Road Safety Status of Nepal 2013

Arjun Jung Thapa
DDG, Department of Roads
Planning and Design Branch
NEPAL in brief

- Situated between China and India
- Country where Buddha was born: “LUMBINI” is the holy place”
- A Himalayan country where 8 of 14 highest peaks on Earth lies (Altitude more than 8000m, including Mt. EVEREST)
- A mountainous country (only 17% of flat land)
- 147,181 sq km of area
- Population as per 2011 census: 26.62 millions
People used to carry vehicles to Kathmandu Valley till 1956.

Road length in 1950 was 376 km in Nepal.

Kathmandu in 1901.
Development of Highways in Nepal

The chart shows the development of highways in Nepal from 1985 to 2011/12. It illustrates the growth in feeder roads and highways over the years. The chart highlights the significant increase in the number of highways, indicating a major development in the transportation infrastructure of the country.
## Road Network of Nepal, 2013

<table>
<thead>
<tr>
<th>Type of Road</th>
<th>Blacktop</th>
<th>Gravel</th>
<th>Earthen</th>
<th>Total</th>
<th>Km/ 100 sq km</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRN</td>
<td>5574</td>
<td>1888</td>
<td>4173</td>
<td>11636</td>
<td>7.9</td>
</tr>
<tr>
<td>Local</td>
<td>1575</td>
<td>14601</td>
<td>34766</td>
<td>50943</td>
<td>34.61</td>
</tr>
<tr>
<td>Total</td>
<td>7149</td>
<td>16489</td>
<td>38939</td>
<td>62579</td>
<td>42.52</td>
</tr>
</tbody>
</table>

Network in %
- 11.4%
- 26.3%
- 62.3%
- 100%

Source: DoR and DoLI DAR, 2013
**Composition of Vehicles in Nepal**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bus/Mini bus/ Micro</th>
<th>Car /jeep/ Van/ Pickup</th>
<th>Crane/ Dozer/ Truck</th>
<th>Tractor</th>
<th>Tempo</th>
<th>Motorbike</th>
<th>others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 2000</td>
<td>14,507</td>
<td>54,963</td>
<td>21,309</td>
<td>21,072</td>
<td>6,702</td>
<td>150,185</td>
<td>3,715</td>
<td>272,453</td>
</tr>
<tr>
<td>2000/01</td>
<td>1,453</td>
<td>5,152</td>
<td>1,271</td>
<td>3,519</td>
<td>232</td>
<td>29,291</td>
<td>77</td>
<td>313,448</td>
</tr>
<tr>
<td>2001/02</td>
<td>1,163</td>
<td>4,374</td>
<td>1,798</td>
<td>3,189</td>
<td>248</td>
<td>38,522</td>
<td>86</td>
<td>362,828</td>
</tr>
<tr>
<td>2002/03</td>
<td>962</td>
<td>3,487</td>
<td>1,212</td>
<td>2,485</td>
<td>17</td>
<td>29,404</td>
<td>43</td>
<td>400,438</td>
</tr>
<tr>
<td>2003/04</td>
<td>1,853</td>
<td>7,557</td>
<td>1,477</td>
<td>2,191</td>
<td>16</td>
<td>26,547</td>
<td>58</td>
<td>440,137</td>
</tr>
<tr>
<td>2004/05</td>
<td>1,622</td>
<td>4,781</td>
<td>1,592</td>
<td>1,374</td>
<td>48</td>
<td>31,093</td>
<td>21</td>
<td>480,668</td>
</tr>
<tr>
<td>2005/06</td>
<td>2,257</td>
<td>5,150</td>
<td>2,263</td>
<td>635</td>
<td>60</td>
<td>45,410</td>
<td>0</td>
<td>536,443</td>
</tr>
<tr>
<td>2006/07</td>
<td>2,508</td>
<td>5,892</td>
<td>3,278</td>
<td>2,942</td>
<td>12</td>
<td>72,568</td>
<td>1,536</td>
<td>625,179</td>
</tr>
<tr>
<td>2007/08</td>
<td>2,629</td>
<td>6,329</td>
<td>3,594</td>
<td>3,297</td>
<td>18</td>
<td>69,666</td>
<td>205</td>
<td>710,917</td>
</tr>
<tr>
<td>2008/09</td>
<td>2,564</td>
<td>8,144</td>
<td>3,643</td>
<td>4,663</td>
<td>20</td>
<td>83,334</td>
<td>202</td>
<td>813,487</td>
</tr>
<tr>
<td>2009/10</td>
<td>2,810</td>
<td>14,243</td>
<td>4,524</td>
<td>11,460</td>
<td>9</td>
<td>168,707</td>
<td>31</td>
<td>1,015,271</td>
</tr>
<tr>
<td>2010/11</td>
<td>3,095</td>
<td>8,510</td>
<td>1,969</td>
<td>7,937</td>
<td>2</td>
<td>138,907</td>
<td>133</td>
<td>1,175,824</td>
</tr>
<tr>
<td>2011/12</td>
<td>3,410</td>
<td>8,711</td>
<td>1,333</td>
<td>8,413</td>
<td>10</td>
<td>145,135</td>
<td>91</td>
<td>1,342,927</td>
</tr>
<tr>
<td>2012/13</td>
<td>4,749</td>
<td>9,595</td>
<td>3,332</td>
<td>9,795</td>
<td>57</td>
<td>175,381</td>
<td>152</td>
<td>1,545,988</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45,582</strong></td>
<td><strong>146,888</strong></td>
<td><strong>52,595</strong></td>
<td><strong>82,972</strong></td>
<td><strong>7,451</strong></td>
<td><strong>1,204,150</strong></td>
<td><strong>6,350</strong></td>
<td><strong>1,545,988</strong></td>
</tr>
</tbody>
</table>

