GATI SHAKTI: INDIAN RAILWAYS' INITIATIVES

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NEW DELHI

SELF DECLARATION CERTIFICATE

It is hereby declared that this dissertation is my original piece of work and to the best of my knowledge and belief, it contains no material previously published or written by any other person. I am aware of the University's norms and regulations regarding plagiarism including the disciplinary action that it may invite. Any use of the works by any other author, in any form, is adequately acknowledged at their point of use or in the Bibliography.

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I have pleasure to certify that Smt. Renu Yadav has pursued his research work and prepared the present dissertation "GatiShakti: Indian Railways' Initiatives" under my guidance and supervision. The dissertation is a result of her own research and to the best of my knowledge, no part of it has comprised any other monograph, book or dissertation earlier. This is being submitted to Panjab University, Chandigarh for the purpose of Executive Masters in Public Administration and Public Policy in Partial fulfillment of the requirement for the Advanced Professional Programme in Public Administration (APPPA) of Indian Institute of Public Administration (IIPA), New Delhi.

I recommend that the dissertation of Smt. Renu Yadav is worthy of consideration for the award of Executive Masters degree of Panjab University, Chandigarh.

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Glossary and Terms

GS Principles – GatiShakti Principles

NPG – Network Planning Group

NHAI – National Highway Authority of India

OHE – Over Head Equipment

MOBD – Member Operations and Business Development

MTRS – Member Traction and Rolling Stock

MF– Member Finance

GM – General Manager

PU – Production Unit

NMP – National Master Plan

PMGS – Pradhan Mantri Gati Shakti

MIDC – Maharashtra Industrial Development Corporation

MORTH – Ministry of Roads,Transport and Highways

MOR – Ministry of Railways

ROB– Railway Over Bridge

GDP – Gross Domestic Product

NHIDCL – National Highways and Infrastructure Development Corporation Limited

BRO – Border Road Organization

PWD – Public Works Department

GIS – Geographic Information System

DPR – Detailed Project Report

ISRO – Indian Space Research Organization

BISAG – Bhaskaracharya National Institute for Space Application and Geoinformatics

PM Award – Prime Minister's Award

NICDC – National Industrial Corridor Development Corporation

RoW – Right of Way

DPD – Direct Port Delivery

CFS – Container Freight Station

RoB – Road Over Bridge

GAD – General Agreement Drawings

MoEF & CC – Ministry of Environment, Forest and Climate Control

EC – Environmental Clearance

APIs – Application Programming Interface

EGOs – Empowered Group of Secretaries

TSU – Technical Support Unit

MMLP – Multi Modal Logistic Park

Chapter-1

Introduction

1.1 Indian Railways

Indian Railway is the lifeline of the nation stretching throughout the length and breadth of the country from South to North and East to West with a network of around 1.27 lakh track kilometres. With a modest beginning on 16th April 1853, when the first train ran from Bombay to Thane, Indian Railways have traversed a long journey of progress. Indian Railway is the biggest employer in the country which provides the transportation services to every citizen of the country. Today, it is the principal mode of transportation for passenger and freight traffic in this country. It caters to around 8 billion passenger journeys in a year.

The first railroad trip across the Indian Subcontinent covered a distance of 21 miles between Bombay and Thane, nevertheless, the journey of the Indian Railway started before 1853.Mr. George Clark, the Chief Engineer of the Bombay Government, initially had the idea of building a railway to link Bombay, or Mumbai with Thane, Kalayan, and the Thal and Bhore Ghats inclines, when visiting Bhandup in 1843.The official opening took place on April 16,1853, when 14 railway carriages leaving Bori Bunder at 3.30 p.m “to the salute of 21guns” and “amidst the applause of a great multitude”. On August 15,1854, the first passenger train travelled from Hathras Road to Mathura Cantt., a distance of 24 miles, departing from Howrah station. As a result, the Eastern side of the subcontinent’s railway transportation system officially began with this opening of the first segment of the East Indian Railway, now known as the Eastern Railway. The Madras Railway Company inaugurated the first line in the southern region of India on July 1, 1856. It began 63 miles

Away at Vyasarpadi Jeeva Nilayam (Veyasarpandy) and ended there at Walajah Road (Arcot). On March 3, 1859, a 119-mile line from Allahabad to Kanpur in the northern section of India

was constructed. On October 19, 1875, traffic was allowed to travel from Hathras Road to Mathura Cant.

These were the good beginnings that developed into a network of railway lines all over the country. By 1880 the Indian Railway had a route of about 9000 miles. Indian Railways, the lifeline of the country is the largest rail network in Asia after China and the world's fourth-largest under single management with more than 11.5 lakhs employees.

Indian Railways spread its network across the country throughout 28 states and 8 Union Territories from Kanyakumari in the South to Jammu and Kashmir at Baramulla in the North, and from Gujarat in the West to Manipur, Assam and Arunachal Pradesh in the East. Indian Railways play a vital role in connecting the country by running more than 21000 trains daily including freight and passenger. The National carrier transports more than 8.4 billion passengers and more than 1.2 billion tonnes of freight in a year. It is the largest employer in the country having more than 11 lakhs employees. Indian Railways has already received revenue of more than 1.9 lakh crores in 2018-19.

Indian Railways has come a long way from 1950-51 in all the areas of rail transportation including infrastructure like laying the track, electrification, advanced signalling system, self-reliance in manufacturing of rolling stocks, etc. The track running kilometre increased from 59315 to more than one lakh from 1951 to 2020.The number of passengers carrying rolling stocks has increased four times approximately from 20000 to 80000 along with more carrying capacity and passenger amenities with modern values. The freight revenue has increased 100-fold in terms of Rs which is much faster than the growth of the GDP of the country. Indian Railway has set up eight factories to manufacture all kinds of rolling stocks, electric and diesel locomotives, and wheels, which is one of the best examples of Make in India. The Indian Railways has done exemplary work in the field of promoting tourism in the country by preserving a lot of heritage sites and running tourist specific trains.

Indian Railways is one of the organizations which not only runs the trains but also manufactures and maintains the trains. Indian Railway also builds all the fixed infrastructure including track, Over Head Equipment (OHE), signalling system, stations, and buildings. Under a single roof, the railway performs almost all kinds of engineering and management activities while delivering services to passenger and freight transportation.

Indian Railways was a multi-gauge system. However, over the years through the work of gauge conversion, now it is almost Broad Gauge.

Table 1. Details about Track of the Indian Railways

Track Kilometres (2022-23)			
Broad Gauge (1676 mm)	Metre Gauge (1000 mm)	Narrow (762/610 mm)	Total
129505	1417	1388	132310
Route Kilometres (2022-23)			
Electrified		Total	
58074		68584	

Other interesting facts of Indian Railways is that it runs around 21000 trains everyday are :

Table 2. Details about the rolling stocks and fixed infrastructure

Locomotives	Coaching Stocks	Freight Wagons	Stations
14360	88920	315791	7364
Yard	Good Shed	Repair Shop	Employee
6019	6114	6319	11.90 lacks

1.1.1 Organisation

At the apex level of administration is the Ministry of Railways (Railway Board). The Railway Board functions as the top executive for administration, technical supervision and direction of the Railways. It is at the same time, a Ministry of India responsible for the planning, construction, maintenance and operations of the Railways.

Railway Board comprises the Chairman, Member Finance, MOBD, and MTRS. All the Members are ex-officio Secretaries to Government of India, the Chairman being Principal Secretary. Member Finance-Railway Board exercises full powers with regard to Budget, finance and funds.

Additional Members assist the Railway Board in its work. The Board's establishment is organized as functional Directorates, each under Executive Directors, Directors, Joint and Deputy Directors who are responsible for the disposal of day to day work with the framework of the policies set by the Government and the Railway Board.

For operational purposes, Indian Railways are divided into 17 Zonal Railways. Each Zonal Railway is headed by a General Manager who is responsible to the Railway Board for the operation, maintenance and financial position of his Railway. The General Managers are assisted by functional Heads of Departments at the headquarters. For quick and effective disposal of work, the General Managers have been delegated wide powers in establishment matters and in matters relating to works, contracts, procurement etc. The Zonal Railways are further divided into 68 Divisions. A Division is the basic operational unit. A Divisional Railway Manager who reports to the General Manager heads each Division. Adequate administrative powers have been delegated to the DRMs for day to day functioning. The DRMs are assisted by a team of Senior Divisional Officers in each area of activity such as Operations, Personnel, and Finance etc. DRMs have ten Departments under him performing multifarious activities. Manpower in a

Division varies from 8,000 to 40,000 depending upon the geographical location and intensity of traffic movement etc. The Divisional staff are posted at different stations, yards, depots, Engineering sub-divisions etc.

Besides the Zonal Railways mentioned above, there are---Production Units producing rolling stock and its related components for the Railways. These Units are:-

1. Chittaranjan Locomotive Works, Chittaranjan
2. Banaras Locomotive Works, Varanasi
3. Integral Coach Factory, Perambur, Chennai
4. Rail Coach Factory, Kapurthala
5. Rail Wheel Factory Yelahanka
6. Modern Coach Factory, Rae Bareli
7. Patiala Locomotive Works, Patiala
8. Rail Wheel Plant, Bela

In addition to these units there is Research, Designs and Standards Organization (RDSO) located at Lucknow. This is an attached office of the Railway Board and is headed by a Director General. It is responsible for conducting research and designing new forms of rolling stock and equipment.

Apart from the Production Units, there are Workshops meant primarily for the maintenance of rolling stock. These workshops have a fairly large concentration of labour force. The approximate staff strength of a workshop varies from 2,000 to 10,000.These staff belongs primarily to the Mechanical and Electrical Departments. Organizational structure of a workshop

is akin to that of a Production Unit. There are similar kinds of Categories of staff in both these units. The staff strength of a Production Unit varies from 3,000 to 15,000.The Production Units are headed by a General Manager or a Chief Administrative Officer who reports directly to the Railway Board whereas the Workshops are under the control of the Zonal General Managers.

For the purpose of GatiShakti National Master Plan, Indian Railways has taken various initiatives including the introduction of some organizational changes. This dissertation is an effort towards evaluating the new found impetus and new found synergies and energies as a result of implementation of Gati Shakti Plan over Indian Railways with a view to study:-

- Various policy initiatives undertaken by Indian Railways for implementation of Gati Shakti Plan over Indian Railways.
- Organisational changes undertaken for achieving the objectives of Gati Shakti Plan and the result thereof.

1.2 Prime Minister's Awards for Excellence in Public Administration:

The topic for this dissertation has been picked up on the basis of PM's Excellence Awards in the category of "PM Gati Shakti National Master Plan". In 2006, Government of India constituted an award namely "The Prime Minister's Awards for Excellence in Public Administration" to promote and recognize innovative initiatives taken by districts / departments of Central and State Governments in the field of public service delivery. In 2014 the scheme was reconstituted to recognize initiatives taken by district collectors in their respective district. In 2020, another dimension of economic development of district was also added. Later, in 2021, it was thought to induce constructive competition among districts so that the best practices of one district can be replicated by others. Emphasis was given to qualitative achievements instead of quantitative one with special attention to good governance. With this in focus, the applications for Awards are evaluated on three parameters; Good Governance, Qualitative and Quantitative.

It is expected All Districts are expected to participate in the Scheme of Prime Minister's Awards. The subject of study has been taken from Awards given for the year 2022 out of the scheme for Prime Minister's Awards for Excellence in Public Administration in the following categories (source: DARPG website):

(i) Promoting Swachh Jal (Clean Jal) through Har Ghar Jal Yojana

(ii) Promoting Swasth Bharat (Healthy Bharat) through Health & Wellness Centers

(iii) Promoting quality education with an equitable and inclusive classroom environment through Samagra Shiksha

(iv) Holistic Development through Aspirational District Programme – overall progress with special focus on saturation approach

(v) Innovations

In the category of "Innovation",7 awards were given in the year 2022.In the category Innovation(Centre),one award went to PM Gati Shakti National Master Plan.

1.3 Indian Railways and PM Gati Shakti

i) Planning on PM Gati Shakti National Master Plan

Railways is one of the key drivers of the PM GatiShakti scheme, which was launched by the PM in 2021 known as The PM Gati Shakti – the National Master plan.

A number of initiatives have been taken in the year 2022 by the Ministry of Railways to achieve the objective of PM Gati Shakti NMP. The brief of these initiatives is being given below and these will be discussed in details in chapters of dissertation coming further.

ii) PM Gati Shakti for Planning : Railways' Initiatives

- Dedicated "Gati Shakti directorate" with multidisciplinary functional team has been created in Railway Board.
- Core principles of PM Gatishakti viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes are followed in the planning of all the Projects by Railways.
- Gati Shakti units in all 68 Divisions-Field units, both headquarter and division have these functional units.
- Capacity augmentation works to remove bottlenecks in operations to improve cargo loading in Divisions.
- 39 GatiShakti Cargo Terminals have been commissioned. Around 100 locations have been provisionally identified for the development of GCTs.
- 25+ Railway specific data layers have been uploaded on the NMP portal.
- Field Officials are working with BISAG team for best fit alignment of New Lines. 126 alignment are planned and revalidated using this portal for planning DPR.
- Network Planning Group has appraised and recommended 34 projects with estimated cost of ₹ 81,000 Cr (approx).
- Indian Railways and India Post developed a 'Joint Parcel Product' (JPP). A full train service under JPP of Indian Railways and India Post between Surat and Narayanpur Anant via Varanasi has also been launched on 20.10.2022.

1.4 Statement of Problem:-

The National Master Plan for Multi-modal Connectivity (PM Gati Shakti) is a digital platform that Prime Minister (PM) launched to bring Ministries, including those of Roadways and Railways, together for integrated planning and coordinated implementation of infrastructure

connectivity projects. The movement of people, commodities and services between modes of transportation will be integrated and frictionless thanks to the multi-modal connection. It will speed up last-mile infrastructure connectivity and shorten people's commutes. The Gati Shakti Directorate's creation in the Railway Ministry/Railway Board has given project approval for the Railways more momentum. It has transformed the project sanction & delivery from departmental working in silos to team working, bringing synergy for team working resulting in faster delivery of projects. This has led to substantial improvement in pace of sanction and execution of works. In 2022, 300 projects were approved, compared to 40 to 45 over the same time period in 2021.

