. The general road is approximately 70 meters wide (the area where the service way is designed will increase the width of the exit boundary by 20 meters on each side). The road surface will be asphalt concrete, divided into 2 phases:

- Phase 1: Bang Yai - Nakhon Pathom (Highway No.321) (km.2+750 - km.47+500) designed as a motorway on land with 6 traffic lanes;
- Phase 2: Nakhon Pathom (Highway No.321) - Kanchanaburi (km.47+500 - km.96+410), designed as a motorway on land with 4 traffic lanes.

All routes have been designed to have underpasses and crosswalks to reduce the impact on the people in the area. In addition, based on the suitability of the area, an elevated highway was designed at the beginning of the project at km.0+400 - km.2+750. As this area has dense community and there are many housing estates, therefore, an elevated bridge has been designed to continue expanding to meet the exit at Bang Yai Toll Plaza.

Toll Collection System

In relation to collection of toll fees, the Department of Highways has used a Closed System which charges fees according to the distance-based fee. The Department of Highways has determined the method of collecting tolls in cash (Manual Toll Collection: MTC) and Multi-lane free flow (M-Flow).

Opening Plan

April 2024 - Trial service
January 2025 - Provide full service along the route

The Inter-city Motorway Project No.82, Bang Khun Thian - Ban Phaeo Route (M82)

The route of the Inter-city Motorway Project Bang Khun Thian – Ban Phaeo Line (M82) is one of the projects under the 20-year Inter-city Motorway Development Master Plan, 2017-2036, with a starting point directly connecting to the Rama 3 - Dao Khanong - West Bangkok Outer Ring Road Expressway Project which was constructed by the Expressway Authority of Thailand and ending at Ban Phaeo district area, Samut Sakhon Province. The total distance is approximately of 25 kilometers. There are 6 toll plazas, namely:

1. Phanthai Norasing Toll Plaza
2. Mahachai 1 Toll Plaza
3. Mahachai 2 Toll Plaza
4. Samut Sakhon 1 Toll Plaza
5. Samut Sakhon 2 Toll Plaza
6. Ban Phaeo Toll Plaza





Construction

The Inter-city Motorway Project Bang Khun Thian – Ban Phaeo (M82) is constructed as an elevated highway on Highway No.35 (Rama 2 Road) according to the Motorway Standard with complete access control. The construction is divided into 2 phases:

Phase 1: Bang Khun Thian - Ekachai

The Inter-city Motorway Project Bang Khun Thian - Ban Phaeo, at Bang Khun Thian - Ekachai (M82) with the starting point at km.9+731 in the area of Samut Sakhon, Samut Sakhon Province and at km.20+295 in the area of Mueang Samut Sakhon District Samut Sakhon Province, with a distance of 10.564 kilometers. The highway is an elevated highway with 6 traffic lanes, with 2 entrance-exit points: Phanthai Norasing Toll Plaza and Mahachai 1 Toll Plaza. The toll collection is based on distance (Closed System). Currently, the Department of Highways is under construction using the state budget (73.43% completion and expected to be completed in 2023).

Phase 2: Ekachai - Ban Phaeo

The Inter-city Motorway Project Bang Khun Thian - Ban Phaeo, Ekachai - Ban Phaeo section (M82), has a starting point at km.20+295 in the area of Mueang Samut Sakhon District, Samut Sakhon Province and ending at km.36+645 in the area of Ban Phaeo District, Samut Sakhon Province. The total distance is approximately



16.350 kilometers, designed as an elevated highway with 6 traffic lanes, with 4 entrance-exit points, namely: Mahachai 2 Toll Plaza, Samut Sakhon 1 Toll Plaza, Samut Sakhon 2 Toll Plaza and Ban Phaeo Toll Plaza. The toll collection is distanced-based (Closed System). The Department of Highways has a construction plan using the toll fund which has been approved by the Cabinet on 9 February 2021, with a budget of 19,700 million Baht. Currently, the Department of Highways is on the process of finding contractors for the project (3.84% completion and expected to be completed in 2024).

Toll Collection System

In relation to collection of toll fees, the Department of Highways has used a Closed System which charges fees according to the distance-based fee. The toll fees will be collected by cash (Manual), an Electronic Toll Collection System (ETC) which can support a toll collection system without barriers or Multi-Lane Free Flow (MLFF).

Progress on Rest Area

2 Rest areas that will be opened in the near future are in accordance with the Action Plan in the development of rest areas on the inter-city Motorway No.7, Bangkok - Ban Chang route, 2020 - 2024 of the Department of Highways which will provide additional services 2 locations:

1. Bang Lamung service area - It is a medium-sized rest area at km.137+800 on the Inter-city Motorway No.7, located between Huai Yai Interchange and Khao Chi On Interchange. The size of the area is approximately 38 rai per side with the purpose to provide additional main rest area for road users. The facilities inside the rest area consist of parking spaces, seating areas, public restrooms, food and beverage shops, grocery stores, gas stations, quick charging station for electric vehicles, toll automated service center and other necessary services.

Outbound Direction from Bangkok (Heading to U-Tapao)

Project location: at km.137+100 area
Location: Huay Yai Subdistrict, Bang Lamung District, Chonburi Province
Area size: approximately 38.5 Rai
Inbound Direction to Bangkok (Heading to Bangkok)
Project location: at km.137+100 area
Location: Huay Yai Subdistrict, Bang Lamung District, Chonburi Province
Area size: approximately 38.5 Rai

Action Plan

Requesting for approval for the Project: September 2021
Private Sector Selection and Contract Signing: Year 2022 - 2023
Construction Commencement: Year 2023 - 2025
Soft Opening for Services for Basic Facilities: Year 2024
Providing Full Services: Year 2025





2. Sriracha Highway Service Center - It is a large rest area at km.93+750 on the Inter-city Motorway No.7, located between Bang Phra (Kiri) Interchange and Nong Kham Interchange. The size of the area is approximately 59 Rai per side with the purpose to provide additional main rest area for road users. The facilities inside the said rest area are completed and as same as in Bang Lamung and consist of first aid center, additional emergency response units and fire suppression units to provide support for road users. Both rest areas are designated to have elevated buildings above the traffic lanes which are shared space between both sides. As a result, it solves the problem of insufficient facilities, including parking spaces, public restrooms, shops, gas stations during extreme congestion periods, especially during weekends and holidays as well.



Action Plan

Requesting for approval for the Project: September 2021
Private Sector Selection and Contract Signing: Year 2022 - 2023
Construction Commencement: Year 2023 - 2025
Soft Opening for Services for Basic Facilities: Year 2024
Providing Full Services: Year 2025

Outbound Direction from Bangkok (heading to Pattaya)

Project location: at km.93+500
Location: Bang Phra Subdistrict and Surasak Subdistrict, Sri Racha District, Chonburi Province
Area size: approximately 62 Rai

Inbound Direction to Bangkok (Heading to Bangkok)

Project location: at km.93+500
Location: Bang Phra Subdistrict and Surasak Subdistrict, Sri Racha District, Chonburi Province
Area size: approximately 59 Rai





Highway landscaping works

Highway landscaping project on highway no. 213 Sang Kho – Sakon Nakhon KM. 155+550 – KM.157+275 Sakon Nakhon 1 Highway District

Project background

The project site locate on highway no.213, where is a unique location called “Ping Ngu curve” which devious like snake. The highway no.213 has been run through many natural recreation areas such as Phu Phan national park, Sin Chai waterfall, Sam Lan waterfall and Sao Hai waterfall. Therefore, improving the landscape has been needed to increase the performance of the area and to be a new attraction point in Sakon Nakhon Province.

Project details

The project site locates on a devious terrain and run through many natural recreation areas. The project detail focuses on improving the local identity and develop to be an attraction area by choosing beautiful flowers to create a memorable scene for tourists.

Project achievements

1. Developing an tourist attraction point
2. Creating recreational area
3. Disseminating local culture to outsiders













Highway landscaping project on highway no. 9 Bang Khae – Khlong Maha Sawat KM.30+056 Thonburi Highway District

Project background

The project site locates on Chimphli interchange on highway no.9. In the past, this site has been constructed to be a garden named "Suan Rom Klao" to honour the king rama IX before being abandoned.

Project details

The project site locate on Chimphli interchange. The idea of improvement landscape is bring the old concept from "Suan Rom Klao" by installing the rabbit figures and planting beautiful flowers to resurrect the garden.

Project achievements

1. Creating rest area and recreational zone for local people
2. Increasing green space













Highway landscaping project on highway no. 107 Mae Thalai – Hua Tho KM.84+215 Chiang Mai 3 Highway District

Project background

The project site locates on highway no.107, where is an important route that link many tourist locations in Chiang Mai. This cause traffic increasing through this highway. Therefore, rest stop has been deployed for reducing driver's fatigue which can reduce the accident opportunity.



Project details

The concept of this project is improving landscape to create rest area for recreational activities to serve tourists and local people.

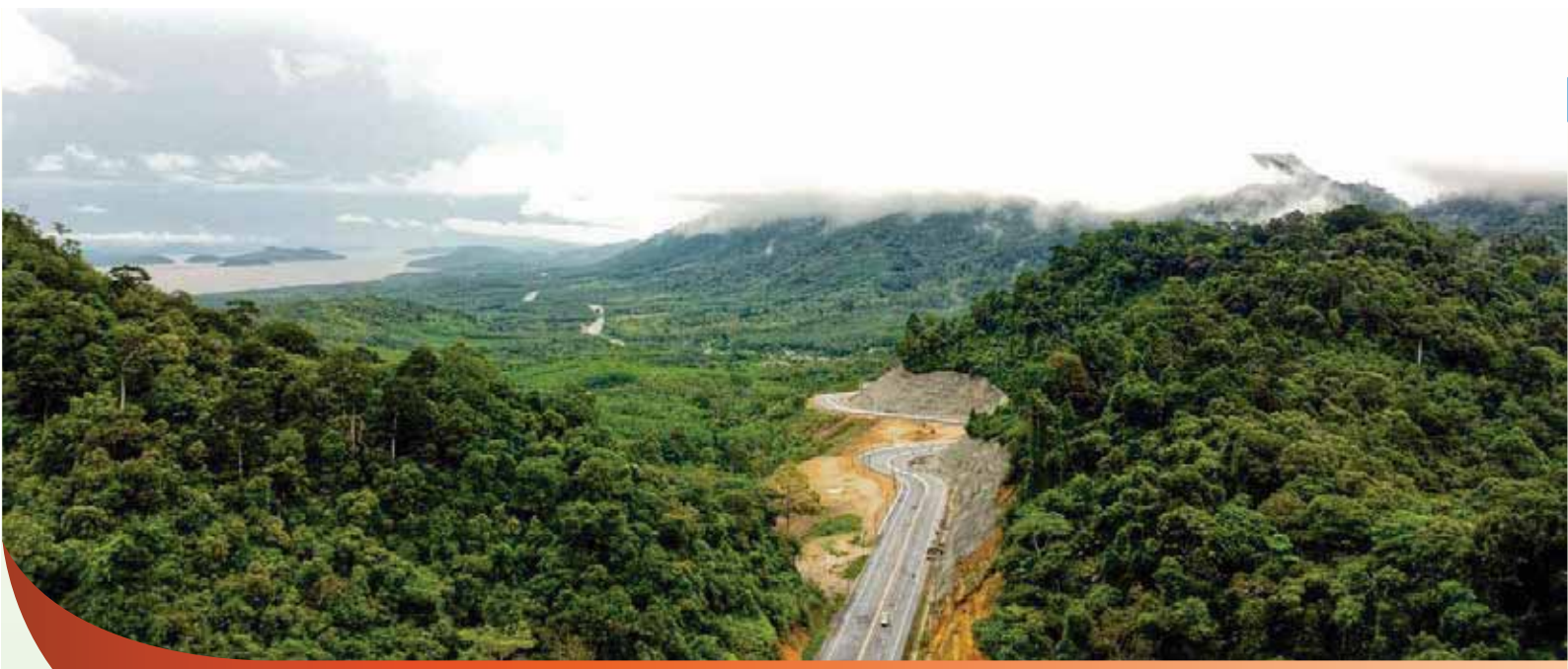


Project achievements

1. Creating rest area and recreational zone for local people
2. Increasing green space







Highway Landscape and Architecture Development

Environmental design guidelines for highway project

There are many highway construction projects that cause an environmental impact on local residents and the environment. According to the Ministry of Transport's policy, the Department of Highways has been focused on developing the highway network which is safe and environmentally friendly. The environmental impact can be separated into four main components as followed; physical resources, biological resources, human use value, and value for the quality of life. Therefore, it is necessary to improve and prepare an environmental design guideline for highway projects which cover the four main components mentioned before in order to develop highway works to be safer and more environmentally friendly.



