

ESI-2021-22 AND OTHER CA 2021-22

INFRASTRUCTURE

(ESI – CHAPTER-8) – PART-4

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1. INFRASTRUCTURE: GENERAL

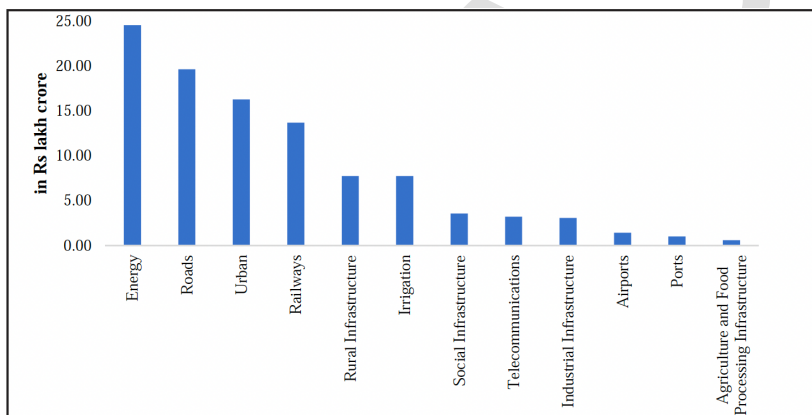
1) NATIONAL INFRASTRUCTURE PIPELINE (NIP) 2020-25

- According to **Ministry of Finance**, to achieve the **GDP of \$5 trillion by 2024-25**, India needs to spend about \$1.4 trillion (**Rs 100 lakh crore**) over these years in infrastructure. This is a steep change compared to **\$1.1 trillion** on infrastructure spent between 2008-17.
- Keeping this objective in view, National Infrastructure Pipeline (NIP) was launched with projected infrastructure investment of around Rs 111 lakh crores during FY2020-25 to provide world class infrastructure across the country and improve the quality of life for all citizens.

- **Key Highlights of the NIP**

- » The NIP has projected **total infrastructure investment** of **Rs 111 lakh crore (US\$1.5 trillion)** during the period FY 2020 to 2025 in India. It also envisages to improve project preparation and attract investment, both domestic and foreign in infrastructure.

- » NIP was initially launched with 6,835 projects which has now expanded to over 9,000 projects covering 34 infrastructure sub-sectors. During the fiscals 2020 to 2025, sectors such as energy (24%), roads (19%), urban (16%), and railways (13%) amount to 70% of the projected capital expenditure in infrastructure in India.



Source: Survey calculations based on data from the Report of the Task Force on National Infrastructure Pipeline for 2019-2025

- **Jointly funded by Central Government, State Government and Private Sector:**

2) VIABILITY GAP FUND (VGF) FOR PPP PROJECTS IN INFRASTRUCTURE SECTOR

- PPP in infrastructure has been an important source of investment in the sector. As per the World Bank, India is ranked second among developing countries in terms of both the number of PPP projects as well as the associated investment.
- The Public Private Partnership Appraisal Committee (PPPAC) which is responsible for the appraisal of PPP projects has cleared 66 projects with a total project cost of Rs 137218 crores from 2014-15 to 2020-21.
- **Viability Gap Fund Scheme:**
 - » The government launched VGF scheme for providing financial assistance to financially unviable but socially/economically desirable PPP projects.
 - Upto 20% of the project cost is funded under the scheme as a grant.
 - » Between 2014-15 to 2020-21, the total VGF amount disbursed by DEA is Rs 2943 crores.
- **Further**, in 2020, the government of India has in Nov 2020, approved continuation of and revamping of the Scheme for Financial Support to PPPs in Infrastructure Viability Gap Fund (VGF) Scheme till 2024-25. The revamped VGF Scheme is expected to attract more PPP projects and facilitate private investments in social sectors such as health, education, waste, water, solid waste management, water supply etc.

3) NATIONAL MONETIZATION PIPELINE (NMP)

- **Why in news?**

- » The government has unveiled a four-year National Monetization Pipeline worth an estimated Rs 6 lakh crore (Sep 2021)

- Background

- » **Asset** monetization is one of the key recommendations of National Infrastructure Pipeline (2020-25).
- » **Budget 2021-22** had announced the 'National Monetization Pipeline' of potential brownfield assets.
- » **NITI aayog** has developed the 'National Asset Monetization Pipeline' (NMP Vol-1 &2) in consultation with infrastructure line ministries.

- Details:

- » **Asset monetization entails** a limited period license/lease of an asset owned by government or a public agency, to a private sector entity for an upfront or periodic consideration. Only revenue rights would be transferred and not ownership rights. So, these contracts will also include provisions of transfer of asset back to the authority at the end of the period.
 - These are "brownfield" (already developed) but underutilized public sector assets.
 - **The private sector entity** is expected to operate and maintain the asset based on the terms of the contract/concession, generating returns through higher operating efficiencies and enhanced user experience.
 - **Public authority**, which receives the fund, will invest it in new infrastructure or deploy it for other public purposes.
- » A **robust asset pipeline** has been prepared to provide a comprehensive view to investors and developers of the investment avenues in infrastructure.
 - It includes selection of de-risked and brownfield assets with stable revenue generation profile (or long rights) which will make for an attractive investment option.
- » Total **indicative value of NMP** for core assets of the Central Government has been estimated at Rs 6.0 lakh crore over 4-year period (FY22 - 25) (5.4% of the total infrastructure investment envisaged under NIP)
- » **Other details:**
 - Roads, railways and power sector assets will comprise over 66% of the total estimated value of the assets to be monetized, with the remaining upcoming sectors including telecom, mining, aviation, ports, natural gas and petroleum product pipelines, warehouses and stadiums.

- Significance: Positives

- » Opportunity to upgradation of Infrastructure in India.
- » Clear framework for monetization and given potential investors a ready list of assets to generate investment interest.
- » Promotes the use of complete assets which are languishing or it is not fully monetized or is under utilized.

4) PM GATISHAKTI MASTER PLAN

- Why in news?

- » Cabinet approval sets the implementation of PM Gati Shakti National Master Plan (NMP) in Motion (Oct 2021)
- » Earlier, during the Independence Day Speech, PM Modi had announced that the Centre will launch 'PM Gati Shakti Master Plan', a Rs 100 Lakh crore project for developing 'holistic infrastructure'. (Aug 2021)

- Need of PM GatiShakti: Class discussion

- Details

- » **PM GatiShakti** is aimed at breaking departmental silos and bring more holistic and integrated planning and execution of projects with a view to address the issue of **Multi-Modal connectivity and last mile connectivity**.
 - This will help in bringing down the logistic cost and will translate into enormous financial gains to consumers, farmers, youth as well as those engaged in businesses.
- » **PM Gatishakti** is a digital platform which connects 16 ministries - including MoRT&H, Railways, Shipping, Petroleum and Gas, Power, Telecom, Shipping, and Aviation - with a view to ensuring holistic planning and execution of infrastructure project.
 - It will offer 200 layers of geospatial data, including on existing infrastructure such as roads, highways, railways, and toll plazas, as well as geographical information about forests, and district boundaries to aid in town planning and obtaining clearances.
 - The portal will also allow various government departments to track, in real time and at one centralized place, the progress of various projects, especially those with multi-sectoral and multi-regional impact. This gives every department/ministry a visibility into other department/ministry's projects. This will enable various government departments to synchronize their efforts into a multi-modal network.
 - The portal will also highlight all the clearances any new project would need, based on its location - and allow stakeholders to apply for these clearances from the relevant authority directly on the portal.
- » **How will progress under National Master Plan be monitored?**
 - **A Project Monitoring Group** under DPIIT will monitor the progress of key projects in real time, and report any inter-ministerial issues to an empowered group of ministers, who will then aim to resolve these issues.
- » **Are all state on board?**
 - Portal would help states avoid both cost and time overruns, and allow them to provide the benefit of valuable infrastructure on their residents sooner.
- » **How were inter-ministerial issues resolved earlier?**
 - At regular meetings of infrastructure related ministries.
 - PM PRAGATI (Pro-Active Governance and Timely Implementation) portal also helped in resolution of several issues even prior to inter-ministerial meetings.
 - **How would Gatishakti portal help?**
 - It will reduce the human intervention required as ministries will be in constant touch, and projects will be reviewed by the project monitoring group in **real time**.
- » **Who has built the portal?**
 - The Bhaskaracharya Institute for Space Applications and Geoinformatics (BISAG-N).
- **Implementation Framework** includes Empowered Group of Secretaries (EGOS), Network Planning Group (NPG) and Technical Support Unit (TSU) with required technical competencies.
 - **EGOS** will be headed by Cabinet Secretary and will consist of secretaries of 18 ministries as members and Head of Logistics division as Member Convenor.
 - It has been mandated to review and monitor implementation of the PM GatiShakti NMP to ensure logistics efficiency.
 - It is empowered to prescribe framework and norms for undertaking any subsequent amendments to the NMP.
 - It shall set up procedures and definitive frameworks for synchronization of various activities, and ensure that various initiatives of infrastructure development are part of the common integrated digital platform.

- It will also look at the interventions required to meet the demand side, in efficiently transporting bulk goods on the requirement of various Ministries like Steel, Coal, Fertilizer, etc.
- **Network Planning Group (NPG)** will consist of Network Planning Wing of respective infrastructure ministries and it will assist the EGOS.
- **Technical Support Unit (TSU)** will have domain experts from various infrastructure sectors as Aviation, Maritime, Public Transport, Rail, Roads & Highways, Ports etc. and Subject Matter Experts (SMEs) as Urban & Transport Planning, Structures (Roads, Bridges & Buildings), Power, Pipeline, GIS, ICT, Finance/Market PPP, logistics, Data Analytics etc.
- **Progress as of Feb 2022:**
 - i. Bhaskaracharya National Institute for Space Applications & Geo-informatics in coordination with DPIIT is integrating data layers of Central Ministries/Department on National Master Plan (NMP) portal.
 - State related layers to the extent information shared have been integrated in coordination with States.
 - ii. **Empowered Group of Secretaries (EGoS), Network Planning Group (NPG) and Technical Support Unit (TSU)** have been constituted and operationalized.
 - **22 Ministries/Departments** are being represented through EGoS.
 - iii. **Training and capacity building for 17 Ministries/Departments on PM Gati Shakti NMP** has been completed and five zonal conferences have been organised.

