

ROUND TABLE ON INFRASTRUCTURE STANDARDS IN INDIA'S TRANSPORT SECTOR

ORGANISED BY
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SETTING STANDARDS OF PROFESSIONAL COMPETENCE IN INDIA'S TRANSPORT SECTOR

By:

PROF MAHESH TANDON
MANAGING DIRECTOR, TANDON CONSULTANTS PVT LTD

Guest Professor at IIT Gandhinagar
President, Indian Society for Wind Engineering

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INFRASTRUCTURE STANDARDS IN INDIA'S TRANSPORT SECTOR:

SETTING STANDARDS OF PROFESSIONAL COMPETENCE IN INDIA'S TRANSPORT SECTOR

CONTENTS

- GLIMPSES OF TRANSPORT SECTOR IN INDIA
- WHY IS SETTING STANDARDS NECESSARY IN INDIA ?
- WHO ARE PROFESSIONAL ENGINEERS ?

THE KEYS

Investment in transport infrastructure
Building capacity in human resources

Competence of professionals is vital



GLIMPSES OF TRANSPORT SECTOR IN INDIA



- **HOW DO WE TRANSPORT GOODS?? HOW PEOPLE TRAVEL IN INDIA??**

- ROAD : RAIL TRANSPORTATION = 65:35 IN 2017
COULD BECOME 50:50 IN 2031-32. FOCUS ON RAILWAYS ESSENTIAL TO
REDUCED ENVIRONMENTAL POLLUTION. WATER TRANSPORT?

TRANSPORTATION OF GOODS BY ROAD



INTERCITY

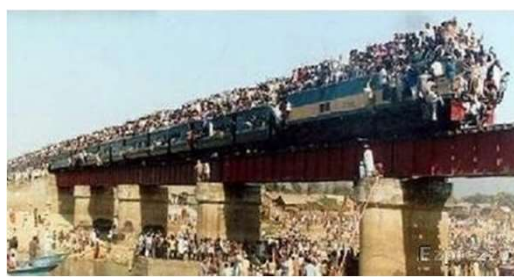


INTRACITY





INTER CITY : RAIL



INTER CITY : RAIL



SCHOOL GOING CHILDREN: URBAN



SCHOOL GOING CHILDREN: RURAL

HOW INDIA TRAVELS



WORLD RAILWAYS

Nº	Country	Length (km)	Country	Billion passenger-km	Country	Billion tonne-kilometers
0	World	1,134,429	India	1,046.0 ^[1]	China	2,947 ^[18]
1	USA	226,427	China	981.2	United States	2,469 ^[19]
2	China	93,250	European Union	397.8	Russia	2,011
3	Russia	87,157	Japan	395.1 ^[2]	India	668 ^[20]
4	India	65,000	Russia	139.8	Canada	323 ^[19]
5	Canada	46,688	France	88.1	European Union	300
6	Germany	41,896	Germany	82.4	Brazil	268
7	Australia	37,855	United Kingdom	58.3	Ukraine	218
8	Brazil	34,660	Ukraine	50.6	Kazakhstan	197
9	Argentina	31,409	Egypt	40.8	South Africa	113
10	France	29,213	Italy	40.6	Germany	105.9
11	Japan	23,506	United States	27.6 ^[3]	Mexico	69.2
12	Poland	22,314	Spain	22.7	Australia	64.2
13	Ukraine	21,655	South Korea	21.6	Belarus	42.7
14	South Africa	20,872	Pakistan	20.6	Poland	34.3
15	Italy	19,729	Indonesia	20.3	France	22.8
16	Mexico	17,516	Switzerland	17.5	Uzbekistan	22.2
17	United Kingdom	16,454	Iran	17.9	United Kingdom	21.2
18	Spain	15,288	Taiwan (Republic Of China)	17.9	Austria	21.1
19	Kazakhstan	13,700	Netherlands	17.1	Japan	20.4
20	Sweden	11,633	Kazakhstan	16.6	Iran	20.2
21	Romania	10,788			Latvia	17.2
					Switzerland	15.7