1.5 Purpose or Objectives :-

a) To study implementation of PM Gati Shakti Plan in context of Indian Railways.

b) To study changes in organizational structure over Indian Railways for Gati Shakti National Master Plan.

c) To study whether it has led to faster Planning Process and resulted in saving time and quality improvement.

d) To study whether GS framework has led to faster sanctioning of projects and its impact on Logistics and Infrastructure Projects?

e) To study the effectively of the GS Framework over Indian Railways. With the GS Framework in place, is the efficiency of the Railways expected to improve for development in the future.

1.6 Rationale for choosing the topic and study area:-

a) PM Gati Shakti National Master Plan:-

- Transformative approach for economic development & sustainable development

- National Master Plan-for integrated infrastructure & network planning
- Next generation infrastructure development.
- Seamless multimodal connectivity for goods, people & services
- It will speed up last-mile infrastructure connectivity & shorten people's commutes

b) PM Gati Shakti, Indian Railway Initiative:-

- Dedicated "Gati Shakti directorate with multidisciplinary functional team in Railway Board-one directorate has been created by clubbing Works, Signal, RE Directorate to bring synergy and to improve efficiency of the system so as to create additional rail infrastructure & thereby enhance railway market share in country's cargo loading and reduce logistic cost.
- The Gati Shakti Directorate creation has given project approval for the Railways more momentum. In 2022, 300 projects were approved, compared to 40 to 45 over the same time period in 2021.
- Core principles of PM Gatishakti viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes are followed in the planning of the Projects.
- Gati Shakti units in all 68 Divisions :- capacity augmentation works to remove bottlenecks in operations to improve cargo loading in Divisions.

1.7 Research Questions or Hypothesis

❖ How PM Gati Shakti Plan has been implemented in context of Indian Railways?

- What changes have been made in organisational structure over Indian Railways for Gati Shakti National Master Plan?
- How it has led to faster Planning Process and resulted in saving time and quality improvement?
- How GS framework has led to faster sanctioning of projects and its impact on Logistics and Infrastructure Projects?
- How effective is the GS Framework over Indian Railways? With the GS Framework in place, is the efficiency of the Railways expected to improve for development in the future?

1.8 Research Methods and Data Sources

This study is to be conducted mainly in Railway Board (Ministry of Railways),which is the apex level of administration. Besides unstructured interviews will be conducted with top officials in Railway Board. The emphasis would be to collect qualitative data by examining the collection of printed documents, Government mandate in the form of orders issued, interviews from key personnel will be collected to ratify the inference arrived at. Thus, the aim would be to gather all possible facts pertaining to the problem through examination of documents and personnel interviews to finally arrive at a conclusion.

Chapter-2

Gati Shakti: Core Principles and Institutional Framework

2.1 PM Gati Shakti National Master Plan

PM Gati Shakti is essentially an initiative of the government to bring various Ministries together through a centralized digital platform for integrated planning and coordinated implementation of infrastructure connectivity projects. The PM Gati Shakti-National Master Plan for multi-modal connectivity was launched by the Hon'ble PM in October, 2021. The aim of NMP is coordinated planning and execution of infrastructure projects to bring down logistics costs in India. It seeks to address the gaps and barriers which are presently hampering the growth of infrastructure development in the country. The Gati Shakti digital platform bring together 21 Ministries including Road Transport, Railways and Ports & Shipping. This is helping in removing long-standing issues such as disjointed planning, lack of standardization, problems with clearances, and timely creation and utilization of infrastructure capacities.

2.1.1 PM Gati Shakti is based on six pillars:

Using an integrated approach the National Master Plan aims at achieving enhanced efficiency through:-

Comprehensiveness: It includes all the existing and planned initiatives of various Ministries and Departments with one centralized portal. Each and every Department now have visibility of each other's activities providing critical data while planning & execution of projects in a comprehensive manner.

For example, the implementation agency of Railways may not know the upcoming projects of other Departments like irrigation, roads, economic zones, industrial clusters etc. Through this

plan, each and every Department will now have visibility of each other's activities providing critical data while planning and execution of project in a comprehensive manner.

Prioritization: Through this, different Departments enabled to prioritize their projects through cross-sectoral interactions.

For example, Shendra and Bidkin near Aurangabad in Maharashtra are 02 economic zones getting developed under National Corridor Programme. To provide better connectivity to these zones, 02 road projects have been prioritized after extensive interactions between National Highway Authority of India (NHAI) and Maharashtra Industrial Development Corporation (MIDC) and got included under Bharatmala Scheme of MoRTH. It will also get connected to Mumbai-Nagpur Samruddhi Mahamarg. This prioritization will help industries of these zones to get better connectivity for sourcing the raw material/labour and evacuation of their final product.

Similarly, whenever any economic zone is established in future, infrastructure connectivity projects can now be prioritized by respective departments with the help of this plan to provide timely connectivity.

Optimization: The National Master Plan will assist different ministries in planning for modification/expansion/new projects after identification of critical gaps. For the transportation of the goods from one place to another, the plan will help in selecting the most optimum route in terms of time and cost.

For example, if coal has to be transported from Jabalpur to Mundra Port, the most cost effective and less time-consuming route of rail and road network can now be identified through this plan which will lead to reduction in the overall logistics cost.

Synchronization: Individual Ministries and Departments often work in silos. There is lack of coordination in planning and implementation of the project resulting in delays. PM Gati Shakti

will help in synchronizing the activities of each department, as well as of different layers of governance, in a holistic manner by ensuring coordination of work between them. The platform provide visibility and coordination in planning and implementation of projects of individual Departments/Ministries. Thus there are no delays/clashes/unsystematic development.

For example, different types of roads are being constructed/implemented by multiple agencies in North East Region under various schemes by NHIDCL, State PWD Department, PMGSY Roads by Rural Development Department, Border Roads by Border Roads Organization (BRO) etc. NHAI constructs the roads till District Headquarters, thereafter; it is constructed by State PWD or by Rural Development Department to the habitations and to the border areas by BRO. The NMP Platform will help in synchronizing the activities of each department in a holistic manner by ensuring coordination of work between them. The coordinated completion of all these roads executed at the same time by these different agencies will help the seamless connectivity to the habitants of that area and open up numerous avenues for them.

Analytical : The plan provide the entire data at one place with GIS based spatial planning and analytical tools having 200+ layers like land use, existing structures (e.g. bridge, railway crossing, culvert), soil quality, infrastructure (Road, Rail, Waterway etc.), elevation data/3D (contour and gradient), habitation sprawl etc.

This has enabled better visibility to the executing agency.

For example, many infrastructure contracts go into litigation as the Detailed Project Report (DPR) of the project do not have complete information about the structures and the likely hindrances etc. in and around the project area. Contractors meet with uncertainties while executing, which delays execution and leads to litigation. This plan/platform provides the visibility to users like contractors/agencies for avoiding such situations.

Dynamic: All Ministries and Departments can now visualize, review and monitor the progress of cross-sectoral projects, through the GIS platform, as the satellite imagery give on-ground progress periodically and progress of the projects is updated on a regular basis on the portal. They can work together to avoid conflicts and achieve better efficiencies. This makes the process dynamic by helping in identifying the vital interventions for enhancing and updating the master plan.

2.1.2 Problems it seeks to address :

1) **Coordination** : By bringing together 21 central ministries and departments, including railways, roads and highways, petroleum and gas, power, telecom, shipping and aviation, etc it seeks to unite the infrastructural initiatives planned by these departments and address the lack of coordination among them. This calls for a holistic institutional planning which seeks to change the traditional way of working in silos. Infrastructure development requires a concerted approach since there exists inter-dependence among the various agencies for more efficient completion of projects.
2) **Seamless connectivity and movement of goods and people** : The multi-modal connectivity will provide integrated and seamless connectivity for movement of people, goods and services from one mode of transport to another. It will facilitate the last mile connectivity of infrastructure and also reduce travel time for people.
3) **Innovation** : The National Master Plan will employ modern technology and the latest IT tools for coordinated planning of infrastructure. A GIS-based Enterprise Resource Planning system with 200+ layers for evidence-based decision-making is one example. The use of satellite imagery for monitoring is another. It will also leverage technology extensively including spatial planning tools with ISRO (Indian Space Research Organisation) imagery developed by BiSAG-N (Bhaskaracharya National Institute for

Space Applications and Geoinformatics). Digitisation will play a big role in ensuring timely clearances and flagging potential issues, and in project monitoring as well.

4) **Convergence** : It seeks to institutionalize holistic planning for stakeholders for major infrastructure projects. Instead of planning & designing separately in silos, the projects will be designed and executed with a common vision.

   Mentioned below are the various targets that will be achieved under the Gati Shakti scheme:

   - Roadways capacity to be increased with the national highway network to touch the 2 lakh-km mark.
   - Aviation will receive a massive boost, with around 200 new airports, heliports and water aerodromes envisioned in the plan.
   - Capacity of railways transport cargo to be increased to around 1,600 tonne by FY25
   - Ease in the electricity access with the transmission network to be increased to 454,200 circuit km.
   - Renewable capacity to be increased to 225 GW by FY25.
   - Also around 17,000 kms of gas pipelines will be completed in the same year.
   - 4G connectivity for the villages by FY22
   - 20 new mega food parks
   - 11 industrial corridors and two new defence corridors in Tamil Nadu and Uttar Pradesh
   - 202 fishing clusters/harbours/landing centres

5) **Monitoring**: The GatiShakti programme marks a paradigm shift in decision making to break the silos of departmentalism. In the proposed Plan, all the existing and proposed

economic zones have been mapped along with the multimodal connectivity infrastructure in a single platform. Individual projects of different line Ministries would be examined and sanctioned in future within the parameters of the overall Plan, leading to synchronisation of efforts.

6) **Improve supply chain**: An efficient logistics network is one necessary condition for the development of the Infrastructure sector. The National Industrial Corridor Development Corporation (NICDC), will work in close coordination with state governments to develop these industrial corridors. State governments will expedite identifying parcels of land for industrialisation in consonance with the national plan to reap the maximum benefits of jobs and growth.

7) **Curb wasteful expenditure**: The disjointed decision making and slow pace of approvals had led to lot of time and cost over-runs. By facilitating ease of planning and a syncretic approach in monitoring, it would bring down the overall costs of implementation thereby curbing wasteful expenditure. This would enable the governments to increase their spending in the social sectors.

8) **Accelerate overall economic development of the country** : With the broad objective of making products manufactured in the country more competitive by cutting down the logistics costs and improving supply chains, the Pradhan Mantri Gati Shakti scheme will help India attract investment from all over the world for improving the infrastructure of the country. For instance, roads would feed into railway lines which in turn would feed into ports, efficiently moving goods from the hinterlands to the ports. This would enable the development of multiple urban, industrial centres across India which will generate employment for the youth both in the skilled and semi-skilled markets. These urban centres in turn, would enable balanced regional development, as multiple industrial clusters could sprout up across India. Both Central and state government revenues would

be bolstered, enabling higher spending on social sectors. This would have the spillover effect of easing pressure on existing urban agglomerations, leading to a higher quality of life across the board. A lack of scale in manufacturing and an inefficient logistics network hampered our global competitiveness. Cleaning up of bank balance sheets will raise availability of credit. Availability of large tracts of land, can help achieve scale in manufacturing. Public investments in infrastructure will reduce the cost of logistics, through creating a seamless multi-modal infrastructure network.

One of the drivers of India's Vision of 2047 to achieve the 17 trillion dollar economy is Integrated Infrastructure and Network Planning and Development for which PM Gati Shakti Master Plan will provide a major impetus.

2.1.3 The various issues being faced by Indian Infrastructure Today and how Gati Shakti help in resolving them?

Infrastructure creation in India has for decades suffered from disjointed planning, non/under-utilization of installed capacity, lack of standardization, synchronization, issues of clearances/approvals & other inter-departmental issues. GatiShakti aims at resolving these issues and the same is being explained herein below by way of following practical examples:

i. **Disjointed Planning:** It has been observed on numerous occasions that once a road is constructed, some of the other agencies dig up the constructed road again for various activities like shifting/laying of underground cables, gas/water pipelines etc. This results in these stretches of roads being continuously under some or the other construction, not only causing great inconvenience to the common man but also results in wasteful expenditures being incurred by different Departments.

GatiShakti aims at resolving this issue by establishing synergies among different departments during the planning stage itself.

As has been successfully demonstrated in the Integrated Corridor approach adopted by Ministry of Roads, Transport and Highways (MoRTH) in Delhi-Mumbai Expressway Project and Trans Haryana Corridor Project wherein the Right of way (RoW) of utility corridor is being acquired along-with the RoW of expressways leading to saving of time and avoiding digging of roads again and again by different agencies at a later date.

ii. **Non/ Under Utilization of Installed Capacity:** It has been often observed that due to inefficient planning, several projects despite their timely completion are not running upto their optimum capacity and are being under-utilized resulting in loss of revenue and resources.

One such Example is LNG terminal which was commissioned in 2013-14 but because of lack of integrated planning, pipeline connectivity to various demand centres in Kerala, Tamil Nadu and Karnataka with LNG terminal could not be completed due to ROU acquisition issues in the States. The pipelines were to be laid at about the same time. Initially only 41 KM pipeline was supplying gas to region around Kochi City only and terminal capacity was underutilized. Kochi Mangalore pipeline section was commissioned in November, 2020. With the laying of pipeline connectivity to demand centres, the utilization has improved.

If the execution of the road and rail connectivity were aligned with the completion timelines of a port, the problem of under-utilization of capacity would have not arisen. GatiShakti not only aims at aligning the timelines of various projects through efficient planning, but also aims at taking initiatives even after completion of the project to overcome the past inefficiencies thereby minimizing the losses.

As has been demonstrated by the Ministry of Shipping through several interventions, involving up gradation of infrastructure for movement of goods from the port by improving the last mile connectivity in addition to various policy interventions like Direct Port Delivery (DPD) which facilitates the delivery of the container directly from the terminal without being taken to Container Freight Stations (CFS). This has ensured that the customer can avail the direct delivery thus, saving the overall logistics cost of Rs 8,000-20,000, as well as saving time by 4-5 days.

This and other interventions have resulted in the clearance of the containers at a very faster speed. In 2014-15, on an average it used to take nearly 79 Hrs for an import container to get cleared out of the port which has drastically come down to 25 Hrs in 2019-20.

iii. **Lack of Standardization:** Previous practice has always been to design each and every part of infrastructure as if it is a unique construction. Such as each Railway Over Bridge (ROB) is designed as a separate project by the MoRTH which later requires approval by the Ministry of Railways (MoR). Most of the time these designs are similar but approval process is stretched to several years causing huge inconvenience to general public and loss to the exchequer.

