1. Functions and Structure of MPWT

The Ministry of Public Works and Transport has the following mission and functions:

- Manage the implementation of national policy concerning all public works construction by establishing the principles of law and cooperate with various organizations to develop the country.
- Build, maintain and manage all the transportation infrastructure such as roads, bridges, ports, railways, waterways and buildings.
- Establish the regulations for the development of the roads, ports, railways and waterways infrastructure.
- Furthermore, Please access to www.mpwt.gov.kh

Outline of Presentation

1. Function and Structure of MPWT
2. Policy and Strategy for Road Improvement
   - Policy
   - Strategy
3. Road Network Classification in Cambodia
   - Road Pavement Structure
   - Surface Types
   - Budget Allocation for maintenance 2006-2011
4. General Overview of Bridges in Cambodia
   - Bridge Structural Types
   - Number and Length of Bridges
   - Bridge Maintenance Activities

Participants
- Mr. NAY Chamnang
  Deputy Director
- Mr. CHAO S. Phibal
  Chief of Planning & Technical Office
2. Policy and Strategy for Road Improvement

- **Policy for Road & Bridge Improvement**

<table>
<thead>
<tr>
<th>Road Classification</th>
<th>Road Improvement Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Digit National Roads</td>
<td>To improve the road to be all weather condition by asphalt concrete (AC) pavement with sufficient capacity and standard for international corridor</td>
</tr>
<tr>
<td>2-Digit National Roads</td>
<td>To improve the road to be highway class function under all weather condition by AC or DBST surfacing</td>
</tr>
<tr>
<td>Provincial &amp; Rural Roads</td>
<td>To maintain the road function level to be trafficable in accordance with traffic demand by strengthening the road maintenance system</td>
</tr>
</tbody>
</table>

- **Bridge Improvement Target**

- 1. To replace all temporary bridges that remain in the completed road section to be permanent bridges.
- 2. To improve or replace all bridges with low standard to be permanent bridges.

2. **Policy and Strategy for Road Improvement, Cont**

- Road network and infrastructures are defined as arteries that transform the country into an integrated economy and are vitally critical for distributed economic growth.
- In order to achieve the above-mentioned purpose and policy the following six strategies are set forth:

  - **Strategy 1: Enhancement of Multi Growth Pole Development.**
  - **Strategy 2: National Integration.**
  - **Strategy 3: Development of International Corridors for Cambodia Regional Integration.**
  - **Strategy 4: Enhancement of Rural Socio-economic development.**
  - **Strategy 5: Strengthening of Economic Growth Corridor Development.**
  - **Strategy 6: Promotion of Tourism Development.**

- **Strategy 1: Enhancement of Multi Growth Pole Development**

  - **Objectives:**
  - To contribute multi-core national development in stead of that of sole initiative by Phnom Penh.

  - **Target:**
  - Expansion to 4-lane roads on 1-digit national roads connecting to Phnom Penh through construction of main roads and bypass construction at major growth poles.
**Strategy 2: Promotion of National Integration**

**Objectives:**
To contribute to a national integrity and administration with remote areas where road access is very limited.

**Target:**
Improvement into all-weather road so as to realize easy connection to Phnom Penh even in the rainy season.

**Strategy 3: Development of International Corridors**

**Objectives:**
To contribute to an expansion of trade and commodity flows to and from neighboring countries.

**Target:**
Functional strengthening of 1 digit and improvement of 2 digit roads designated as GMS (Asia) Highways.

**Strategy 4: Enhancement of Rural Economic Development**

**Objectives:**
To contribute to a promotion of rural industries, an expansion of investment, increase in employment opportunities and strengthening of national security.

**Target:**
Reinforcement of road access, especially by 2 and 3 digit roads to high potential agriculture, manufacturing and tourism areas.
**Strategy 5: Strengthening of Economic Growth Corridor Development**

**Objectives:**
To contribute industrial development and to alleviate traffic congestion and conflict.

**Target:**
Expansion of 4-lane roads on Phnom Penh – Sihanoukville and construction of 2nd Mekong bridge in Phnom Penh – Bavet corridor.