Source: Department of Transport Management, MoPIT
Causes of Road Accident in Nepal

- Negligence by driver: 44%
- High Speed: 19%
- Overtaking: 10%
- Pedestrian: 10%
- Overload: 6%
- Technical fault of vehicle: 6%
- Drinking and driving: 6%
- Cattle: 0.4%
- Miscellaneous: 0.4%
Figure 3: Road Accidents in Nepal
National statistical trends in road accident (2001-2013)

<table>
<thead>
<tr>
<th>Year</th>
<th>Accidents</th>
<th>Fatalities</th>
<th>Serious Injuries</th>
<th>Slight Injuries</th>
<th>Injury/fatal ratio</th>
<th>Fatality per 10000 vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>3,823</td>
<td>879</td>
<td>458</td>
<td>4,138</td>
<td>5.23</td>
<td>24.2</td>
</tr>
<tr>
<td>2002-03</td>
<td>3,864</td>
<td>682</td>
<td>785</td>
<td>4,442</td>
<td>7.66</td>
<td>17.0</td>
</tr>
<tr>
<td>2003-04</td>
<td>5,430</td>
<td>802</td>
<td>1,659</td>
<td>3,925</td>
<td>6.96</td>
<td>18.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>5,532</td>
<td>808</td>
<td>1,795</td>
<td>4,039</td>
<td>7.22</td>
<td>16.8</td>
</tr>
<tr>
<td>2005-06</td>
<td>3,894</td>
<td>825</td>
<td>1,866</td>
<td>3,655</td>
<td>6.69</td>
<td>15.4</td>
</tr>
<tr>
<td>2006-07</td>
<td>4,546</td>
<td>953</td>
<td>2,583</td>
<td>5,331</td>
<td>8.30</td>
<td>15.2</td>
</tr>
<tr>
<td>2007-08</td>
<td>6,821</td>
<td>1131</td>
<td>2,663</td>
<td>5,245</td>
<td>6.99</td>
<td>15.9</td>
</tr>
<tr>
<td>2008-09</td>
<td>8353</td>
<td>1356</td>
<td>3609</td>
<td>6457</td>
<td>7.42</td>
<td>16.7</td>
</tr>
<tr>
<td>2009-10</td>
<td>11747</td>
<td>1734</td>
<td>4130</td>
<td>7383</td>
<td>6.64</td>
<td>17.1</td>
</tr>
<tr>
<td>2010-11</td>
<td>14013</td>
<td>1689</td>
<td>4,018</td>
<td>8,503</td>
<td>7.41</td>
<td>14.4</td>
</tr>
<tr>
<td>2011-12</td>
<td>14,297</td>
<td>1837</td>
<td>4,018</td>
<td>7,811</td>
<td>6.44</td>
<td>13.7</td>
</tr>
<tr>
<td>2012-13</td>
<td>13,582</td>
<td>1816</td>
<td>3,986</td>
<td>8,000</td>
<td>6.60</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Source: Nepal police, Traffic Directorate
In Line with UN Global Plan for the Decade of Action for road-safety 2011 to 2020