Gati Shakti aims at resolving this issue by promoting standardization of the designs so that the approval could be completed in a very short span of time.

As has been successfully demonstrated by Ministry of Railways (MoR) by implementing the Rail Road Crossing General Alignment Drawing Approval System, an online all-in-one approval portal wherein the list of drawing for Rail Road Crossing are available along with guidelines for planning of road over bridges. This has reduced the time from 6 months to 2-3 months in getting relevant approvals from the MoR.

iv. **Lack of coordination and Clearances/ Approvals & Other Inter-Departmental Issues:** Execution of projects requires a host of regulatory approvals and environmental clearance, land acquisition proceedings, shifting of utilities. Specifications and drawings so on and so forth. Absence of any of one such approval adversely impacts the timely completion of the project and has been happening quite frequently in the past.

One such example is the case of Delhi - Meerut Expressway – Package II, wherein the overall project was delayed by 11 months due to delay in approval and issuance of clearance for General Agreement Drawings (GADs) from Railways. The entire road construction was completed; however the approval of just one Road over Bridge (RoB) resulted in the delay in commissioning of the project.

GatiShakti aims at facilitating the laying down of standardized procedures/ timelines by all the agencies providing such clearances, in order to reduce delays considerably.

As has been successfully demonstrated by Ministry of Environment, Forest and Climate Control (MoEF&CC) in institutionalizing the practice of accepting the applications for Environmental Clearance (EC) for different projects only through online mode which has expedited the entire process with a view to increase transparency and facilitating early decision making. The above initiative has resulted in reducing the average time period for environmental clearances from around 600 days to around 162 days.

2.1.4 Which all ministries are part of PM Gati Shakti at present?

Following Ministries are involved in PM GatiShakti:

S. No.	Ministry / Department
1	Ministry of Railways

2	Ministry of Road, Transport & Highways
3	Ministry of Ports, Shipping and Waterways
4	Ministry of Civil Aviation
5	Ministry of Petroleum & Natural Gas
6	Ministry of Power
7	Department of Telecommunications
8	Ministry of Coal
9	Ministry of Mines
10	Department of Chemicals & Petro-Chemicals
11	Department of Fertilizers
12	Ministry of Steel
13	Department of Expenditure
14	Department for Food and PDS
15	Ministry of Agriculture and Farmer Welfare
16	Ministry of Fisheries, Animal Husbandry & Dairying
17	Ministry of Tourism
18	Ministry of Commerce and Industry
19	NITI Aayog
20	Ministry of Housing and Urban Affairs
21	Ministry of Electronics and Information Technology

As the GatiShakti National Master Plan will progress, other Ministries will also get included.

2.2 The Gati Shakti Digital Platform/the role of BISAG-N?

PM GatiShakti National Master Plan has been developed as a Digital Master Planning tool by BISAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics) and has been prepared in dynamic Geographic Information System (GIS) platform wherein data on specific action plan of all the Ministries/ Departments have been incorporated within a comprehensive database. Dynamic mapping of all infrastructure projects

with real-time updation is provided by way of a map developed by BISAG-N. The map will be built on open-source technologies and hosted securely on Meghraj i.e. GoI cloud. It will use Satellite imagery available from ISRO and basemaps from Survey of India.

The digital system is a software where individual Ministries are given separate user identification (login ids) to update their data on a periodic basis. The data of all the individual Ministries will be integrated in one platform which will be available for planning, review and monitoring. The Logistics Division, Ministry of Commerce will further assist all the stakeholders through BISAG-N for creating and updating their required layers in the system and update their database through Application Programming Interface (APIs).

The GIS data-backed platform (NMP) maps out all infrastructural assets of our social and economic Ministries and Departments. This detailed mapping enables one with granular visibility of roads, railways, ports, railway stations, natural resources, forest areas, mining areas, power lines, optical fibre cables, telecom lines etc., as a single view.

With this platform, the planning process and ability to visualise and implement multimodal connections boils down to the click of a button.

For example, if a new expressway is being planned using the PM GatiShakti platform, the concerned Ministry can visualise the exact terrain, assess the industrial parks and manufacturing clusters, and identify the forest land, the inland waterways and the railway tracks. This also streamlines collaboration across other Ministries, from Coal to Steel to Mining, etc., for comprehensive planning.

Challenges

- Complex coordination issues
- Lack of visibility and information
- Constrained planning and decision making.

Solutions

- Pan India level GIS based digital platform – National Master Plan.
- Project Monitoring Group portal.
- Customized decision making and planning support tools.
- Institutional Arrangement at Central and State level.
- Individual portals for all central ministries and States/UTs.
- Data layers uploaded for GoI Ministries/Departments – **900+**, States – **654**.
- Trunk infrastructure, utility network, economic zones, social infrastructure.
- Data based decision support system.
- Tools for planning, NOC/approvals/clearances.
- Integrated project monitoring for transparency in governance. Training & Capacity Building across Central Ministries and States.
- Infrastructure planned up to 2024-25 mapped on NMP.

2.3 The Institutional structure of PM GatiShakti National Master Plan

The institutional framework for rolling out, implementation, monitoring and support mechanism is designed to have a three-tier system-

i. Empowered Group of Secretaries (EGOs)

ii. Network Planning Group (NPG)

iii. Technical Support Unit (TSU)

Governance framework

Empowered Group of Secretaries (EGOs)	Headed by Cabinet Secretary with Special Secretary, Logistics as the Member Convenor and other Secretaries as members
Network Planning Group (NPG)	Heads of Network Planning Division from various connectivity infrastructure Ministries/ Departments
Technical Support Unit (TSU)	Will be constituted in the Logistics Division with representatives from various Ministries (officers to be placed on deputation) to assist the NPG

2.3.1 Empowered Group of Secretaries?

- Headed by Cabinet Secretary.
- To monitor and review implementation of PM GatiShakti NMP

An Empowered Group of Secretaries (EGoS) under the Chairmanship of Cabinet Secretary has been constituted for monitoring the Master Plan and for approving any changes in the Master Plan to meet any emerging requirements. The EGoS will also look at the interventions required to meet the demand side, in efficiently transporting bulk goods based on the requirements of various Ministries like Steel, Coal, Fertilizer etc.

2.3.2 What is the Network Planning Group

- Planning heads of all infrastructure ministries.
- To assess multimodality of projects proposed under PM GatiShakti.

The collaborations and clearances required from multiple Ministries and Departments are also simplified under the **PM GatiShakti approach**. This entire process is executed through the Network Planning Group (NPG) operating under PM GatiShakti. A NPG is constituted with heads of various Ministries and Departments for unified planning and integration of proposals.

This group meets at least once a month to have regular and intensive coordination to improve synchronization and avoid Ministries working in silos.

An Integrated Multimodal Network Planning Group (NPG) with heads of Network Planning Division of all connectivity infrastructure Ministries & Departments is responsible for unified planning and integration of the proposals and assist the EGOS in respect of its mandate.

NPG facilitate regular interactions between the stakeholders. It will guide all the Departments/ Ministries responsible for creation of economic zones and coactivity infrastructure during the planning phase itself. The parameters/ prescribed norms of the overall National Master Plan will be the overarching objective of the NPG for examining and sanctioning future projects thus leading to minimising of disruptions and strive for the creation of an ideal & efficient operating system for all infrastructure projects in the country. NPG's role will be to ensure:

- integration of networks;
- enhance optimization through modification/ expansion/ new network creation;
- avoid duplication of works for holistic development of any region;
- reduction logistics costs through micro-plan detailing.

The coordination mechanism for achieving objective of PM GatiShakti

To break the silos in Govt. Ministries/Departments, Network Planning Group (NPG) will act as a catalyst to further intensive and regular coordination between various Ministries/Departments of GoI along with the State Governments and private sector industries/experts/stakeholders for unified planning and integration of the proposals and assist the EGOS.

The coordination between Ministries/Departments is pivotal and role of NPG is crucial to achieve the integration of infrastructure projects.

NPG will facilitate regular interactions between the stakeholders. It will guide all the Departments/Ministries responsible for creation of economic zones and connectivity infrastructure during the planning phase itself. The parameters/prescribed norms of the overall PM GatiShakti-National Master Plan will be the overarching objective of the NPG for examining and recommending future projects thus leading to minimising of disruptions and strive for the creation of an ideal & efficient operating system for all infrastructure projects in the country.

2.3.3 Technical Support Unit

- Technical Support Unit is formed with Director from each ministry/department to be appointed.
- Directors, Domain experts and support staff.
- To provide support for effective implementation of PM GatiShakti.

A Technical Support Unit (TSU) has been constituted in the Logistics Division with 7 representatives from Line Ministries (Director Level).Officers from these Ministries to be placed on deputation to the Logistics Division.TSU will have 14 domain/subject experts with 15-20 years of experience under following verticals:

S. Nos.	Name of Vertical	Domain/ Subject Matter Experts
1.	Integration	Transport Planner, Roads and Highways, Railways, ports/ maritime, aviation, Civil & Structural, Power Expert, Pipeline expert.
2.	Optimization	Market, Finance & PPP expert
3.	Standardization	Logistics expert Legal & Regulatory expert
4.	Digitization	ICT expert, GIS expert, Data Analytic Expert

2.4.1 The Role of Central Ministries

The primary role of the Central Ministries is to break the silos and start working in co-ordination with each other under the umbrella of PM GatiShakti National Master Plan for multimodal connectivity. All the existing/ planned initiatives/ schemes of the various Ministries/ Departments like Bharatmala, Sagarmala, inland waterways, dry/ land ports, UDAN have been integrated as part of PM Gati Shakti – National Master Plan.

Further, the Ministries will regularly update the PM Gati Shakti GIS portal. Also, share new proposals with NPG which will examine and sanction future projects from the perspective of multi-modal connectivity, thus, leading to minimising of disruptions and strive for the creation of an ideal & efficient operating system for all infrastructure projects in the country.

2.4.2 Role of state Governments

The State governments have large infrastructure responsibilities spread across departments and agencies. Success of PM Gati Shakti National Master Plan for multi modal connectivity largely depends upon the coordination between:

i. Various Central Ministries/ Departments with various State Government/ Departments.
ii. Various Departments within a State
iii. Various Departments of a State with various Departments of another States.

It is essential that a PM Gati Shakti State Master Plan be prepared for providing multi-modal connectivity infrastructure for various economic zones in the State. It is further envisaged that State-level EGOS headed by Chief Secretary on the pattern of EGOS is also constituted. Similarly, creation of NPG at State Level and also TSU in industries departments of State Governments are required.

2.4.3 Role of district administration

The District Administration will help in ground-level implementation of the planned initiatives /projects under PM Gati Shakti including expediting the district level approval processes. For this it is essential that required layers of data is mapped on GIS platform. Its visualization and utility by district administration will help in attaining the objective. Also, it will help in identifying district level projects which will complement the initiatives/ projects of the Central Ministries/ Departments and State Governments.

2.4.4 Role of Logistic Division

To achieve its mandate to develop and integrate cost-effective, reliable, sustainable and digitally enabled logistics ecosystem in the country in coordination with the respective line Ministries/ Departments, the role of Logistics Division will be as under:

a. Further develop and monitor the National Master Plan (NMP) in co-ordination with the respective line Ministries;
b. Operationalise the Network Planning Group (NPG) & the Technical Support Unit (TSU);
c. Handhold all stakeholders and provide capacity building on the use of the Monitoring Tools for updating and sharing data;
d. Identify projects which are vital or critical from multimodal connectivity point of view through Network Planning Group (NPG);
e. Coordinate for upgradation of the NMP portal from time to time and use the monitoring tools for review by the Egos, NPG and other stakeholders;
f. Act as Secretariat to the Empowered Group of Secretaries (EGOS) for its ToR.

Chapter-3

Gati Shakti : Organisational Structural Changes Over Indian Railways and Budgetary Support

3.1 Creation of Gati Shakti Directorate:

Ministry of Railways was one of the first Ministries to onboard very early on PM GatiShakti National Master Plan (NMP) launched in October 2021 by Hon'ble Prime Minister to bring in a transformative approach in planning and execution of infrastructural transportation projects.

Ministry of Railways has set up a multi-disciplinary Gati Shakti Directorate in Railway Board for single window clearance and fast-tracking sanctioning of new projects. The Gati Shakti directorate has dedicated multidisciplinary functional team in Railway Board. The Directorate also serves as an interface for inter-ministerial coordination at the centre and with the state government departments, in regard to planning and approval of projects.

The Gati Shakti Units in all 68 divisions are also created to percolate the PM Gati Shakti Plan down to the grassroots level. This has helped bring in complete cohesion between components of project planning and execution.

Creation of an exclusive, dedicated and multidisciplinary Gati Shakti Directorate is an initiative to improve project preparation and implementation. This is an important Organizational reform for project planning & approval. The core principles of PM Gatishakti viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes are followed in planning of the projects. The Gati Shakti Directorate has transformed the project sanction & delivery from departmental working in silos to team working,

bringing synergy for team working resulting in faster delivery of projects. This has lead to substantial improvement in pace of sanction and execution of works.

1) Multidisciplinary Gati Shakti Directorate in Railway Board and Gati Shakti units in all 68 divisions has led to
    a. *Shift from silos working by departments to team working*
    b. *Single window clearance*
    c. *Fast track processes, sanctioning and deliveries*
2) Synergy and effective coordination between Center and State by utilizing Project Monitoring Group mechanism
3) Improved framework for project prioritization and appraisal

    The impact of Gati Shakti can be seen in terms of project sanctioned, new track construction, station redevelopment and automatic signalling. In the year 2022-23,there has been 9 times increase in sanctioning of projects.68 projects were sanctioned in comparison to 7 projects sanctioned last year. There has been 35% increase in New Track Construction,11km vs 8km per day last year. Station redevelopment sanction has seen 50 times increase as 50 station redevelopment projects were sanctioned as compared to 1 last year. There has been 143% increase in Automatic Signalling.

3.1.1 Gatishakti Initiatives for fast execution of projects :

Various initiatives have been taken by Indian Railways for faster execution of projects. The initiatives are as follows:-

1) Rationalization of role of CRS in commissioning of projects.
2) Delegation of powers for Non-Interlocking and Traffic Blocks to GM/DRM.
3) Empowerment of field execution units with delegation of additional powers.