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**Strategy 6: Promotion of Tourism Development**

**Objectives:**
To contribute tourism development which has many potentials to attract tourists from the world.

**Target:**
Improvement of roads in tourism areas in order to provide comfort and convenient environments to tourists and to create more employment opportunities.
3. Road Network Classification and Shares

**National (Primary) Roads, 1 Digit**
- NR: 2,114.94 Km
- Provin: 3,484.82 Km
- RRs: 6,607.44 Km
- Total: 12,207.2 Km

**National (Secondary) Roads, 2 Digit**
- NR: 3,484.82 Km
- Provin: 5,816.01 Km
- Earth: 1,398.86 Km
- Total: 10,620.7 Km

**Provincial (Tertiary) Roads, 3 & 4 Digit**
- NR: 6,607.44 Km
- Provin: 5,816.01 Km
- Total: 12,423.45 Km

**Rural Road**
- NR: 38,527.0 Km
- Total: 50,734.0 Km

**Road Network Classification and Shares**

<table>
<thead>
<tr>
<th>Road Classification</th>
<th>Length, Km</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR, 1 digit (MPWT)</td>
<td>2,114.94</td>
</tr>
<tr>
<td>NR, 2 digit (MPWT)</td>
<td>3,484.82</td>
</tr>
<tr>
<td>PR, 3 &amp; 4 digit (MPWT)</td>
<td>6,607.44</td>
</tr>
<tr>
<td>Total</td>
<td>12,207.2</td>
</tr>
<tr>
<td>RR (MRD)</td>
<td>38,527.0</td>
</tr>
<tr>
<td>Grand Total</td>
<td>50,734.0</td>
</tr>
</tbody>
</table>

**Road Pavement Type and Length**

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>Length, Km</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCC</td>
<td>23.02</td>
</tr>
<tr>
<td>AC</td>
<td>926.21</td>
</tr>
<tr>
<td>DBST</td>
<td>4,043.10</td>
</tr>
<tr>
<td>Laterite</td>
<td>5,816.01</td>
</tr>
<tr>
<td>Earth Road</td>
<td>1,398.86</td>
</tr>
<tr>
<td>Total</td>
<td>12,207.2</td>
</tr>
</tbody>
</table>

**Source:** RID_MPWT & MRD, 2011

**International Highway Through Cambodia**
- AH1 (Asian/ASEAN Highway) / R1 (Central Sub corridor), blue line
- AH11 (Asian/ASEAN Highway) / R6 (Central Inter-corridor Link), violet line
- R9 (Northern Sub corridor), green line
- R34 (Asian/ASEAN Highway) / R10 (Coastal Sub corridor), dark blue line
- R34 (Asian/ASEAN Highway) / R5 (Coastal Sub corridor), dark blue line

<table>
<thead>
<tr>
<th>Route</th>
<th>GMS Rd. No</th>
<th>ASIAN Rd. No</th>
<th>Cambodia Rd. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phnom Penh - Siem Reap - Battambang</td>
<td>11</td>
<td>AH1</td>
<td>R1</td>
</tr>
<tr>
<td>Sihanoukville - Phnom Penh - Kampot - Sihanoukville</td>
<td>12</td>
<td>AH11</td>
<td>NR6, NR7</td>
</tr>
<tr>
<td>Chau Doc - Dinh Yen - Vinh Long</td>
<td>20</td>
<td>-</td>
<td>ND12, ND13</td>
</tr>
<tr>
<td>Roi Et - Phom Phamit - Nong Khai - Muang Thong Khon</td>
<td>9</td>
<td>-</td>
<td>ND16, ND7</td>
</tr>
</tbody>
</table>
### 4. General Overview of Bridges in Cambodia

#### Bridge Structural Types

- Stone bridge (historical bridge)
- Concrete arch bridge
- Wooden bridge
- Steel bridge (Truss, Bailey)
- RC Bridge (Girder, Slab)
- PC Bridge (Plank, I Beam and Box Girder)
- Composite Bridge (Steel Beam and RC Deck)

### Budget Allocation for Road Maintenance 2006-2011

<table>
<thead>
<tr>
<th>Budget Category</th>
<th>Unit</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM (61) USD</td>
<td></td>
<td>2,000,000</td>
<td>3,750,727</td>
<td>8,068,728</td>
<td>17,532,955</td>
<td>17,922,453</td>
<td>14,897,691</td>
<td>66,438,752</td>
</tr>
<tr>
<td>PM (61) USD</td>
<td>-</td>
<td>12,195,122</td>
<td>14,285,714</td>
<td>13,285,714</td>
<td>15,000,000</td>
<td>26,585,366</td>
<td>81,351,916</td>
<td>-</td>
</tr>
<tr>
<td>NEW CONSTRUCT</td>
<td>USD</td>
<td>-</td>
<td>5,000,829</td>
<td>11,904,762</td>
<td>50,238,095</td>
<td>45,238,095</td>
<td>100,387,782</td>
<td>-</td>
</tr>
<tr>
<td>EROD WORKS (4.5)</td>
<td>USD</td>
<td>-</td>
<td>2,439,024</td>
<td>2,380,952</td>
<td>-</td>
<td>-</td>
<td>1,901,414</td>
<td>46,283,390</td>
</tr>
<tr>
<td>EMERGENCY (4.5)</td>
<td>USD</td>
<td>-</td>
<td>1,500,000</td>
<td>1,904,762</td>
<td>2,380,952</td>
<td>2,857,143</td>
<td>3,658,537</td>
<td>12,386,760</td>
</tr>
<tr>
<td>Total USD</td>
<td>-</td>
<td>2,000,000</td>
<td>18,576,277</td>
<td>38,285,714</td>
<td>75,945,543</td>
<td>52,855,573</td>
<td>105,055,543</td>
<td>369,468,639</td>
</tr>
</tbody>
</table>