Environmental design guidelines for highway projects

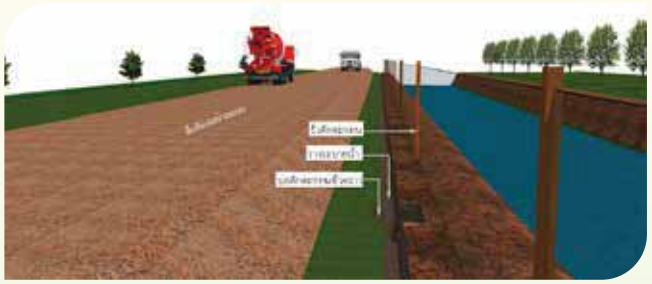
(Thai and English versions)

The guideline has been established by reviewing environmental case studies such as environmental complaints or conflicts, or EIA reports. The guideline consisted of fifty topics such as;

Reducing the impact of land debris leaching into water sources

The EIA report found that the impact of land debris leaching into water sources has highly occurred during the construction. There are three processes to reduce the impact of land debris leaching into water sources as followed;

1) Sediment trap pit; This device has been installed in the construction site that has been located near water resources. The capacity of this device depends on the size of the pit. This device needs to maintain by improving the embankment and removing the sediment properly.



The installation of a Sediment trap pit and net

2) Sediment trap net; This device has been installed in the construction site that has been located on the embankment. The distinctive feature of this device is the net that water can pass through without damaging the device structure.

3) Straw blocks sediment trap; This device has been installed in the construction site that has been located on the embankment. The distinctive feature of this device is the straw blocks that water can easily pass through.

Reduction of noise impact

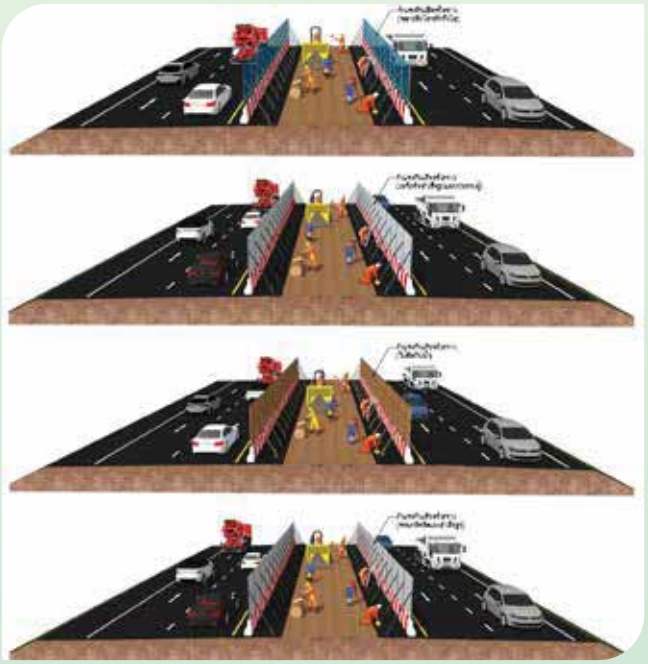
The EIA report found that the noise impact has highly occurred during the construction and during operation. The Bureau of Location and Design has designed the Noise Barrier: Specification for Construction, drawing no. EN-201 which has been published in Standard Drawings for Highway Design and Construction 2015 Revision 2018 Edition. There are four processes to reduce the noise impact as followed;

1) Acrylic
   - High noise resistance
   - Clearly transparent
   - Easy installation
   - High strength
   - Less maintenance
   - High-cost

2) Metal Sheet
   - Moderate noise resistance
   - Easy installation
   - High strength
   - Less maintenance
   - Moderate-cost

3) Plywood
   - Low noise resistance
   - Easy installation
   - Reusable
   - Low-cost

4) Precast Concrete
   - High noise resistance
   - Complex installation
   - High strength
   - Less maintenance
   - High-cost



The installation of noise protection

Reducing the impact on animals in the ecosystem

There are construction sites that run through the forests or natural parks which can cause an impact on the wildlife ecosystem. The EIA report has set the measures to help or evacuate wildlife from the construction area or provide opportunities for wildlife to escape from the area. There are three processes to reduce the noise impact as followed;

1) Underpass; This device has been installed in the area where amphibians such as frogs, lizards, or snakes appeared. Moreover, the benefit of this device is easy to install and cheaper than others devices.



underpass for amphibians

2) underpass for land animals; This device has been installed in the area where small land animals such as mice, musk, weasel, wild boar, etc. appeared. However, the drawback of this device is complex and more expensive than others devices.



underpass for land animals

3) Bridge for animal crossing; This device has been installed in the area where canopy animals such as monkeys, gibbons, squirrels, etc. appeared. However, the drawback of this device is required a complex structure to construct the walkway for canopy animals.



Bridge for animal crossing

Moreover, in order to make a complete environmental design and analysis, there are four manuals that used together with the environmental design guideline for highway projects as follows.

1) Environmental impact prevention and evaluation manual

2) Environmental monitoring and evaluation for highway construction manual

3) Instruction for using environmental design guidelines for highway project

4) Cost estimation manual



Environmental impact prevention
and evaluation manual



Environmental monitor and evaluation
for highway construction manual



Instruction for using environmental design guideline
for highway project



Cost estimation manual



Land acquisition

Background

At present, most traffic networks in Bangkok Metropolitan Region are in line from the North to the South and there are a few traffic networks from the East to the West. Thus, travel from the town to outer ring road must use secondary roads and minor roads and it wastes time and expenses. There is a need of traffic networks for traveling from the East to the West at northern area of Bangkok Metropolitan Region for enhancing highway network and being more efficiency. It also provides direct traffic and can mitigate heavy traffic in Bangkok Metropolitan Region. Hence, the Department of Highways hired consultant group consisting of Epsilon Company Limited, MAA Consultants Company Limited, and Asia Lab and Consultant Company Limited for studying economic and engineering optimum and environmental impact.

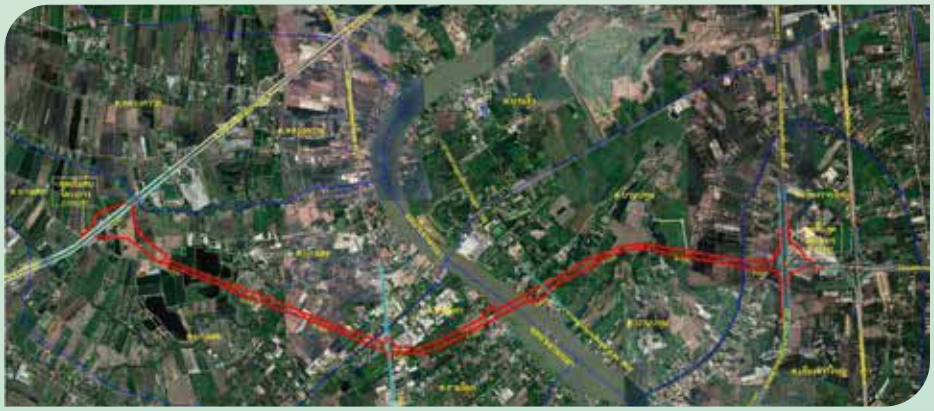
Project

The 1st part: new highway was constructed starting from intercity motorway no. 9 (West) at km. 64, through highway no. 3111 at Sam Khok Sub-District and crossing the Chaophraya river, and joining at the intersection of highway no. 347 and highway no. 3214. It is 6-lane highway; 60 meters in width and the distance is 9.4 kilometers.

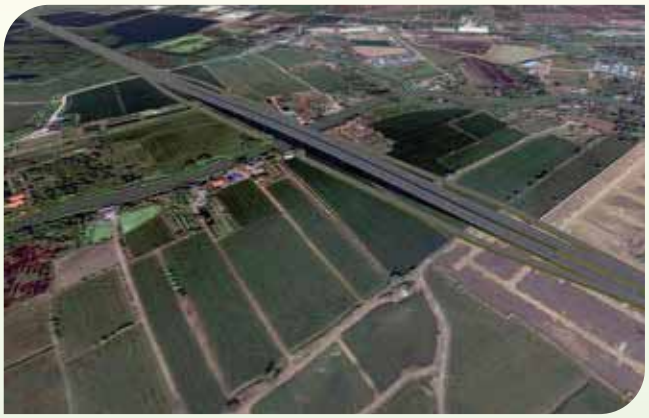
The 2nd part: highway no. 3214 (Chiang Rak Yai junction) was renovated starting from junction of highway no. 347 to the interchange of intercity motorway no. 9 (East). It is 6-lane highway expansion with 2-lane frontage road construction in some areas. The interchange was also renovated.

Objective

The objective is development of infrastructure in transportation of Thailand and it is also national highway network development for solving traffic problem in Bangkok Metropolitan Region by constructing 6-lane highway with bridge crossing the Chaophraya river (Sam Khok bridge). It is the construction under the Cabinet resolution on 2 July 2013.









Consistency with strategy/plan

To support 20-year National Strategy on competitiveness enhancement in accordance with the Twelfth National Economic and Social Development Plan (2017 – 2021) on Infrastructure and Logistics development and Thailand's Transport Infrastructure Development Strategy (2015 – 2022) is the highway empowerment plan for linking Thailand's significant production base and linking with neighbor countries which conforms to strategy of Ministry of Transport.

The aim of the project are connectivity and mobility for facilitating the transport. This project is the development of highway no. 3214 ranging to the East and to the West which has capacity to serve as main highway. This is the reason why the Department of Highways develops the highway network through such highway for complete highway network.

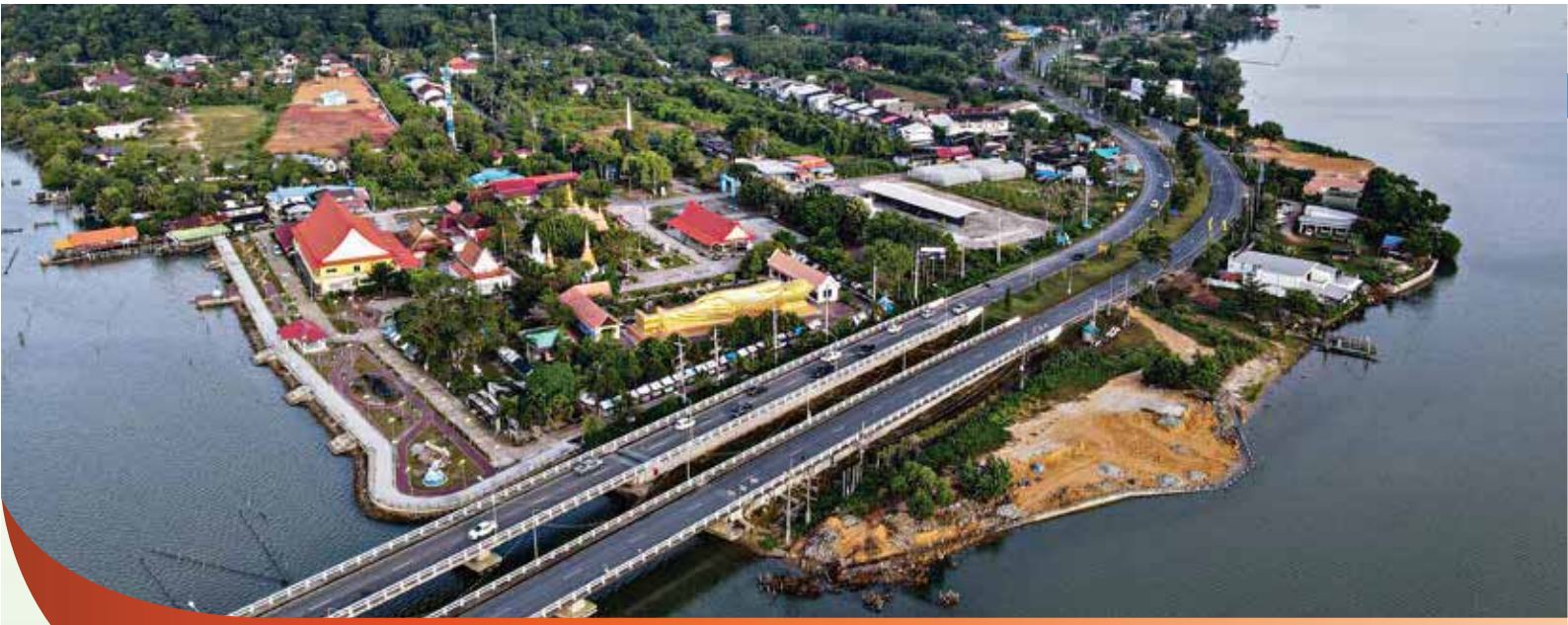
Benefit

The benefit of this project is competitiveness enhancement, sustainable development of all country's sectors, decrease of travel cost and time, facility, traffic speed and safety for travelers, and to be used as index of country's competitiveness.