6 TRACK LENGTH

PASSENGERS

FREIGHT



• **WHY IS SETTING STANDARDS IN INDIA NECESSARY ?**



WE LIVE IN A WORLD OF FINITE RESOURCES

Investment in transport must respond to emerging demand, but it is also an economic growth driver in itself

- "INDIA'S **TRANSPORT INFRASTRUCTURE** SECTOR TO EXPERIENCE **ELEVATED GROWTH RATES OVER THE NEXT FIVE YEARS.** **INCREASED GOVERNMENT INVESTMENT**, ESPECIALLY IN ROADS AND RAILWAYS, AND IMPROVING ENVIRONMENT FOR PUBLIC-PRIVATE PARTNERSHIPS (**PPPS**),"
- HIGHWAYS ; **> 26 km/day** DURING 2017-18. Targeted 40km/day
- INVESTMENT RS 7 TRILLION (US\$ 107.82 BILLION) FOR CONSTRUCTION OF NEW ROADS AND HIGHWAYS OVER THE NEXT FIVE YEARS.
- **INDIAN RAILWAYS** MEGA INVESTMENT PLAN RS 8.56 LAKH CRORE OVER FIVE YEARS STARTING FROM 2015.THIS IS **STARTING POINT FOR DRAMATIC DEVELOPMENTS FOR THE LONG-TERM VISION OF 2030.**



LESSONS FROM PAST EXPERIENCE IN INDIA

- Arrest and reverse the increasing mode share of road transport for passengers and freight
- Prioritize inland waterways and coastal shipping for the movement of bulk cargo
- Encourage use of public transport and non-motorised transport in cities



THE URBAN SCENE

Lewis Mumford *

“A city exists, not for the constant passage of motorcars, but for the care and culture of men”

THE NEEDS

- Urban Infrastructure Priorities:
Public Transport, Non motorised vehicles, Pedestrians
- Use of appropriate technologies for roads, bridges, metros (elevated and Underground)



*(1895 – 1990), KBE American historian, sociologist, philosopher of technology, literary critic. Particularly noted for his study of cities and urban architecture.






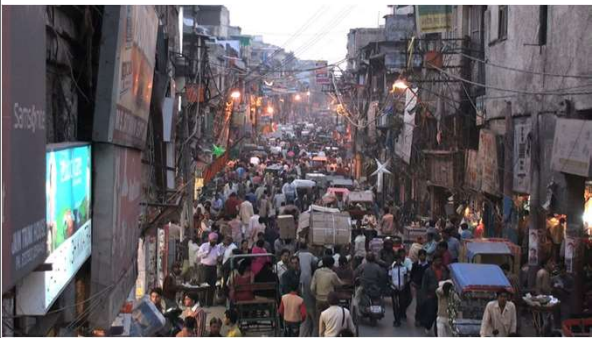
TOWARDS URBAN CHAOS ?