- Reduce deaths from traffic accident by 35% up to 2015
- Reduce deaths from traffic accidents by 50% up to 2020
Pillar 1: Road Safety Management

Objectives:
Set up a mechanism to improve capacity to manage road-safety through adoption of UN legal instruments, creation of regional road-safety instruments, Improvement of horizontal coordination amongst stakeholders, Development of sustainable road-safety strategies and accident reduction targets and improvement of accident data collection and research.

Activities
- Establish the National Road Safety Council with sweeping authority.
- Train stakeholders
- Amend the Vehicle & Transport Management Act 1993 (VTMA 1993), Local Self Governance Act 1999 (LSGA 1999) and develop various guidelines.
- Develop a national road-safety strategy and implementation modality.
- Reliably, scientifically compile, analyze the RTA statistics and research on counter measures.
- Increase expenditure for traffic safety.
Pillar 2: 
Safer Roads and mobility

Objectives:
To improve the inherent safety of the road networks for all road-users, especially the most vulnerable groups (e.g. pedestrians, bicyclists and motor-cyclists). This will be achieved through Adoption of UN and international standards for the design of safe roads, road safety audits and assessment and incorporating safe design practice during design, construction and operation of roads.

Activities
- Develop road-safety audit manual for non-strategic roads and gradually enforce safety audits in all roads (strategic and non-strategic).
- Introduce compliance policy for safety audits recommendations (strategic and non-strategic roads).
- Develop design guideline for safer roads and construct required infrastructures.
- Investigate accident black spots for all road types and construct appropriate countermeasures.
- Enforce work-zone safety from construction to defect-liability period in all road project contracts.
- Establish road-safety units in DoLIDAR and valley municipalities.
- Train stakeholders on safe roads and safety-audits.
Siddababa Rockfall

96 died in last 10 years
Engineering Measures

Rock Shed / Sliding Structure
Objective:
To promote the universal adoption of both the active and passive technologies that are available for safe vehicles through the harmonization with the global standards, publicity and incentives for the consumers in their adoption.

Activities:
- Develop and implement a safe-vehicle guideline through a task force including the following:
  - Develop and introduce standards for safe vehicles, spares.
  - Amend VTMA 1993, VTMR 1997 and develop national transport policy to reinforce safer vehicles.
- Review route-permit procedure.
- DoTM institutional development.
- Financial incentives to promote in-vehicle safety devices.
- Improve vehicle inspection procedure.
- Research major public vehicle accidents, school bus safety and initiate mitigation.
- Basic repair and maintenance training for public vehicles.
Pillar 4: Safer Road users

Objectives:

is to develop comprehensive programs to improve road-user behavior through sustained and stronger enforcement of traffic rules, sustained road-safety awareness campaigns, increased efforts to improve the use of seat-belts and helmets, reduce drunk-driving and other risky behaviors, introduce better speed control and heavy penalty to undisciplined road-users including pedestrians.