4) Close monitoring of land acquisition issues and statutory clearances with regular meetings at all levels
5) Prioritisation of projects and committed fund provision for super critical, critical & priority projects.
6) Comprehensive combined EPC contract for all works of Engineering, Electrical, S&T including all fittings, sleeper etc. for a smooth working.
7) Digitization->Sanctioning (IRPSM), tendering (IREPS), contract management (IRWCMS), e-measurements (e-MB), e-payment (IPASS)
8) Standard templates issued for DPRs and project appraisals.
9) Standardization in traffic survey, IRR & EIRR calculation for faster project appraisals.
10) IR-SOD (Indian Railway Schedule of Dimension) provisions rationalized to expedite commissioning.

3.1.2 Railway Project Planning on PM Gati Shakti BISAG Portal:

The NMP Portal, the GIS data-based platform (NMP) maps out all infrastructural assets of our social and economic Ministries and Departments. This detailed mapping enables details of forest, land, water bodies, mines, ports, power lines, available at one place on the click of a button.

For example, in case of Railways if a new line is being planned or doubling of already existing line is planned or station development is planned using the PM GatiShakti platform, the Railway Ministry can visualise the exact terrain, assess the industrial parks and manufacturing clusters, and identify the forest land, the inland waterways and the roads. This also streamlines collaboration across other Ministries, from Coal to Steel to Mining, etc., for comprehensive planning. Instead of planning and designing separately in silos, the projects can be designed and executed with a common vision.The PM GatiShakti can help in planning the route alignment,

minimizing intersections with the sensitive areas such as forests areas, identifying the need for new bridge construction, and assessing the movement of cargo. It also streamlines and simplifies the collaboration across relevant Ministries/Departments.

On the NMP Portal,30+ Railway specific data layers have been uploaded, more than 400 projects have been mapped, more than 60 Gati Shakti Cargo terminals have been mapped. Around 1324 Station Developments have been planned, out of which 1202 have been mapped on the portal.

As far as access to NMP-PM GatiShakti portal is concerned, apart from Railway Board, Zonal and Divisional Officials have also been provided the access. Two logins are given, NMP Portal login and Ministry login.NMP Portal has wider and much broader layers of data while by Ministry login limited data concerning that ministry is available. In case of a new project, the field units after doing the initial physical field survey provides the data in digitized form to Railway Board which is further handed over to BISAG team for uploading it on NMP Portal.

Ministry of Railways issued following instructions to field units so that maximum benefit of NMP Portal can be harnessed:-

"During recent consultations, It is being emphasized to take cognizance of following so that the projects can be evaluated appropriately and at par:

- Ensure mapping of project line on BISAG-NMP portal.
- Include Gati Shakti Principle – "Integrated Planning" slide in the presentation to showcase consultation and approvals with relevant agencies in planning of project.
- Include Gati Shakti Principle – "Logistical Efficiency" slides in the presentation to showcase improvement in the overall operation i.e., Improvement in detention savings/ Improvement in wagon turnaround time/ Improvement in mine or port evacuation capacity/ Route distance or travel time reduction, among others.

- Include Gati Shakti Principle – “Multi-Modality” slides in the presentation to highlight inter-connectedness and(or) proximity with other modes of transport and transport hubs e.g. NH & SH network/ Airport, Airstrips & Naval bases/ Port/ Waterways.

Include Gati Shakti Principle – “Economic Nodes” slides in the presentation to showcase Industry parks and clusters along the project’s catchment e.g. Power plants/ Mines/ Steel plants/ Mills/ Industries, among others.”

3.1.3 NPG and RAILWAYS

The collaborations and clearances required from multiple Ministries and Departments are also simplified under the PM GatiShakti approach. A NPG is constituted with heads of various Ministries and Departments for unified planning and integration of proposals. This Group meets at least once a month to have regular and intensive coordination to improve synchronization and avoid Ministries working in silos.

All Railway projects costing above Rs. 500 crores are appraised by NPG. All projects of Railways appraised by NPG are mapped on NMP portal. Till date 56 Railway projects have been appraised by NPG and all of these have been mapped on NMP Portal.

3.2 Budgetary Support and Budget 2023-24 Announcements

Budgetary Support:

To boost infrastructure, the Ministry of Railways has received a record budgetary support of ₹**2.4 lakh crores** in 2023-24**,** the highest ever outlay and about 9x over 2013-14 and 71.9% increase over the 2022-23 budget.

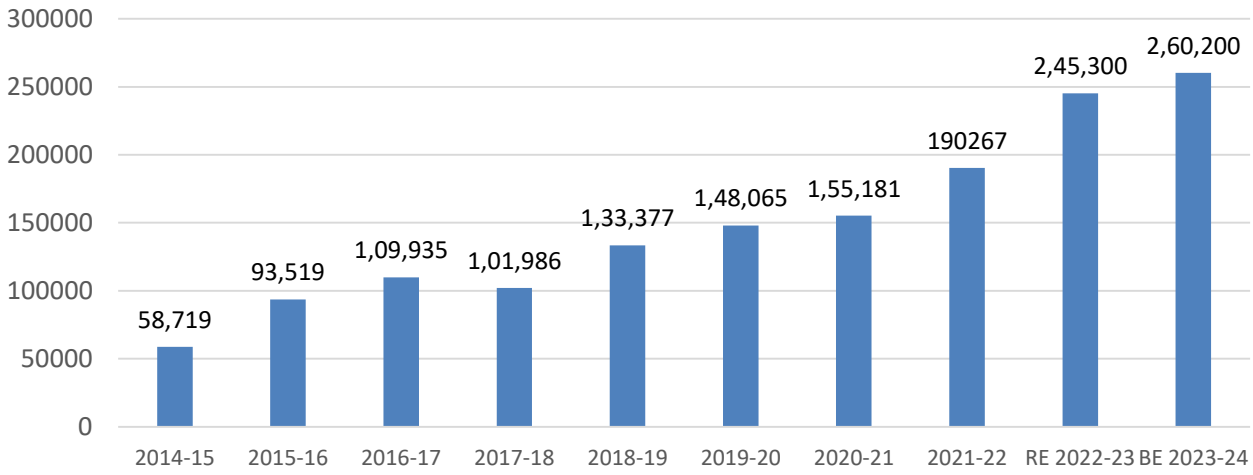
The Capital Outlay (BE 2023-24):

In line with the vision of creating Railway Infrastructure for future requirement adequate Capital Outlay (BE 2023 – 24) has been provided: -

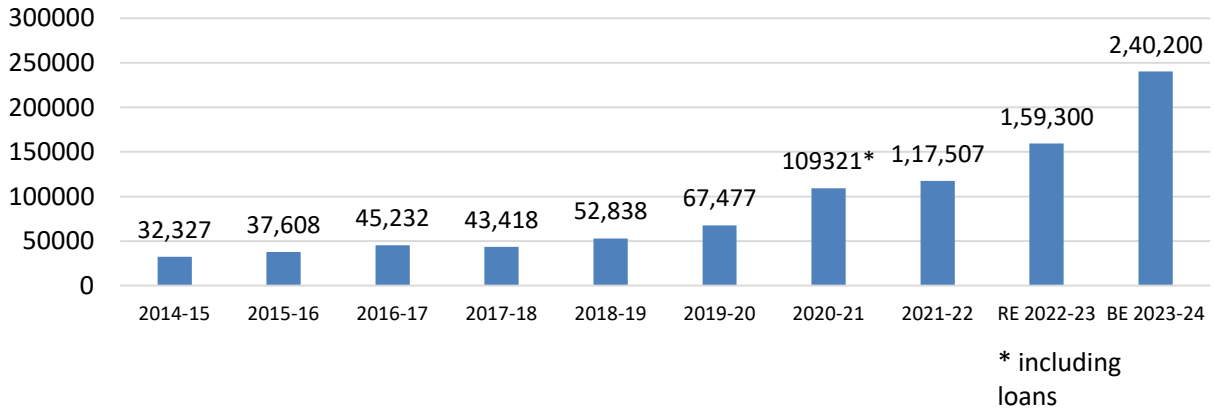
Table 3. Capital Outlay (BE 2023-24) for Indian Railways

Plan Head	RE (2022-2023)	BE (2023-24)
Capacity Augmentation		
New Lines (Const.)	26,014	31,850
Gauge Conversion	3,870	4,600
Doubling	42,526	30,749
Traffic Facilities	4,740	6,715
Electrification Projects	8,030	8,070
Invest. In PSU/JV/SPV (Govt./Non-Govt.)	28,981	34,354
MTPs	3,536	5,000
Total	**1,17,697**	**1,21,338**
Safety Related Works		
Road Safety Works- LCs	750	700
Road Safety Works -ROBs/RUBs	6,000	7,400
Track Renewals	15,388	17,297
Bridge Works	1,215	1,255
Signal and Telecom	2,428	4,198
Other Electrical Works (excl. TRD)	676	1,650
Total	**26,458**	**32,500**
Other Plan Heads		
Customer Amenities	3,824	13,355
Rolling Stock and Inv	60,549	47,760
Others	22,072	28,247
CAPEX (Excl. PPP)	2,30,600	2,43,200
EBR(P)	14,700	17,000
Total CAPEX	**2,45,300**	**2,60,200**

Graph 1: Capex (In Rs. Cr.) Over the Years:



Graph 2: Gross Budgetary Support for Capex (In Rs. Cr.) Over the Years:



Budget support and extra budgetary resources help sustain investments

Railways' capital expenditure includes investments for constructing new lines, procuring wagons, doubling of lines, and renewing tracks.

In 2023-24, Railways' capital expenditure is targeted at ₹2.6lakh crore, an increase of 6% over the previous year. The share of capital expenditure in total expenditure of Railways has

consistently increased in recent years, despite low revenue surplus. This increase has been funded through budgetary support from the central government and extra budgetary resources.

Extra budgetary resources include:

- Borrowings through Indian Railway Finance Corporation (IRFC)
- Borrowings from banks, institutional finance, and external investments. Investments are in the form of public-private partnership, joint ventures, and purchase of equity and bonds by private sector.

Extra budgetary resources funded more than 50% of capital expenditure between 2017-18 and 2020-21. In 2023-24, funds from extra budgetary resources are estimated at ₹17,000crore in 2023-24, a decrease of 79% from the previous year.

Budget 2023-24 announcements:

Key announcements and proposals related to Railways made in Budget 2023-24 include:

- Redevelopment of 1,275 stations under the '**Amrit Bharat Station'** scheme
- Introduction of **Vande Bharat trains**, H-fuelled trains, and modern wagons for freight movement
- Laying of additional tracks (New lines and Doubling)
- **Electrification** of the network
- Corridor approach for Infrastructure development and **last and first-mile connectivity** to strategic corridors such as Energy (Coal), Ports (Sagarmala), Hilly areas, Janjatiya Gaurav etc.
- Focus on tourism through the **Bharat Gaurav trains** by introducing new circuits

Outlook/Action Plan for 2023-2024:

The outlook for this year related to transformational changes and as per the outlook. The Ministry of Railways had made significant progress under the government's "PM Gati Shakti

National Master Plan", aimed at improving multi-modal connectivity as well as last-mile connectivity across India. To meet PM Gatishakti's vision in time bound manner, the Indian Railways' endeavours are aligned towards the following areas:

- Energize the organisation for developing infrastructure in line with Demand.
- Increasing the pace of Commissioning of projects from 12 Km/day (2022-23) to 16 Km/day (2023-24)
- Automatic Signalling from 33 Km/month (2022-23) to 65 Km/month (2023-24).
- Electrification of 100% existing Broad Gauge (BG) network is planned to be achieved during 2023-24.
- Rail connectivity to Kashmir valley.
- Rail connectivity to the capital of Mizoram.
- Roll out of the **Amrit Bharat station scheme** covering more than 1,276 (1324 is the latest number) stations covering the IR network spanning the entire length and breadth of the country. The Scheme envisages development of stations on a continuous basis with a long-term approach.
- Amrit Bharat Station Scheme involves preparation of Master Plans and their implementation in phases to improve the amenities at the stations like improvement of station access, circulating areas, waiting halls, toilets, lift/escalators, cleanliness, free Wi-Fi, kiosks for local products through schemes like 'One Station One Product", better passenger information systems, executive lounges, nominated spaces for business meetings, landscaping and creation of 'Roof Plazas' and city centres at the station in the long term.
- Provide connectivity to critical infrastructure gap projects catering to mines, minerals and industry, coal, ports, connectivity to Hilly and Border areas and unconnected Districts /Town.

During 2023-24, Ministry of Railways planned to spend the overall capex on various key projects such as 500 planned Vande Bharat Express trains, achieving 100 per cent electrification, and an ambitious station redevelopment plan (1,275 stations under Amrit Bharat scheme). To boost its electrification plans, the Railways also plans to set up ultra mega solar plants, and this will be done to ensure that not only electrification, but the source of the electricity itself is green. As a result during 2023-24, the Ministry of Railways continued to focus on upgrading track infrastructure to decongest its network, inducting new trains, improving the passenger amenities and modernisation of Indian Railways. The total projects sanctioned by Ministry of Railways are depicted in the following table:-

Table 4. Projects Sanctioned in the year 2022-23

SN	Item	Achievement (2021-22)	Achievement (2022-23)	% age Growth over 2021-22	Remarks
1	Final Location Surveys (Nos.)	57	441	673.68%	Highest ever in 2022-23
2	Project Sanction (Nos.) (NL+DL+GC)	07	68	871.42%	Highest ever in 2022-23
3	Traffic Facility Works (Nos.)	82	132	60.98%	
4	Station Development (Nos.)	01	50	4900%	
5	Revised Estimates (Nos.)	10	25	150%	

Gap Projects – Identification by using PM Gati Shakti NMP Portal:

1.) IR has identified critical infrastructure gap projects using PM Gati Shakti –NMP, catering to mines, minerals and industry, coal connectivity, port connectivity and are under process for DPR preparation and sanctioning.

- **Connectivity for Energy Corridors** planned for a length of 5,385 Km (2,495 Km NL and 2,880 Km DL). Approximately 114 projects are planned to be sanctioned at an approximate cost of Rs 1.25 Lac Crores.