5) INFRASTRUCTURE STATUS

- **Why in news?**
 - » Finance Ministry grants 'infrastructure status' for exhibition and convention centres i.e. 'Exhibition-cum-Convention Centre is included in the Harmonized Master List of Infrastructure sub-sectors by insertion of a new item in the category of Social and Commercial Infrastructure' (May 2021)
 - » **Budget 2022-23 announcement:** Data Centres and Energy Storage Systems including dense charging infrastructure and grid-scale battery systems will be included in the harmonized list of infrastructure. (Feb 2022)

- About Harmonized Master list of Infrastructure sub-sector

SI No	Category	Infrastructure Sub-sectors
1	Transport and Logistics	<ol style="list-style-type: none"> 1. Roads and Bridges 2. Ports 3. Shipyards 4. Inland waterways 5. Airport 6. Railway Tracks including bridges, tunnels, electrical and signaling system etc. 7. Railway rolling stock with workshop and associated maintenance facilities 8. Railway Terminal Infrastructure including stations and adjoining commercial infrastructure 9. Urban Public Transport (except rolling stock in case of urban road transport) 10. Logistics Infrastructure, Bulk material Transportation pipelines

2	Energy	<ul style="list-style-type: none"> ▪ Electricity generation, transmission, distribution etc ▪ Oil/Gas/LNG storage facilities
3	Water and Sanitation	<ul style="list-style-type: none"> ▪ Solid Waste Management ▪ Water Treatment Plant ▪ Sewage collection treatment and disposal system ▪ Irrigation (dams, channels, embankments, etc.) ▪ Storm Water Drainage System
4	Communication	<ul style="list-style-type: none"> ▪ Telecommunication ▪ Telecommunication towers ▪ Telecommunication & Telecom services
5	Social and Commercial Infrastructure	<ul style="list-style-type: none"> ▪ Education Institutions (capital stock) ▪ Sports Infrastructure ▪ Hospitals (capital stock) ▪ Tourism infrastructure viz. i) three star or higher category classified hotels located outside cities with population of more than 1 million ii) ropeways and cable cars iii) Common infrastructure for industrial parks and other parks with industrial activities such as food parks, textile parks, SEZs, tourism facilities and agricultural markets ▪ Post Harvest Storage infrastructure for agricultural and horticulture produce including cold storage ▪ Terminal markets ▪ Soil testing laboratories ▪ Cold Chain ▪ Affordable Housing ▪ Affordable Rental housing Complex ▪ Exhibition-cum-convention Centre (added in April 2021)

- **Advantages of getting Infra Status**

» **Facilitate Credit Flow:**

- **Access Bank financing** at easier terms with enhanced limits
- Longer tenor funds from insurance companies and pension funds
- Eligible to borrow from India Infrastructure Financing Co. Ltd (IIFCL)
- They are eligible for slightly higher equity ratios while applying for loans.
- Certain advantages and flexibility under External Commercial Borrowing Provisions.

» **Note:** Infrastructure tag no longer involves significant tax breaks.

- **Infrastructure status to Convention and Exhibition Centre (April 2021)**

- » However, the benefits would only be available as 'infrastructure' projects for projects with a minimum built-up floor area of 1,00,000 sq kms of exclusive exhibition space or convention space or both.

• **Why significant?**

- India's doesn't have convention centres or single halls with capacities to hold 7,000 to 10,000 people, unlike countries like Thailand that is a major global Mice destinations. Becoming a MICE (Meetings, Incentives, Conferences and Exhibition) destination can generate significant revenue with several global companies active in India but it will take time to become preferred destination.

- In 2020, affordable rental housing projects were added in the list.

2. URBAN INFRASTRUCTURE

1) SMART CITIES MISSION (SCM)

- Introduction

- Government of India launched **Smart Cities Mission (SCM)** on **25 June 2015**.
 - » It is based on the idea of developing the entire urban eco-system on the principles of complete and integrated planning.
 - » The focus is on **sustainable and inclusive development** and the idea is to look at **compact areas, create a replicable model which will act like a light house to other aspiring cities** i.e. SCM will set examples that can be replicated to create similar cities in various regions and parts of the country.
- 100 Smart Cities have been selected through 4 rounds of competition from January 2016 to June 2018
- As per the SCM guidelines, GoI will provide financial support to the extent of Rs 48,000 crore over five years i.e., on an average Rs 100 crores per city per year. An equal amount on a matching basis will be contributed by the State government/ULB.
- Other than this Rs 42,028 crores has been proposed from convergence with other missions, 41,022 crore from PPP, around Rs 9,843 from loans; and some other resources.
- The **implementation of the SCM** at the city level is done by **SPV** created for the purpose. At the **state level**, the mission implementation is coordinated by the State Level High Powered Steering Committee (HPSC) chaired by Chief Secretary of the State. At the **national level**, implementation of SCM is monitored by an Apex Committee headed by Secretary, MoHUA.
- **Note:** The period of implementation of SCM has also been extended upto **June 2023** and all smart cities are expected to complete their projects within the stipulated time.

- Important Steps taken under SCM by 2020:

- **Integrated command & control centres (ICCCs)** to help cities in evidence-based smart governance operationalized in 53 cities and in progress in 30 cities. Total investment worth over ₹15,000 crore is planned under the mission.
 - The mission has **targeted to setup ICCCs in all 100 Smart Cities by 2022.**
- **Ease of Living Index and Municipal Performance Index:** Outcome and performance assessment frameworks to measure quality of life and city performance rolled out in **114 Cities**. Over **31 lakh citizens** engaged with as part of Citizen Perception Survey.
- **The Urban Learning and Internship Program (TULIP)** aims to match opportunities in ULBs/smart cities with learning needs of fresh graduates. **284 Smart Cities/ ULBs have posted over 13,000 internships** out of which 828 candidates are undergoing internships and 81 have completed their internships.
- **DataSmart Cities and Data Maturity Assessment Framework (DMAF)** rolled out in 100 Smart Cities to help cities create a data ecosystem for data-driven governance. Second round of annual assessment currently underway. Centre for Digital Governance (CDG) has been established in NIUA.
 - DataSmart Cities Strategy will be scaled up in 500 Cities by the end of the Mission.
- **Climate Smart Cities Assessment Framework (CSCAF)** rolled out in 100 Smart Cities to help cities look at urban planning and governance from the perspective of climate change.
- **India Cycles4Change Challenge, Streets for People Challenge, Nurturing Neighborhoods challenge are being implemented by the Mission** towards scaling-up transformative projects benefitting citizens and contributing to enhanced quality of life.

2) AMRUT (ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION)

- Why in news?

- Cabinet approves AMRUT 2.0 till 2025-26 (Oct 2021)
- Ministry of Housing and Urban Affairs launches the Operational Guidelines for Swachh Bharat Mission - Urban 2.0, and AMRUT 2.0

- **About AMRUT (or AMRUT 1.0)**

- It was launched on 25th June 2015 to complement the Smart Cities Mission. It targeted **covering 500 cities with a population of 1 lakh and more.**
- The mission focuses on development of basic urban infrastructure in the sectors of water supply; sewerage and septage management; storm water drainage; non-motorized urban transport; development of green spaces and parks.
- Mission also mandated a set of 11 Reforms for all the Mission cities and Capacity building activities for the ULBs.
- **Ministry:** Ministry of Housing and Urban Affairs
- It is a **Centrally sponsored scheme** being funded through Central and State/ULB share.
- **Achievements of AMRUT 1.0:**
 - So far, 1.1 crore household tap connections and 85 lakh sewer/septage connections have been provided. 6,000 MLD sewage treatment capacity is being developed, of which 1,210 MLD capacity is already created.
 - 1820 parks with area of 3,600 acres have been developed, while another 1800 acres of area is under greening. Further, so far, 1,700 flooding points have been eliminated.

- **AMRUT 2.0**

- The Union Cabinet has approved the AMRUT 2.0 till 2025-26, as a step towards Aatma Nirbhar Bharat and with an aim of making the cities 'water secure' and 'self-sustainable' through circular economy of water.
- It targets to provide 2.68 crore tap connections and 2.64 crore sewer/septage connections to achieve the below outcomes:
 - i. **Universal coverage of water supply** by providing household tap connections in all 4,378 statutory towns.
 - ii. **100% coverage of household sewerage/septage management in 500 AMRUT cities.**
- **Total indicative outlay** for AMRUT 2.0 is Rs 2,77,000 crore including central share of Rs 76,760 crore for five years from FY 2021-22 to FY 2025-26.
 - i. Total outlay becomes 2,99,000 crores if allocation for projects of ongoing AMRUT Mission to the tune of Rs 22,000 crore for five years are included.
- **Monitoring Provisions:**
 - i. The mission will be monitored on a robust technology portal and the projects will be geo-tagged.
- **Other features:**
 - i. Endeavour to make mission paperless
 - ii. Cities will assess their water sources, consumption, future requirements and water losses through a **city water balance plan.** Based on this, a **City Water Action Plans** will be prepared which will be summed up as State Water Action Plan and will be approved by Ministry of Housing and Urban affairs.
 - iii. The **funds** for the projects will be shared by Centre, State and ULBs. Central funds will be released to the states in three tranches based on the allocation to the states as per the State Water Action Plan.
 - iv. Another feature is the **Pey Jal Survekshan** - this will encourage competition among cities for benchmarking urban water services.
 - v. Mission will also mobilize market finance for mandating implementation of 10% worth of projects in cities with population above 10 lakhs through Public Private Participations.
 - vi. The mission will also bring in the leading technologies in water sector in world through technology sub-mission.
 - vii. Entrepreneurs/start-ups will be encouraged in water ecosystems.

- viii. Information Education and Communication (IEC) campaign will be undertaken to spread awareness among masses about water conservation.
 - ix. The mission has a **reform agenda** focused towards financial health and water security of ULBs.
 - Meeting 20% of water demand through recycled water, reducing non-revenue water to less than 20% and rejuvenation of water bodies are major water related reforms.
 - Reforms on property tax, user charges, and enhancing credit worthiness of ULBs are other important reforms. ULBs will be rewarded with incentive on accomplishing the reforms.
- **AMRUT 2.0 Operational Guidelines**
 - AMRUT mission which was earlier covering 500 cities will now expand to all cities.
 - It will not only provide water tap connections, but will also help in realization of the real value of water.