The value of the project in quality is mobility for reducing traffic congestion, connectivity for facilitating the travel, trade and transport, accessibility for reducing travel time, modal shift support for decreasing logistic cost, and sustainability for reducing emission of transport or traffic jam.

Estimate budget for land acquisition

1. 470 land plots	approximately	3,701,000,162 Baht
2. 270 buildings	approximately	703,473,600 Baht
3. 190 trees	approximately	11,781,000 Baht
	Total	4,416,254,762 Baht



Material Analysis and Inspections

Outstanding Performances in Analysis and Inspection in Fiscal Year 2022

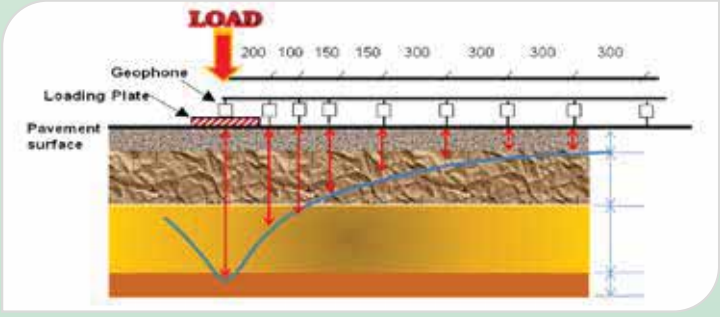
In the fiscal year 2022, the Bureau of Material, Analysis and Inspection has outstanding performances as follows:

1. Inspection of the Strength of the Pavement Structure by Using a Fast Falling Weight Deflectometer method (FFWD).
2. Preparation of Specifications for Construction Materials in accordance with TorLor.-Kor.411/2565 "Specification for Performance – Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test)".
3. Improvement of Pavement Standards (TorLor.-Mor.) to use hydraulic cement in pavement construction.
4. Design of Pavement Structure to Reduce Greenhouse Gas Emissions.
5. Prevention of Slope Damage on Highway No.4244, Betong - Saho, between km.0+600 - km.2+200 (in sections) and km.3+000 - km.15+200 (in sections).
6. Foundation Survey for the 2nd Thai - Malaysian Bridge Construction Project (Su - ngai Kolok - Rantau Panyang).

1. Examination of the strength of the pavement structure by using a Fast Falling Weight Deflectometer method (FFWD).

In inspecting and evaluating the road conditions of a large number of highways across the country, the tools used in the inspection must be efficient, fast and accurate because the information obtained will be used to determine the design, construction or to determine the method of maintaining the road in good condition for maximum benefit of road users.

The Bureau of Material, Analysis and Inspection has chosen a method for inspection of the strength of the pavement structure by using the data from the deflection of pavement surface and structure from weights hitting the pavement called "Falling Weight Deflectometer". The result of the deflection can be used to determine the strength of the pavement structure and to predict the service life of the road in order to make a maintenance plan by considering the strength of the pavement structure and taking into account the design of the overlay to reinforcement the pavement structure.



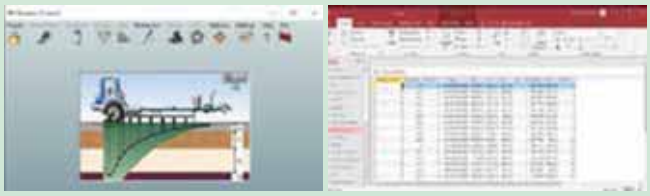
Picture 1: Principle to Determine Deflection of Road Structure

The FFWD tool is a new generation of tool with a lifting and releasing weight control unit as well as a robust and fast operating electric motor system. It is easier to maintain than older hydraulic systems that have been used for a long time and may have deterioration of various equipment. The FFWD uses the Dynatest Data Collection program to control and command through the computer laptop and stores various data in the form of an MDE file that can align multiple data from inspection sites which are in the form of F25, including information on various parameters used for analyzing and processing results in a single file. It is analyzed and processed through the ELMOD 6 program, which has been developed from the ELMOD 4 program that was used on older machines. The ELMOD 6 program is designed to be modern and easy to use and the processed data can be used immediately in the form of Microsoft Excel and Microsoft Word.

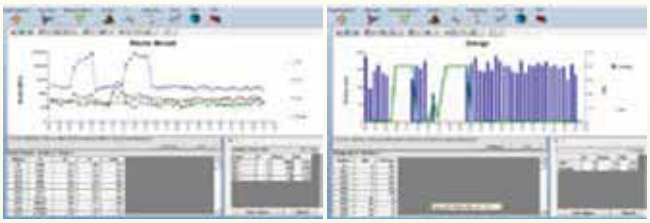


Picture 2: New Model FFWD Dynatest 8012 (left) and Old Model Dynatest 8000 (right)

In addition, the inspection results can be opened in the Google Earth via mapping system via geolocation device (GPS or DGPS) to determine the location and topography of the route that may affect the strength of the pavement structure.



Picture 3: The ELMOD 6 Processor Program and the MDE file Used for all Data Storage and Processing



Picture 4: Processing of Pavement Structure Strength and Design Thickness to Strengthen the Pavement according to the Service Life Designed with the ELMOD 6 Program

The results of Material all the pavement structure strength analysis can be used to determine the design, construction, and selection of road maintenance methods, with fast and accurate information and efficiently makes the performance of inspection work on the strength of the pavement structure to be effective which helps enhance a development of a highway network.

2. Preparation of specifications for construction materials in accordance with TorLor.Kor.411/2565 "Specification for Performance – Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test"

The Bureau of Material Analysis and Inspection has prepared the specifications for construction materials no. TorLor.-Kor.411/2565 "Specification for Performance Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test" which was approved by the Department of Highways on 27 June 2022. These specifications cover the Performance Grade (PG) determination of asphalt cement used in construction work. The Multiple Stress Creep Recovery (MSCR) method is used to test the creep recovery of materials by repeatedly stressing and to determine the value of non-recoverable creep compliance, Jnr according to the MSCR method using a Dynamic Shear Rheometer. Asphalt cement grading classifications specified in accordance with this specification are related to the highest and lowest of 7-day average temperatures in pavement design and traffic levels that are specified as Normal Traffic (S), Heavy Traffic (H), Very Heavy Traffic (V) and Extreme Traffic (Extremely Heavy Traffic, "E"). The test of asphalt cement properties according to this specification includes the Brookfield Viscosity Test, Dynamic Shear Rheometer Test, Rolling Thin Film Oven Test and Pressurized Aging Vessel: PAV Aging.



Picture 5: Brookfield Viscosity Test



Picture 6: Dynamic Shear Rheometer Test



Picture 7: Rolling Thin Film Oven Test



Picture 8: Pressurized Aging Vessel: PAV Aging Test

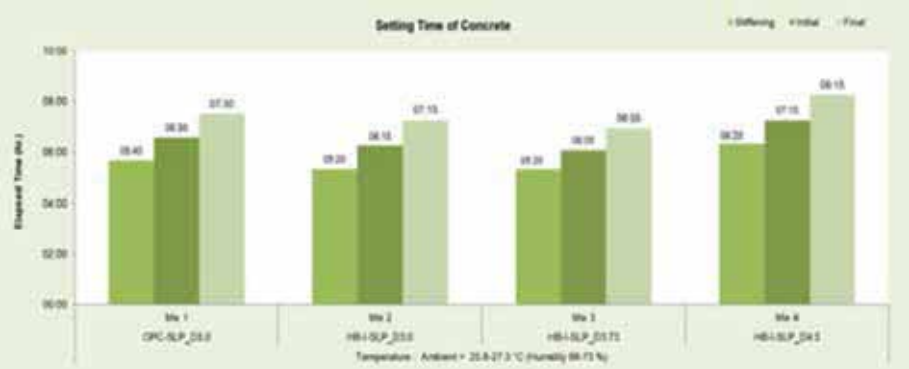
3. Improvement of Pavement Standards (TorLor.-Mor.) to Use Hydraulic Cement in Pavement Construction

As of now, cement production innovations and technologies are now more environmentally friendly than in the past. Accordingly, the clinkers used for cement production may be replaced with other materials called "hydraulic cement" which can reduce carbon dioxide emissions from the production process as certified by the Thai Industrial Standards Institute, TISI Certification 2594. As a result, the Department of Highways therefore has appointed a working group consisting of representatives from various sectors such as the Department of Highways, Construction Technology Research Center, Sirindhorn International Institute of Technology and the Thai Cement Industry Association with the purpose to study the properties and applications of hydraulic cement in concrete pavement construction of the Department of Highways which led to the preparation or improvement of standards and requirements for the use of hydraulic cement in the construction and maintenance of road by the Department of Highways.

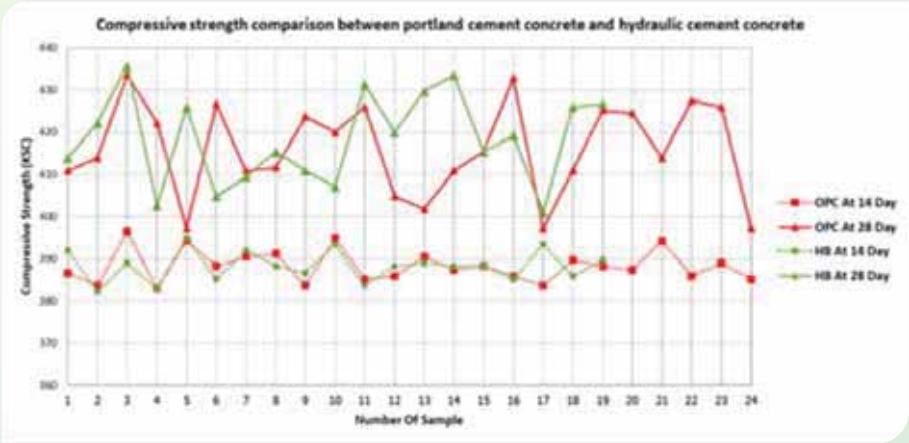
The Bureau of Material, Analysis and Inspection has studied the properties of hydraulic cement and has improved the Pavement Standards (TorLor.-Mor.) so that hydraulic cement can be used as an alternative for pavement construction and maintenance (for roads in the past that used Portland cement) which is in accordance with measures to reduce greenhouse gas emissions. The Pavement Standards (TorLor.-Mor.) that the Bureau of Material, Analysis and Inspection has improved to be able to use hydraulic cement which has been approved by the Department of Highways to be used as the Pavement Standards (Tor-Lor.-Mor.) on 24 February 2022, consists of standards No. TorLor.-Mor.204/2564 Soil Cement Base Standards and Standards No. Tor.Lor.-M.206/2564 Soil Cement Subbase Standards. By the end of 2022, the Bureau of Material, Analysis and Inspection has proposed a draft Standards No. TorLor.-Mor.309/2565 Cement Concrete Road Standards. The draft Standards is in consideration process by the Supervisory Board for Improvement and Development of Standards and Requirements Related to Road Engineering prior to making an announcement as the Pavement Standard (TorLor.-Mor.) by the Department of Highways.



Picture 9: Experimental Plot to Study the Properties of Hydraulic Cement in Concrete Pavement construction on Highway Construction Project No. 11, at Den Chai Intersection - Pang Kho Intersection between km.370+913.000 - km.385+550.000



Picture 10: Results of Concrete Setting Time Test Comparing between Portland Cement Concrete and Hydraulic Cement Concrete



Picture 11: Test Results for Compressive Strength of Concrete Comparing between Portland Cement Concrete and Hydraulic Cement Concrete.



