



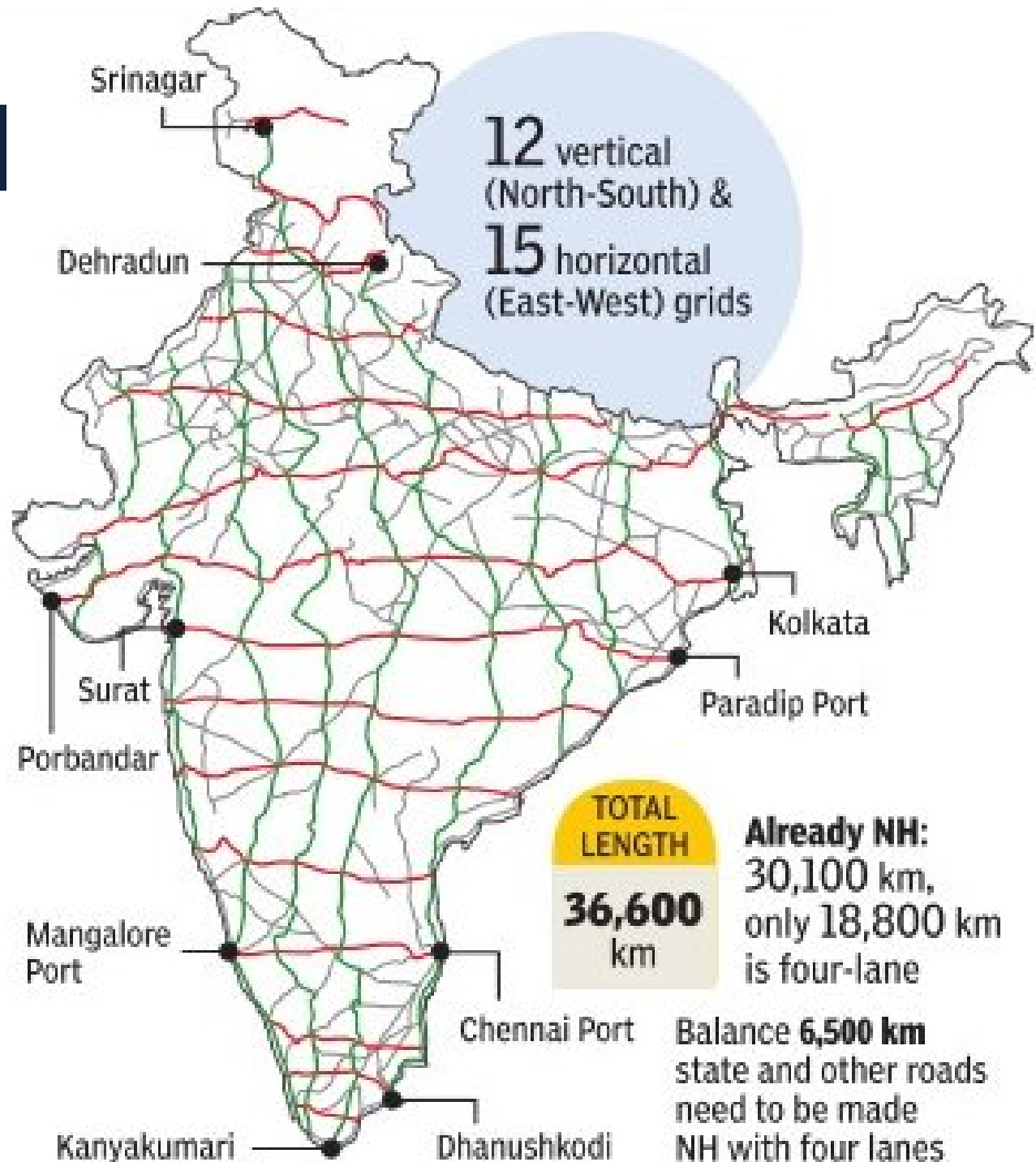
# ROAD NETWORKS AS ECOLOGICAL CORRIDORS

A CASE FOR SUSTAINABLE ROAD  
LANDSCAPES IN INDIA

Nidhi Madan, LEED AP  
Landscape Architect, Architect

Hony. Secretary, **ISOLA** (Indian Society of Landscape Architects)  
Executive Committee Member, **ISOLA Delhi NCR Chapter**  
Director, **SAMARTHYAM**, National Centre for Accessible Environments  
madannidhi1@gmail.com

