



MINISTRY OF WORKS

# HIGH-LEVEL 15TH REGIONAL ENVIRONMENTALLY SUSTAINABLE TRANSPORT FORUM IN ASIA

## HIGH-LEVEL PLENARY SESSION 3:

## SPECIAL SESSION ON QUALITY ROAD INFRASTRUCTURE FOR SUSTAINABLE TRANSPORT

24 October 2023  
Hilton Kuala Lumpur

**Datuk Seri Hj. Hasnol Zam Zam bin Hj. Ahmad**

Secretary General

Ministry of Works Government of Malaysia

# OVERVIEW OF ROAD INFRASTRUCTURE IN MALAYSIA

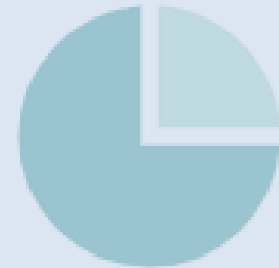
## TYPES OF ROADS



- Toll Expressway
- Main Federal Roads
- State Road
- Urban Road
- Rural Road
- Federal Land Development Authority (FELDA) Road, Regional Development Board and Industrial Area
- Agricultural Street

18,023 km Federal Road Length

14,885 km in Peninsular Malaysia and  
3,138 km in East Malaysia.



21

Top 21st in the world based on the road quality rankings issued by The Global Economy

# POLICY AND PLANNING ON ROAD INFRASTRUCTURE

## HIGHWAY NETWORK DEVELOPMENT PLAN (HNDP)

Highway Network Development Plan (HNDP) is a national master plan of road infrastructure developed by the Ministry of Works. HNDP aims to develop the national highway network that complements the national economic development plan that consider several factors, including the volume of traffic, land use, socio-economics, economic and environment factor.

### HNDP 2030: Duration from year 2020 to 2030

- Part 1: Peninsular Malaysia
- Part 2: Klang Valley & Its Conurbation

### ➤ HNDP 2010: Duration from year 2010 to 2025

- Sabah, Sarawak and Wilayah Persekutuan Labuan
- The MOW is now conducting a study on the Highway Network Development Plan 2040 (HNDP 2040) to replace HNDP 2010 planning which will expire at the end of 2025



# NATIONAL CONSTRUCTION POLICY 2030 (NCP 2030)

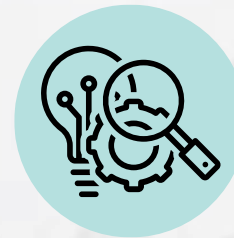


The National Construction Policy 2030 (NCP 2030) is developed by the Ministry of Works (MOW) which aims among others, to **promote sustainable infrastructure development** that harmonises economic growth, social inclusion and environmental protection.

## 4 CORE STRATEGIES:



Develop quality, reliable, sustainable and resilient infrastructure especially to address natural calamities.



Advocate research and development and leverage technological capabilities across sector.



Develop environmental-friendly design to conserve and preserve nature.



Promote environmental-friendly construction materials and strengthen the waste management system.

# NATIONAL CONSTRUCTION POLICY 2030 (NCP 2030)

1



QUALITY AND SAFETY  
IN PROJECT  
PERFORMANCE

2



EMBRACE  
SUSTAINABLE BUILT  
ENVIRONMENT

3



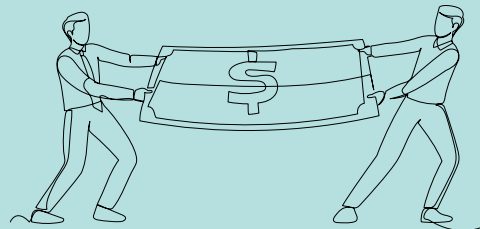
IMPROVE  
CONSTRUCTION  
PRODUCTIVITY

4



STRENGTHEN  
INFRASTRUCTURE  
MAINTENANCE

5



INTERNATIONAL AND  
COMPETITIVENESS

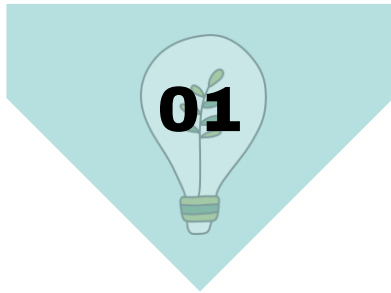
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STRENGTHEN GOOD  
GOVERNANCE AND  
ADOPTION OF BEST  
PRACTICES <sup>5</sup>