Picture 12: Construction of the Trial Field for a Study on the Use of Hydraulic Cement as a Replacement for Portland Cement Concrete and Pavement Restoration Work on Highway No.3261 Khlong 10 to Nong Suea Section 2, between km.5+000 - km.7+500

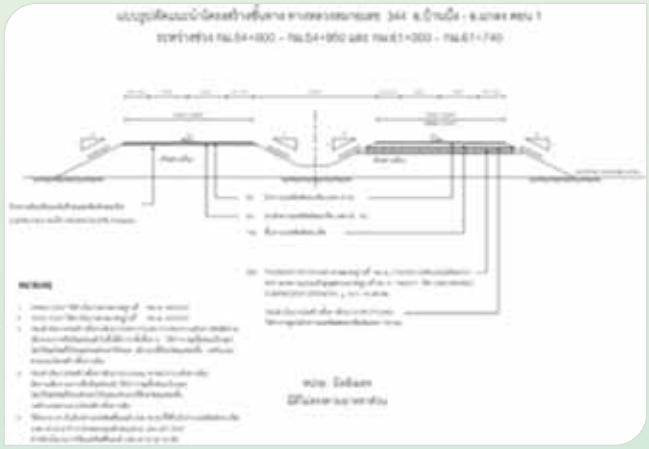
4. Design of Pavement Structure to Reduce Greenhouse Gas Emissions

Global warming is caused by emissions of greenhouse gases into the atmosphere in excess of the natural absorption capacity. The major greenhouse gases emitted into the atmosphere are: carbon dioxide, methane and nitrous oxide gas, resulting in trapping heat from the sun that radiates to the earth's surface as these gases have the ability to absorb heat from the earth's surface and not reflect back into space but radiate back to the earth's surface causing the lower atmosphere of earth's surface to increase in temperature, which is called "the Greenhouse Effect".

The effects of global warming are likely to intensify even in the construction and restoration of roads. This is because the production process of materials used in pavement construction has an impact on greenhouse gas emissions. The greenhouse gas

emissions can be reduced in pavement construction and/or restoration starting from considering the design of the pavement structure, which will play a part in reducing global warming.

The Bureau of Material Analysis and Inspection has carried out the design of the road structure for the restoration of Highway No.344, Ban Bueng-Klaeng, at km.25+000 to km. 62+200, as shown in Picture 13, using asphalt cement grade 40/50 in the fiscal year 2014 as the first project. The purpose of the design was to solve the problem of wheel grooving instead of adjusting the gradation used in asphalt concrete work. Due to solving the problem by adjusting the size of the aggregate materials, the durability of the road is greatly reduced. This makes pavement more rapidly damaged by humidity. Therefore, changing to use asphalt cement grade 40/50 instead of asphalt cement grade 60/70 will make the road more durable and it is a sustainable solution to reduce greenhouse gas emissions.



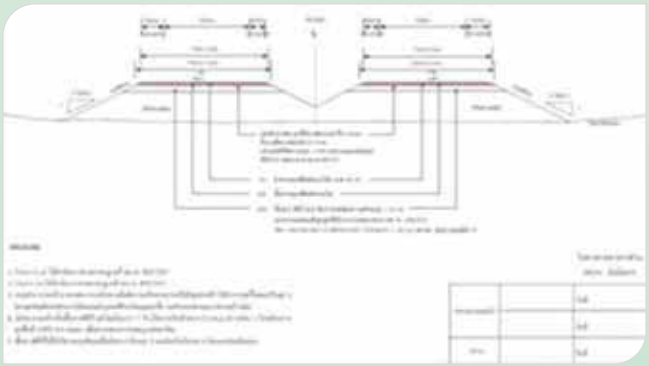
Picture 13: Cross Section Showing the Pavement Structure of the Highway No.344 Construction Project, Ban Bueng District – Klaeng District

In addition, during the production of reinforcing steel, there may be greenhouse gas emissions. Thus, designing a Jointed Plain Concrete Pavement (JPCP) is one of the options to reduce greenhouse gas emissions by using the pavement structure design. The Bureau of Material, Analysis and Inspection has designed the JPCP road on Highway No.225, Nakhon Sawan - Chaiyaphum, Sub-Elum - Sub-Tabaek, at km. 142+780 to km. 152+200, as the first route in the fiscal year 2018 as shown in the Picture 14.



Picture 14: Cross Section of the Pavement Structure on Highway No.225, Nakhon Sawan - Chaiyaphum, Sub-Elum - Sub Tabaek, at km. 142+780 to 152+200

The Bureau of Material, Analysis and Inspection has designed the pavement structure and prepared the special requirements for cement treated base for the construction project of Highway No.344, Ban Bueng-Klaeng, at km.24+500 to km.25+000 in fiscal year 2017, which was the first standard of the Department of Highways where hydraulic cement was used. Picture 15 shows a cross section of the pavement structure and the design of JPCP roads that use hydraulic cement in pavement construction and restoration projects. The construction project of Highway No. 11, Den Chai District - Lampang, at the Den Chai Intersection - Pang Kho Intersection was the construction work for the fiscal year 2020 that has carried out the construction of the JPCP pavement using hydraulic cement in the fiscal year 2022 as shown in Picture 16.



Picture 15: Cross Section Showing the Road Structure of the Highway No.344 Construction Project at Ban Bueng District - Converging with Highway No.331 (Nong Prue Intersection), including the Overpass across Nong Chak Intersection, at km.24+470 to 25+000



Picture 16: JPCP Road using Hydraulic Cement on Highway No. 11, Denchai district - Lampang, at Den Chai Intersection - Pang Kho Intersection

5. Prevention of Slope Damage on Highway No.4244, Betong - Saho section, between km.0+600 - km.2+200 (in certain parts) and km.3+000 - km.15+200 (in certain parts)

Due to the erosion of the back slope and side slope of Highway No.4244 at the border of Thailand and Malaysia where the country boundary pillars are located above, there are some of the country boundary pillars located less than 1 meter from the edge of the erosion. If this issue has not been fixed, it may lead to the erosion of the country boundary pillars.



Picture 17: Showing the Country Boundary Pillars Located on the Edge of the Back Slope which is less than 1 Meter from the Front Edge of the Back Slope.



Picture 18: The Back Slope that has been eroded



Picture 19: the erosion on Side Slope

The Bureau of Material, Analysis and Inspection conducted an area survey together with relevant agencies and officers from the Royal Thai Survey Department to inspect country boundary pillars and slopes where erosion has occurred. It was found that the geological features in the area were sandy soil which is soil with low adhesion stability. In addition, the slope is fairly steep since the adjustment of the slope cut to get the right slope angle cannot be performed because it would encroach into the boundary of Malaysia. Therefore, it is proposed to carry out preventive measures by increasing the stability of the slope by installing soil nails and preventing erosion of the slope by spraying steel fiber shotcrete together with the installation of underground and surface drainage systems.



Picture 20: Installation of Soil Nail and Steel Fiber Shotcrete at the Back Slope



Picture 21: Completion of Preventive Measures Construction

In relation to the part of the damaged back slope, the extent of the damage spreads to the traffic surface. Hence, it is necessary to build a new slope in order to be able to use the route normally because the area is a mountain area and there is a limitation on use of the route. Subsequently, the construction is to be carried out using reinforced soil by a modular block wall type which is a steep slope that can be built in that area. After the preventive measure is completed, it can prevent the erosion of the slope where the country boundary pillars are located and allow the road users travel with convenience and safety.



Picture 22: Construction of the Modular Block Wall on the Back Slope



Picture 23: Completed of Modular Block Wall on Back Slope

6. Foundation Survey for the 2nd Thai - Malaysian Bridge Construction Project (Su-Ngai Kolok - Rantau Panyang)

The Thai government has cooperated with Malaysia in conducting soil surveys on the Thai side. The Bureau of Material, Analysis and Inspection has been assigned by the Department of Highways to carry out foundation exploration drilling and submit a soil data report obtained from such survey drilling to be used as information for the construction of the 2nd Thai-Malaysian Bridge (Su-Ngai Kolok - Rantau Panyang), which is a bridge between Thailand and Malaysia located on Highway No.42, Su-Ngai Kolok - Rantau Panyang, in the area of Su-Ngai Kolok District, Narathiwat Province.



Picture 24: Exploration Drilling Operations



Picture 25: Soil Samples Obtained from the Exploration Drilling



Picture 26: The Foundation Survey Team under Road Survey and Evaluation Division, the Bureau of Material, Analysis and Inspection Office which has Conducted Exploration Drilling of the Soil for the Construction of the 2nd Thai-Malaysian Bridge (Sungai Kolok - Rantau Panyang)



Road Research and Development

Grappling Device for Prestressing Rubber Pad

The Department of Intellectual Property has granted a design patent (Patent Act B.E. 2522) to the Department of Highways (Bureau of Road Research and Development) for the designing of "Grappling Device for Prestressing Rubber Pad"

The "Grappling Device for Prestressing Rubber Pad" was developed for temporary repairing a shear key of PC plank girder bridges to strengthen while waiting for the major repairment or special reinforcement. For convenience of the installations, the device was designed and made to reinforce the tensile strength in a rubber pad so that it can pull or bear the force and transmit the force to support without removing the previous bearing pad. Moreover, there is no need for the bridge closure to install the device. The actual size of the Prestressing Rubber Pad was tested in a laboratory, the result and analysis of finite-element model clearly showed that the plank girder was stronger and able to transmit the shear force after reinforcing with the prestressing rubber pad. Not only this was considered as the first innovation of bridge maintenance in Thailand but also was a part of the development of road innovation under the 5-year research strategy in response to the 20-year national strategy of the Thai government.


สิทธิบัตรการออกแบบผลิตภัณฑ์

กรมทางหลวง (สำนักวิจัยและพัฒนางานทาง)

Project: The study of technologies for measuring, monitoring, warning and risk-management the landslide on highway network

The Department of Highways (Bureau of Road Research and Development), together with Kasetsart university (Faculty of Engineering) studied the technologies for measuring, monitoring, warning and risk-management the damage from landslide on highway network such as roadblocks caused by landslide, road closures caused by a scouring of an embankment which leads to the commuting difficulties and road safety.



The Bureau of Road Research and Development was aware of the importance and the urgency of this issue which occurs on the highway network every year thus we had conducted a field study to find a solution to prevent the landslide and the scouring in the actual area while still considering all the crucial engineering aspects including principles, suitability, costs, maintenance and environmental effects in order to set a concrete example for the operational staffs. We provided the guidelines on installation and usage of the standard equipment, working procedure, reports, monitoring, warning forecast, prevention, risk assessment, landslide lookout and how to sustainably maintain the prevention system. The study on 4 pilot areas proved that there are some beneficial aspects gained from the study such as the application of Bio engineering, the recycling of local materials, the efficient water source management system (both surface and ground), the demonstration of the technologies for measuring, monitoring, reporting and safety assessment using the device connected to IoT Platform which can report, forecast, warn and assess the safeness and risk of the landslide in real-time through web application. The study of the technologies for monitoring and risk-management the damage from landslide on highway network got an honorable mention award from Thailand Research Expo 2022. Moreover, the study had gained many interests from many organizations which had observed the project on this aspect. We are preparing for the next steps to develop and expand the study to other areas covering across country.









Project: The study on increasing the level of road safety and decreasing the girder damage from heavy truck by using the "Prestressing Rubber Pad Grappling Device" to mitigate vibration.

As the traffic increases, the solutions are always to demolish pavements or concrete barriers in order to expand the bridges to support the increased traffic volume. The results from pulling down those pavements or concrete barriers causes the loss of the mass that weighing the bridge which leads to the vibration of the girder. Since most of the bridges that the Department of Highways has constructed are slab type bridges i.e., the overpass in Phanat Nikhom, Chonburi Province

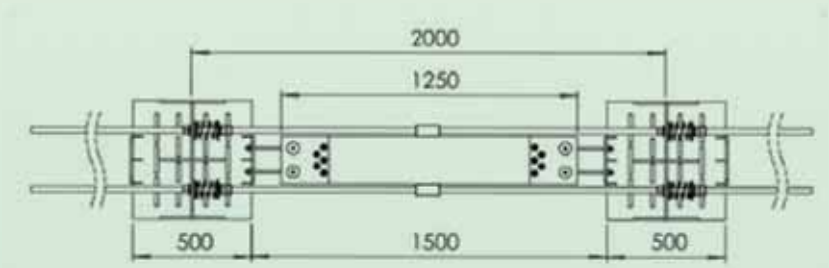
This project aims to solve the vibration of the girder in slab type bridges by using the Prestressing Rubber Pad which is studied by the Bureau of Road Research and Development to fix the shear key of plank girder bridges. The study was done by stretching out the natural rubber pad (sizing: 20*100 cm, thickness: 4 cm - which can be found easily) in order to create the tensile strength as designed then attaching the pad to plank girder so that it can bear the broken shear key.

Technology

Attaching a spring to the prestressing rubber pad in order to mitigate the vibration, the spring will strengthen the girder by reducing the frequency of the vibration. The device will be installed under the girder that has the vibration which will not affect the traffic under the bridge since the device doesn't add any more depth to the bridge.

Utilization and Expansion

- The grappling device shown a concrete result in reducing the vibration on the overpass in Phanat Nikhom, Chonburi Province
- The design of the device has been implemented to other bridges.









