

**INDIAN ROADS CONGRESS  
&  
ROADS IN INDIA**



**PRESENTATION**

**AT**

**JAPAN ROAD CONGRESS**

**30<sup>th</sup> October 2013**



- The Geographical location of India extends between  $8^{\circ} 4' N$  and  $37^{\circ} 6'$  North Latitude and  $68^{\circ} 7'$  and  $97^{\circ} 25'$  East Longitudes. Its total area is 3.1 million square Kilometres.
- India is the 7<sup>th</sup> largest country in the world.



- The land frontier of the country is 15,200 km and the total length of the coastline is 7,517 Kilometers.
- There are as many as 28 states & 7 Union Territories in India.



- Broadly the physical features of India can be divided into five physical units - The Great Mountains of the North, The North Indian Plain, The Peninsular Plateau, The Coastal Plains, and The Islands
- The population of India in year 1951 was 36.1 million which is now grown to 1.2 billion as on March 1<sup>st</sup> 2011. The population density 382 person per square meter.



- India is a multi-lingual country with diverse culture. More than 1500 languages are spoken in India. The literacy rate in the country is 74.04 per cent.
- India has a large road network of 4.69 million kilometer consisting of all categories of roads – Expressways, National Highways, State Highways, MDR & other District Roads & Village roads.
- In 1951, the total road network in India was just 0.399 million kilometer which has grown to 4.69 million kilometer in the last 62 years. The major growth in the road network has been witnessed in the last one decade during which more than 1.3 million kilometer of road has been added.
- The road density per square kilometer of land is 0.66 km which is highest in the world surpassing the USA road density of 0.65 km.
- The major quantum of traffic is cater to by National Highways which is about 2% of the total road network. However, it carries 40% of road traffic.
- The road sector contributes about 6.4% in India's gross domestic product (GDP)
- Even though India is having a vast network of Railways and also a developed system of coastal shipping, waterways & airways, the total share of roads sector in the freight traffic is 60% and in passenger traffic it is 85%.

- The Broad break up of road network by category wise is as follows:-

➤ National Highways	-	79, 116 km
➤ State Highways	-	163,898 km
➤ Urban Roads	-	411,084 km
➤ Rural Roads and Other Roads	-	4,043,670 km

- The pressure on Indian Roads can be ascertained from the fact that the population of a big State like Uttar Pradesh in India is almost equivalent to the population of Brazil. The population of Uttar Pradesh is 199.6 million whereas Brazil's population is 190.7 million.
- Similarly, the population of city of Jaipur is equivalent to the population of Hongkong. Both are about 7 million.
- The number of motorized vehicles in India in 1951 was just 306 thousand in numbers which have now grown to more than 156 million in numbers. The major growth in the vehicle population in India is since the year 1991. The growth rate has been 9.9% cumulative annual growth rate (CAGR) which means that every year on the larger base the registered vehicle is growing at this pace. This has been highest in the world. However, it also generates a higher intensity of pressure on the roads as well as on the road sector professionals.

# Road Programs in India

- World's Biggest road sector Programme is being witnessed in India under PMGSY. Under this Programme the connectivity is being provided to all habitations having more than 500 habitants in plain areas and in hill, desert and tribal areas the threshold number is 250 habitants. The magnitude of roads being developed under this program can be assessed from the fact that about 400 thousand kilometer of all weather roads have been developed during the year 2012-13.
- The other major Programmes under which the roads are being developed are:-
  - National Highways Development Programme (NHDP) which is covering all the National Highways and spread over 7 phases.
  - Improvement of road connectivity in left wing affected areas.
  - Special Isolated Road Development Programme (SARDP-NE) for North Eastern Region.
  - National Highways Inter Connectivity Improvement Programme (NHIIP) in association with World Bank.
  - In addition at States level a number of road sector programmes are being executed.