- Ensuring **New Line connectivity to Backward and remote areas**: 19 Projects identified for the purpose requiring 2464 Km of lines to be constructed at an overall cost of Rs 70,000 Cr.
- **Connectivity and throughput enhancement for Ports** of 31 projects, 2,142 Km at an overall Cost of Rs 47,000 Cr is planned.
- **New Line connectivity to 14 Hilly and Border areas** at an overall Cost of Rs 1.2 Lac Crores is planned. This will entail building 1054 Km of rail lines.
- **New Line connectivity to 55 unconnected District /Towns having population greater than 50,000** at an overall Cost of Rs 60,000 Cr is planned. This will entail building 2000 Km of rail lines.
- Up gradation and Modernization of Stations through soft upgrade, FOB, Lifts, Escalators, Sewage treatment Plant, facility for Divyangjan etc. at an overall cost of Rs 77,500 Cr.
- Introduction of ABS (Automatic Block Signaling) on HUN (Highly Utilized Network) Routes at a cost of Rs 1,105 Cr is planned.
- Up-gradation of Electric Traction System from 1x25 kV to 2x25 kV system at a cost of Rs. 33,000 crores on routes identified from point of view of achieving 3,000 MT freight traffic target.
- Electrification of remaining un-electrified sections over Indian Railways arising due to currently undergoing NL/GC works at a cost of Rs. 1,000 crores.

Table 5. Critical Infrastructure Gap Projects

Infrastructure development of country through Rail connectivity - Provision of Theme based Umbrella works for improving Railway connectivity

S N.	Umbrella Works	No. of Projects	Cost (Rs. Cr.)
1	New Line connectivity for energy corridors	26	80,000

2	Doubling/ tripling/ quadrupling/ flyover/ bypass works to augment capacity of energy corridors	88	45,000
3	Janjatiya Gaurav Corridor	19	70,000
4	New line connectivity to ports	08	5,000
5	New Lines for rail connectivity to unconnected towns/ cities with population more than 50 thousand	55	60,000
6	New Lines for connectivity to Hilly areas and Border areas	14	1,20,000
7	New Lines connectivity in all Indian Railways except energy corridors	33	35,000
8	Doubling/ tripling/ quadrupling/ flyover/ bypass works on Indian Railways except energy corridors to augment capacity of existing lines	82	75,000
9	Gauge conversion of Meter Gauge/ Narrow Gauge lines on Indian Railways	11	7,000
	Total	**336**	**4,97,000**

2. Commissioning of New Lines, Doubling, Gauge Conversions at rate of 16 Km per day (around 6,000 Km) in 2023-24.

Table 6. Commissioning of Projects in the year 2022-23

SN	Item	Achievement (2021-22)	Achievement (2022-23)	% age Growth	Remarks
1	New Line, Doubling & Gauge Conversion (KMs)	2910	5243	80.17%	Highest ever with DFC (Previous best was 3596 Km in 2018-19)
		2910	3925	34.87%	Highest ever (Previous best was 2910 Km in 2021-22)
2	Railway Electrification (RE) (KMs)	6366	6565	3.12%	Highest ever (Previous best was 6366 RKms in 2021-22)
3	Automatic Signalling (RKMs)	218	530	143.11%	Highest ever (Previous best was 349 RKms in 2008-09)
4	Electronic Interlocking (Nos. of Stations)	421	538	27.79%	Highest ever (Previous best was 421 nos. in 2021-22)
5	LC Gate Interlocking (Nos.)	277	277	-	

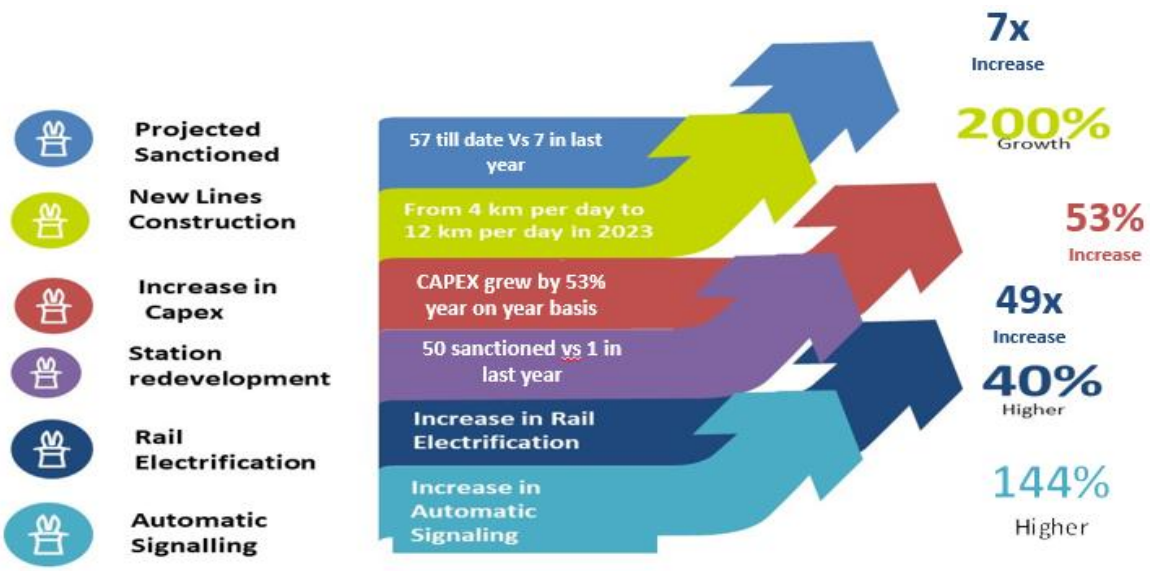
Major Achievements 2022-23 (till date)

A number of initiatives have been taken in the last year by Ministry of Railways to achieve the objective of PM Gati Shakti and improve logistic efficiency, as summarized below:

PM Gati Shakti for Planning:

- Ministry of Railways was one of the Ministries to onboard very early on PM Gati Shakti National Master Plan (NMP) launched in October 2021 by Hon'ble Prime Minister to bring in a transformative approach in planning and execution of infrastructural transportation projects.
- Ministry of Railways has set up a multi-disciplinary Gati Shakti Directorate in Railway Board for single window clearance and fast-tracking sanctioning of new projects. The Directorate focuses on bringing synergies and improving the efficiency of the system to create additional rail infrastructure and thereby enhance railway market share in the country's cargo loading and reduce logistics costs
- The core principles of PM Gati Shakti viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes are followed in planning of the Projects.

Impact of Gati Shakti:



Major Achievements 2022-23: -

Some of the Indian Railways' (IR) achievements in the financial year 2022-23 are

- 405 FLS (Final Location Survey) sanctioned in 2022-23 compared to 57 in 2021-22.
- 57 Projects sanctioned till date and another 15 projects are in various stages of approval as compared to 07 projects sanctioned in 2021-22. This represents a 714% growth in number of works sanctioned over the previous year.
- 3,989 Kms Rail Lines commissioned against up to Jan 2023 against 2,910 Km commissioned in 2021-22. This is the **highest ever number of Kms commissioned** in a year. Pace of Commissioning of projects improved from 4 Km/day to 12 Km/day.
- Highest ever electrification of 3,375 Route Kilometre (RKM) has been achieved during FY 2022-23 (up to 31.01.2023) against 2,452 RKM during the corresponding period of FY 2021-22 i.e. 37% higher.
- Electrified Network of IR has been extended to 85%. North Central Railway and Uttarakhand State have been 100% electrified.
- Pace of commissioning of Automatic Signalling improved from 18 Km/month to 33 Km/month.
- Network Planning Group has appraised and recommended 56 projects with estimated cost of ₹ 66,910.82 Cr. proposed by Ministry of Railways based on core principles of PM Gati Shakti.
- Over 400+ railway projects have been mapped and 126 project alignments have been verified and finalized on the PM Gati Shakti NMP Portal. Details of forest, revenue land, water bodies, mines, revenue records have been now made available at one place. 17 railway specific data layers have been uploaded on the NMP portal.
- The Gati Shakti Units have been created in all 68 divisions of Indian Railways.

Table 7. Comparative Figures of Projects Commissioned in 5FYs

Commissioning of Projects in FY 2019-20 to 2023-24

Commissioning - FY - 2019-20						Commissioning - FY - 2020-21						Commissioning - FY - 2021-22						Commissioning - FY - 2022-23						Commissioning - FY - 2023-24					
Month / Year	NL (Km)	GC (Km)	DL (Km)	Total (Km)	Cum	Month / Year	NL (Km)	GC (Km)	DL (Km)	Total (Km)	Cum	Month / Year	NL	GC	DL	Total (Km)	Cum	Month / Year	NL	GC	DL	Total (Km)	Cum	Month / Year	NL	GC	DL	Total (Km)	Cum
Apr'19		57	7	64	64	Apr'20	0	0	0	0	0	Apr'21	0	0	35	35	35	Apr'22	0	0	220	220.4	220	Apr'23	0	0	37	37	37
May'19		24	146	170	234	May'20	28	0	12	40	40	May'21	0	0	28	28	63	May'22	14	16	81	111.2	332	May'23	15	15	186	215	252
June'19	58	85	90	233	467	Jun'20	52	0	72	124	165	Jun'21	0	0	108	108	171	Jun'22	19	12	224	255.26	587	Jun'23	50	0	229	279	532
July;19	51		55	106	572	Jul'20	40	44	105	189	354	Jul'21	0	0	114	114	285	Jul'22	0	0	219	218.99	806	Jul'23	150	0	141	291	822
Aug'19	28		88	116	688	Aug'20	30	34	94	157	511	Aug'21	0	4	52	56	341	Aug'22	9	0	274	282.26	1088	Aug'23	65	37	99	201	1023
Sep'19	43		139	181	870	Sept'20	0	11	146	157	668	Sept'21	0	0	142	142	482	Sept'22	0	0	379	378.53	1467	Sept'23	656	0	204	860	1883
Oct'19	21	61	93	176	1045	Oct'20	0	49	187	236	905	Oct'21	17	166	165	348	830	Oct'22	11	74	177	261.90	1729	Oct'23	17	46	123	186	2069
Nov'19		20	101	121	1166	Nov'20	14	63	142	219	1124	Nov'21	25	20	113	158	988	Nov'22	25	0	181	205.85	1934	Nov'23	70	16	126	212	2281
Dec'19	78	36	97	211	1377	Dec'20	0	110	205	316	1439	Dec'21	79	52	204	335	1323	Dec'22	1390	15	174	1578.92	3513	Dec'23	1132	19	187	1813	4094
Jan'20		63	120	183	1560	Jan'21	32	0	26	58	1497	Jan'22	0	0	108	108	1431	Jan'23	122	34	317	473.53	3987	Jan'24	59	13	201	272	4366
Feb'20		63	297	360	1920	Feb'21	0	22	284	306	1803	Feb'22	27	116	395	538	1969	Feb'23	20	0	88	456	4443	Feb'24					
Mar'20	82		225	306	2226	Mar'21	91	137	341	568	2371	Mar'22	141	278	522	941	2910	Mar'23	0	0	0	799	5242	Mar'24					
TOTAL	360	408	1458	2226		TOTAL	286	470	1614	2371		TOTAL	289	636	1984	2910		TOTAL	1609	151	2335	5242		TOTAL	2212	145	1533	4366	

Table 8. Summary of New Line,Gauge Conversion,Doubling

SUMMARY						
Plan Head	Total No. Of Projects	Total Length (Km)	No of Projects Commissioned	Total Length Commissioned (Km)	No of Balance Projects	No. of Balance Length in Progress (Km)
New Line	27	2107	11	1577	16	530
Gauge Conversion	27	2856	18	2306	9	550
Doubling	155	12268	87	9190	68	3078
G. Total	209	17231	116	13073	93	4158

Way Forward:

During 2024-25, the Ministry of Railways will continue to focus on upgrading track infrastructure to decongest its network, inducting new trains, improving the passenger amenities and modernization of Indian Railways.

- Commissioning of projects from 4 Km/day to 12 Km/day (2022-23), 16 Km/day (2023-24)
- Automatic Signalling from 18 Km/month to 33 Km/month (2022-23), 65 Km/month (2023-24).
- 100% Electrification by Dec.-2023.
- Develop infrastructure to carry 3000 MT by 2028.
- Improve freight modal share from 27% to 40%
- To reduce logistic cost from 14% of GDP to 8% of GDP.
- Amrit Bharat station for improving passenger experience.

Chapter-4

GatiShakti and Logistic Efficiency Over Indian Railways: Case Studies

4.1 Improving Logistics Efficiency:

Indian Railways (IR), the 4th largest Railway Network in the world, transported a record 1,418 million Tones (MT) cargo in the financial year 2021-22. Indian Railways plays a stellar role in meeting the logistics needs of the country and is rightly called the "**lifeline of the nation"**.

Railways is one of the key drivers of the PM GatiShakti scheme. The PM GatiShakti – the National Master plan for multi-modal connectivity- aims to decongest railway infrastructure by 51% by 2024-25. Under PM Gati Shakti-NMP, Ministry of Railways plans to increase its share of the logistics market to 40% from the current 27-28% in 2022-23.

To boost infrastructure, the Ministry of Railways has received a record budgetary support of ₹**2.4 lakh crores,** the highest ever outlay and about 9xover 2013-14. The main thrust in the Budget 2023-24 for the railways is towards new development projects to improve logistics efficiency and enhance levels of safety and comfort for passengers. **39 GatiShakti Cargo Terminals** have been commissioned. Around 100 locations have been provisionally identified for the development of GCTs. Indian Railways and India Post developed a '**Joint Parcel Product' (JPP).** A full train service under JPP of Indian Railways and India Post between Surat and Narayanpur Anant via Varanasi has also been launched on 20.10.2022.

4.1.1 How PM Gati Shakti is likely to improve logistic efficiency?

PM Gati Shakti – National Master Plan provides an integrated platform where all the economic zones and their multimodal connectivity infrastructure have been depicted with an aim to boost the economic and overall development of the region. The same will provide physical

linkages to promote comprehensive and integrated multimodal national network of transportation and logistics thereby enabling smooth transportation of goods, people and services to create efficiency gains and avenues for further developments, value addition and creating employment opportunities.

The Plan holistically looks at the interventions required to be taken for reduction in the cost of logistics like encouraging higher use of alternate fuels like LNG/ methanol and rationalization of taxes /GST on improving procedures for seamless multimodal transport as well as consider transportation of high value items by air. It also looks at the interventions required to efficiently transport bulk goods based on the demand side requirement of various Ministries like Steel, Coal, Fertilizer etc.

4.2 A Case Study: Jogighopa Multimodal Logistics Park

The National Master Plan helped plan a Multimodal Logistics Park at the Intersection of national waterways, rail network and roadways, connected to the rest of India and supplemented by a 4-lane bridge across the Brahmaputra River, drastically reducing the existing travel distance and time.

4.2.1 Vision for the Project

On the northern banks of river Brahmaputra, in the district of Bongaigaon in Assam, this ambitious project will be the country's first Multi-Modal Logistics Park (MMLP). This project will enable critical, seamless and multimodal transport of goods to and from the Northeast of India across road, rail and waterways.