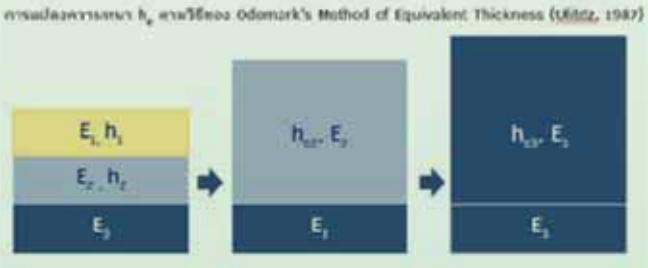


Project: The research for making the specification and designing processes of Flexible Pavement Structure in Thailand

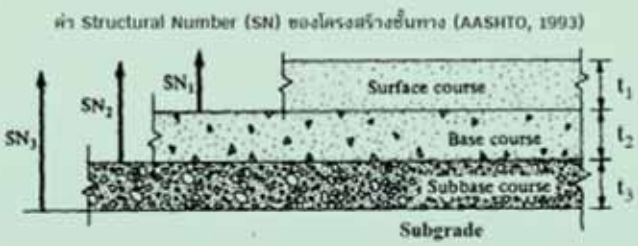
The Department of Highways has been referencing the designing of bridge construction from The United States of America for quite some time. Due to the differences of environmental effects on bridge structures between Thailand and International database such as the weight of trucks, construction, materials, traffic volume, environment, weather, other conditions in Thailand - not only in Thailand but also the increase of traffic volume and weight of trucks in ASEAN countries. The impact of those effects causes the damages in bridge structure sooner than the expected time in the design. Therefore, the research for making the specification and designing processes of Flexible Pavement Structure in Thailand is crucial for any research that involving with the highway construction since we are a part of the Ministry of Transport - our mission is to improve the highway infrastructure, construct and maintain the network to cover all the area in our country and neighbors so that the people can commute conveniently and safely.

The researchers has developed the specification and designing processes of Flexible Pavement Structure in Thailand that suitable for our environmental conditions, materials and traffic volume so that the engineers and operational staffs can design the proper and safe flexible pavement structure by using values of deflection that reads from the Falling Weight Deflectometer (FWD) in the designing process. The research was funded by the Thailand Science Research and Innovation (TSRI) which is an independent organization under the Ministry of Higher Education, Science, Research and Innovation (MHESI) using the 2021 Science Research & Innovation budget.















Mechanics and Communication

1. The great activities of revolving fund in 2022

The Budget Bureau arranged the ceremony of the best revolving fund award for 2022, named "Revolving Fund to keep on Government Policy and boost Economy into New Normal Life" on 15 September 2022 at the Jupiter Room, Challenger Hall, the Impact Arena to award the outstanding revolving fund in 2020 and 2021. It was honored by Mr. Arkhom Termpittayapaisith, Minister of Finance, presided over the opening ceremony. There were many exhibitions of a revolving fund to distribute knowledge and enhance the appropriate image of the revolving fund.

The Equipment Revolving Fund of the Department of Highways which was operated by the Bureau of Material Equipment and Communication participated in the ceremony by exhibiting knowledge and mission of the Equipment Revolving Fund. The Equipment Revolving Fund received the award of the outstanding revolving fund in the fiscal year 2020 – 2021. It was honored by Mr. Sarawut Songsivalai, Director-General, Mr. Noppakhun Sawangsawai, Director of Bureau of Material Equipment and Communication, and Mr. Kamon Detkawinlerd, former Director of Bureau of Material Equipment and Communication, as the committee of the Equipment Revolving Fund to receive three awards as follows;

1. The Award of the Best Management in 2020
2. The Award of the Best Management in 2021
3. The Award of the Greatest Revolving Fund Organizer in 2021

These awards demonstrated the effective performance of the Equipment Revolving Fund of the Department of Highways which has been increased constantly.





2. Personnel development in driving and operating machine

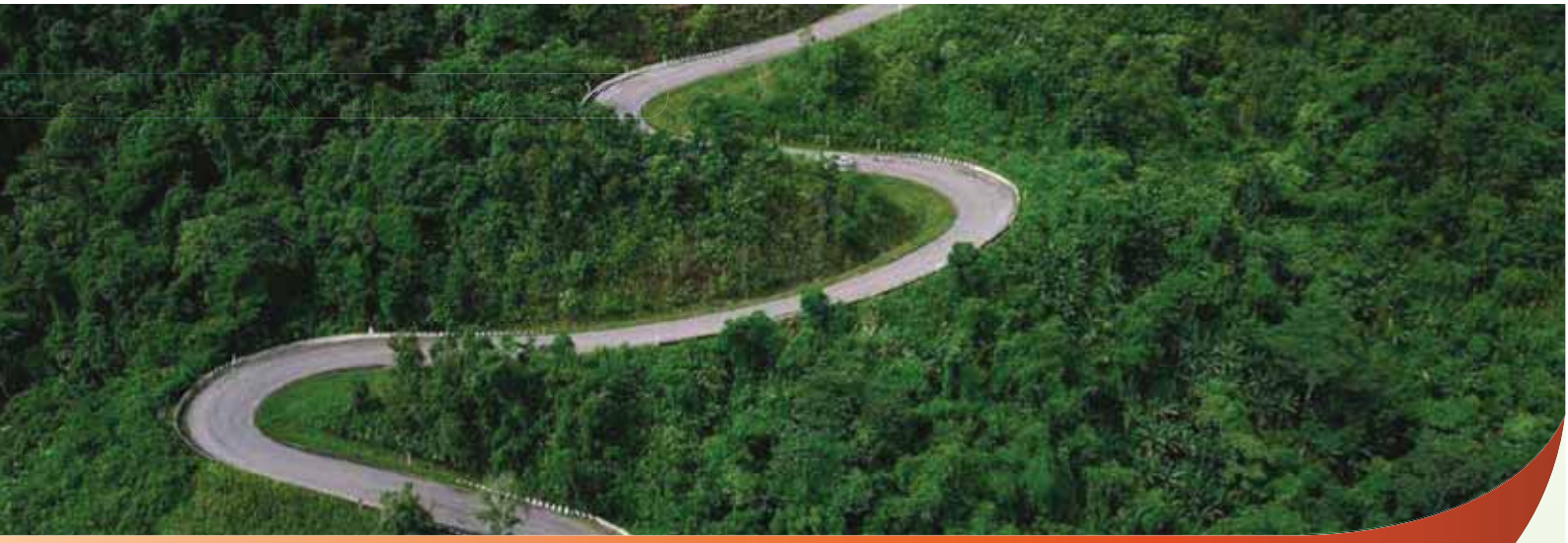
Bureau of Material Equipment and Communication worked together with Department of Land Transport to organize two following training courses in 2022 for the DOH's drivers;

1. "Truck Driving Course" was for two batches of trainers with 6 days of training, including holidays, per batch. The objective of the course is to enrich the knowledge and skills of truck driving for the DOH's driver, who has a private car driving licence. There were 64 drivers who attended the training. The trained drivers may apply for a driving licence for a car type 2 (Tor.2 or Bor.2), which allows them to drive a variety of trucks such as water trucks, dump trucks, crane trucks, and other trucks according to Thai law.

2. "Tow Truck Driving Course" for a single batch of trainers, completed in 13 days, including holidays. The course aimed to improve the knowledge and skills of the DOH's driver, who has a type 2 car driving licence, in towing truck driving. There were 33 drivers who attended the training. The trained drivers may apply for a driving licence for a car type 4 (Tor.4 or Bor.4), which allows them to drive a variety of trucks such as tow trucks, hazardous material trucks, and other trucks according to Thai law.







Environment and Public Participation

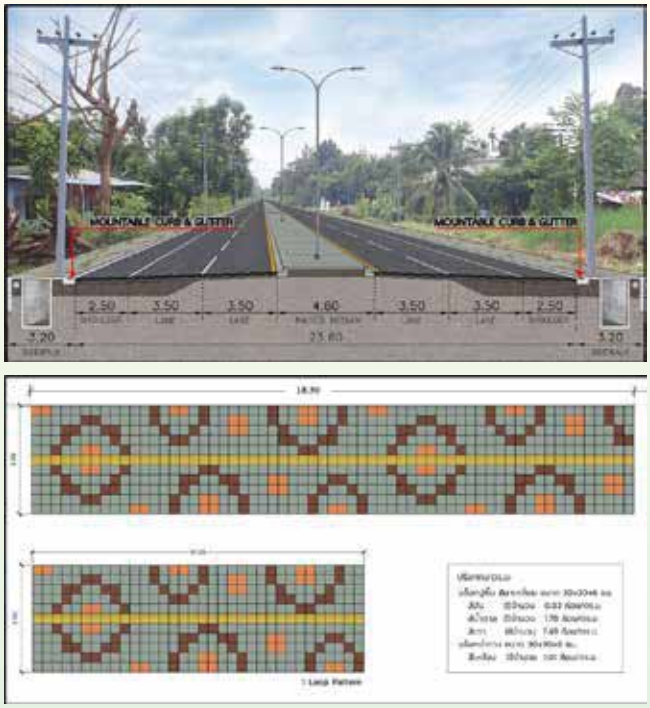
The Department of Highways puts emphasis on environmental safeguarding and promoting sustainable highway development. Thus our operational framework and direction are set in accordance with the Environmental Quality Enhancement and Protection Act B.E. 2535 (1992) and (No.2) B.E. 2561 (2018) and the Office of the Prime Minister's Office Announcement on Public Consultation, B.E. 2548 along with adhering to the Good Governance Principle for transparent, just, and verifiable conducts. The public is welcome to participate in all steps of highway development and we incorporate the public's input in our decision making process for appropriate and practical developments that address the needs of the public. We conducted environmental impact assessment (EIA) and specified impact mitigation measures for highway projects that pass or located near conservation areas for 14 projects, namely,

1) EIA for Ang Thong Bypass, Ang Thong Province
2) EIA for Highway no. 214, Chaturaphak Phiman district - Kaset Wisai district, Roi Et Province
3) EIA for Highway no. 11 Route Pang Ko, Phrae Province - Pa Kham, Lampang Province
4) EIA for Highway no. 229 Ban Nong Muang - Mancha Khiri District, Khon Kaen Province
5) EIA for Highway no. 2445, Salang Tone Subdistrict - Ban Paiboon, Buriram Province
6) EIA for Highway no. 226, Ban Nong Sawai - Ban Rawiang, Surin Province



Design optimal illuminance to minimize impacts to grain production of photosensitive rice

7) EIA for Highway no. 2256 Lopburi - Dan Khun Thot, section Thanon Kong - Ban Tha Luang, Lopburi Province
8) EIA for Highway no. 212, Pak Kad District - Ban Somprasong, Bueng Kan Province
9) EIA for construction and widening of Highway no.1421 Route Hua Doi- Ban Mai Pattana
10) EIA for Highway no. 101 Tha Chai - Si Satchanalai, Sukothai Province
11) EIA for Highway no. 101 Si Samrong - Sawankhalok, Sukothai Province
12) EIA for Highway no. 11, Ban Khlong Dua - Thap Khlo District, Phichit Province
13) EIA for Highway no. 3081 Tha Rua - Phra Tan Dong Rang, Section Ban Don Rak - Phra Tan Dong Rang, Kanchanaburi Province
14) EIA for Highway no. 3471, Bang But Subdistrict - Choomsang Subdistrict, Section Bang But Subdistrict - Ban Nong Phawa, Rayong Province



Design pedestrian walkway as sea bubbles in line with local identity to mitigate the visual impact

Moreover, we conducted environmental monitoring for 28 projects namely

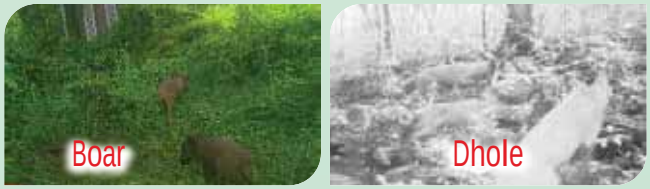
1) Monitoring of the Highway no. 211 Amphoe Thabo - Amphoe Si Chiang Mai, Nong Khai Province

2) Monitoring for the extension of frontage roads of the Barom Ratchonni elevated roads and the efficiency enhancement for Highway no. 338 Pinklao - Nakhon Chai Si

3) Monitoring of The Wildlife Corridor for World Heritage Forests on Highway no. 304 Amphoe Kabin Buri - Amphoe Pak Thong Chai (phase 4)



Comparison of the vegetation conditions atop the tunnels at the wildlife corridor



Monitoring of wildlife usage of the wildlife corridor reveals various species including dholes, which are categorized as endangered (EN) status

4) Monitoring of 4-lane widening of Highway no. 304 section Amphoe Kabinburi - Amphoe Pak Thongchai (phase 4)