Activities

- Amend VTMA 1993, VTMR 1997 to invigorate safe road-users
- Strictly enforce the rules on the seat-belts, helmets use, and public transport safety and develop comprehensive code-of-conduct for all road-users
- Public awareness campaign and research for all road-users
- Include road-safety education in school curriculum with regular revisions
- Train drivers and other road-user.
- Improve driving license procedure scientifically
- Establish road-safety units in the Department of Transport Management and institutional development of the traffic police
- Construct modern driving training centers and capacity enhancement
Pillar 5:

Post Crash Response

Objectives:

To improve the post-crashes response, improve capacity of the health-care systems to provide emergency treatments and long-term rehabilitation for crash victims

Activities

- Introduce toll-free telephone number for RTA emergencies.
- Develop ambulance policy for post-accident treatments and emergency treatment training
- Develop strategy and introduce revolving fund for RTA victims and disabled.
- Open Trauma Care Centers and train for RTA injured.
- Research and prioritize treatments for serious injuries from RTAs.
- Develop; introduce comprehensive injury surveillance system in hospitals, health centers.
- Establish road-safety unit in the Ministry of health and Population and institutionally enhance it.
- Develop ambulance network along the major highways, urban and rural roads
Progress

- Trauma Hospital in Kathmandu with the assistance of Government of India will be in operation immediately
- DoTM is planning to franchise vehicle inspection system to private party
- Traffic Police is tightening enforcement of prohibition of drinking and driving in cities all over country
- Department of Roads is planning to enforce threshold of 10.2 metric ton axle load threshold as stipulated in Management of Large Vehicle Policy 2007 involving DoTM, Transport Entrepreneurs Association and Traffic Police by next year
- Road Safety Status of 700 km of high risk corridors on major highways being identified and design the counter measures under the Technical Assistance of Asian Development Bank (ADB)
- DoR engineers, Consultants, Traffic Police and people from other concerned agencies will be trained for safety evaluation of roads under ADB Technical assistance
- Department of Roads is constructing footpaths and railing for Separation of pedestrians and vehicles in major roads of Kathmandu valley
- Department of Road is constructing Separate Bicycle track and service lane in major roads like Maitighar Tinkune
Progress……

- Private stakeholders are coming forward for installing of Street Lighting with inverter and beautification by plantation of ornamental trees and flowers in Durbar Marga.
- Disable friendly footpath are constructed in some of the improved roads in Kathmandu.
- New Traffic Signals are to be established in 16 major junction of Kathmandu valley under ADB assistance.
- National Road Safety Secretariat has been established.
- Discussion with different stakeholders and study of different aspects of vehicle and Traffic Management Act and Regulation has started.
- Budget allocation for traffic has been increased and distributed to DoTM, DoR and Traffic Police.
- Government has already started a new licensing system franchising physical facilities from the private parties all over the country: Transparent.
- Traffic Police has started checking compliances of speed limit using Radar gun in specific location having high rate of accident.
Challenges

- Lack of required autonomy and authority to effectively operate the National Road Safety Council
- Possibility of inadequate budget and manpower resources to the Council
- Inadequate budget provision for every training of all stakeholders
- Targeted individuals excluded in the trainings
- Omissions of the provisions required in the amended Acts
- Difficulties encountered in enforcing the amendments of Acts and Regulations
- Required provisions omitted in National Road Safety strategy and strategy lacking legal standing
- Lack of long-term horizontal coordination between agencies.
- Road-safety audit manual for non-strategic roads not formulated
- Safety audits not enforceable in all roads lacking legal mandate
- Compliance policy for safety audits recommendations may lack legal mandate
- Traffic Safety Audit recommendation not complied in absence of legal mandate
Challenges

- Lack of authority and difficulty enforcing work-zone safety
- Standards for safe vehicles, spares inadequately prepared, failure to enforce or
  Difficulty or deficiency in monitoring
- Difficulty or difficulty in amending act, regulation.
- Omission of required safety provisions in the amended act, regulation
- Omission of required safety issues in the national transport policy.
- Difficulty including in the school curriculum or inadequate preparation
- Weak coordination between hospitals, health-centers and agencies.
- Database system ineffective, unscientific
- Database inaccessible, non-transparent