Exchange Rate:

- USD: 4000R
- USD: 4100R
- USD: 4200R

Notes:

- RM: Routine Maintenance
- PM: Periodic Maintenance
- EN: Emergency

**W = 24 m**
- 4 lanes
- AC Pavement

**W = 13 m**
- 2 lanes
- AC Pavement

**W = 8.5 m**
- 2 lanes
- DBST or Laterite Pavement

**W = 8.0 m**
- 2 lanes
- DBST or Laterite Pavement

**W = 9.5 m**
- 2 lanes
- DBST Pavement

**W = 11 m**
- 2 lanes
- AC or DBST Pavement

**W = 13 m**
- 2 lanes
- AC Pavement

**W = 24 m**
- 4 lanes
- AC Pavement
### Number and Length of Bridges, 2011

<table>
<thead>
<tr>
<th>Province &amp; Municipality</th>
<th>Number of Bridge</th>
<th>Bridge Length, m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banteay Meanchey</td>
<td>69</td>
<td>1,531.50</td>
</tr>
<tr>
<td>Battambang</td>
<td>71</td>
<td>1,785.50</td>
</tr>
<tr>
<td>Kompong Speu</td>
<td>106</td>
<td>2,602.50</td>
</tr>
<tr>
<td>Kompong Thom</td>
<td>54</td>
<td>2,338.00</td>
</tr>
<tr>
<td>Kampot</td>
<td>162</td>
<td>1,552.20</td>
</tr>
<tr>
<td>Kandal</td>
<td>287</td>
<td>9,956.70</td>
</tr>
<tr>
<td>Kep</td>
<td>13</td>
<td>229.50</td>
</tr>
<tr>
<td>Koh Kong</td>
<td>50</td>
<td>6,390.02</td>
</tr>
<tr>
<td>Kom</td>
<td>68</td>
<td>1,257.00</td>
</tr>
<tr>
<td>Mondulkiri</td>
<td>29</td>
<td>496.00</td>
</tr>
<tr>
<td>Oddar Meanchey</td>
<td>87</td>
<td>2,197.70</td>
</tr>
<tr>
<td>Pailin</td>
<td>20</td>
<td>658.00</td>
</tr>
<tr>
<td>Phnom Penh</td>
<td>27</td>
<td>5,429.17</td>
</tr>
<tr>
<td>Preah Sihanoukville</td>
<td>38</td>
<td>1,089.50</td>
</tr>
<tr>
<td>Preah Vihear</td>
<td>119</td>
<td>3,279.00</td>
</tr>
<tr>
<td>Prey Veng</td>
<td>82</td>
<td>3,946.00</td>
</tr>
<tr>
<td>Pursat</td>
<td>254</td>
<td>4,671.00</td>
</tr>
<tr>
<td>Rattanakiri</td>
<td>43</td>
<td>658.00</td>
</tr>
<tr>
<td>Siem Reap</td>
<td>174</td>
<td>3,023.00</td>
</tr>
<tr>
<td>Stung Treng</td>
<td>23</td>
<td>1,794.60</td>
</tr>
<tr>
<td>Svay Rieng</td>
<td>36</td>
<td>1,056.80</td>
</tr>
<tr>
<td>Takeo</td>
<td>31</td>
<td>654.00</td>
</tr>
</tbody>
</table>
| Total Number: 2,029 locations, L=64,074.09 m

### Historical Bridge

**Concrete Arch Bridge Built before 1953**

**Wooden Bridges**

- Constructed in the era of the King Jayavarman VII (11 Century)
Proposed BOT Project

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport Road Infrastructure Department

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport General Directorate of Public Works

Ministry of Public Works and Transport General Directorate of Public Works

Bridge Maintenance Activities

- Bridge Routine Maintenance
  - Take care by Provincial Public Works Departments, located in all 24 Provinces and Municipality
  - Cleaning the accumulation of dirt and soil on bridge deck
  - Take out grass or small tree in surrounding area
  - Repair small cracking of secondary structure
  - Leveling road surface of approaching area
  - Survey and improve waterway condition at bridge location
  - Sealing of concrete deck or sub-structure elements
  - Repair of handrail or guard rail
  - Painting of traffic sign at bridge elements

Thank You Once Again for Your Patient and Kind Attention