3) SWATCH BHARAT MISSION 2.0 (SBM 2.0)

- **Why in news?**
 - » PM launched SBM-2.0 and AMRUT 2.0 (Oct 2021)
- **Background**
 - » In 2014, the countrymen took a pledge to make India open defecation free - ODF and the fulfilled this pledge with the construction of more than 10 crore toilets.
 - » Now, the goal of SBM-U 2.0 is to make the cities Garbage Free.
- **SBM-U 2.0 guidelines:**
 - » Budget outlay of SBM-U 2.0 is Rs 1,41,600 crores.
 - » The launch ceremony witnessed the signing of a tripartite MoU of States/Uts and nearly 4,800 ULBs with MoHUA.
 - » SBM-U 2.0 aspires to make all our cities 'Garbage Free' and **ensure 'grey and black water (used water) management** in all cities other than those covered under AMRUT, making all the urban local bodies ODF+ and those with a population of less than 1 Lakh as ODF++, and Water+, thereby ensuring that no untreated water is discharged in open to pollute water bodies, thus achieving the vision of safe sanitation in urban areas. The mission will also focus on source segregation of solid waste, utilizing the principles of 3Rs (Reduce, reuse, recycle), scientific processing of all types of municipal solid waste and remediation of legacy dumpsites for effective solid waste management.
 - » **Achievements of SBM-U** so far:
 - Over 3,300 cities have been declared ODF+ and another 950 have been certified ODF++ respectively. 9 Cities have also been certified Water+, which entails treatment of wastewater and its optimum reuse.
 - **Impact:** Waste processing in India is going up by over five times form 18% in 2014 to 70% today. This has been aided through 100% door-to-door waste collection in 97% wards and source segregation of waste being practiced by citizens in letter and spirit across 85% wards.
 - » This will signify a step forward in the march towards effectively addressing the challenges of rapidly urbanizing India.
 - » It is committed to make all cities 'Garbage Free' and 'Water Secure', in order to contribute to the achievement of the Sustainable Development Goals (SDGs) 2030, which will ultimately improve the quality of life and ease of living of urban populations, thus leading to urban transformation

4) PRADHAN MANTRI AWAS YOJNA (PMAY-URBAN)

- It subsumes all the previous urban housing schemes and aims at 'Housing for All' to be achieved by the year 2022.
- **Ministry:** Ministry of Housing and Urban Poverty Alleviation.
- **The Mission has four components/verticals**
 - i. **"In Situ" Slum Redevelopment (ISSR)**
 - » Using land as a resource through private participation.
 - » The states receive a slum rehabilitation grant of Rs 1 Lakh per house on an average, for providing houses to eligible slum dwellers.
 - ii. **Affordable Housing through Credit Linked Subsidy Scheme (CLSS)**
 - » Central sector scheme
 - » Interest subvention subsidy for **EWS, LIG and MIG** households for new house or incremental housing.
 - iii. **Affordable Housing in Partnership (AHP)** with public and private sector
 - » **Financial assistance to private developers** to boost private participation in affordable housing.
 - iv. **Subsidies for beneficiary-led individual Housing Construction (BLHC)**
 - » For individuals of EWS category requiring individual house, central assistance of 1.5 Lakh is provided for new construction or extension of existing houses for the EWS/LIG.

Note: Credit linked subsidy component is being implemented as a Central Sector Scheme while other three components as Centrally Sponsored Scheme (CSS)

5) NATIONAL URBAN DIGITAL MISSION

- It was launched in Feb 2021, to facilitate electronic delivery of municipal services to citizens across towns and cities of the country.
- It will make available shared digital infrastructure to all States and UTs which would include foundational digital building blocks, ready to use platforms, standards, specifications, and framework for electronic delivery of municipal services.
- **The implementation** of NUDM is being anchored by the Centre for Digital Governance (CDG) under the National Institute of Urban Affairs (NIUA).
- **Stakeholders Consultation** is part of the approach towards implementation of NUDM, and engagements have started with various states.

6) REPORT: REFORMS IN URBAN PLANNING CAPACITY IN INDIA

- **Why in news?**
 - » **NITI Aayog** launched a report on measures to ramp up urban planning capacity in India (Sep 2021)
- **Details**
 - » The report has been developed by NITI Aayog in consultation with concerned ministries and eminent experts in the domain of urban and regional planning. It presents a condensed outcome of the extensive deliberations and consultations conducted over a period of 9 months.
 - » **The report makes several recommendations that can unblock bottlenecks in the value chain of urban planning capacity in India:**
 - i. **Programmatic Intervention for Planning of Healthy Cities:** Every city must aspire to become a 'Healthy City for All' by 2030. The report recommends a Central Sector Scheme '500 Healthy Cities Programme', for a period of 5 years, wherein priority cities and towns would be selected jointly by the states and local bodies.
 - ii. **Programmatic Intervention for Optimum Utilization of Urban Land:** All the cities and towns under the proposed 'Healthy Cities Programme' should strengthen development control regulations based on scientific evidence to maximize the efficiency of urban land (or planning area). The report recommends a sub-scheme 'Preparation/Revision of Development Control Regulations' for this purpose.

- iii. **Ramping Up of Human Resources:** To combat the shortage of urban planners in the public sector, the report recommends that the states/UTs may need to a) expedite the filling up of vacant positions of town planners, and b) additionally sanction 8268 town planners' posts as lateral entry positions for a minimum period of 3 years and a maximum of 5 years to meet the gaps.
- iv. **Ensuring Qualified Professionals for Undertaking Urban Planning:** States may need to undertake requisite amendments in their recruitment rules to ensure the entry of qualified candidates into town-planning positions.
- v. **Re-engineering of Urban Governance:** There is a need to bring in more institutional clarity and also multi-disciplinary expertise to solve urban challenges. The report recommends the constitution of a high-powered committee to re-engineer the present urban-planning governance structure. The key aspects that would need to be addressed in this effort are: i) clear division of the roles and responsibilities of various authorities, appropriate revision of rules and regulations, etc., ii) creation of a more dynamic organizational structure, standardization of the job descriptions of town planners and other experts, and iii) extensive adoption of technology for enabling public participation and inter-agency coordination.
- vi. **Revision of Town and Country Planning Acts:** . The formation of an apex committee at the state level is recommended to undertake a regular review of planning legislations (including town and country planning or urban and regional development acts or other relevant acts).
- vii. **Demystifying Planning and Involving Citizens:** The committee strongly recommends a 'Citizen Outreach Campaign' for demystifying urban planning.
- viii. **Steps for Enhancing the Role of Private Sector:** These roles include the adoption of fair processes for procuring technical consultancy services, strengthening project structuring and management skills in the public sector, and empanelment of private sector consultancies.
- ix. **Steps for Strengthening Urban Planning Education System**

3. LOGISTIC SECTOR

1) MULTIMODAL LOGISTICS PARK

- **Why in news?**
 - » Multimodal Logistic Park to come up in nine more cities (March 2022)
 - » Centre and Maharashtra sign MoUs for five more multimodal logistic park (Dec 2021)
 - The parks will come up in Mumbai Metropolitan region, Pune, Aurangabad, Nashik, and Dighi Port Industrial Area.
- **Details about Multi-Modal Logistic Park (MMLPs):**
 - » The government plans to build 35 MMLPs under the PM GatiShakti National Master Plan for Multi-modal connectivity and the Bharatmala Pariyojna project to expand India's infrastructure by creating more logistic and transport hubs and connecting them seamlessly.
 - » MMLPs have been conceptualized to enable seamless intermodal freight movement and offer multiple functionalities such as freight aggregation, and distribution. Storage, warehousing solutions, value-added services like custom clearances and IT services will be provided. The parks will enable the switch from a point-to-point to a hub-and-spoke model in the logistic parks, eventually bringing down logistics costs by at least half and enabling more efficient movement of new generation vehicles.



The multimodal logistics park at Jogighopa will include railway sidings, container terminals, warehousing, iron-cargo processing, a truck terminal, support infrastructure and equipment. Graphic: Mint

- **The construction of the country's first such park in Assam's Jogighopa is underway** while the work on the two others in Nagpur and Chennai is likely to start soon. (March 2022)
 - » It will have a cargo capacity of 13 million metric tonnes (MMT) per year and act as a single platform for cargo, warehousing, custom clearance, parking and maintenance services.
 - » It will have direct connectivity with **National Highway 17**, the proposed Jogighopa waterway terminal on Brahmaputra, the newly constructed Rupsi and Guwhati airports as well as the main railway route.
 - » It will have road, rail, waterway and air transport facilities.
- **Reasons why Jogighopa was chose**
 - » Location near Brahmaputra (and Bangladesh, Bhutan Borders)
 - » Recent projects, like announcement of the North-east Economic Corridor under the Bharatmala programme of the road ministry, and the signing of MoU (memorandum of Understanding) between India and Bangladesh for developing the Dalu-Tura-Goalpara-Gelephu multimodal trade route strengthens Jogighopa's case for MMLP.

2) FREIGHT SMART CITIES (JULY 2021)

- **Why in news?**
 - » Commerce Ministry's Logistic Division unveils plans for 'Freight Smart Cities' (July 2021)
- **Details**
 - » The Logistics Division under the Ministry of Commerce and Industry has decided to work in a planned manner to improve the city freight movement.
 - » **Why focus on city freight movement?**
 - Demand for urban freight is expected to grow by 140% over the next 10 years.
 - **Final mile freight movement** in Indian cities is currently responsible for 50% of the total logistics costs in India's growing e-commerce supply chains.
 - Increase efficiency and bring down the logistics costs boosting all sectors of the country.
 - » The ministry has launched **portal and handbook** with 14 key measures to enhance urban freight systems.
 - » The initiative will first be launched in 10 cities and it is planned to expand the list to 75 cities in the next phase before scaling throughout the country including all state capitals and cities that have more than 1 million population.
 - » The **list of the cities** to be taken up would however be finalized in consultation with the state governments.