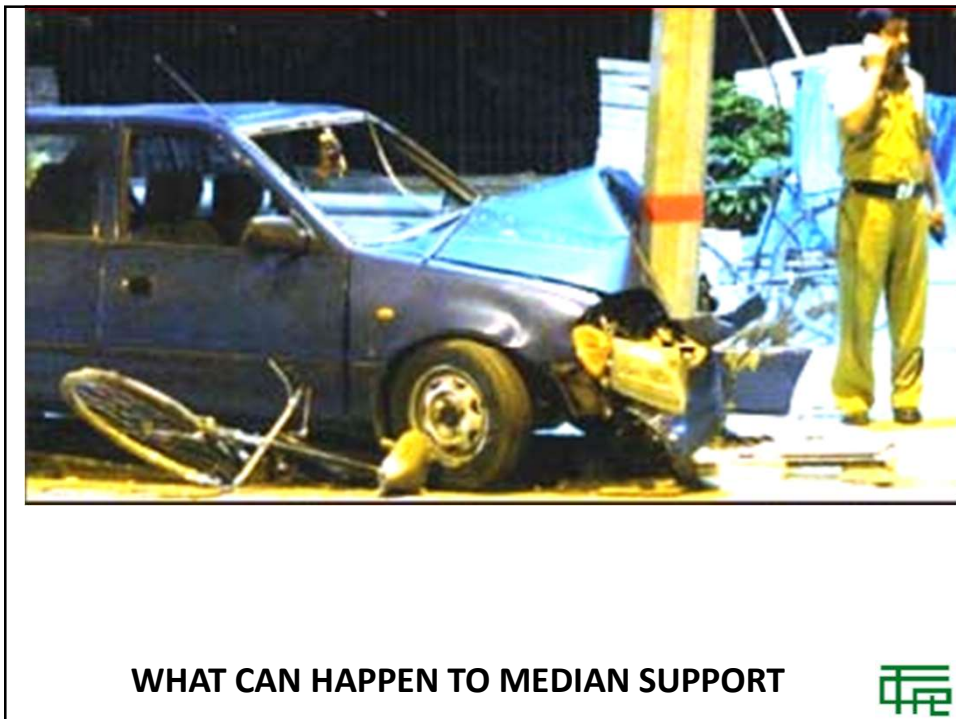
LOCAL TRAINS



TOWARDS URBAN CHAOS ?