Comparison of the conditions under the elevated highway



Wildlife species monitored at wildlife underpass

5) Monitoring of Highway no. 348 Amphoe Pa Kham - Amphoe Nang Rong

6) Monitoring for Highway no. 12 Phitsanulok - Amphoe Lom Sak (operation phase)

7) Monitoring of The Intercity Motorway Chonburi - Pattaya (operation phase)

8) Monitoring for Intercity Motorway Pattaya - Map Ta Phut (phase 3) Rayong Province

9) Monitoring of Highway no. 319 Prachinburi - Amphoe Phanom Sarakham section Ban Nong Bua Moo - Amphone Phanom Sarakham Section 2

10) Monitoring of The Intercity Montorway Bang Pa-in - Nakhon Ratchasima (phase 3) Nakhon Ratchasima province

11) Monitoring of Highway no. 3646 Amphoe Aranyaprathet - Thailand/Cambodia border (Ban Nong lan - Satung Bot) section Highway no. 33 junction meeting with Highway no. 3586

12) Monitoring of construction of elevated road on Highway no. 35 Thonburi - Pak Tho (Rama II road)

13) Monitoring of Highway no. 101 Rong Kwang - Naan section 2

14) Monitoring of Highway no. 4 Chumpon - Ranong
15) Monitoring of Highway no. 11 Uttaradit - Den Chai, Uttaradit province (operation phase)
16) Monitoring of the construction of Bueng Kan bypass km. 0+000 (at the junction of Highway no. 222 km.123+430) - km.2+276 (at the junction of Rural Road BK.3217) Bueng Kan province
17) Monitoring of the construction of interchange at junction of Highway no. 4 and Highway no.3087 (Khao Ngoo intersection)
18) Monitoring of Highway no.118 Chiang Mai - Chiang Rai setion Amphoe Doi Sa-ket - Ban Mae Chedi (phase 2)
19) Monitoring of Nakhon Ratchasima ring road for the section between junction with Highway no.205 - junction with highway no.226, Nakhon Ratchasima Province
20) Monitoring of railway overpass at Highway no. 226 km. 62+886 (adjacent Surin Highway District area) - junction to Utumporn Pisai at km. 75+971 Sisaket province
21) Monitoring of Intercity Motorway Bang Yai - Kanchanaburi (phase 3) Kanchanaburi province
22) Monitoring of railway overpass on Highway no. 4114 at the junction of Highway no. 41 (Samor Thong) - Chai Talay at km. 4+492 Surat Thani province
23) Monitoring of New Highway Ban Na Khrai - Amphoe Kham Cha-I (phase 2)
24) Monitoring of Highway no. 4 Trang - Phattalung section Ban Na Yong Nua - Khao Pubpa (Ban Nawong) Trang province (operation phase)
25) Monitoring of Highway no. 12 Tak - Mae Sot
26) Monitoring of Highway no. 333 Amphoe Nong Chang - Uthai Thani section Tambon Nong Phai - Uthai Thani, Uthai Thani province
27) Monitoring for Highway no. 304 Chachoengsao - Khao Hin Son subdistrict, section Mueng Kao subdistrict - Phanom Sarakham District, Chachoengsao Province
28) Monitoring for Construction of Highway no. 3702 section Bang Khwai - Khao Din (Bang Pakong River bridge), Chachoengsao Province

Award of Commitment for Sustainable Highway Development

With our practices of environmental- and social-friendly highway development, the Department of Highways was awarded with the EIA Monitoring Awards 2021 in the government sector projects by the Office of Natural Resources and Environmental Policy and Planning. The awarding criteria includes 3 levels, namely, honorable mention, outstanding, and excellence. Decisions are based on site visit evaluation to assess environmental management in the project that extends to environmental enhancement measures, cooperations with relevant environmental agencies, and relevationship with surrounding communities. The assessment also takes into account the involvement of executive-level and operation-level staffs in environmental management. In the past year, the DOH was given "Outstanding" level awards in 2 projects, namely

1) Intercity Motorway Pattaya - Map Ta Phut



The award committee visit the Intercity Motorway Pattaya – Map Ta Phut project for assessment on 31 March 2021

2) New highway for Chiang Rai Bypass section Junction with Highway no.1211 - Junction with Highway no.1207



The award committee visit the Project New Highway for Chiang Rai Bypass section Junction with Highway no.1211 – Junction with Highway no.1207 on 12 January 2022



Mr.Sarawut Songsivilai, the DOH Director General, received the EIA Monitoring Awards 2021 from Mr. Varawut Silpa-archa, Minister of Natural Resources and Environment on 8 August 2022

Fostering Transparency in Highway Development with Public Participation

To promote public involvement, The Department of Highways arranges public participation activities throughout the stages of highway development. Especially during the construction stage, public participation meetings were held in compliance with the Office of The Prime Minister's Office Announcement on Public Participation B.E. 2548. Comments and concerns from the people were utilized to improve project implementation to meet the demands of the locals in 342 projects, namely:

1) Highway efficiency improvement: 128 projects



Highway efficiency improvement project for Highway no. 4135 section Hat Yai airport entrance
Responsible unit: Songkhla 1 Highway District



Highway efficiency improvement project for Highway no. 4 section Siab Yuan – Kraburi between km. 543+100 – km.544+981
Responsible unit: Ranong Highway District

2) Drainage structure construction and maintenance: 40 projects

3) Regional integration plan: 78 projects

4) Highway improvement in community areas: 64 projects



Highway improvement in community area for Highway 3177 section Petchaburi – Hat Chao Samran
Responsible unit: Petchaburi Highway District



Highway improvement in community area for 4184 section Kuan Sator – Prachan border (Thailand/Malaysia border)
Responsible unit: Satun Highway District

5) National highway network construction project - road shoulder construction activity: 17 projects



Road shoulder construction activity for Highway no. 227 control section 0301 section Ban Phasuk - Warichabhum
Responsible unit: Sakon Nakhon 2
(Sawang Daen Din) Highway District

6) New highway projects allocated with B.E.2565 fiscal budget: 15 projects



Regional connectivity road network rehabilitation project for Highway no. 1263 section Pang Ung – Mae Na Jon Responsible unit: Chiangmai 1 Highway District





Highway Maintenance

Highway maintenance is one of the most important missions of the department of highways. Therefore, the systematic maintenance plan has played a major role to keep the road performance as long as possible.

In the fiscal year 2022, DOH received a budget for maintaining the network of around 26,279.9882 Million Baht which consist of Highway management and assisting 474.9600 Million Baht, UAV Survey equipment (Drone) 8.6800 Million Baht, Highway maintenance activities 20,455.2994 Million Baht, Bridge maintenance activities 365.3340 Million Baht, Urgent maintenance 200.0000 Million Baht, Highway maintenance Consulting project 58.0948 Million Baht, Inter-Region Maintenance Project 4,284.6100 Million Baht and Rest stop construction Project 443.0100 Million Baht. The budget for maintaining have been allocated in many activities as followed;

Objective 1: Developed highways network.

1) Highway management and assisting	474.9600 Million Baht
1.1 Residential building construction budget	226.1000 Million Baht
1.2 Office building construction budget	166.4000 Million Baht
1.3 Office building renovation budget	45.6100 Million Baht
1.4 Residential building renovation budget	36.8500 Million Baht
2) UAV Survey equipment (Drone)	8.6800 Million Baht

Objective 2: Maintained highways network.

1) Highway maintenance activities	20,455.2994 Million Baht
1.1 Routine maintenance	5,914.1700 Million Baht
1.2 Periodic maintenance	5,046.2670 Million Baht
1.3 Special maintenance	7,346.5484 Million Baht
1.4 Rehabilitation activities	2,148.3140 Million Baht
2) Bridge maintenance activities	365.3340 Million Baht
3) Urgent maintenance	200.0000 Million Baht
4) Highway maintenance Consulting project	58.0948 Million Baht

Integrated work plan for the development of transport and logistics network

- Inter-Region Maintenance Project
  4,284.6100 Million Baht
- Rest stop construction Project
  443.0100 Million Baht

There are different and specific in each activity as followed

1. General highway maintenance supporting activities

The objective f this activity is to construct and renovate the office. At present, there are 712 highway offices located around the country which are needed to maintain urgently.

2. Highway maintenance activities

2.1 Routine Maintenance

The objective of routine maintenance is to keep the roads in good condition for serving the traveler. The type of routine maintenance is as follows:





Pavement Maintenance

2.1.1 Maintenance of Asphalt Pavement

1. Crack Filling
2. Surface Sealing
3. Surface Leveling
4. Skin Patching
5. Deep Patching
6. Surface Grinding

Maintenance of Concrete Pavement

1. Repair of Joint
2. Crack Sealing
3. Concrete Pavement Leveling
4. Concrete Pavement Patching

2.1.2 Sidewalk, Connection Road, Median, and Bicycle-lane Maintenance





2.1.3 Drainage System, Bridge, and Structure Maintenance

Drainage System

1. Maintenance of Open Channel such as Cleaning, Dredging, Repairing, Removing etc.
2. Maintenance of Culvert

Bridge and Structure

1. Maintenance of Bridge and Structure such as Joint filling, Repairing rail, Repairing slab, Painting
2. Repair of Bridge Approach such as Motar Rip-Rap
3. Repair of Retaining Structure such as Repairing crack on retaining wall
4. Repair of Pedestrian Bridge or Underpass
5. Repair of Tunnel

2.1.4 Traffic and Safety Device Maintenance

Maintenance of Traffic Sing and Marking

1. Repair of Traffic Signs such as Cleaning, Repairing, Painting
2. Traffic Painting and Marking

Maintenance of Safety Device

1. Maintenance of Guard Rail, Guard Fence, Guard Cable, Barrier, R.O.W. Fence, Barricade, Crash Cushion, and Others
2. Maintenance of Guard Rail, Guard Fence, Guard Cable, Barrier, R.O.W. Fence, Barricade, Crash Cushion, and Others such as Cleaning, Repairing, Painting or Removing
3. Maintenance of Other Safety Devices

Maintenance of Road Lighting and Traffic Signal

1. Maintenance of Road Lighting
2. Maintenance of Traffic Signal



2.1.5 Highway Landscape
2.1.6 Supplementary Activities for Enhancing Highway Maintenance's Efficiency

2.2 Periodic Maintenance

The objectives of periodic maintenance are to expand the surface lifetimes and increase the strength of the surface in order to serve the traffic in the future. The type of periodic maintenance is as follows:

2.2.1 Asphalt Seal Coating
2.2.2 Asphalt Overlay
2.2.3 Replacement of Joint Sealing

2.3 Special Maintenance and rehabilitation

2.3.1 Special Maintenance

The objective of special maintenance is to repair the road damage that can't maintain by routine maintenance work such as Surface Leveling, Major Repair of Asphalt Pavement or Asphalt Hot Mix Recycling etc. The type of special maintenance is as follows:

1. Surface Leveling
2. Major Repair of Asphalt Pavement
3. Asphalt Hot Mix Recycling
4. Major Repair of Concrete Pavement
5. Major Repair of Side Slope and Back Slope
6. Major Repair of Bridge Structure and Highway Structure







2.3.2 Rehabilitation

The objective of special maintenance is to repair the road damage that can't maintain by special maintenance work. The type of rehabilitation is as follows:

1. Rehabilitation of Asphalt Pavement
2. Rehabilitation of Concrete Pavement

2.4 Disaster rehabilitation activities

Disaster rehabilitation activities are the maintenance project for roads that fail from the disasters such as flooding, storm, landslide, or another disaster. In 2022, Thailand was hit by many storms such as Mulan, Noru, Songa, etc. which made major damage to the highway network, especially in central, northern, northeastern, and southern of Thailand.

3. Bridge maintenance activities

Nowadays, there are many accidents on bridges that effect the transportation network. This causes losses of enormous economic and social value. Accidents from bridges that occur may be caused by the load that is too much for the bridge to be able to bear or the bridge being very old, so the bridge has a service life that can provide services to road users safely Therefore, it is necessary to plan the maintenance and restoration work of the bridge. Including strengthening the bridge to support the current increasing load. The objectives of routine maintenance are to keep the bridges in good condition for serving the traveler and expand the bridge's service life.







4. Urgent maintenance

Urgent maintenance is the quick maintenance work from unpredicted disasters such as flooding, storm, landslide, or another disaster in order to open the traffic rapidly. The objective of this activity is open traffic rapidly and repair to the original condition. In 2022, there are 810 cases of urgent maintenance and the cost of urgent maintenance is around 200 million baht.