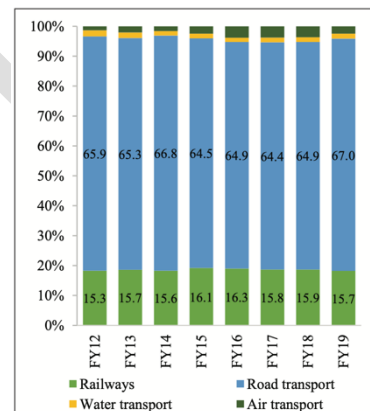
3) LOGISTIC EASE ACROSS DIFFERENT STATES (LEADS) INDEX

- **Why in news?**
 - » Ministry of Commerce and Industry releases the 3rd edition of the LEADS index (Nov 2021)
- **About the Index**
 - » It is a composite indicator to **assess international trade logistics across states and Union Territories** and is based on stakeholders' survey conducted by Deloitte for the Ministry of Commerce and Industry.
 - » It is based on **the analysis of perception with regard to nine parameters including** infrastructure services, timelines, track and trace, competitiveness of pricing, safety of cargo, operating environment, and regulatory process.
- **The LEADS 2021** exercise has gone one-step ahead in analyzing domestic and EXIM logistics ecosystem of the state.
 - » Specifically, two improvements, have been done in the overall assessment framework.
 - Firstly, objective parameters have been used along with perception based indicators for index formulation.
 - Secondly, the statistical methodologies to build the index has been updated to get more robust results, given change in the overall framework.

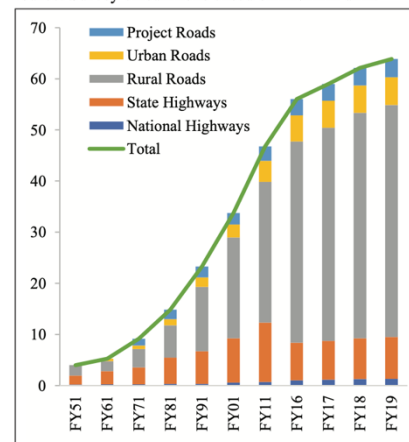
- » Alternatively, a total of 21 perception and objective variables have been statistically analyzed to prepare a composite index basis upon which the states have been ranked.
- » **The Perception Survey** was administered to the four different categories of logistics stakeholders, viz., traders/shippers, transport service providers, terminal operators, and logistic service providers.
- » The **States' Objective Survey** collected binary responses in the context of the areas related to policy, institutional framework, current enforcement mechanism, warehousing approvals and processes, smart enforcements, city logistics, drivers' empowerment, etc. to understand the initiative taken by the different state governments towards improving the logistics environment in their respective states.
- **Top Performers of LEADS 2021:**
 - » Gujarat, Haryana, and Punjab have emerged as the top performers in the LEADS 2021 index respectively.
 - » **Within NE states and Himalayan region**, J&K is the top ranker followed by Sikkim and Meghalaya. Delhi stands at the top rank among other UTs.
- **NOTE:** LEAD is loosely based on WB's LPI.

4. ROADWAYS

- Road transport is the dominant mode of transport in India, both in terms of **traffic share** and in terms of contribution to **National Economy (3.08% of GVA (out of total 4.6% by Transport sector))**.
 - » Apart from facilitating Indian **movement of goods and passengers**, road transport plays a key role in promoting **equitable socio-economic development** across regions of the country.
 - » According to the **National Transport Development Policy Committee Report**, as of 2011-12, road transport is estimated to **handle 69% of countrywide freight and 90% of passenger traffic respectively.**
- India has **2nd largest road network** in the world with **63.71 lakhs kms of rural-urban roads** and national state highways (as on March 2019)
 - » **Note:** India is **next only to the USA** that has a road network of 66.45 lakh km.
- With a proactive policy initiative in the sector, the **road network has continuously been expanding in the country.** The **pace at which roads have been constructed** has grown significantly from **12 kms per day in 2014-15 to 30 kms per day in FY19** before it moderated in FY20 due to COVID-19.
- **Total investment** in roads and highway sector has gone up more than three times in the six years period from FY15 to FY20, which also led to increased road density across the states.



Source: Survey calculations based on MoRTH data.



Source: Survey calculations based on MoRTH data.

1) INSTITUTIONAL FRAMEWORK

1. **The Ministry of Road Transport and Highways** encompasses construction and maintenance of National Highways (NHs), administration of Motor Vehicles Act, Central Motor Vehicles Rules 1989, National Highway Act, 1956 and National Highways Fee (Determination of Rates and Collections) Rules, 2008.
 - It is also responsible for policy making related to road transport, environmental issues, automotive norms etc.
2. **National Highway Authority of India (NHAI)**
 - It is an statutory, autonomous agency of GoI, responsible for management of a network of over 50,000 km of National Highways out of 1.32 lakh km in India.

- It is also responsible for collection of tolls on several highways.
- It is a nodal agency of Ministry of Road transport and Highway.
- It was created through NHAI, Act, 1988.
- **InvIT By NHAI (Dec 2019 - Jan 2020)**
 - Cabinet in Dec 2019, allowed NHAI to set up an InvITs as per the InvIT guidelines issued by SEBI and thus monetize Nationla Highway Projects.
 - **Need?**
 - Mobilize funding for road sector.
 - **Union Minister of Road Transport and Highways**, Nitin Gadkari have announced that the NHAI targets to mobilize Rs 10,000 - 20,000 crore through its maiden InvIT offering and eventually scale up this funding model based on the response received from the investors.

3. National Highway Investment Promotion Cell

- In Dec 2017, NHAI have created NHIPC for attracting domestic and foreign investment for highway projects.
- The cell focuses on engaging with global institution investors, construction companies, developers and fund managers for building investment participation in road infrastructure projects.
- NHIPC maintains close coordination with various connected Ministries and departments of government of India, State governments, Apex Business chambers like CII, FICCI etc.
- It also works in coordination with foreign embassies and Missions in India and Indian embassies and missions situated in foreign countries.

4. NHIDCL (National Highway and Infrastructure Development Corporation Limited)

- It is a fully owned company of the MoRTH, GoI which was established in July 2014.
- It is **responsible** for exclusively carrying out the task of **construction, maintenance and upgradation of National Highways and Strategic Roads** including interconnecting roads in **parts of the country** which share **international boundaries** with neighboring countries.
- The focus is on promoting cross border trade and commerce and help safeguard India's international borders. This will lead to a more integrated South Asia and Southeast Asia. In addition, this will also bring economic benefits for the local population and help integrated peripheral areas with the mainstream

2) ROAD PROJECTS/SCHEMES/PROGRAMS

A) NATIONAL HIGHWAY DEVELOPMENT PROJECT (NHDP)

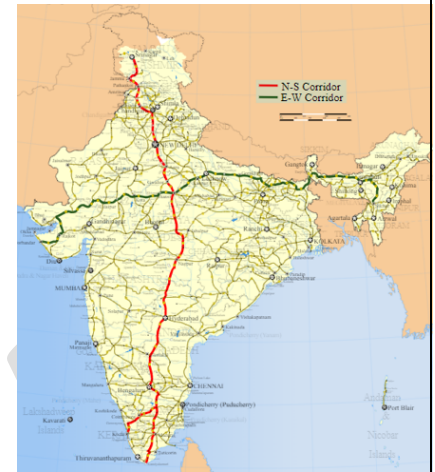
- The NHDP was once the largest Highways Project ever undertaken (**now Bharatmala is the largest**) in the country since 2000. The NHDP is being implemented by NHAI and NHIDCL.
- **NHDP had two major components**
 1. **Golden Quadrilateral (project completed)**
 - » It is a highway network (5846 km) connecting many of the major industrial, agricultural and cultural centres of India.
 - A quadrilateral of sorts is formed by connecting Chennai, Kolkata, Delhi and Mumbai and hence the name.
 - Other major cities connected by the network include: Jaipur, Surat, Ahmedabad, Pune, Bengaluru, Bhubaneshwar, Kanpur, Nellore, Vijayawada and Vishakhapatnam.



- » It was started in 2001 by then PM AB Vajpayee and was completed in 2012.
- » The GQ project is managed by National Highway Authority of India under MoRTH.

2. North-South and East West Corridors

- This is a 7,142 km network connecting Srinagar to Kanyakumari and Silchar to Porbandar.



B) BHARATMALA PARIYOJNA

- **Bharatmala Project** is biggest ever road and highways development program taken by India.
 - » It is bigger than *National Highway Development Programme (NHDP)* started during Vajpayee government
- **Ministry: MoRTH**
- Core idea is of a road built along India's vast west to east land border from Gujarat to Mizoram, and linking that to a road network in coastal states, from MHA to Bengal.
 - » This is a road network that will, as it were, **garland the territory of India**. Hence the name.
- **Scale**
 - » Under this project highways of approximately 25,000 kms will be constructed (also bridges) with an estimated cost of around 3.85 lakh crore in phase-1 (2017-19 - 2021-22)
 - In addition Phase-1 includes 10,000 km of balanced road works under NHDP. It will cost 1.5 lakh crore
 - » **Total Estimated outlay for phase-1** is Rs 5,35,000 crore.
 - » The target to complete the project in 2022.
- **Funding**
 - » To complete all the ongoing projects of the Ministry government estimates total expenditure of **about Rs 6.92 lakh crore (3.85 lakh crore for Bharatmala)**.
 - The funds are going to come from **fuel cess, budgetary allocation, TOT monetization and market borrowing**.
- **Bharatmala is an umbrella scheme** which subsumes unfinished part of NHDP and also focus on new initiatives like
 - Development of border and international connectivity roads**
 - Coastal and port connectivity roads**
 - Improvement in Efficiency of National Corridors**
 - » Currently, NHs including GQ and North South and East West Corridor carry nearly 35% of India's freight. All these stretches will be **declared National Corridors**.
 - » Under Bharatmala all these stretches will **be widened to 6-8 lanes**.
 - » Further, **new ring roads, and bypass/elevated** corridors will be built to decongest choke points on National Corridors.

