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Presentation

on

“Road Network and

Implementation of Engineering

Measures”

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Presentation Outline

- ❖ Indian Road Network
- ❖ National Highways Development Project
- ❖ Implementation of Engineering Measures
- ❖ Formulation and Issue of Important Guidelines and Manual
- ❖ Appointment of Safety Auditors for PPP Projects on DBFO
- ❖ Action on Road Safety Audit Reports of 2793 km done in 2005
- ❖ Work done with World Bank in the area of Safety Measures
- ❖ Accident Data Collection and Collation & Training Programmes

Indian Road Network

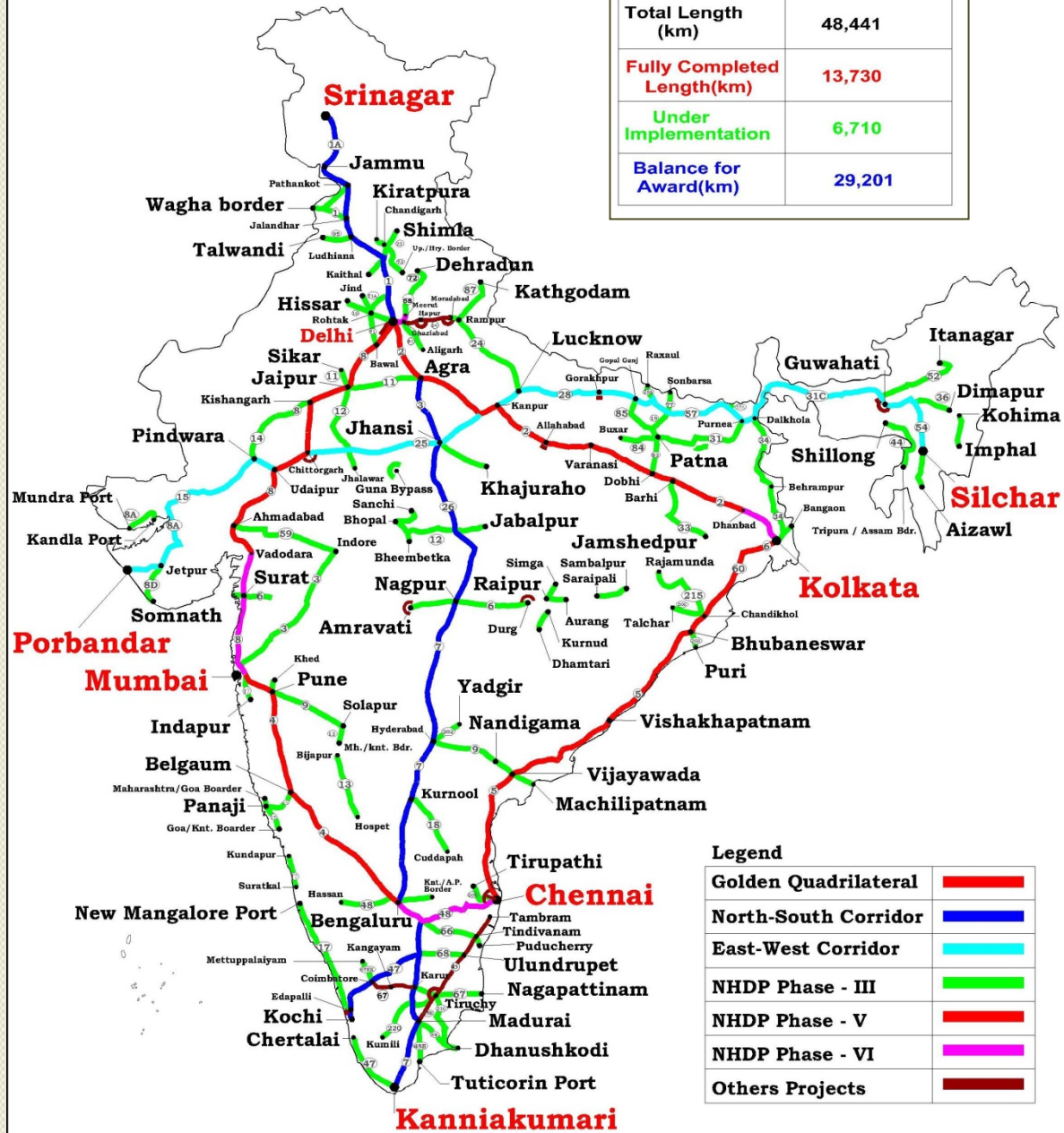
Total Length-33 lakh Km

	<u>Length (Km)</u>
Expressways	200
National Highways	70,934
State Highways	1,28,000
Major District Roads	4,70,000
Rural Roads	26,50,000

- * Roads – 85% of Passenger & 65% of freight traffic
- * National Highways : Severe capacity constraint
- * Less than 2% but carry 40% of traffic

NATIONAL HIGHWAYS DEVELOPMENT PROJECT

Total Length (km)	48,441
Fully Completed Length(km)	13,730
Under Implementation	6,710
Balance for Award(km)	29,201



Legend

Golden Quadrilateral	█
North-South Corridor	█
East-West Corridor	█
NHDP Phase - III	█
NHDP Phase - V	█
NHDP Phase - VI	█
Others Projects	█

I N D I A N O C E A N

Phases of NHDP

Phases	Total Length in km	Length Completed in km	Length under Imp.	To be awarded
I GQ, EW-NS corridors, Port connectivity & others	7,498	7370	122	6
II 4/6-laning North South- East West Corridor, Others	6,647	4818	1383	446
III A Upgradation, 4/6-laning	4,815	1869	2390	556
III B Upgradation, 4/6-laning	7,294	16	2853	4425
Total phase III (phase III A + III B)	12,109	1885	5277	4981
IV 2 - laning with paved shoulders	20000	-	176	19824
V 6-laning of GQ and High density corridor	6500	363	1937	4200
VI Expressways	1000	Nil	Nil	1000
VII Ring Roads, Bypasses and flyovers and other structures	700 Km	-	41	659

Mode of Delivery wise Break Up

	Awarded Length in km	Completed Length in km	UI Length in km	No. of awarded contracts	Completed Contracts	UI Contracts