- Over 3.3 million kilometres of roads
- 96,000 km of national highways
- Set to increase exponentially to 200,000 km.
- The National Highways, 1.7% of the road network
- Carry 40% of road traffic alone

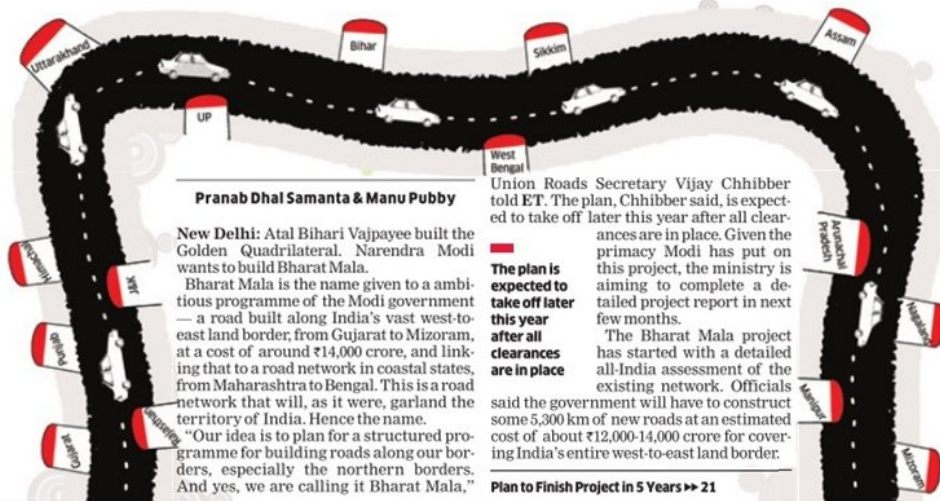


## Scope Of Impact

Roads and highways together form the single largest contiguous network of open space available in the country today and an unexplored passivity beyond physical connectivity

**BHARAT MALA** Modi govt plans ambitious project to build a road along India's west-to-east border – from Gujarat to Mizoram – at a cost of ₹14,000 crore, and link that to a road network in coastal states

## After Golden Quadrilateral, Here's Mother of All Roads



# Govt plans Bharat Mala, a 5,000km network of roads

## ROAD-LINKING SCHEME

**TOTAL LENGTH**  
**5,000 km**  
(Approx)

**INVESTMENT**  
**₹50,000cr**

**STATES TO BE COVERED**  
Entire northeast, Odisha, West Bengal, Punjab, Rajasthan, UP, Tamil Nadu, J&K, Himachal Pradesh

**FOCUS** | Provide road connectivity all along the borders and to ports on the coast



## Opportunity

To address landscape ecology at a vast scale, at multiple levels be it national, regional, state or local level



## Adverse impacts requiring mitigation

Deforestation, barriers to migration, wildlife fragmentation, loss of habitat and adverse impact to water and soils changes the regional landscape ecology



# IN THE NAME OF DEVELOPMENT

Instances of the NDA government clearing projects despite environmental and wildlife conservation concerns

**1** The proposed **Gaduli-Santalpur road** in Gujarat's Rann of Kutch will run very close to **Flamingo City**, the only nesting place for flamingos in the country  
Cleared in August 2014

**2** A strategic road through the heart of **Dudhwa National Park** in Uttar Pradesh, citing security reasons  
Cleared in August 2014

**3** The 3,000 MW **Dibang dam project** in Arunachal Pradesh will submerge **4,500 hectares of rainforests**, endanger the red panda, clouded leopard and tigers and affect two wildlife sanctuaries  
Cleared in September 2014