# INVESTMENT FOR DEVELOPMENT OF NHs

## ✓ Milestone Initiatives

- Dedicated road fund named Central Road Fund (CRF) revamped in 2000 by imposing cess on diesel and petrol.
- Domain of public sector thrown open to private sector





# Central Road Fund (CRF)

✓ Distribution of cess levied under CRF Act 2000.

(a) Distribution of Rs. 1.5 levied per liter of petrol and HSD.

- 50% of the cess on HSD for development of rural roads.
- 50% of cess on HSD and cess collected on petrol:
  - 57.5% for the development and maintenance of NHs.
  - 12.5% for safety works at unmanned railway crossing &
  - 30% on development and maintenance of State Roads

(a) Balance cess of Rs. 0.5 per litre both on HSD and petrol entirely allocated for development and maintenance of NHs.



# IMPLEMENTATION OF NH PROJECTS THROUGH PUBLIC-PRIVATE PARTNERSHIP (PPP) BASIS)

- ✓ Common forms of PPP for development of NHs are:
  - Build, Operate and Transfer (Toll) model
  - Build, Operate and Transfer (Annuity) model.
  - Design, Build, Finance and Operate (DBFO) model

*The Government has put in place appropriate policy, institutional and regulatory mechanisms including a set of fiscal and financial incentives to encourage Private Sector Participation in road sector.*



# PROPOSED FUNDING FOR CENTRAL ROAD SECTOR

## ✓ Estimated investments for development of roads

- For 20 years plan upto 2012 : INR 21800 billion (US\$350 billion)
- For 12<sup>th</sup> five year plan (2012-17) : INR 4000 billion (US \$70 billion)

## ✓ Source of funds include:

- Budgetary Support
- Cess on Petrol and Diesel
- External Assistance
- Borrowing
- Private Sector Investment



# RURAL ROAD DEVELOPMENT PROGRAMME (PMGSY)

## PROGRAMME DETAILS

- ✓ Expenditure so far : INR 1000 billion (US\$ 17 billion)
- ✓ Projects sanctioned so far : INR 1600 billion (US\$ 27 billion)
- ✓ About 8% Concrete pavement
- ✓ About 15% expenditure on CD works & Structures.



# PMGSY-II

## PROGRAMME DETAILS

- ✓ Length Planned : 50,000 KM
- ✓ Estimated Cost : INR 250 billion (US\$ 4 billion)



# NATIONAL HIGHWAY DEVELOPMENT PROJECT (NHDP)

Sl. No.	Phase	Name of Project	Length (KM)	Estimated Cost (INR Billion)
1	NHDP Phase-I	4 Laning of 5,646 KM of (GQ) 881 KM of NS. EW comdors 856 KM Part Connectivity, 315 KM other NHs	7,488	303
2	NHDP Phase-II	4-Laning of 6,161 KM of NS-EW Comdors, 486 KM other NHs	6,647	343
3	NHDP Phase-III	4-Laning of NHs	12,109	806
4	NHDP Phase-IV	2-Laning with paved shoulders of NHs	19,800	276
5	NHDP Phase-V	6-laning of 6,500 K of selected stretches of NHs	6,500	412
6	NHDP Phase-VI	Development of 1,000 KM of Expressways	1,000	166
7	NHDP Phase-VII	Construction of ring roads, flyovers and bypasses on selected stretches in ...		166



# CHANGE IN DEVELOPMENT STRATEGY

- ✓ Shift from in-house design to outsourcing to consultants
- ✓ Evolution of consultants for supervision in the role of Engineer
- ✓ Contracting industry graduated to large scale organization to developers / concessionaires
- ✓ Item rate contracts giving way to EPC contracts.
- ✓ Focus turning on Expressways.
- ✓ IRC preparing Manual on Expressways .



# INDIAN ROADS CONGRESS (IRC)

- Set up by Government of India in consultation with State Governments in December, 1934.
- Premier body of Highways Engineers in India, to provide a national forum for regular pooling of experience and ideas on all matters concerned with planning, design construction and maintenance of highways.
- It also recommends standard specifications and provides platform for the expression of professional opinion on matters relating to roads.
- It is also publishing Journals, monthly magazines and research bulletins.
- IRC is a registered society under the Registration of Societies Act and is financed by contribution from Central Government, various State Governments and also contributions from its Members and sale of Publications.
- Today IRC has more than 15550 active members representing all Stakeholders from India and abroad.