The location will act as an aggregation point. This will enable the long-distance overhaul to move on more efficient modes such as rail, waterways, and trucks with higher carrying

capacity while ensuring that the first mile and last mile movement within the Northeast region will be on medium and smaller- sized trucks.

This will boost the region's economic development and improve connectivity with the entire nation. The part will have a variety of facilities, including warehouses, cold storage facilities, and cargo terminals to facilitate and allocate the goods movement among different modes of transport. The development of state-of-art warehouses and cold storage facilities shall cater to a diverse array of goods, including agricultural produce, fisheries output, and processed commodities that have the potential to boost agriculture, fisheries, and industries,

It will enable the reduction of both logistics' costs and vehicular emissions from freight transmissions. It will also connect to the economic node of the fishing cluster at Goalpara and a logistics node at Jogighopa railway station and boost trade in the region significantly. The completed project will also include the longest river bridge connecting flood-prone areas.

This also acts as a possible link to neighbouring countries like Bhutan, Bangladesh and Myanmar in terms of regional cooperation and trade prospects in the future.

4.2.2 The Gati Shakti EDGE and Approach

With PM Gati Shakti at the helm, the MMLP project took a transformative trajectory. Before the PM Gati Shakti approach, the need for comprehensive connectivity and efficient logistics in the Northeast region was evident. The region faced limitations due to fragmented transport system, inadequate facilities, and constrained trade prospects. The disconnect between the fishing cluster in Golapara and the rest of the trade ecosystems is indicative of the need for an integrated approach. The transformation of the MMLP at Jogighopa began with following initiatives of PM Gati Shakti principles: -

1. The first step was harnessing data layers from diverse Ministries/ Departments, and States/ UTs along with social, ecological and topographical data from the NMP platform. By leveraging this amalgamation of information, a holistic view of the area development approach emerged, incorporating economic nodes, railway network, airports, ports, waterways, schools, hospitals and ecological considerations.
2. The integration of economic nodes was strategically planned through PM Gati Shakti approach. Through this the connectivity between Jogighopa railway station and the Goalpara fishing cluster.
3. PM Gati Shakti approach also enabled synergy with the national highway infrastructure in Assam, including the Jogighopa Bridge parallel to Naranarayan Setu on NH-17 as well as the Dhubr-Phulbari Bridge on NH-127B.

   The forthcoming Dhubri-Phulbari Bridge overcomes the challenges of disconnected flood-prone areas. The 4-lane bridge's design, is set to reduce the distance between Dhubri and Phulbari by a staggering 90%, reducing the current ~205km journey to a mere ~20km. This monumental bridge is poised to be India's longest, an emblem of ambitious infrastructure development.
4. Through NMP platform, the external road connectivity aligned with a railway intersection has been planned for integration. This called for a Road Under Bridge (RUB) for seamless connectivity. The State Government of Assam and the Ministry of Railways collaborated effectively, facilitated by PM Gati Shakti portal.

   This project will significantly contribute to the overall connectivity strategy. Through the effective coordination facilitated by the PM Gati Shaki initiative, the construction of the RUB was realized successfully, playing a crucial role in the broader connectivity strategy.

5. The initiative plans for advanced warehouse and cold storage facilities. These are tailored to accommodate a diverse array of goods including agricultural produce, fisheries output, and processed commodities that have the potential to boost agriculture, fisheries, and industries. This comprehensive infrastructure further supports local economies and bridges critical infrastructure gaps.

   Thus, Jogighopa multimodal Park epitomizes all the objectives / principles of PM Gati Shakti approach. This is an example of a transition from disjointed connectivity to seamless trade networks. It showcases the potential of coordinated efforts. The upcoming Dhubri-Phulbari Bridge and the comprehensive facilities within the MMLP reflect the power of strategic planning and execution.

4.3 A Case Study: Strengthening of the Railway Line Between Bhadrak and Vizianagaram

The new line, with its intricate planning on the PM Gatishakti National Master Plan, will ease freight traffic congestion on exiting transport routes and bring seamless rail connectivity to major Eastern ports. This would provide easier access to raw material, efficient freight movement export of minerals, faster movement of goods, and marine traffic thereby, improving global competitiveness.

4.3.1 Vision for The Project:

The proposed rail alignment is between Bhadrak, a picturesque tourist attraction district in Odisha, and Vizianagaram, a historical city in Southern India, which have today emerged into modern commercial zones.

Odisha is home to the country’s second-largest coal reserves, with high demand in India across some Southern States and across the world.

1. This rail alignment would reduce congestion in the existing burdened railway and port network and ease freight movement.

2. This will provide an alternate route for coal and other minerals such as iron ore and steel from the ports to the domestic and global markets.
3. The project is crucial for the movement of raw materials and cargo between southern India and eastern coasts.
4. It would provide faster raw material access to steel plants, ensuring they have the materials needed for their expansion plans. It would help in seamless transportation from goods sheds and increase domestic coal transport and coastal connectivity. This, in turn, would reduce logistics transportation costs.
5. Beyond connectivity between major east coast ports, the proposed broad gauge railway line will also connect major cities in Bhadrak, Odisha, and Vizianagaram, Andhra Pradesh.
6. It will enable seamless cargo movement between India's eastern and southern coast through rail-sea-rail movement.
7. It will catalyse the progress and development of the region while bringing seamless connectivity.

4.3.2 The GatiShakti Edge and Approach:

At the initiation of this project, the Railway Ministry was aware that the existing railway line had reached its maximum capacity despite the need for enhanced connectivity

Two prominent challenges presented themselves**:**

1. The burgeoning congestion at the nearby Paradeep port and the surplus production at the coal mines and steel plants, necessitating transportation to regions of high demand. Unfortunately, the current route from Paradeep could not accommodate this augmented freight.

It was at this point that the Railway Ministry turned to GatiShakti with a definitive directive: To establish a third railway line within the corridor, strategically designed to bridge these gaps. Thus, it is one of the gap projects that has been taken up.

2. The first and last-mile connectivity to these economic nodes was mapped on the NMP platform, and the infrastructure was planned by superimposing their alignment on the GIS maps on the platform.

This comprehensive approach succeeded in augmenting connectivity across vital economic hubs, encompassing both major and minor ports. The approach maximizes multimodality for seamless operations, creating a ripple effect with the industries and mines that use the materials transported.

This will help facilitate the multimodal movement from goods sheds at Khurda, Jagannathpur, and Srikakulam and provide raw material access to steel and power plants in Kalinganagar and Angul areas. It connects with other existing and planned infrastructure right from the upcoming East Coast Dedicated Freight Corridor between Kharagpur and Vijayawada, 3 ports of Gopalpur, Visakhapatnam, Gangavaran, to airports in Bhubaneswar and Vizag, as well as five national highways.

The Optimisation of the alignment, using the GIS-based layers on the NMP platform, identified overlaps with other infrastructure and geographical features. The pre-alignment checked for intersections with trunk infrastructure, forest, wildlife sanctuary, power lines, telecom, etc., to reduce the overlapping with these assets. The visual representation of layers helped minimise intersections with forest and mining areas of Odisha.

By combining smart planning and advanced technology, the Railway Ministry used the GatiShakti approach to plan a game-changing railway route. This route alignment solved important logistical challenges and also showed a model of building infrastructure that is well-

organised, eco-friendly, and responsible. This rail line between Bhadrak and Vizianagaram, it interconnects the significant economic nodes as well.

4.4 PM Gati Shakti Use Case Example Gandhidham – Samakhiyali Quadrupling Project

(Ahmedabad Division of Western Railway)

This is one another example which shows how GS principle of integrated planning and logistic efficiency are being followed in Railway projects. Gandhidham-Samakhiyali Quadrupling project is 53 km line. For this project, Department of Road Transport & Highway has been consulted. NHAI has been consulted for construction of three ROBs, coming in the alignment of quadrupling. Department of Port was consulted as Kandla Port is 11.00 km away from Gandhidham, Tuna port is 19.57 km away from Gandhidham, Mundra port is 65.92 km away from Gandhidham. The additional traffic has been considered for Quadrupling project.

Consultations were held with other stakeholders as well, which are: -

1. Kandla and Mundra port.
2. Gujrat Mineral Development Corporation.
3. Chamber of Commerce, Gandhidham
4. Kutch Salt Association

4.4.1 Logistic Efficiency of the Project:

The project improves the overall logistical performance of the ecosystem as a whole: -

1. This line is handling outward Traffic from Gandhidham area = 28-30 million Tonnes (MT)/ Annum in 2021-22 which is expected to touch 40 MT in current year 2022-23.
2. Inward traffic is approx. 15 MT in current year, leading to total of approx. 55 MT in 2022-23.

3. Naliya line will be commissioned by Dec 2024; further Vayor and Hajipir is likely to be commissioned by 2026. This cluster will add approx. 4-5 cement and clinker rakes and 5-6 salt rakes/day.
4. Apart than this, Mundra is also developing infrastructure to add freight handling of Petrochemical products, Steel finished goods, Cement and Copper.
5. Steel industry is also projected to grow in Gandhidham, KhariRohar and Bhimasar area.
6. Due to the project, traffic handling capacity of the section will be improved in manifolds.
7. The detention, due to the path constraint will be saved by this project.
8. Availability of rolling stock will be improved, on account of saving in detention.
9. Modal shift from road to rail has been deeply considered for the calculation of Economic IRR for this project.
10. Tuna Port (Deendayal Port).
11. Upcoming New container terminal will

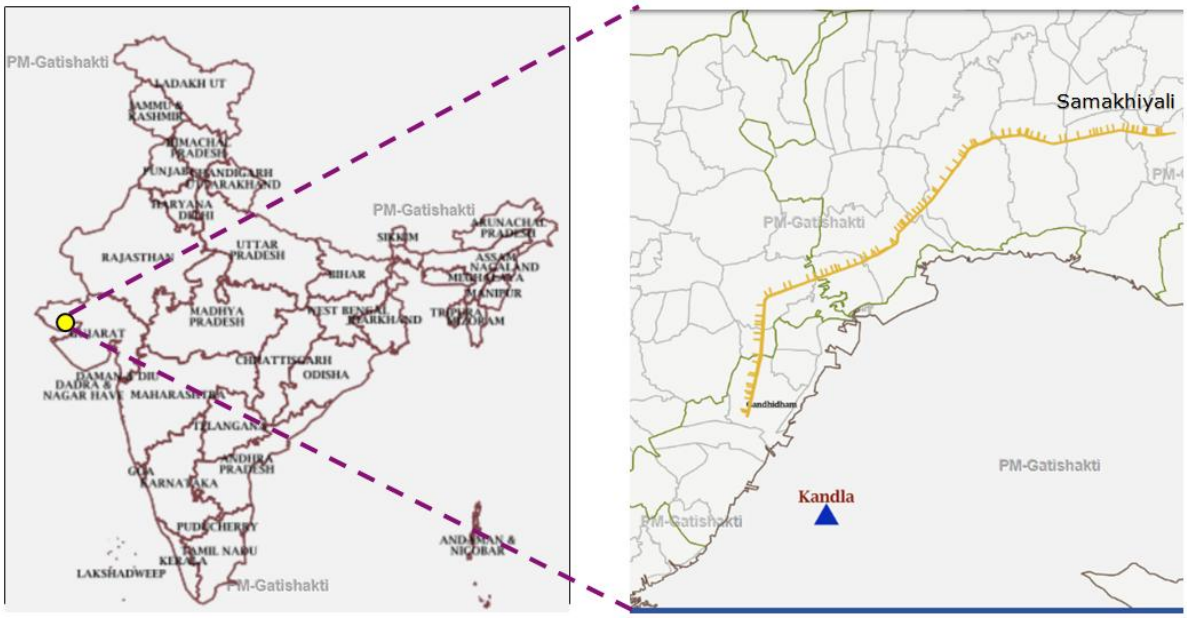
    a) Add 2.2 million TEU EXIM traffic (6-7 rakes per day)

    b) Multipurpose Cargo increase of 2-3 rakes per day (18MT)

    c) Total – 8-9 rakes per day.
12. Organic Growth of Mundra Port in terms of container (2 upcoming terminals MICT 5 and MICT 6): Current: 22-23 rakes/ day, projected in 5 years: 35- 40 rakes/day (Addition of 15-17 rakes/day)

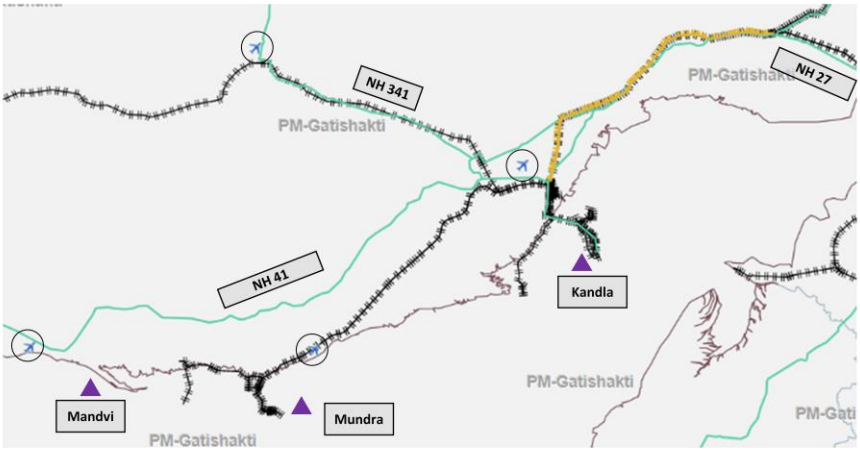
Line Map

Samakhiyali –Gandhidham Quadrupling Project (53 Km)



GS Principles - Multi-modal Approach

Samakhiyali – Gandhidham Quadrupling (53 Km)



Project Line
Existing Railway line
Airstrip
Port
NH Network

Multi Modal Connectivity	
DFC Connectivity	
DFC Feeder Route	0 Km
New Chadotar Sub Yard (WDFC)	200 Km

Multi Modal Connectivity	
Port Connectivity	
Kandla	12 Km
Mundra	68 Km
Mandvi	101 Km

Multi Modal Connectivity	
Road Connectivity	
NH 41	0 Km
NH 27	0 Km

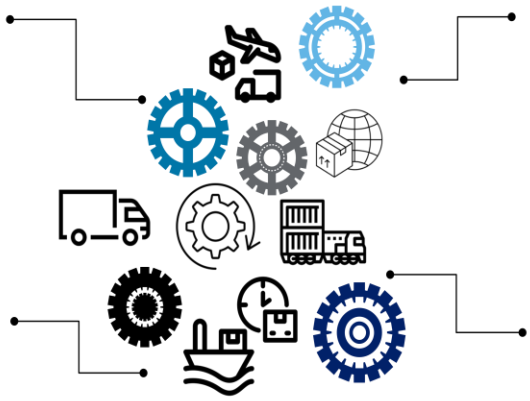
Multi Modal Connectivity	
Air Connectivity	
Kandla	9 Km
Mundra	53 Km
Bhuj	61 Km
Mandvi	106 Km

GS Principles - Logistical Efficiency

Samakhiyali –Gandhidham Quadrupling Project (53 Km)

- Handling of outward Traffic from Gandhidham area = 28-30 Million Tonnes (MT)/ Annum in 2021-22 which is expected to touch 40 MT in current year 2022-23.
- Inward traffic is approx 15 MT in current year, leading to total of approx 55 MT in 2022-23.