**4** Extension of the **Sevoke-Rangpo railway track** through Mahananda Wildlife Sanctuary in West Bengal. **Over 40 elephants have been mowed down by trains here in the past 12 years**  
Cleared in March 2015

**5** Widening of 9 km of a road through the **Pench Tiger Reserve** in Madhya Pradesh will endanger the **tiger corridor between Pench and Kanha tiger reserves**, isolating the population of the two habitats  
Cleared in August 2015

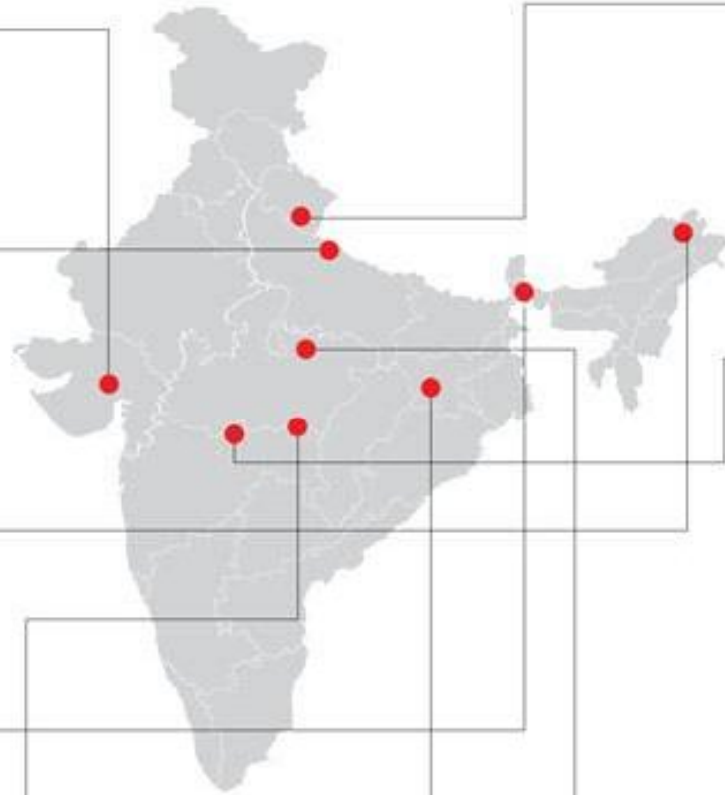
**6** Move to push through the **Kutku Mandal dam on North Koel river** in Jharkhand. It will submerge **119 sq km of forest in the Palamau Tiger Reserve**—home to tigers, elephants and gaurs  
Cleared in August 2015

**10** Turning a forest road through the core tiger habitat of **Jim Corbett National Park** into a national highway. The tiger density in this habitat is among the highest in the world  
Cleared in March 2017

**9** Upgrade of railway line (**Akola-Khandwa gauge conversion**) through **Melghat Tiger Reserve** in Maharashtra. Over 38 km of the railway tracks pass through a wildlife-rich area inside the reserve  
Cleared in January 2017

**8** The minimum limit for **Environmental Impact Assessment of construction projects** raised from **20,000 sq m to 150,000 sq m** through a notification  
Cleared in December 2016

**7** The **Ken-Betwa river-linking project** will submerge **89 sq km of forests in the Panna National Park**, 58 km of which is core tiger habitat  
Cleared in August 2016





**Adverse impacts requiring mitigation**





## Adverse impacts requiring mitigation





## Adverse impacts requiring mitigation

- Issues

Effects of particulate emissions, noise pollution and heat and glare too are lost when landscape development is addressed belatedly



## THE SUFFERING CITIES



Image: NASA

**TOXIC AIR CHOKES  
DELHI-NCR**



## Integrated Approach

- enhances and encourages local engagement, native plantation and regional ecological diversity
- addresses the socio- cultural, ecological issues and long-term adaptation to changing climate