# IRC AS NATIONAL FORUM

- To promote and encourage the science and practice of building and maintenance of roads;
- To provide a channel for the expression of collective opinion of its members regarding roads;
- To promote the use of standard specifications and to propose specifications to achieve safety and mobility;
- To advise regarding education, experiment and research connected with roads;
- To hold periodical meetings, to discuss technical questions regarding roads;
- To suggest legislation for the development, improvement and protection of roads;
- To suggest improved methods of administration, planning, design, construction, operation, use and maintenance of roads.

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# IRC SPECTRUM OF ACTIVITIES

- Publication of Standards relating to roads, viz. survey, investigation, equipment, design, construction, environment, maintenance, geometrics, safety, road signage & technology.
- Publication of Standards, Specification and Codes of Practice on Bridges and also Guidelines for their inspection, maintenance, testing and rating.
- Publication of Standards Plans and specifications of Ministry of Surface Transport (now Ministry of Road Transport & Highways).
- Holding Annual Sessions, mid-term Council Meetings in order to discuss the road problems and to take policy decisions.

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# APEX COMMITTEES

## OF IRC

There are three Apex committees, which are responsible for formulation of Codes of Practices, Standards and Guidelines. They are

- (i) Highways Specifications & Standards Committee (HSS);
- (ii) Bridges Specifications & Standards Committee (BSS) &
- (iii) General Specifications & Standards Committee (GSS).

# HIGHWAY RESEARCH BOARD

The objectivities of the HRB are:

- to ascertain the nature and extent of research required;
- to correlate research information from various organizations in India and abroad with a view to exchange publications on roads:
- to coordinate and conduct correlation services;
- to sponsor basic research through universities and research organizations;
- to collect and disseminate results of research; and
- any other matter related to road research.

There are three committees under HRB, namely;

- (i) Committee for Identification, Monitoring and Research Application (IMRA)
- (ii) Committee for Accreditation of New Materials/Techniques/Technology, etc.
- (iii) Committee on Pilot Projects to introduce innovations and support innovative ideas in the road sector

# ACHIVEMENTS

- Up till now, IRC have published 115 number of Codes of Practices for Specifications & Standards; 98 number of Special Publications on Guidelines and Manuals, 22 number of State-of-the-Art Reports on new technology/ techniques/methodology/material,etc; 77 number of Highway Research Bulletins; 12 number of Highway Research Journals, 40 number of Highway Research Records, besides a number of publications made on behalf of Ministry of Road Transport and Highways, Planning Commission, NHAI, Ministry of Rural Development / NRRDA, etc.
- IRC brings out the following periodicals monthly, quarterly, half yearly & annually which are highly popular among the road sector fraternity:-
  - Indian Highways (Monthly),
  - Journal of the Indian Roads Congress (Quarterly),
  - Highway Research Journal (Half-Yearly), and
  - Highway Research Record (Annually)

# IRC INITIATIVES

- Roads to be considered as active infrastructure facility for people, for safety and services, besides a catalyst in development of economy in place of passive approach of exclusivity.
- Synchronization with other sectors of the economy based on interdependent model, wherein the need of safety of all stakeholders of highway sector is fulfilled through inclusive approach.
- To Propagate multi-modal transport concept while developing guidelines and codal practices.
- A Pan India road safety programme with a theme on “Road Safety- reaching to every household in the country” has been conceptualized. This is a unique concept in which the road safety good practices will reach to each household in the country through their own children studying in the primary schools and each of the child will be an ambassador of road safety in their house. In this unique process of road safety programme, the entire populace of the country and all stakeholders will be involved in promoting the road safety efforts as well as followance of road safetv guidelines of IRC



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...you just got to take the first step.

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