- » Moreover, **multimodal logistic parks** will be developed at **critical economic nodes** along the GQ and North South and East West corridors to enable efficient modal transfers, freight aggregation and disaggregation.
 - A network of **35 multimodal logistic park** has been identified for development in the phase-1.
- d. **Development of Economic Corridors**
 - » Economic Corridors focus on improving logistic efficiency.
 - » **44 new economic corridors** have been identified which include Mumbai-Agra, Mumbai-Kolkata, Chennai-Madurai, Bilaspur-Delhi etc.
 - » These economic corridors with national corridors will form India's new highway grid.
- e. **Inter Corridor and Feeder Routes**
 - » A network of shorter inter corridor routes connecting two existing corridors and feeder routes to the corridor network. These roads are expected to carry 20% of the freight.
- f. **Development of Greenfield Expressways**
 - » Bharatmala program also envisages building expressways close to the National Economic Corridors where traffic has breached the 50,000 passenger car units (PCUs).
 - » About 1900 kms of these stretches have been identified for the development of green-field expressways. Expressways have limited entry and exit points and there will be no traffic signals or toll plaza on the main carriageway which will ensure seamless and faster traffic movement.

C) SETU BHARATAM PROJECT

- It is an ambitious program with an investment of Rs 50,000 crore to build **bridges for safe and seamless travel on National Highways**. It was launched in 2016. It is aimed an **elimination of railway crossings** from National Highways in India by constructing 1500 major bridges and 200 railway over bridges (ROBs) or Railway Under Bridges (RUBs).
- **Ministry:** MoRTH
- The **original deadline** for completion of Setubharatam project was **2019**

D) CHAR DHAM HIGHWAY PROJECT (CHAAR DHAM MAHAMARG VIKAS PARIYOJNA)

- **Why in news?**
 - » Supreme Court allows Centre to widen three Char Dham Highways (Dec 2021)
- **Char Dham Expressway National Highway** is a proposed road network in Uttarakhand stretching upto **890 km** and connecting **four shrines** of Kedarnath, Badrinath, Gangotri and Yamunotri. According to government the project is expected to cost **Rs 11,700 crore**. The project is being executed by the **Ministry of Road Transport and Highways (MoRT&H)**.
- Founding stone of the project was laid by PM Modi in Dec 2016 and the target was to complete the project by March 2020.
- **Originating in Rishikesh**, Char Dham Highway network will have four distinct routes:
 - » Rishikesh - Yamunotri
 - » Rishikesh - Gangotri
 - » Rishikesh - Kedarnath
 - » Rishikesh - Badrinath



Chardham Yatra Marg Project

- The project will have bypasses, bridges, viaducts, pit stops, parking, helipads and helicopter emergency response service etc. along the way.
- **Significance of the Project**
 - » It will facilitate millions of pilgrims going to char Dham every year.
 - » It will also ensure development of the region and bring employment and other economic development opportunities.
 - » The project also has strategic significance as it is in close proximity to India-China Border.
- **Environmental concerns becoming an issue with Char Dham Project**
 - a. Environmentalists allege that the project is being pursued in haste and would result in an irreparable loss.
 - b. **Deforestation:** Various reports claim that about 40,000 trees will be cut across 8 districts to make way for the roads.
 - c. **Soil Erosion and Landslides:** For widening of roads precarious mountain slopes are being cut in haphazard manner with the use of heavy machines like JCBs and Poklands. Further, the removal of vegetation cover on slopes downhill and erosion increases the chances of landslides.
- **Petitions was filed against the project in NGT** seeking a stay on the Char Dham Project as it violates Environmental Impact Assessment notification of 2006.
 - » **In Sep 2018**, the NGT gave its clearance for the project and ordered the formation of a committee to oversee the project.
 - » The NGT Nod was stayed by Supreme Court on technical ground.
- **The clearance was struck down by the Supreme Court in Oct 2018.**
- **In Aug 2019, Supreme Court Finally backed portions of Tribunal's order allowing the project to continue with assessment by an independent committee.**
 - » It modified portions of earlier NGT order regarding the constitution of the High Powered Committee (HPC). Instead of being headed by a judge, it would be led by **Ravi Chopra**, Director of the Dehradun People's Science Institute.
- The **HPC couldn't reach a unanimous decision**. It has **submitted reports in two** parts - the majority report and minority report, dated Dec 31, 2020.
 - » **Majority** is in favor of widening of the wider roads, considering the strategic requirement and snow removal needs.
 - » Minority group which also comprised of **HPC chairman Ravi Chopra**, who is also a noted environmentalist, and two other members, however, expressed their dissent and maintained that the road width should be restricted to 5.5 m.
- **Supreme Court order in Sep 2020**
 - The Court directed the government to adhere to an MoRTH circular of March 2018 that advised against building full-fledged roads in hilly areas. The carriageway width of the roads **can't exceed 5.5 meters**. In doing so, the court upheld the minority view of the HPC.
- **In Nov 2020, Ministry of Defence** filed an appeal in which, quoting the MoRTH Affidavit, it asked "for a double lane road having a carriageway width of 7 m (or 7.5 m in case there is a raised kerb), with 8-10 m formation width to "meet the requirement of the Army".
- **In Dec 2020**, MoRTH amended in 2018 circular and raised the 5.5m width limit to 10m (7m width and 1.5 meters paved shoulder on either side).
- **In Dec 2021**, Supreme Court upheld the government's mandate to broaden three Himalayan highways, considered crucial by the MoD for quick troop buildup along the Indo-China border.
 - The three National Highways are: Rishikesh to Mana; Rishikesh to Gangotri; and Tanakpur to Pithorgarh. They act as feeder roads to the northern border with China.
 - These highways will now be developed as per the double lane with paved shoulder (DLPS) system.

- The court said that "**This court in judicial review can't second guess the infrastructural needs of the armed forces**".
- This verdict is based on application filed by MoD to modify the Sep 2020 orders, which directed the mountain roads for the Char Dham Highway project should be 5.5 m in width in compliance with a 2018 circular of the Roads and Highways Ministry.
- However, SC has also asked the government to address the environmental concerns raised by HPC constituted on its order in Aug 2019.
- An oversight committee, which will assess their implementation, has been set up by the Supreme Court.
- As directed, government will issue a formal notification in terms of the Supreme Court's directions within two weeks and thereafter, MoRTH and MoD will place before the committee the steps taken to adhere to the recommendations, along with projected timeline for complying with the remaining suggestions.

E) PRADHAN MANTRI GRAM SADAK YOJNA

- Pradhan Mantri Gram Sadak Yojana (PMGSY)

- » PMGSY was launched in the year 2000, as a centrally sponsored program and a one-time special intervention by Ministry of Rural Development (**MoRD**).
- » The primary **objective** of the programme was to provide
 - » **Connectivity by way of all-weather roads** to unconnected habitations of designated population size of more than 500 in plain areas and 250 in north-east, hill, tribal and desert areas as per the census 2001.
 - » **Upgradation of selected roads** to provide full farm to market connectivity.
- » **Funding**
 - » Initially, it **was fully funded by central government**.
 - » **But lately**, since the 14th Finance Commission's recommendation for more devolution of tax pool to states, it is funded by both center and state government in 60:40 ratio (90: 10 in some north eastern and hilly states)
- » **Execution:** The works are executed by the state governments and monitored by the MoRD through National Rural Road Development Agency (NRRDA) set up for the purpose.
 - » **Monitoring: OMMS** (an Online Management & Monitoring System or OMMS GIS system) was developed to identify target and monitor progress.
- » **Connecting left wing affected areas Scheme:**
 - » To improve rural road connectivity in the left wing extremism affected districts from security angle, the Cabinet had in 2016 approved the centrally-sponsored "Road Connectivity Project for Left Wing Extremism (LWE) Affected Areas" scheme.
 - » The Project will be implemented as a vertical under PMGSY to provide connectivity with necessary culverts and cross-drainage structures of 44 worst affected LWE districts and adjoining districts, critical from security and communication point of view.
 - » **Development of Major District Roads (MDRs):** PMGSY guidelines don't permit construction/upgradation of MDRs. However, keeping special circumstances of LWE area in view, MDRs would be taken up under the scheme as a special dispensation.
 - » The National Highways and State Highways would be excluded from the project.
 - » The roads to be constructed have been identified by MHA in close consultation with the State Governments and the security agencies, by following a process of extensive consultation.
 - » Government has taken up task of connecting habitations with more than 100 persons in LWE affected blocks under PMGSY.
 - » All such habitations are expected to be covered by 2019.
 - » **States covered**
 - Orissa, Jharkhand, Bihar, Chhattisgarh, MP, Telangana and Maharashtra

» **Targets**

- » PMGSY Phase 1: Habitation (250+) would be covered by March 2019.
- » PMGSY Phase 2 (Habitation 100+) and LWE blocks would be covered by March 2020.
- » Phase 3 will focus on sustainable maintenance of the roads.
 - Phase 3 was launched in Dec 2019
 - It is aimed at **consolidation of 1 lakh 25 thousand Kms** through routes and major rural links that connect habitations to GrAMs, Higher Secondary Schools, and Hospitals.
 - It will cost an **estimated 80 thousand 250 crore rupee** for the period **2019-20 to 2024-25**. Center will be contributing 60% of the cost. For the North Eastern and Himalayan states the center's contribution will be 90:10.
 - Construction of **bridges** of upto 150 m in plain area and 200 m in Himalayan and north-eastern states are proposed under this phase, as against the existing provisions of 75 m and 100 m in plain areas and Himalayan and north-eastern states respectively

F) MAJOR ROAD PROJECTS LAUNCHED IN LADAKH TO BE CONSTRUCTED BY BRO

- **Why in news?**

- » 5 major Road infra projects launched to be constructed by BRO to boost connectivity in the region (Oct 2021)
- » Earlier, in Sep 2021, Ladakh Administration and Border Road Organization (BRO) had signed a historic MoU for upgradation and improvement of Road Network of Ladakh (Sep 2021)