5. Consulting for Survey and Evaluate Highway Network Project

The highway properties management system project According to the national strategic plan, the Department of Highways has launched a project that has been designed to combine digital technology, such as digital survey technology, and highway properties database to create a highway properties management system in order to serve the mission of the Department of Highways in every dimension. The system has linked to other working network systems of the Department. These will help in estimating and designing the maintenance plan.



6. Inter-Region Maintenance Project

The inter-city road network is the main transport route that serves the national economy. The inter-city network links the economic strategic area such as ports, airports, and industrial sites. These make a high traffic volume of heavy trucks that increase road damages which need special maintenance and budget more than the ordinary road. Therefore, the Department of Highways has to allocate the budget for maintenance of this network in order to keep their capacity in good condition to serve the national economy and social.







7. Rest stop construction Project

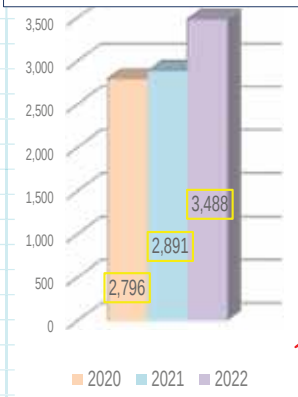
The objective of this project is to support the logistic system by providing a rest stop site for drivers especially heavy vehicle drivers to release their fatigue from driving. The Department of Highways has established a rest stop, especially for heavy trucks. The rest stop consisted of the standard refreshment equipment and security services. This will help to reduce many problems such as prohibited parking, drowsy etc.

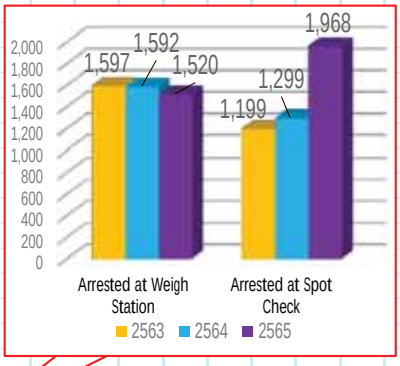


Performance on Arrested Overweight Trucks

Statistics of Arrested Overweight Trucks on Highways in 2020 - 2022

Comparative statistic of arrested overweight trucks on highways between fiscal year of 2020 - 2022 (quantity : truck)









Performance on the usage at Truck Rest Areas

Record number of users at Truck Rest Areas in 2022

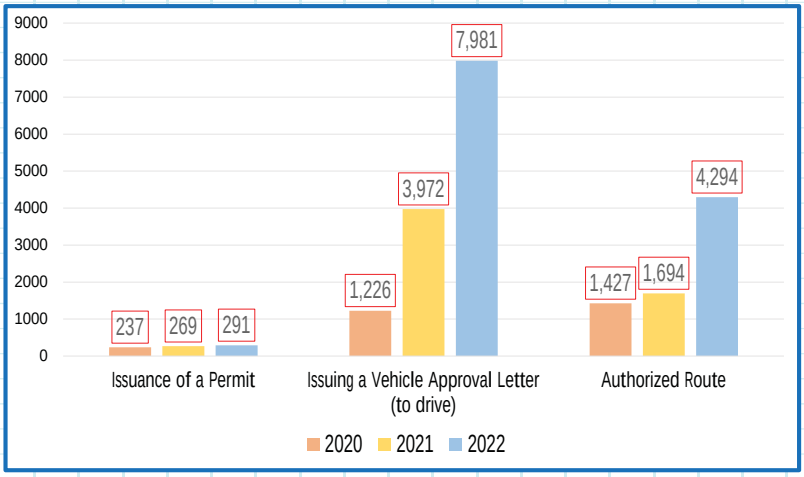
There are currently 17 Truck Rest Areas on Highways

1	Loei, Loei Province - In bound	2	Udon Thani, Udon Thani Province - Inbound
3	Nam Phong, Khon Kaen Province - Outbound	4	Phetchabun, Phetchabun Province - Outbound
5	Banphot Phisai, Nakhon Sawan Province - Inbound	6	Maha Sarakham, Maha Sarakham Province - Inbound
7	Roi Et, Roi Et Province - Inbound	8	Yasothon, Yasothon Province - Outbound
9	Ubon Ratchathani, Ubon Ratchathani Province - Outbound	10	Non Sung, Nakhon Ratchasima Province - Inbound
11	Non Sung, Nakhon Ratchasima Province - Outbound	12	Sikhio, Nakhon Ratchasima Province - Inbound
13	Wang Nam Khiao, Nakhon Ratchasima Province - Inbound	14	Prakhon Chai, Buriram Province - Outbound
15	Surin, Surin Province - Inbound	16	Kaeng Khoi, Saraburi Province - Inbound
17	Tha Sae, Chumphon Province - Outbound		

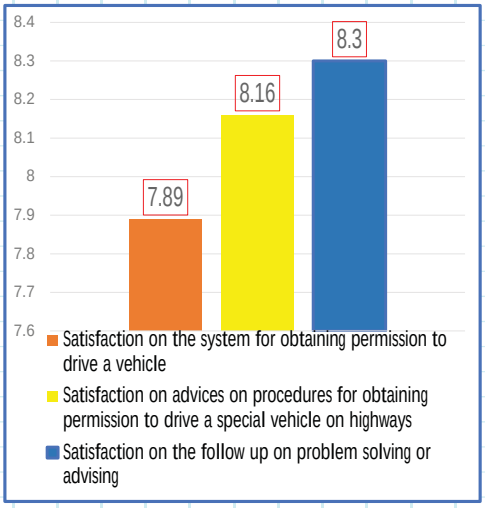


Performance of Services for Obtaining Permission to drive on the Highways

Statistics for Permission to drive Special Vehicles on Highways of the year 2020 - 2022



Entrepreneur Satisfaction Assessment Score (out of 10 points)



Truck Rest Area Construction Projects

Nong Song Hong Truck Rest Area Construction Project



Truck Rest Area Construction Projects

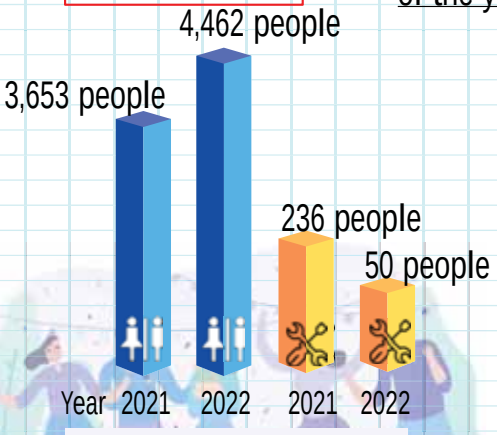
Udon Thani Truck Rest Area Construction Project



Performance of Servicing People during the Holidays

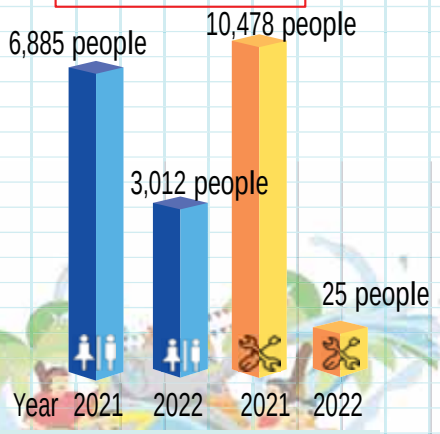
Assistance on Highways Statistics of the year 2021 -2022

New Year Festival



Year 2021 : 30 Dec 20 - 4 Jan 21
Year 2022 : 29 Dec 21 - 4 Jan 22

Songkran Festival



Year 2021 : 9 Apr 21 - 18 Apr 21
Year 2022 : 11 Apr 22 - 18 Apr 22



Highway Police Division

The Highway Police Division was established in 1960 and has been standing together with people and supporting the people for more than 61 years. They have continuously developed their departments to service people.

The Highway Police Division aims to facilitate, service people, and manage traffic on highways and motorways, as well as monitor usage of highways and motorways in accordance with the law and regulations. They also make certain that people drive safely to their destinations.

Furthermore, the Highway Police Division is responsible for preventing and suppressing criminal activity, as well as arresting anyone who causes damage to the Department of Highways and its properties, also offenders under various acts using highways as a route. This is to protect and save life and properties of the people and public interest of the nation.

What is more, the Division is a leader in volunteer public sector networks. The networks were established to encourage, cultivate, and raise awareness of doing good deeds for the country and people through various methods and categories such as development volunteers, disaster volunteers, and ad hoc volunteers. The network worked together with the public and private sectors to operate volunteer activities to facilitate the people traveling to their hometowns during long holidays.

Highway Police Volunteers

Development Volunteers





Ad Hoc Volunteers





Disaster Volunteers helping people after water decreasing





Volunteerism integrated with the public and private sectors during the long holiday season






Traffic Facilitation and accident prevention on highways

The Highway Police Division focused on encouraging people to accept responsibility for driving safely and to be aware of the causes of road accidents. One of the causes of accidents is careless motorcycle riding, as is failing to check that the car is in perfect condition before use; as a result, there is a project to provide "free tail light replacement for life safety" to save lives.







The Highway Police Division has provided free rooms to accommodate people traveling around Thailand. Driving for a long time could make people exhausted and sleepy, which is the top cause of an accident from drowsy driving. People may take a break and relax in the provided rooms before driving again, or they probably stay overnight. Rooms, food and beverages, snacks, toilets and alcohol gel were prepared for free at 201 Public Service Units around Thailand. In addition, the people are able to study the Sufficiency Economy Project at the Public Service Unit – growing vegetables, raising chickens, raising fish or gain suggestion from the police, and take vegetable, agricultural products home. For more information or room reservation please visit www.booking.hwpdth.com



The Highway Police Division has a policy of continuously developing personnel and working in their duties to support the performance of duties under their responsibilities for maximum efficiency. They arranged a training project to strengthen the public sector network to prevent accident on highways. Under the network, people could interact, assist, and support the Highway Police in carrying out their duties effectively. Moreover, according to the network, traffic management and public service on highway usage was becoming increasingly efficient. The people who were the traffic volunteers could use their knowledge to educate others to be more understanding in Highway Police's duty, reduce mistrust, and be appreciative of the Highway Police. It is also intended that all volunteers have adapted their attitudes so that they are pleased to find cooperation and interact with members of the public and local government. If performance of traffic volunteers reached aforementioned ideology and vision, it would result in actual success and high efficiency in public service.









To form safety culture on highway by cultivating safety driving, following traffic laws as well as understanding and considering the fellow passengers on the road, it is imperative to establish traffic discipline, which should begin in children and young people according to the identity of Thai society. Consequently, the Highway Police Division who focused on children and young people has established the "Knowledge Center of Highway Police Volunteer" which was located in Pak Chong, Nakhon Ratchasima.





Effective Management System

The Highway Police Division is an agency responsible for maintaining peace, crime prevention, and suppression. They carry out duties in accordance with the Criminal Procedure Code, as well as other laws related to criminal offenses on highways and motorways, and other relevant charges in the country. Therefore, the Highway Police Division has established the Traffic Control Center to strengthen crime prevention and suppression on highways, complying with the vision of the Royal Thai Police – "a modern law enforcement organization that meets international standards in which the public can have confidence." The Traffic Control Center aims to manage traffic and resolve traffic problems promptly by connecting to CCTV covering the country, operating Call Center 1193 to notify incidents, and establishing the Suspect Vehicle Command Center: SVCC of the Highway Police Division. The suspect vehicle notification system with License Plate Recognition and Alarm has been applied and installed on highways throughout the country, which will notify the proven suspect vehicle via application line. As a result, the agencies under the jurisdiction of the Highway Police Division could cooperate with others to perform duty quickly and effectively, leading to an increase in public faith and confidence in the police.













Crime Prevention and Suppression

Various offenders under the Acts using highways have been arrested on a continuous basis, such as drug smuggling, illegal labor smuggling, fossil smuggling, agricultural product smuggling, arrest of oversized trucks and guns, and offenders using highways to flee.