# CONSTRUCTION METHOD INCLUDING QUALITY AND SUSTAINABILITY ELEMENTS

- Use of integrated building information modelling (BIM) & geographical information system (GIS) to produce highway information modelling (HIM). Total of 119 (75.3%) from the 158 project in 12th Malaysian Plan, are proposed to be implemented using BIM
- BH girder is a longer girders compared to the conventional concrete beams
- Road infrastructure acceptance criteria



## Green And Sustainable Materials

- Renewable Energy Or Light Emitting Diode (LED) In Street Lighting ~ 48 projects
- Ultra-High Performance Concrete (UHPC) beam for longer bridge span ~ 6 projects
- Bamboo Geotextile Buoyant System (Geobamtile) ~ 3 Projects



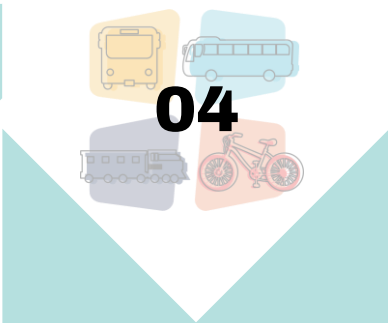
## Flora and Faunas Preservation

- Provision of wildlife crossing.
- Example of Project: Sungai Yu Eco-Viaduct in Central Spine Road (CSR) and Eco-Viaduct Aring in Jalan Simpang Pulai-Lojing-Gua Musang-Kuala Berang



## Sustainability / Green Rating Tools

- Green Rating / Penarafan Hijau JKR (pHJKR)/
- Malaysia Carbon Reduction and Environmental Sustainability Tool (MyCREST), Malaysia Sustainability Infrastructure Rating Tool (Sustainable INFRASTAR) and MyGHI



## Intelligent Transport System

- National Intelligent Transportation Management Centre (NITMC)
- Smart Traffic Light System
- Multi Lane Fast Flow (MLFF)
- Weigh In Motion (WIM)




The system is able to weigh a vehicle while in motion automatically and continuously. Therefore, it can provide accurate vehicle weight information to enforcement and efficient enforcement implementation.



1<sup>ST</sup> ECO-VIADUCT IN MALAYSIA MEMELIHARA EKO-SISTEM HIDUPAN LIAR

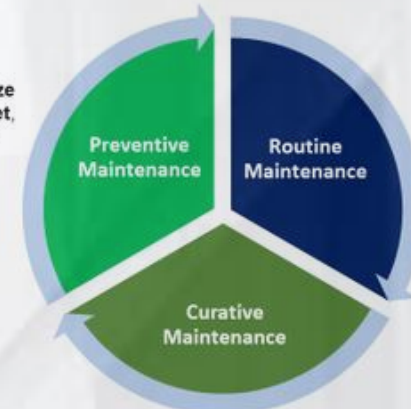


# ROAD INFRASTRUCTURE MANAGEMENT

- 
- Managed through Malaysian Highway Authorities for expressway
  - Appointment concession company using Performance Based Contract (PBC)
  - Benefits to small contractors (G1-G4)

## Highway Maintenance

Planned works to maximize the design life of the asset, facilities & accessories cost-effectively

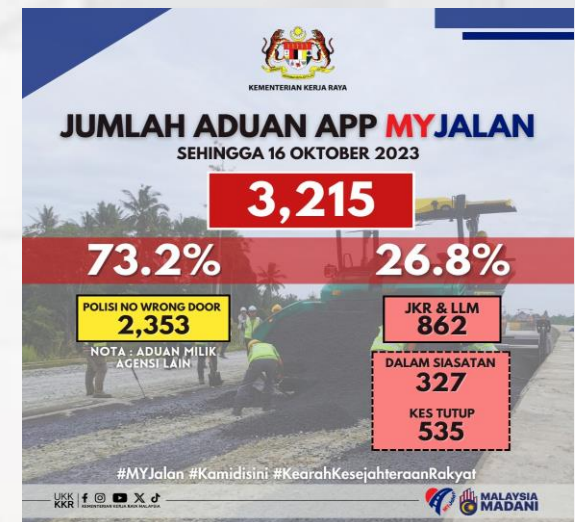


Repetitive or periodic nature of works to maintain functionality and aesthetics

Carried out to maintain safety, serviceability & structural integrity of the Expressways



- Easier for road users to make complaints related to road damage
- Aims to increase the level of safety and comfort of road users





**THANK YOU**