- Naliya line will be commissioned by Dec 2024; further Vayor and Hajipir is likely to be commissioned by 2026. This cluster will add approx 4-5 cement and clinker rakes and 5-6 salt rakes/day.
- Apart than this, Mundra is also developing infrastructure to add freight handling of Petrochemical products, Steel finished goods, Cement and Copper.
- Steel industry is also projected to grow in Gandhidham, KhariRohar and Bhimasar area.



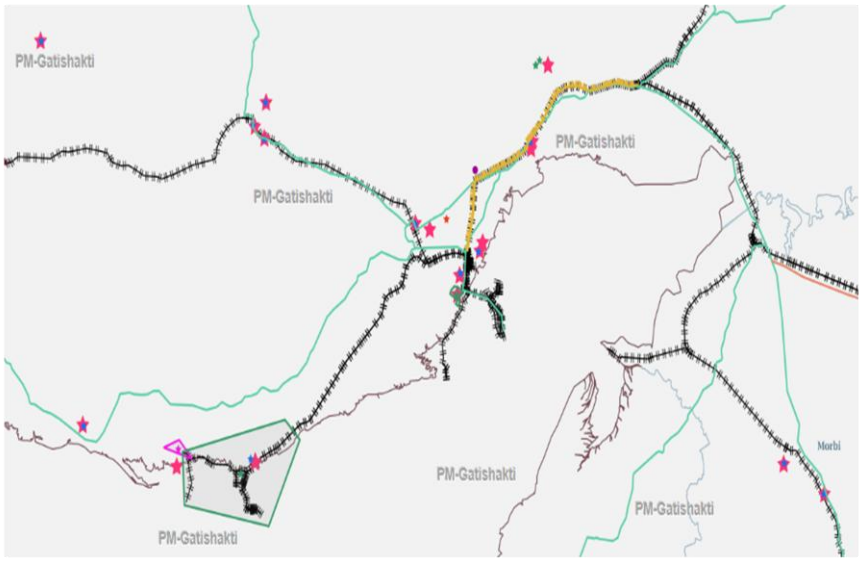
- Due to the project, traffic handling capacity of the section will be improved in manifolds.
- The detention, due to the path constraint will be saved by this project.
- Availability of rolling stock will be improved, on account of saving in detention.
- Wastage of manpower will be saved.
- Modal shift from road to rail has been deeply considered for the calculation of Economic IRR for this project.

- Tuna Port (Deendayal Port):
- Upcoming New container terminal will add 2.2 Million TEU EXIM traffic (6-7 rakes per day)
- b) Multipurpose Cargo increase of 2-3 rakes per day (18MT)
- c) Total – 8-9 rakes per day.

- Organic Growth of Mundra Port in terms of container (2 upcoming terminals MICT 5 and MICT 6): Current: 22-23 rakes/ day, projected in 5 years: 35- 40 rakes/day (Addition of 15-17 rakes/day)

GS Principles – Economic Nodes

Samakhiyali – Gandhidham Quadrupling (53 Km)



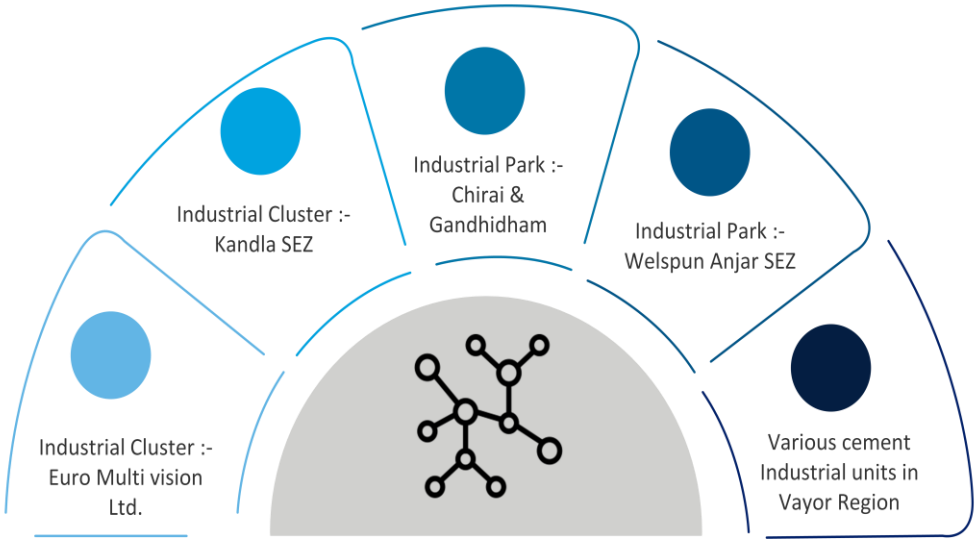
Industry Park Industry Cluster

Project Line Existing Railway line NH Network

Economic Nodes & Clusters	
Steel Plant	
Indian Steel, Gandhidham	16 Km
Economic Nodes/ Clusters	
Euro Multivision Limited – SEZ	44 Km
Mithi Rohar II	8 Km
Welspun Anjar SEZ	15 Km
Anjar Industrial Estate Land	18 Km
Kandla SEZ	5 Km
Moti Chirai Industrial Estate	28 Km
Bhuj – II (Nagor) Industrial Estate	57 Km

GS Principles - Economic Nodes

Samakhiyali –Gandhidham Quadrupling Project (53 Km)



GS Principles - Economic Nodes

Samakhiyali –Gandhidham Quadrupling Project (53 Km)

Major Industries in the Area

1. Deendayal **Port**
2. Mundra **SEZ**
3. Tuna Tekra (DBTK) **Port**
4. Salt **industries** at stations like Khari Rohar, Gandhidham, Chirai, Bhimasar
5. **Fertiliser** freight loading from Kandla, Mundra, Shirva
6. **POL** products from Kandla, Gandhidam IOCL, BPCL, HPCL, NFPG
7. **Steel** products loading from Khari Roharand Bhimasar
8. **Bentonite** powder, gypsum from Bhuj , Kukma and Desalpar
9. **Foodgrain** from Khari Rohar, Mundra, Kandla, Shirva, Gandhidham
10. **Vegetable oil** from Gandhidham , Bhimasar, Shirva and Mundra
11. **Container loading** from Mundra, Kandla, Bhimasar, Gandhidham

Project Brief

SAMAKHIYALI –GANDHIDHAM QUADRUPLING PROJECT (53 KM)

Sponsoring Ministry	• Ministry of Railway
Project Title	• SAMAKHIYALI –GANDHIDHAM QUADRUPLING PROJECT (53 KM)
Location	• State – Gujarat • District – Kachchh
Project Proponent	• Ministry of Railway
Implementing Agency	• Western Railways

Project Status

SAMAKHIYALI –GANDHIDHAM QUADRUPLING PROJECT (53 KM)

DPR Status	• DPR under consideration
Land Acquisition Status	• Total requirement of land: 98.00 Ha • Pvt Land : 78.40 Ha • Govt land : 19.60 Ha • Forest Land : 0.00 Ha • Acquisition process will be started after sanctioning of the project • Area wise land acquisition required has been mapped and uploaded on NMP.
Forest Clearance Status	• 0.00 Ha of Forest Land
Anticipated/ Total Project Cost	• 1429.56 Cr
Project Classification	• It is Brownfield Project.
Expected Project Completion Timeline	• Four Years

Salient Features

SAMAKHIYALI –GANDHIDHAM QUADRUPLING PROJECT (53 KM)

Sr. No	Item	Details
1	Speed potential	• 110 Kmph
2	Land requirement	• 98.00 Ha
3	No. of stations	• 06 (6 Existing)
4	Tunnels	• 0
5	Total length of Bridges	• 0.7 Km (1.32% of total alignment)
6	Important bridges	• 00 Nos
7	Major bridges	• 09 Nos
8	Minor Bridges	• 66 Nos
9	Level crossing	• 26 Nos
10	ROB	• 03 Nos
11	RUB	• 00 Nos
12	Traction	• Electric (OHE – 2X25 kv) AC
13	Signalling	• MACLS with STD II R (EI) INETRLOCKING, AUTOMATIC SIGNALLING BETWEEN STATIONS.

Chapter-5

Gati Shakti : Infrastructure Projects in Indian Railways and Amrit Bharat Station Scheme

5.1 PM GATISHAKTI AT WORK: For Infrastructure Projects

As we now know that GatiShakti National Master Plan is a transformative approach for economic development and sustainable development. Its vision is integrated and unified infrastructure development and network planning.

One of the initial O.M of Ministry of Finance dated 28.04.2022 defines PM GatiShakti NMP as "PM GatiShakti National Master Plan (NMP) is for providing multimodal connectivity infrastructure to various Economic Zones. The PM GatiShakti NMP is an integrated plan depicting the Economic Zones and the the multimodal connectivity infrastructure. "It has the following objective: - "to holistically integrate the interventions of various Ministries/Departments and address missing gaps to ensure seamless movement of people, goods and services."

The sheer scale of infrastructural requirements in India is humungous, and that requires collaboration at multiple levels. To simplify the entire journey from planning to implementations framework provides an integrated and collaborative approach for infrastructural development. From an integrated development approach to planning connectivity, it works at incorporating: -

1) allied infrastructure such as laying utilities during the planning phase,
2) enhancing additional connectivity to help seamless movement,
3) ensuring ecological focus on conservation of forests, rivers, etc. and
4) faster land acquisition and expedited clearances.

The NMP Portal provides a comprehensive view of all projects on one platform, with visibility across stakeholders. This also helps drive faster prioritization across Ministries and

easier synchronization to avoid delays. The detailed analysis from the data layer and tools ensure better optimization of projects and, through it ,keeps the process dynamic for future incorporations and developments.

5.1.1 Collaborative by Design: Gatishakti approach and NMP Portal:

The collaborative nature of GatiShakti starts right from the design of the NMP Portal.8 Infrastructure Ministries,16 Social Sector Ministries,15 Economic Ministries, and 36 State and Union Territories have mapped GIS data layers of their individual Ministries/States/UTs, respectively, onto the National Master Plan. These layers of information have enabled the platform to become a trusted repository by bringing together 60+Central and State portals onto one platform with 1463 data layers integrated.

Using the 50+ planning tools on the National Master Plan and the clearance & approval mechanisms, the inter-Ministerial issues resolution has been streamlined significantly Additionally, comprehensive institutional mechanisms have been established at both Central and State levels to ensure sustained progress.

5.1.2 From design to implementation: The Role of the Network Planning Group (NPG):

The road from idea to implementation is paved with synchronization in NPG. This ensures that the projects are completed on time. The role of NPG is that of facilitator in infrastructure projects.

The infrastructure development projects are often underpinned with complex strategic planning and decision-making processes involving many stakeholders. Collaboration among ministries makes the process more complex and time taking. The NPG has been established under PM GatiShakti with the objective of facilitating this process and minimize delays. This

brings bout a systemic change in ways inter-Ministerial collaborations can happen at scale and across projects.

The ongoing NPG meetings allow for efficiency in the integrated planning and decision-making process. To date,100+ projects have been evaluated by the NPG, and over 156 first and last-mile connectivity projects have been identified. Additionally,192 Energy Corridor projects of Ministry of Railways have also been appraised by the NPG.

5.1.3 Leveraging Innovative Technology:

The National Master Plan leverages state-of-the-art geospatial technology, utilizing a dynamic GIS and a satellite-based platform developed by the Bhaskaracharya National Institute for Space Applications and Geo informatics (BISAG-N).

The technology has revolutionized data input, access, and accuracy. It has multiple specific modules to monitor projects, create queries, provide approvals, plan connectivity, look at overlaps and more.

The data on specific action plans of all Ministries/Departments are uploaded onto this one database that enables a dynamic mapping of all the infrastructure projects, along with real-time updates. This helps create a uniformity of source information everyone can access and use.

The database has information on all current and ongoing projects across Ministries. The comprehensive platform enables easier collaboration across Departments. Thus the planning process gets simplified while ensuring a design that is mindful of all economic and social aspects.

5.1.4 NMP Portal and simplification of Planning Process Over Railways:

PM GatiShakti principles have been adopted for the holistic planning over Indian Railways. Some of the case studies are apt examples of this. **Core principles of PM Gatishakti**

viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes have been followed in the planning of these Projects. Departments consulted and observations were recorded, project's proximity and connectedness with other modes of infrastructure was considered, how project improves overall logistical performance of the ecosystem as a whole was taken into account, project's cohesion with existing economic infrastructure and improvement in overall economic efficiency and impact was also taken into account.