EPC Projects	11510	9962	1548	312	195	117
BOT (Toll)	10132	3397	6735	123	36	87
BOT (Annuity)	2422	1233	1189	40	16	24
Total	24064	14592	9472	475	247	228

THE CHALLENGES AHEAD

Traffic volume*		
	1950-51	2005-06
Freight movement	Road: 13.8% Rail: 86.2%	Road: 60% Rail: 40%
Passenger movement	Road: 15.4% Rail: 84.6%	Road: 87.4% Rail: 12.6%

Expected growth of Road Vehicle Fleet 2001-2021**		
Sl. No.	Vehicle	Ratio of 2021 nos. to 2001 nos.
1.	Cars	5.3
2.	Buses	4.2
3.	Trucks	5.1

Source:

* *Road Transport Year Book 2006-07- M/o RT&H*

** *Road Development Plan Vision: 2021*

Contd.

The Challenges Ahead

- ❖ Road Transport has emerged as the dominant segment in India's transportation section with a share of 4.5% in India's GDP.
- ❖ Average annual growth in road transport is about 9.4%, much higher than the overall annual GDP growth of 6.9%.
- ❖ Between 1991-2004 the motor vehicle population grew @ 11% as compared 3.6% in the total road length with National Highway segment increasing by 2.3% only.

Implementation of Engineering Measures

NHAI is committed to enhance safety during entire life cycle of a Highway

- During Construction (Work Zones)
- During Operation and Maintenance

NHAI has setup a Road Safety Cell headed by a Sr. full time Chief General Manager in march 2009. Ground covered so far:

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1. Formulation and Issue of Important Guidelines And Manual

- ❖ For ensuring long term road safety on Highways already constructed and those under planning and implementation stage, a comprehensive Circular dated 12.07.2010 has been issued by NHAI for incorporation of Engineering Measures incorporating MORT&H Guidelines dated 27.04.2010. This circular delineates actions to be taken for incorporation of Safety Measures as per status of projects - in DPR stage/RFP invitation stage/Work in Progress/ Work completed and project in O&M stage.
- ❖ Reimbursement of extra cost to be incurred if any by the Concessionaire/ Contractor is clearly defined in 7 different situations in the comprehensive circular.