- **Details:**

- » The five projects that kicked off today included preparation of greenfield alignment and upgradation of major single lane roads to double lane (NHDL specifications) and tunneling works.
- » Construction of road **Hanuthang-Handanbroke-Zungpal-Turtuk**, the 26.6 km long greenfield road is planned to provide inter valley connectivity between Hanuthang-Handambroke (Indus Valley and Zungpal-Turtuk (Shyok Valley) across the Stakpuchan range. This will reduce the travel time to 3.5 hours from the current 9 hours to Turtuk via Leh, without crossing the treacherous **Khardungla pass**.
- » **Upgradation of 4 major single lane roads** have also commenced:
 - **78 kms** road from **Khalse to Batalik**.
 - **50 Km** road from **Kargil to Dumgil**, which will also include construction of tunnel at Hambotingla to ensure seamless connectivity from Kargil to Batalik.
 - **70 km** road from **Khalsar to Shyok** via Agham
 - **31 km** road from **Tangtse** to Lukung.
- » All these roads are used extensively by tourists to reach sought after tourists destinations such as Hundar (Nubra Valley), Turtuk Village, Shyok, Pangon-Tso lake and Aryan villages of Dah, Garkone Darchik etc.
- » It also has huge strategic significance

G) NEW ROAD TO KAILASH MANSAROVAR

- **Why in news?**

- » Rajnath Singh inaugurates new road to Kailash ManSarovar (May 2020)

- **Details**

- » The new 80 km long greenfield road from **Ghatiabgarh to Lipulekh** was made under directions of the **China Study Group (CSG)** and is funded by **Indo-China Border Road (ICBR)**. It is scheduled to be completed by 2022.
 - This road was approved by the Cabinet Committee on Security (CCS) in 2005 at a cost of Rs 80.76 crore and in 2018 the cost was revised to Rs 439.40 crore.
 - The road has been completed upto 5 km short of Lipulekh pass on April 17, 2020. The last bit couldn't be finished due to a temporary ban placed on last-mile connectivity by the DGMO, which is yet to be lifted.

-
- » This new road in Uttarakhand connects close to the LAC and **opens a new route to Kailash ManSarovar via Lipulekh Pass**, significantly reducing the travel time for Yatris.

- » Border Road Organization (BRO) achieved road connectivity from **Darchula to Lipulekh** (China Border) known as Kailash ManSarovar Yatra Route.



- » **Reaching Kailash ManSarovar from this route**
 - Delhi -> Pithoragarh (490 km from Delhi)
 - Phithorgarh -> Ghatiabgarh (130 km of road travel)
 - **Ghatiabgarh -> Lipulekh Pass (new greenfield road of 80 km), under construction, expected to be completed by 2022.**
 - Across the China's border
 - 5 km trek
 - 97 km of road journey
 - 43 km of Foot Parikrama
- » **Advantages**
 - It is the shortest and cheapest route with just one-fifth distance of road travel as compared to others.
 - There is no air travel involved and majority of travel, around 84%, is in India and only 16% in China. (Note: On other routes 80% of the road travel is in China).
 - Except for a 5-km trek on the Chinese side across Lipulekh Pass, the complete travel will now be on vehicles.

- **Note: 2 Other Routes to Kailash ManSarovar**

» **Via Sikkim:**

- Delhi -> **Bagdogra** (by flight: 1115 km from Delhi)
- 1665 km of Road travel from Bagdogra (of this only 175 km is in India). It passes through **Nathula** pass in Sikkim, India.
- 43 km of Parikrama



- Via Kathmandu

3) IMPORTANT TUNNELS IN NEWS

A) SIKYARA BEND – BARAKOT TUNNEL

- In Feb 2018, Union Cabinet gave approval to the Rs 1,384 crore tunnel project in Uttarakhand **as part of 'Char Dham' with escape** passage including approaches on **Dharasu-Yamunotri section**.
- This tunnel will **reduce the travel distance** between Dharasu and Yamunotri by 20 kms and travel time by an hour.
- The project falls under NH-134 (old NH-94) in Uttarakhand and will be built under **engineering, procurement and construction (EPC)** mode.
- The project is being implemented by NHIDCL.

B) ATAL TUNNEL (ROHTANG TUNNEL)

- It is a road tunnel which cut through **mighty Pir Panjal Range** and **connects Manali to Lahaul-Spiti Valley**. It is a **9.02 km-long-tunnel**, built by (BRO) and is the **world's longest highway tunnel**.
 - » It is a **10.5 meter wide, single tube, a bi lane tunnel** with a fireproof emergency built into main tunnel itself.
 - » The 10.5 meter width also include a **1-meter foot path on both sides**.
 - » The tunnel will have a **maximum vehicle speed** of 80 km/hr.
- The tunnel has **cut down travel time between Manali and Lahaul** by **five hours** and reduce distance by 46 km.

<ul style="list-style-type: none"> ▪ Length: 9.02 km ▪ Shape: Horse shoe 	<ul style="list-style-type: none"> ▪ Distance reduced: 46 km ▪ Time saved: 5 hours ▪ Altitude: 3,000 m above mean sea level ▪ Single-tube, double lane tunnel ▪ Maximum vehicle speed: 80 km/hr 	<ul style="list-style-type: none"> ▪ Telephone facility: Every 150 m ▪ Fire hydrant: Every 60 m ▪ Emergency exits: Every 500 m 	<ul style="list-style-type: none"> ▪ Turning cavern: Every 2.2 km ▪ Air quality monitor: Every 1 km ▪ Automatic incident detection system with CCTV cameras: Every 250 m 	2002 Atal Bihari Vajpayee laid foundation stone for approach road to the tunnel
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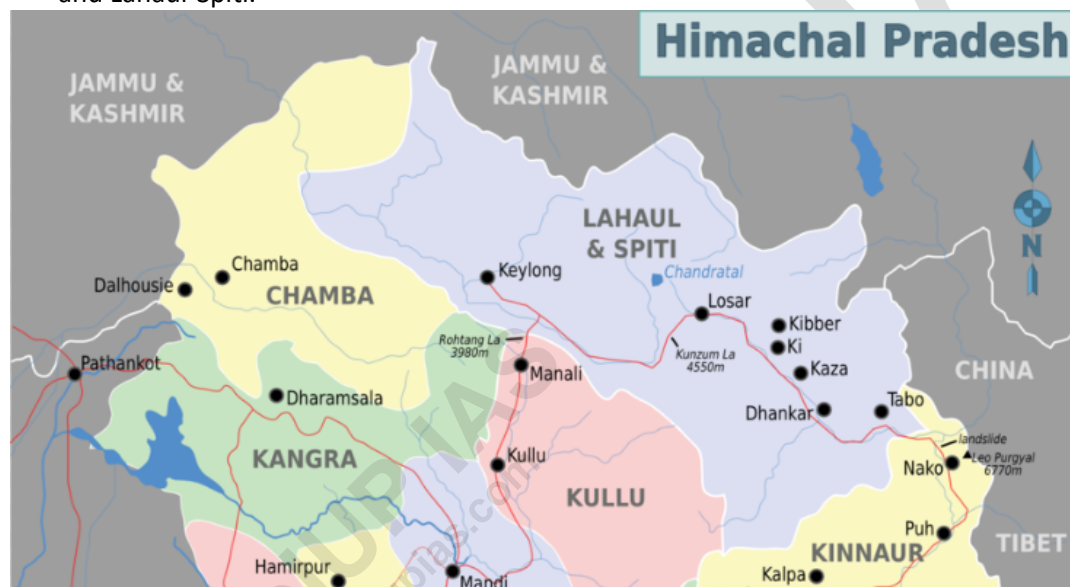
- Afcons in a joint venture with **Strabag AG**, has constructed the tunnel for the **Border Road Organization (BRO)**.
- **Strategic Significance** of the Manali-Leh link was realized by the Indian Government almost two decades ago when Pakistan tried to cut off Srinagar Leh road during Kargil war.
 - » The tunnel will thus provide **access beyond Rohtang pass** even in peak winters.
 - » **All winter connectivity to Ladakh is still far away** as some more tunnels will have to be built to tackle the high passes that fall beyond Rohtang.
 - **Other future tunnel requirement to connect Ladakh**

Passes	Length of the tunnel required
--------	-------------------------------

Baralacha La (16,040 feet)	13.2 km
Lachung La Pass (16800 feet)	14.78 km
Tanglang La Pass (17,480 feet)	7.32 km

- **About Rohtang Pass**

- » It is a **high mountain pass** in the **Pir Panjal** range of The Himalayas. It is around 51 km from Manali.
- » It **connects** Kullu Valley with the Lahaul Spiti Valley of Himachal Pradesh.
- » **Highway:**
 - The former National Highway 21 (NH21), the road through the Kullu Valley, terminates at Manali.
 - **Note:** The highway is **now numbered NH-3**.
 - The road northwards over the Rohtang Pass to Keylong, and Lahul and on to Leh and Ladakh is **not a national highway**.
- » The pass remains closed during winters (Nov - April)
- » With the construction of **Atal Tunnel**, round the year connectivity will be provided between Manali and Lahaul-Spiti.



C) ZOZILLA TUNNEL

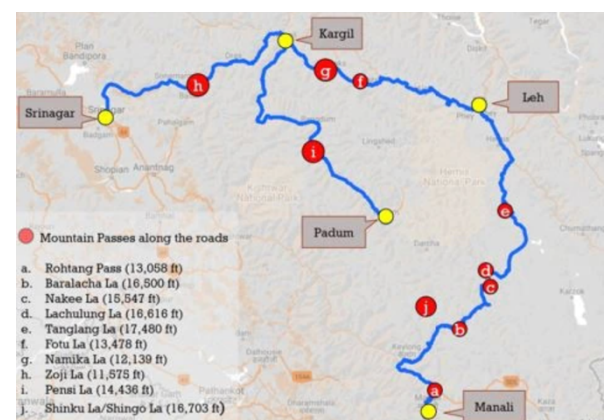
- **About. The tunnel**
 - » The tunnel was approved on Jan 3, 2018 by the Union Cabinet of India at an estimated cost of Rs 6,089. Once completed it will be the **longest bi-directional tunnel in Asia** with **14.150 km** length.
- **Status of the Project**
 - » In **Jan 2019**, the NHIDCL terminated the contract awarded to the troubled IL&FS transportation after it abandoned the project citing financial problems.
 - » The project which was earlier constructed on Hybrid Annuity model will now be constructed into EPC mode.
 - » **Changes being planned:**
 - They will do away with the escape tunnel and instead come up with alternative tunnels to go from one side to the other.
 - The design changes could also include removal of some vertical shafts without compromising on safety.