Result of the arrest of 10 main charges

Result of the arrest under Highways Act and Land Traffic Act (10 main charges)
Of Highway Police Division in fiscal year 2022 (October 2021 – September 2022)

Month/Year	Over speed	Overtake a car in critical situation	Drunk driving	Driving without helmet	Not fastened seat belts while driving	Driving without a License	Lack of proper vehicle's equipment	Breaking a red light	Driving on the wrong side of the road	Using a mobile phone while driving	Total
Oct 2021	375,368	854	15	458	463	960	567	67,685	259	220	**446,849**
Nov 2021	382,166	11,979	25	375	429	1,192	629	66,810	449	205	**464,259**
Dec 2021	374,886	362	160	697	494	1,026	902	69,482	377	253	**448,639**
Jan 2022	507,861	449	159	719	597	1,130	841	71,251	336	230	**583,573**
Feb 2022	492,085	358	18	456	415	875	1,848	68,342	304	171	**564,872**
Mar 2022	551,514	400	4	390	374	1,074	1,950	75,659	313	173	**631,851**
Apr 2022	530,494	388	527	858	591	1,395	2,278	72,706	366	202	**609,805**
May 2022	537,227	260	62	357	360	2,746	3,037	76,681	255	130	**621,115**
Jun 2022	541,340	326	26	324	553	2,624	2,030	64,153	250	150	**611,776**
Jul 2022	512,405	307	32	296	352	2,748	2,970	77,937	325	156	**597,528**
Aug 2022	750,071	1,477	21	263	393	2,539	2,875	91,456	247	157	**849,499**
Sep 2022	446,902	431	11	341	377	1,547	3,216	81,688	222	159	**534,894**
Total	**6,002,319**	**17,591**	**1,060**	**5,534**	**5,398**	**19,856**	**23,143**	**883,850**	**3,703**	**2,206**	**6,964,660**



Public Service Point for People

Nowadays, there are 41 stations, and 205 public service units located all over the country as rest areas for people. Restrooms, bathrooms, bedrooms, tyre filling stations and 24-hour police are available in the rest areas.

Contact details

QR Code Website

QR Code Facebook



Legals Affairs

The Department of Highways is the organization which responsible for Highway network all over the country. Likewise, the main mission is defined as network development, supervision, highway maintenance and safety, including providing public services to meet people's need in terms of economic, social and safety. However, at present, the volume and tendency of activities in the highway area are constantly increasing every year for instance, building construction, construction or installation of any other things, erecting poles, laying cables or laying pipes in the highway area. This is the result of accelerating social and economic development to enhance international competition or to improve people's standard of living and quality of life as one of the objectives.

All constructions or installation for any activities in the highway area mentioned above should be examined because the area in the highway area should be reserved mainly for road work. On the other hand, the refusal of activities used in the highway area may affect constructions or activities such as erecting poles or laying pipes along road boundaries, which is relevance of an economically reasonable approach, urban planning development, or even social development. Department of Highways as the organization which is responsible for the highway network all over the country, it is necessary to give permission carefully and examine the activities in the highway area to maintain orderline and get efficient utility of highway.

According to the Highways Act, A.D. 1992, amended by the Highways Act (No. 2), A.D. 2006, Section 47, No one shall be allowed to construct buildings or any other things within the highway area or encroach on a highway area, unless permitted in writing by the highway director or entrusted person. In granting such permission, the highway director or the entrusted person may impose any conditions and shall have the power to prescribe measures for environmental conservation, prevention of accidents and traffic congestion.

Section 48 prescribes that any person who needs to erect a post, place a cable, lay a pipe or do any act within a highway area must first be permitted in writing by the highway director or the entrusted person.

In granting permission pursuant to section 47 and section 48 said, the Highway Act also prescribes that the person who is permitted must pay fee for utilization of the highway area at the rates prescribed in the Ministerial Regulation.

Therefore, in accordance with the provisions of the Highway Act, it is necessary to define expenses for utilization of the highway areas in accordance with activities as follows:

1. For the public interest, which is intended to provide public services to the public in general. People can take advantage of or use the service without being charged for service fees. The highway area utilization fee shall be paid at the rate of 500 baht per each permission.

2. For basic public service activities which is used to provide basic public services which people can take advantage of or can use the service and be billed for the service fee as follows:

(a) Activities of the Provincial Electricity Authority, Metropolitan Electricity Authority or government agencies that provide public services that are beneficial to the Highway area. The fee shall be paid at the rate of 500 baht per each permission.

(b) activities of the licensee to use the highway area other than (a), the annual fee for the use of the highway area shall be paid moiety according to the rates prescribed in the Ministerial Regulation

3. For activities aiming for business benefits which used for profit or contributing to the business section of those who are permitted to use the highway area. Those people must pay annual fee for utilization of the highway area at the rates prescribed in the Ministerial Regulation.





Public Relations and Dissemination

The Public Relations Section plays an important role in supporting and promoting the effectiveness of the Department of Highways (DOH) operations. Public Relations links DOH to the public by broadcasting the information of DOH, establishing good relationship among DOH sectors and the public, and promoting public cooperation via mass media.

In 2022, The Public Relations Section has publicized and disseminated the activities of the DOH as follows.

1. Television broadcasting

DOH has disseminated its activities through television broadcasting as "Thailand Morning Live Program" and 2 minutes documentary as "Khon Plean Lok" on Royal Thai Army Radio and Television Channel 5.



2. Publications

DOH has continually disseminated its activities through daily and weekly newspapers, magazines, pamphlets, "Tang Luang Sam Pan" journals and the DOH annual report.

3. Online Media

DOH has generated its actions through assorted online media which extend to all targets such as DOH Website, Facebook, Twitter and G-NEWS Application.

4. Interview

In 2022, DOH's senior administrators have been interviewed by many media channels such as television and radio broadcasting and publication about the important works progress and clarified all facts according to the government's policy through IA-IRChat and Fake News.





5. Multimedia and Exhibitions

DOH has recorded, collected and distributed multimedia (photos and VDO) including produced publications, graphic works and public relations media related to the work of DOH through various kinds of channels such as billboard, exhibitions, and picture galleries. Also the DOH photo contest on "361 Angles through the lenses" has been set up to promote the positive image for the Department of Highways.

6. Special Occasion Activities

The DOH has participated in many activities of other organizations as the anniversary to create mutual understanding.





Application Development for Public Service

Government 4.0 System to PMQA 4.0



The development towards government 4.0 system in connection with Public Sector Management Quality Award 4.0 (PMQA 4.0) has requirements that developed on the concept of integrated management that aims for excellence. It emphasizes a government system that is open, interconnected, and takes the people as the center (Citizen Centric). Moreover, the government should be a competent and modern organization. Giving importance to service recipients and stakeholders, government agencies must understand the changing demands of the people (Demand Driven) that change rapidly in a variety of areas. According to the era and local environment, some services must be thought out in advance (Proactive). It may be a joint idea between the people and the government to solve problems, as well as creating service innovations together (Service Innovation).

Service Innovation

The Working Group drives the development of applications for public services lead by Mr. Chatchai Chuangching, Chief Engineer for Maintenance and the members of Working Group consists of representatives from agencies related to service information, both in the central and provincial sector. They jointly set guidelines for application development to provide information services to the public. The Information Technology Center is responsible for designing and developing an application called "Trips on Thai Highways". The application is intended for public highway users to search for service points of the Department of Highways. It provides details of various service information of the Department of Highways, such as the location of the agency, camping ground, check-in point, roadside accommodation, rest area, and weigh station. In addition, the application is creating a network of two sided along the road to introduce two places along the highway, such as tourist attractions, temple/ dharma retreat, garage/ tire repair shop, etc. The application will show information of various interesting service points along with directions to the destination including contact center for emergency of agencies across the country through Trips on Thai Highways.

What services are available in Trips on Thai Highways

Trips on Thai Highways is available via tablet devices. It was designed to be easy to use, meet the needs of service users in finding service points and various information details that the Department of Highways provides.

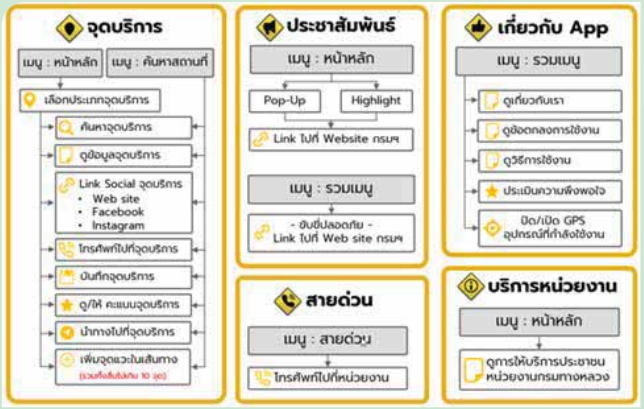


Figure 1 shows the functionality of Trips on Thai Highways application.



Figure 2 shows an example of the usage screen of Trips on Thai Highways application.

"Information" is the highlight of the services provided on this application. These data were created, collected, and managed through teams from all agencies across the country under the Department of Highways. All data must meet the basic requirements, for instance, the information should be accurate, the information is up-to-date and matched with users' needs, the information is responsive to users, the information can be interpreted in a timely manner, the information is complete and consistent. Furthermore, there will be a reliable process to verify the information imported into the system. If mistakes are found, they must be corrected. Importantly, the processing of data into information and maintenance of the information for continuous use should be considered too.



Figure 3 illustrates the data management workflow.

Classification of service points for providing services on Trips on Thai Highways application can be divided into four types, namely, agency service points of highway service, recommendation points of both sides of the highways, and festival activities.



Figure 4 shows the types of data available on the Trips on Thai Highways application.

Download Channels and How to Use

The application can be downloaded from the App Store and Google Play Store, along with an introduction video for the Trips on Thai Highways application.



And to create integration in presenting and providing services on behalf of the Department of Highways, products, the Information Technology Center has been working with the Department of Highways Club in bringing the Trips on Thai Highways application to present in the Thailand Highway Map 2023 by introducing service points and locations in each province via QR Code linked to the Trips on Thai Highways application.



Figure 5 shows the Trips on Thai Highways application linked on the Thailand Highway Map 2023.

Summary

Development of public services application by the Department of Highways is an operation that is in line with the development of Public Sector Management Quality Award (PMQA). It is an important part in the development of the organization to become a government 4.0 by focusing on providing modern information and information services for public service. In addition, it is the integration of information from all sectors in the Department of Highways. As a result, a service innovation was born through an application called "Trips on Thai Highways". We aimed to serve highway users in searching for service points of the Department of Highways with details of various service information and correctly navigate to the destination. Emergency contacts through the phone numbers of agencies across the country are also available. "Trips on Thai Highways" is one of the commitments in providing services to create comfortable, convenience, and safety in using highways according to the slogan "Tourist Route, Dharma Path, Business Route, no matter where you go, Trips on Thai Highways, ready to serve."

Pictures Compilation
of the 110-year Foundation Day of the Department of Highways













พิธีมอบรางวัลและเกียรติบัตรประกาศเกียรติคุณ
ข้าราชการพลเรือนดีเด่น และผู้มีผลงานดีเด่นด้านการฝึกอบรมของกรมทางหลวง ประจำปีพ.ศ. ๒๕๖๔















Pictures Compilation
of public services and facilitation in the festive periods





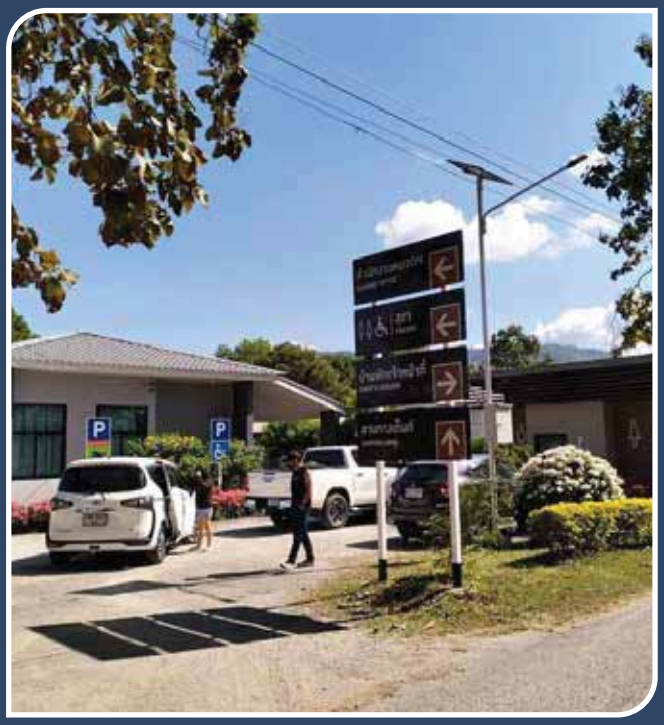







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Pictures Compilation
of Noru Typhoon's Victims Rescued

























กรมทางหลวง





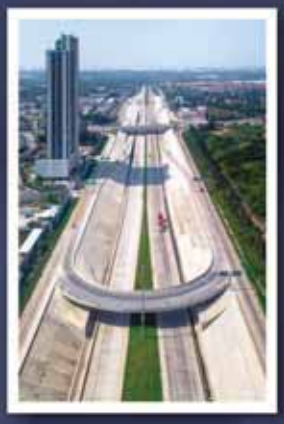


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