PEDESTRIANS







FOB CROSSING BARAPULLA ELEVATED ROAD NEAR JLN STADIUM

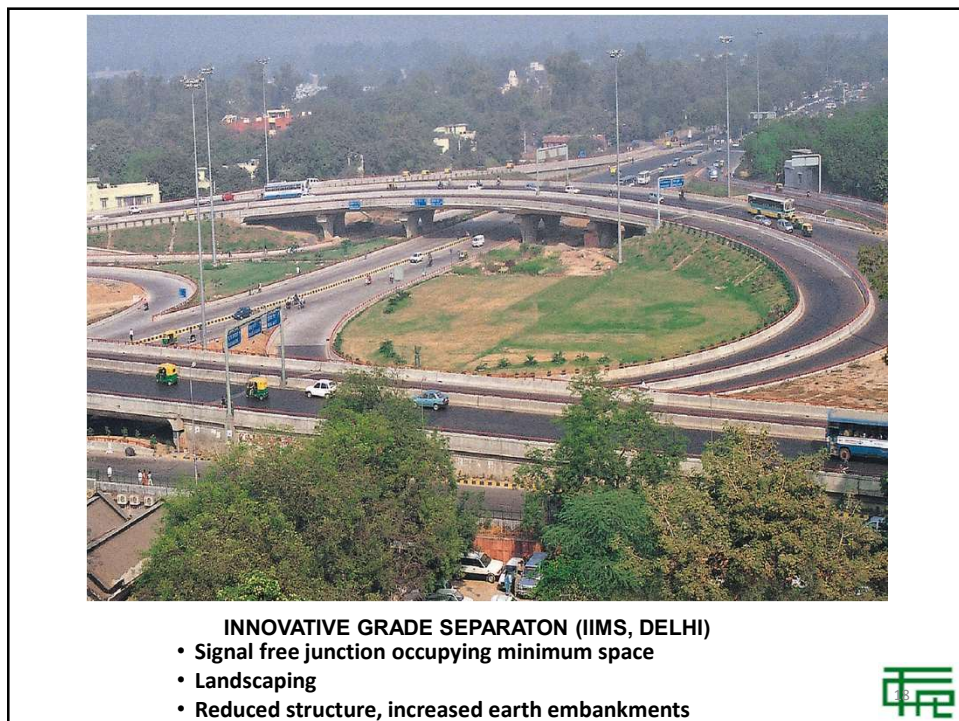


DESIGN CONCEPT

- CATER TO PEDESTRIANS AND NON MOTORISED VEHICLES
- FACILITATION OF PUBLIC TRANSPORT
- AESTHETICS

MUKARBA CHOWK INTERCHANGE AT DELHI BORDER







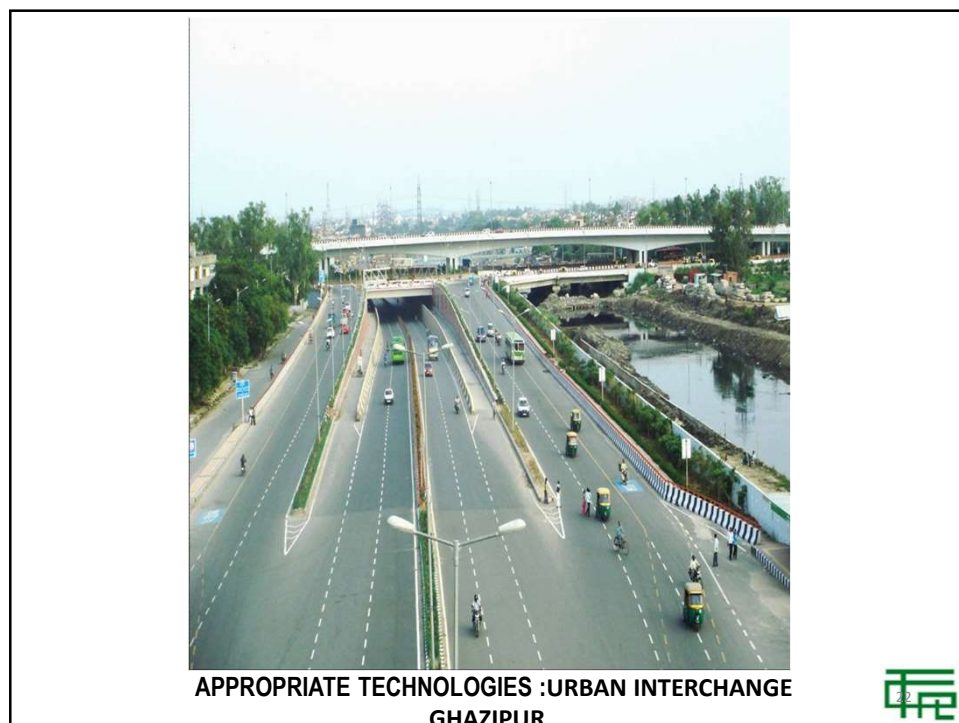
INNOVATIVE GRADE SEPARATION (BADARPUR, FARIDABAD)

- : Minimise structure, Maximise embankments
- : Landscaping
- : Reduced environmental impact by depressing interchange



**APPROPRIATE TECHNOLOGIES: NO DISTURBANCE TO TRAFFIC
BARAPULLA I**





• WHO IS A PROFESSIONAL ENGINEERS ?



WHO IS A PROFESSIONAL ENGINEER ?

PROFESSIONAL ENGINEER is an accreditation for

Competence + Responsibility

The "practice of professional engineering" means any act of

PLANNING,
DESIGNING,
COMPOSING,
EVALUATING,
ADVISING,
REPORTING,
DIRECTING,
SUPERVISING

that requires the application of **engineering principles** and that concerns the **safeguarding of life, health, property, economic interests, the public welfare or the environment, or the managing of any such act..**

In cases where public safety, property or welfare is concerned, it must be required that an engineer be **licensed or registered**



INDIAN ENGINEERS ARE LANGUISHING IN THE UNORGANISED SECTOR.

THE PROFESSION OF ENGINEERING IS **UNREGULATED**

A Mechanism of accreditation by an act of parliament is essential to set proper infrastructure standards in the transport sector

NATIONAL TRANSPORT POLICY DEVELOPMENT COMMITTEE

INDIA TRANSPORT REPORT, 2014

A Proliferation of Regulatory Authorities should be avoided. We should create a cadre of professional regulators with technical expertise for the complex tasks involved.



In most countries, **important Professions** are governed by Acts of Government, e.g., **Australia, Canada, Japan, Malaysia, New Zealand, Pakistan, Sri Lanka, South Africa, Singapore, Tanzania, USA**, etc.

In India some professions, are governed by Acts of Parliament, e.g., **Chartered Accountants, Doctors, Lawyers**

The engineering population in India has reached an estimated 7.5 million and is increasing at the rate of 1.5 million per annum.

June 2016: 3,500 Colleges 17,00,000 seats (UG +PG)



THANK YOU
JAI HIND