- » Its construction period will be **7 years** because of very difficult terrain where in some areas temperature dips to minus 45 degree celsius.
- » The project will be implemented by MoRTH through NHIDCL.
- **Significance**
 - » Enhance the safety of travelers crossing Zozila and reduce the time of travel from 3.5 hours to 15 mins.
 - » The tunnel will also ensure more security for Kargil sector which have seen intrusions in the past.
 - » The tunnel will also bring economic and socio-cultural integration of the region.
- **About Zozila Pass (Zozi Pass)**
 - » It is a high mountain pass in J&K located on the Indian National Highway 1D (Srinagar-Kargil-Leh National Highway) in the western section of the Himalayan mountain range. It provides a vital link between Ladakh and Kashmir valley.
 - » It runs at an elevation of 3,528 meters, and his the **second highest** pass after **Fotu La** on Srinagar-Leh National Highway.
- **Location**



D) SHINKULA TUNNEL

- **Why in news?**
 - » BRO to construct World's highest tunnel at Shinku La pass to connect Himachal to Ladakh (April 2022)
- **Details**
 - » Situated at a height of 16,580 feet, the **Shinku La Pass** tunnel will connect Kargil's Zaskar Valley to Himachal Pradesh.
 - » Work on the tunnel will start in July 2022 and should be completed by 2025.
 - » Centre has already approved **Project Yojak** to execute this ambitious project.
 - » **At present:**
 - **One has to travel 101 km from Manali to Darcha on Leh Road** and thereafter, **take a turn from Darcha towards Shinku La Pass and enter Zaskar.**
 - » **Tunnel:**
 - The south portal of the tunnel will be at **Shinku La** and the north portal at **Lakhang.**
- **Various Passes/Tunnels**



E) SELA PASS TUNNEL

- Why in news?

- » Last blast of Sela Tunnel's escape tube conducted by DG Border Roads through video conferencing (July 2021)
- » PM Modi laid foundation for the Sela Pass Tunnel in Feb 2019.

- About Sela Pass

- » It is high altitude mountain pass located on the border **between the Twang and West Kameng Districts** of Arunachal Pradesh.
- » It has an elevation of 4170 m (around 13,000 feet), and connects Tibetan Buddhist town of Tawang to Dirang (West Kameng District) and Guwhati i.e. the pass carries the main road connecting Tawang with the rest of India. At this height, it will be the world's longest bi-lane road tunnel. It would provide all weather connectivity to Tawang.
- » **Sela Lake** is one of the approximate 101 lakes in the area that are sacred in Tibetan Buddhism.



- About the Tunnel

- » It is being constructed by BRO at a cost of Rs 687 crores. It is being constructed using the latest New Australian Tunneling Method (NATM) and is much below the snowline allowing all weather travel challenges without the challenge of snow clearance.
- » It will be constructed by BRO at a cost of Rs 687 crore and is expected to take three years.

- Significance

- » **Strategic:** the tunnel will reduce the travel time between the Indian Army's 4 Corps headquarters at Tezpur in Assam and Tawang.
- » **Economic:** it will also boost the tourism industry in the region.

F) A PROPOSED ROAD TUNNEL BENEATH WESTERN GHATS IN KERALA: PURPOSE, CONCERN

- Why in news?

- » In Oct 2020, the Kerala Chief Minister launched a tunnel road project that would connect Kozhikode with Wayanad. (Oct 2020)
 - With this survey has begun and final alignment is being fixed ahead of the detailed project report, which should be followed by steps such as technical sanctions, EIA report, and seeking mandatory clearance from various agencies including the MoEF&CC.

- Details

- » The 7-km tunnel, being described as the third longest in the country, is part of an 8-km road cutting through sensitive forests and hills of the Western Ghats.
 - Its endpoints are at Mariphuza in Thiruvambady village of panchayat (Kozhikode) and Kalladi in Meppadi panchayat (Wayanad).
 - The tunnel road is an outcome of a decades-long campaign for an alternative road **as the Thamarassery Ghat Road is congested and gets blocked by the landslides during heavy Monsoon.** A proposal to widen the road has been pending clearance from the MoEF&CC.

4) OTHER ROADS RELATED INITIATIVES

A) RATING MECHANISM FOR NATIONAL HIGHWAYS

- **Why in news?**
 - » MoRTH releases rating mechanisms for National Highways (March 2021)
- **Details**
 - » The initiative has been taken as per the vision of improving the quality of public services. The fundamental objective of highway rating is "Minimum time with maximum safety in stress free environment" from highway users' perspective.
 - » The Ministry of Road Transport and Highways has released the ratings of 18,668 km of completed 4/6 lane NH stretches covering 343 toll plazas.
 - NHAI has done this to improve its accountability towards road users, who pay user fee for use of developed national highways.
 - » **Each toll plaza** is judged based on three criterias:
 - Efficiency
 - Safety
 - User Services
 - » The criteria is further divided into a total of 39 parameters which include average speed, road condition, facility for public like VUP/PUP/FOB, service road, delay at toll plaza, accidents, incident response time, wayside amenities, general cleanliness, etc

B) CENTRAL ROAD FUND (CRF)

- **Introduction**
 - » CRF is a **non-lapsable fund** created under section-6 of the Central Road Fund Act, 2000 out of a cess/tax imposed by the Union Government on the consumption of Petrol and High Speed Diesel to develop and maintain National Highways, State Roads (particularly those of economic importance and which provides inter-state connectivity), rural roads, railways under/over bridges), National Waterways(after the bill is passed in Parliament - Only passed in LS so far), hospitals etc (after 2018 budget amendment) etc.
- **Sources of CRF**
 - » **Cess**
 - An additional duty of customs (tax on imports) and an additional duty of excise (tax on production) are levied and collected as cess (cess is any tax levied for a specified purpose) **on Motor Spirit** (commonly known as petrol) and on **HSD** oil.
 - » The revenue collected is initially credited to Consolidated Fund of India and after adjusting for the cost of collection, Parliament through its appropriation bill, credits such proceeds to the Central Road Fund.
- **CRF has been the mainstay of public funding of highway projects in the country since it was set up by Vajpayee government**, with the objective of finding the resource for NHDP.
- **CRF is distributed among four ministries** in a manner prescribed by the Central Road Fund Act
 - » Ministry of Rural Development
 - » Ministry of Railways
 - » Ministry of Road Transport and Highways
 - » Ministry of Shipping (After the new bill is passed by Parliament) (only passed in LS so far)
 - » Hospitals etc (in future after the budget proposals are implemented)

C) NATIONAL GREEN HIGHWAY PROJECT

- **Why in news?**
 - » Govt allocates Rs 7,660 crore for 780 km green highway project. (**March 2020**)

- » **Status as of July 2021:** Out of the total length of 781 km, work of 287.96 km having Civil Cost of Rs 1664.44 crore has been awarded

- **Key Highlights**

1. Under the Green Highway project, **two-lane or two-lane with paved shoulders or four-lane configuration** (Tw lane/single/Intermediate lane) of national highways will undergo major upgradation or rehabilitation.
 - Apart from these, stretches of several national highways across Andhra Pradesh, Himachal Pradesh, Rajasthan, and Uttar Pradesh will be strengthened
 2. The total cost of the mega Green Highway project is Rs 7662.47 crore which also involves a loan component of Rs 3500 crore or \$500 million. The World Bank will provide the loan under Green National Highways Corridor Project (GNHCP).
 3. The essential components of the Green Highway Project are **sustainable development and maintenance of National Highways, Institutional Capacity Enhancement, road safety, and research and development**.
 4. The project will witness the **strengthening of the Highway or Bridge Engineering Lab at the Indian Academy of Highway Engineers**. At the Lab, testing of materials will be done to assess the quality of works and the impact of interventions in climate resilience.
 5. The Green Highway project will also witness **enhancement of road safety by adopting advanced measures such as safety audits** at design, implementation, operation and maintenance stages.
 6. Under the project, research and development studies will be done topics like the use of fly ash, demolition waste etc. in embankments, use of waste plastic, modifiers etc. in bituminous works, stabilization of soils and pavement layers, tree plantation and slope protection using bio-engineering solutions.
 7. **The schedule** date of completion is Dec 2025.
- **Status as of July 2021:** Out of the total length of 781 km, work of 287.96 km having Civil Cost of Rs 1664.44 crore has been awarded

D) DRAFT STANDARD FOR ROAD TRAINS (APRIL 2021)

- **Why in news?**

- » MoRT&H, under the leadership of Nitin Gadkari, publishes Draft Standard for Road Trains (April 2021)

- **Details**

- » To revolutionize the transport of goods and reduce the overall logistic costs, **the Automotive Industry Standards Committee has amended its AIS-113 Standard** to include the safety requirements of Road-Trains and has hosted the draft on Ministry of Road Transport & Highway's website.

- This standard has been prepared after examining European benchmark, while keeping Indian conditions in mind.
- The standards have been prepared after examining European benchmarks, keeping in mind Indian operating conditions



- » Road-Train is a motor vehicle wherein the traction is provided by the puller, which is connected to a serial combination of trailers or semi- trailers.
 - These shall ply on select stretches to reduce congestion, save fuel and reduce noise & air-pollution.
- » The **Automotive Industry Standards Committee** has representatives from the relevant Ministries, Testing Agencies, Industry stakeholders, BIS etc.
 - The **amended standard AIS-113** (Code of Practice for Type Approval of Trailers / Semi-trailers of categories T2, T3 and T4 being towed by Motor Vehicles of categories N2 and N3) has been published for invitation of public comments, after which it shall be notified in due course.