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1. Formulation and Issue of Important Guidelines And Manual

❖ Circular specifically addresses the following:

1. Geometry of the Roads
2. Separation of Local Traffic
3. Pedestrian Facility
4. Bus Bays
5. Illuminations
6. Development of Junctions
7. Sinages
8. Traffic calming and safety management measures
9. Bridges / CD Structures

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1. Formulation and Issue of Important Guidelines And Manual

- ❖ For future FIDIC Contracts, inclusion of some BOQ items for improving safety conditions of Highways which are not presently covered in the Ministry's specifications has been approved and circulated in NHAI and outside .
- ❖ Guidelines on Work Zone Safety have been formulated in consultation with IIT, Delhi and approved by Executive Committee of NHAI for implementation. These guidelines have been issued to all Technical Divisions/Regional Officers and Project Directors for implementation.
- ❖ Comprehensive 'ROAD SAFETY MANUAL' prepared and hosted on NHAI web site.

2. Appointment of Safety Auditors for PPP Projects on DBFO

- ❖ Audit commenced in 550 km Delhi – Jaipur, Surat – Manor, Vijaywada – Chilkaluripet
- ❖ Work awarded recently for 53 projects of total length 4820 km all over the country (except J&K where work could not be awarded due to receipt of single tender.)

Scope of work formulated as per MCA & NHAI's requirements which inter alia includes:

- i. Review of Designs and Drawings
- ii. Safety Audit during construction stage upto COD. This also includes important elements like

Classified Traffic Volume Count Survey, Speed and Delay Survey, Accident Data Collection and Collation, Toll Related Data, DGPS Survey, Pavement Condition Distress and Corridor Efficiency Parameter Survey, roughness Survey, Pavement, Bridge Inventory and Assessment, Maintaining and Updating the GIS database.

3. Action on Road Safety Audit Reports of 2793 km done in 2005

- ❖ Safety Audit of 2793 km was got conducted by NHAI in 2005-06 on section of GQ and NSEW corridors.
- ❖ Reports got collected from various Divisions at one place by the Road Safety Cell and Standardized as per Road Safety Manual of CRRI.
- ❖ Safety deficiencies classified as high, medium and low risk depending upon their severity.
- ❖ A Consolidated Report submitted to Executive Committee of NHAI with four specific actionable points for approval. Direction of Executive being implemented.
- ❖ Action to be taken by Corridor Management Division for short and medium term measures to bring immediate improvement in Road Safety.
- ❖ Action to be taken by Technical Division for incorporating the recommendations of Safety Audit findings in 6-lane constructions.

4. Work done with World Bank in the area of Safety Measures

- ❖ Comprehensive audit of all 12 packages of LMNHP projects completed to the entire satisfaction of World Bank. Post Audit visit of all packages done and implementation of Audit Reports by the PD's ensured.
- ❖ World Bank had appreciated the Safety Cell's pro-active role in improving Safety at LMNHP packages – Rated the Road Safety Scenario 'Satisfactory'.
- ❖ All Road Safety activities under LMNHP Loan progressing to the satisfaction of World Bank
 - ❑ Appointment of Road Safety Advisor
 - ❑ Quality Audit of Works
 - ❑ Monitoring of Project Outcome Indicator & User Satisfaction Survey
 - ❑ Appointment of Consultant for Network Safety Management

5. Accident Data Collection and Collation & Training Programmes

- ❖ Accident Data from PIUs being received in Road Safety Cell and being stored in Temporary Database. To be stored finally in – ‘Accident Management System’ of Road Information System (RIS) to be available to all stakeholders.
- ❖ Sections having high accidents are being analyzed for necessary engineering measures.
- ❖ Training of more than 200 NHAI personnel, Contractors, Consultants done by organizing Training at Project Sites, NITHE, CRRI & through Contractors/Consultants.

THANK YOU !