E) BH SERIES OF REGISTRATION PLATES FOR VEHICLES

- **Why in news?**
 - » MoRT&H have notified BH series of registration which people can opt for (Sep 2021)
- **Details**
 - » **Problems with the Current System:**
 - Relocating a car or two-wheeler to another state may often be a pain.
 - You have to get an NOC from the current state and then re-register the vehicle in the other state where the vehicle will be located.
 - As per the Motor Vehicle Act, 1988, a vehicle can reside in another state with the same registration for 12 months during which it has to be re-registered in the new state.
 - There is also the issue of paying road tax to the next state all over again and applying for refund of the road tax in the parent state on a pro rata basis. This process is very cumbersome and varies from one state to another.
 - » **What is BH Series of Registration?**
 - The system of allocating BH series of registration will be completely online without the vehicle owner having to figure out complicated red-tape.
 - Government has amended the Central Motor Vehicle Rules, 1989 and has mandated that Vehicles bearing the BH registration mark will not require to be re-registered in a new state once it is relocated.
 - **Who is eligible to get these benefits?**
 - Anyone who is a government/PSU employee, state or Centre, is eligible.
 - In **private sector**, an employee of a company that has offices in at least four states/Uts is eligible to get the BH number on voluntary basis.
 - She has to apply by filling up Form 60 and furnish valid employment ID/proof online. The state authorities will verify the proof and then assign the BH registration. The registration number will be randomly generated by computer.
- **What about tax issues?**
 - Vehicles being registered under the BH registration will be levied tax for 2 years and thereafter in multiple of two, instead of the owner paying for the whole amount of 15 years. This frees the owner from seeking refund before or after relocation as the tax hasn't been prepaid. After completion of 14 years, the motor vehicle tax will be charged annually, which shall be half of the amount which was charged earlier for that vehicle.

- **How much will be the road tax?**

Cost of Vehicle	Tax Rates
-----------------	-----------

< 10 Lakh	8%
10-20 lakh	10%
>20 Lakh	12%

- Diesel vehicles will be charged 2% extra, whereas the electric vehicles will be charged 2% less.
- **Note:** the road tax charged varies from state to state, but this is largely the range anyway.

- **How does BH number look like?**

- "21 BH XXXX AA"
 - 21 - Year of registration
 - BH - Code for the series
 - XXXX - four numbers randomly generated
 - AA - two letters of English Alphabet.

- **Who would be benefitted?**

- Those with transferrable jobs, like those in Defence, Railways, other government employees or even private sector employees who may switch companies or cities

5) ROAD SAFETY

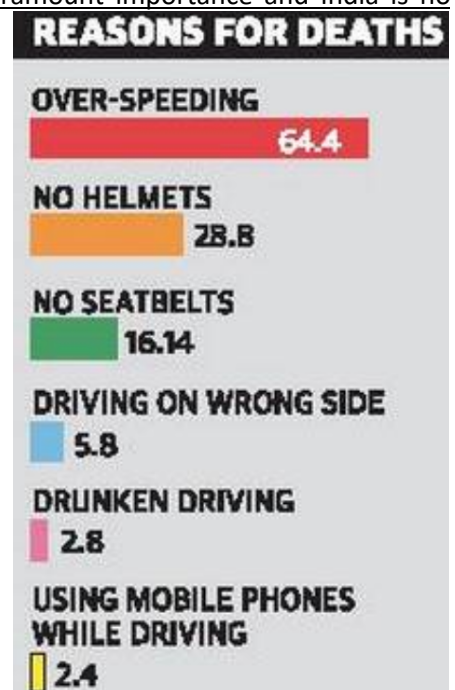
- **Why in news?**

- » As per the data received from Police departments of various states/Uts the total number of persons killed on all roads in the country are shown in the table below: MoRTH (July 2021)

Year	Number of persons killed
2017	1,47,913
2018	1,51,417
2019	1,51,113

- **Introduction**

- » For any country to make steady progress, safe roads are of paramount importance and India is no exception. But the current situation in India is dismal.
- » Road accidents have become the **most dreadful killers in India**. According to the report by MoRTH, **more than 1.5 lakh people die every year in road accidents**.
 - » **WHO's** estimate is much higher at more than 3,00,000 for the same period for India.
 - » In fact, a GoI study by the Registrar General and Census Commissioner, India ('The **Million Death' Study**) also reports at least 50% under-reporting of traffic fatalities and a higher share of pedestrian and motorized two wheelers as Road Traffic Collision victims when compared to the MoRTH report.
 - » According to **Geneva-based World Road Federation's World Road Statistics**, **India is most unsafe country in the world** followed by China (63,000 deaths) and the U.S.A (37,000 deaths).
- » **Other highlights of the MoRTH report**



- India has only about 2% of the world's motor vehicles but account for over 12% of its traffic accident deaths, making Indian road network the most unsafe on the planet.

A) 3RD GLOBAL MINISTERIAL CONFERENCE ON ROAD SAFETY

- Feb 2020, Stockholm
- **Key Highlights**
 - **Theme: Achieving Global Goals 2030**
 - **Stockholm Declaration** calls for new global target to reduce road traffic deaths and injuries by 50% by 2030.
 - In addition, it invites **strengthened efforts on activities in all five pillars of the Global Plan for the Decade of Action**:
 - better road safety management;
 - safer roads, vehicles and people;
 - and enhanced post-crash care.
 - It also calls for speeding up the **shift to safe, affordable, accessible and sustainable modes of transport** like walking, cycling and public transport.
 - **WHO is asked to continue to produce the series of global status reports**, as a means of monitoring progress towards achievement of the 12 Global Road Safety Performance Targets.

B) E-DAR PORTAL

- **Why in news?**
 - » The MoRT&H has developed the portal named 'e-DAR' (e-Detailed Accident Report) (April 2022)
- **Details**
 - » E-DAR is a web portal designed by the government in consultation with insurance companies and will provide **instant information on road accidents** with a few clicks and help **accelerate compensation claims**, bringing relief to victims' families.
 - **Digitalized Detailed Accident Report (DAR)** will be uploaded on the portal for easy access.
 - » The web portal will be linked to the **Integrated Road Accident Database (iRAD)**. From iRAD, applications to more than 90% of the datasets would be pushed directly to the e-DAR.
 - Stakeholders like the police, road authorities, hospitals, etc., are required to enter very minimal information for the e-DAR forms. Thus, **e-DAR** would be an extension and e-version of iRAD.
- **A Supreme Court Bench** led by Justice Sanjay Kishan Kaul expressed satisfaction after technicians demonstrated the working of the portal to the court. The court in its detailed order recorded that e-DAR portal would conduct multiple checks against fake claims by conducting a sweeping search of vehicles involved in the accident, the date of accident, and the FIR.
- **The portal** would be linked to other government portals like **Vaahan** and would get access to information on driving license details and registration of vehicles.
- For the benefit of the **investigating officers**, the portal would provide geo-tagging of the exact accident spot along with the site map. This would notify the investigating officer on his distance from the spot of the incident in the event the portal is accessed from any other location.
- Apart from the state police, an engineer from the PWD Department or the local body will receive alert on his mobile device and the official concerned will then visit the accident site, to examine it, and feed the required details, such as the road design. Hotspots for accidents would also be identified so as to obtain solutions to avoid accidents at these hotspots.
- **Details like** photos, video of the accident spot, damaged vehicles, injured victims, eye-witnesses, etc., would be uploaded immediately on the portal.

6) ATTRACTING INVESTMENTS FROM PRIVATE SECTOR (EPC, BOT, TOT AND HAM MODELS) – (CLASS DISCUSISON)

7) OPERATION MODELS – OMT AND TOT (CLASS DISCUSSION)

8) NEW NUMBERING SYSTEM FOR NATIONAL HIGHWAYS

- On 28th April 2010, MoRTH officially notified the rationalized number system of National Highway network in the Gazette of the Government of India.
- It is a systematic numbering system based on orientation and geographical location of the highway. This was adopted to ensure more flexibility and consistency in the numbering of existing and new national highways.
- **Details of the new system**
 - » All **East-West** highways now have **odd-numbers**, starting in the North and increasing in number towards south. In other words, the greater the latitude the smaller the N-H number and vice-versa i.e. **NH-1 in J&K and NH-87 in Tamil Nadu**.
 - » All **North-South** highways now have **even-numbers** starting in the East and increasing in the number towards west. In other words, the greater the longitude the smaller the NH number and vice versa.
 - » **Major highways** have single or double digit numbers. **Offshoots** of these highways have triple digits (either with or without suffix)
 - For e.g. Offshoots of NH-2 are numbered 102, 202, 302, and 502. Please note that the last two digit indicates the Major Highway.
 - » In the **numbering of offshoot highways**, the first digit of the three digit number will indicate the direction i.e. if the first digit is odd number it says the road is in East-West direction and if even, it indicates North-South direction.
 - » **Suffixes** A,B,C,D etc are also added to the three digit sub-highway to indicate small spin-offs or stretches of sub-highways. For e.g. 966A, 527B etc.
- **New Highways**
 - » As per the new system there are **218 NHs in the country**.
 - » **78 Major NHs**
 - **East-West : 44** (NH-1 to NH 87)
 - **North-South: 34** (NH-2 to NH-68)
- **Some important Highway Numbers**
 - » **NH-2** runs from Dibrugarh in Assam to Tuipang in Mizoram.
 - » **NH-44** (Sri Nagar to Kanya Kumari through Delhi, Agra, Hyderabad etc) -> **Longest National Highway: 3,745 km**.
 - It has been formed after merging 7 older NHs including NH1A, NH 1, NH 2, NH 3, NH 75, NH 26, and NH 7.
 - » **NH-48 - (Delhi to Chennai)**
 - It includes Delhi to Jaipur including Kishangarh express, National Expressway 1, Udaipur to Vadodra to Bomabay (Old NH-8).
 - Old NH-8.
 - » **NH-68** (western most of N-S highways - Jaisalmer (Rajasthan) - Radhanpur, Gujarat.
 - » **NH-1** (Uri-Srinagar-Leh)
 - » **NH-19:** (New Delhi to Kolkata) It goes through Agra, Varanasi, Barhi, Asansol and Kolkata.
 - It was part of Golden Quadrilateral and a major portion is the historical GT Road.
 - OLD NH-2
 - » **NH-27:** (Starts from Porbander and terminates in Silchar) -> Longest East-West Highway: 3,507 km
 - It is also part of North-South and East-West Corridors. Jhansi is the junction of North-South and East West Corridor.
 - » **NH-87** is a NH in southern India which crosses the famous Pamban bridge.

where's my NH?

Renumbered National Highway Map of India

The National Highways of India were officially renumbered on 26 April 2019 to follow a more rational scheme of numbering based on orientation as well as geographical location.

Under the new numbering system, North-South Highways are even numbered and East-West Highways are odd numbered. The numbers increase as we move eastwards or southwards.

Source: New Control, 2019 Bangalore