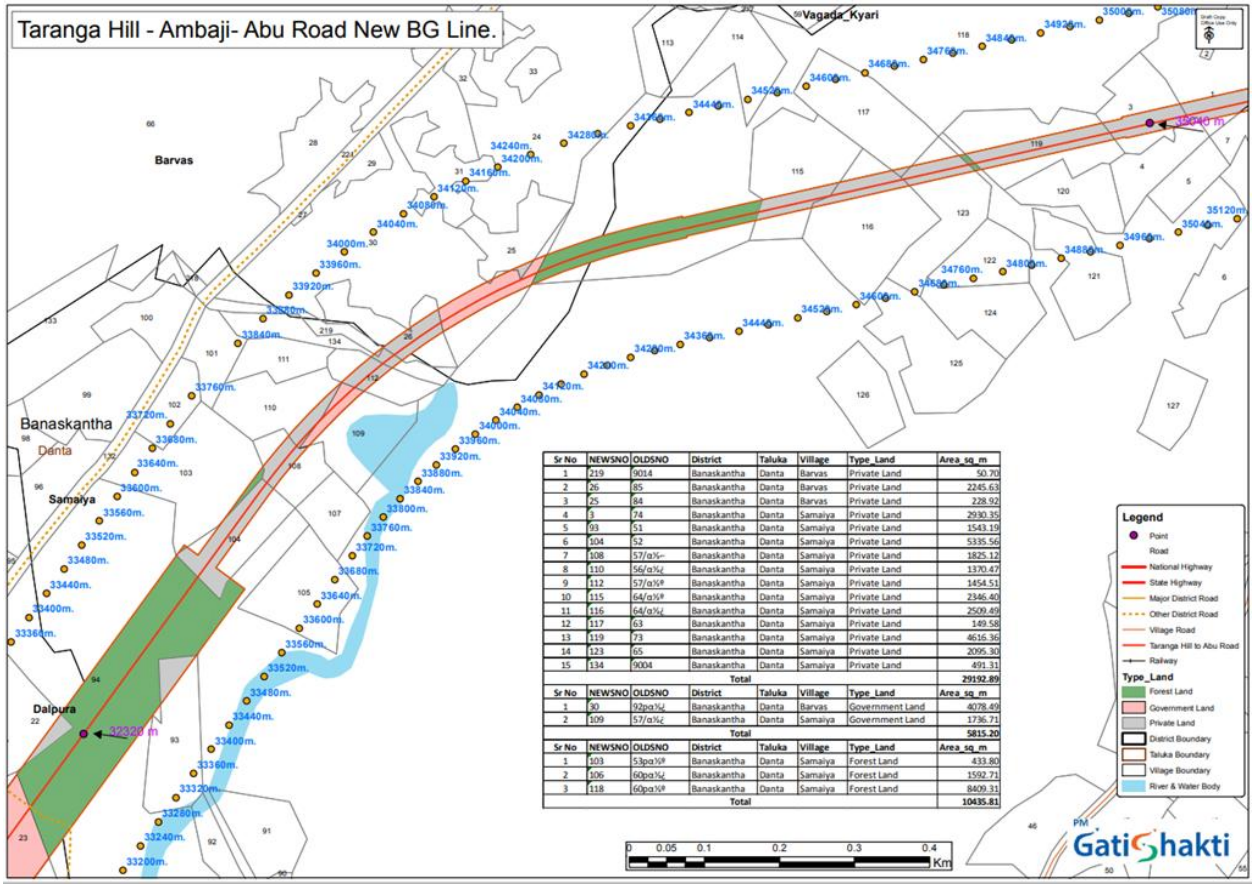
For all the Railway projects, Field Officials are working with BISAG team for best fit alignment of New Lines. 126 alignments are planned and revalidated using this portal for planning DPR. Network Planning Group has appraised and recommended 56 projects with estimated cost of ₹ 132,981 Cr.

5.2 PM Gati Shakti Use Case Example 1: Pre alignment of Railway Line using NMP. Taranga Hill – Ambaji - Abu Road New Rail Line

Pre-alignment for Taranga hill – Ambaji - Abu Road Broad Gauge New Railway Line was under preparation for 6 months. It was taking so long and was in fact delayed for the following reasons: -

1) Lack of khasra wise data on government and private land.
2) Need for field survey to assess intersection with wildlife sanctuary and forest.
3) No visibility of intersection with mining area.

As all this data is available on NMP Portal, the process was completed in 7 days using PM GatiShakti NMP.

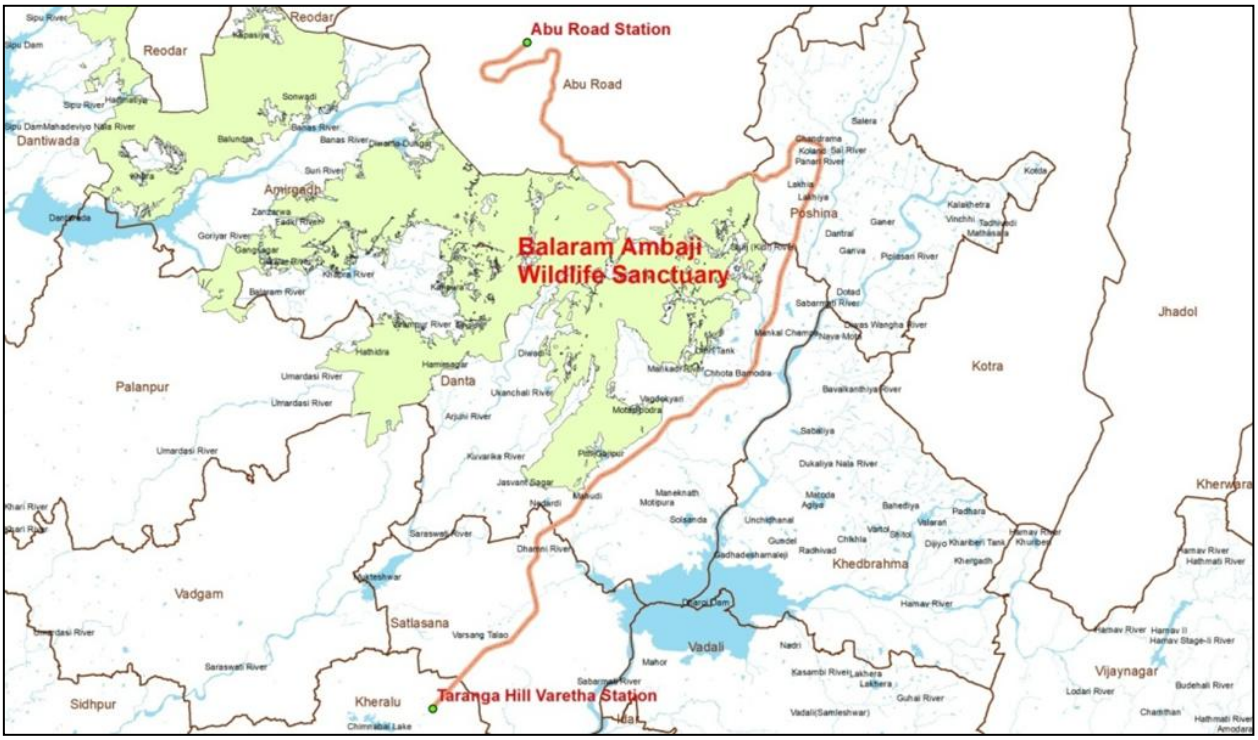


Sr No	NEWSNO	OLDSNO	District	Taluka	Village	Type_Land	Area_sq_m
1	219	9014	Banaskantha	Danta	Barvas	Private Land	50.70
2	26	85	Banaskantha	Danta	Barvas	Private Land	2245.63
3	25	84	Banaskantha	Danta	Barvas	Private Land	228.92
4	3	74	Banaskantha	Danta	Samaiya	Private Land	2930.35
5	93	51	Banaskantha	Danta	Samaiya	Private Land	1543.19
6	104	52	Banaskantha	Danta	Samaiya	Private Land	5335.56
7	108	57/a½-	Banaskantha	Danta	Samaiya	Private Land	1825.12
8	110	56/a½¿	Banaskantha	Danta	Samaiya	Private Land	1370.47
9	112	57/a½º	Banaskantha	Danta	Samaiya	Private Land	1454.51
10	115	64/a½º	Banaskantha	Danta	Samaiya	Private Land	2346.40
11	116	64/a½¿	Banaskantha	Danta	Samaiya	Private Land	2509.49
12	117	63	Banaskantha	Danta	Samaiya	Private Land	149.58
13	119	73	Banaskantha	Danta	Samaiya	Private Land	4616.36
14	123	65	Banaskantha	Danta	Samaiya	Private Land	2095.30
15	134	9004	Banaskantha	Danta	Samaiya	Private Land	491.31
Total							29192.89

Sr No	NEWSNO	OLDSNO	District	Taluka	Village	Type_Land	Area_sq_m
1	30	92pa½¿	Banaskantha	Danta	Barvas	Government Land	4078.49
2	109	57/a½¿	Banaskantha	Danta	Samaiya	Government Land	1736.71
Total							5815.20

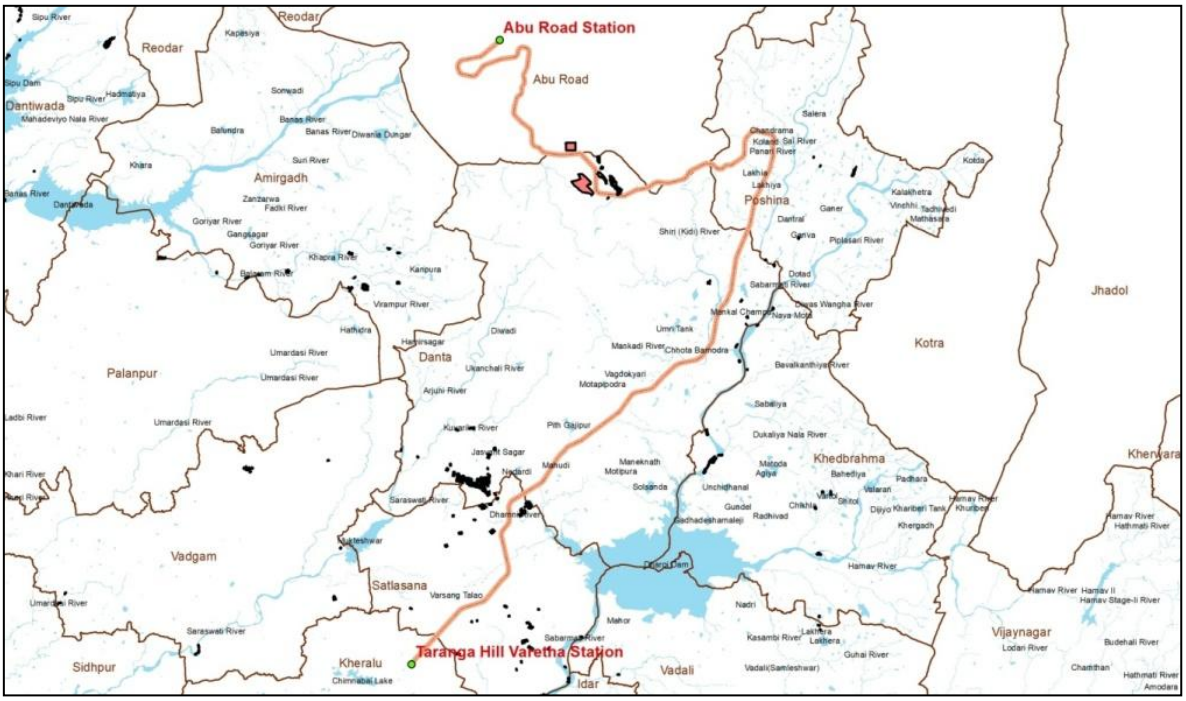
Sr No	NEWSNO	OLDSNO	District	Taluka	Village	Type_Land	Area_sq_m
1	103	53pa½º	Banaskantha	Danta	Samaiya	Forest Land	433.80
2	106	60pa½¿	Banaskantha	Danta	Samaiya	Forest Land	1592.71
3	118	60pa½º	Banaskantha	Danta	Samaiya	Forest Land	8409.31
Total							10435.81

Wildlife…

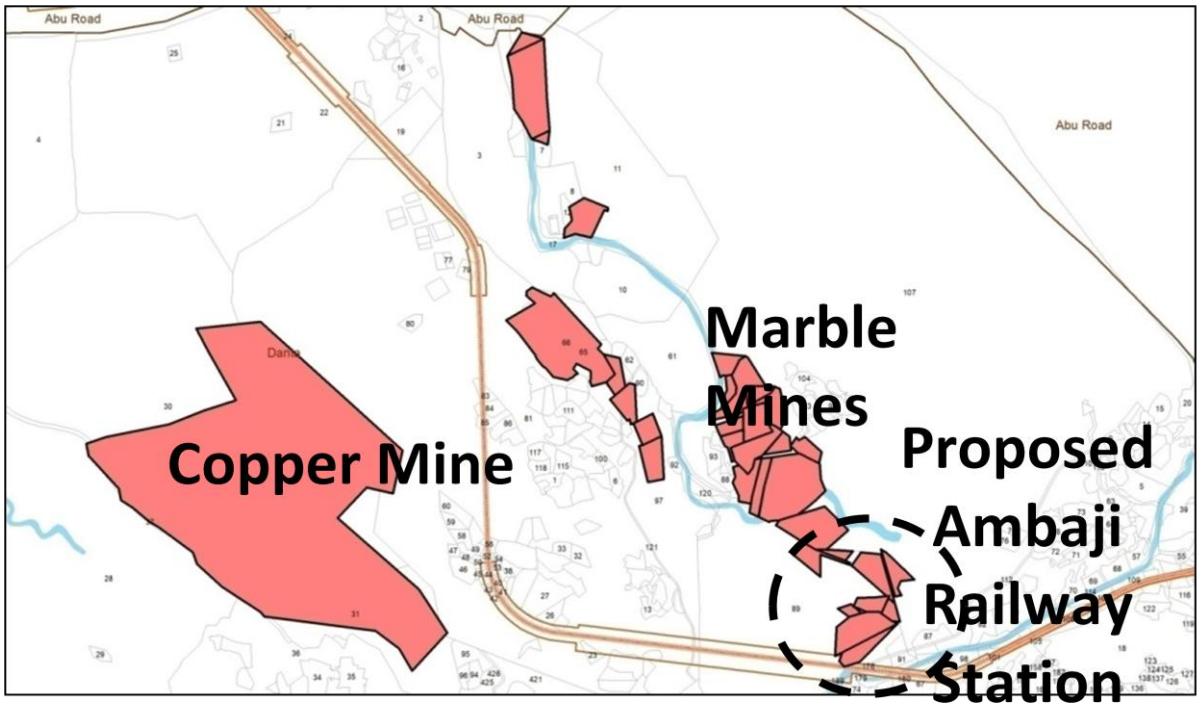


Forest…

Project alignment…



Negotiating along the mine boundary…



5.3 PM Gati Shakti Use Case Example 2 Ajmer – Chittaurgarh Double Line

(Ajmer Division of North Western Railway)

The Core principles of PM Gatishakti viz. Integrated Planning, Logistics Efficiency, Multimodal Approach and maximum coverage to Economic Nodes has been followed in the planning of this project as well.

For integrated planning, all the stakeholders have been consulted. The stakeholders with whom consultations have been held are:-

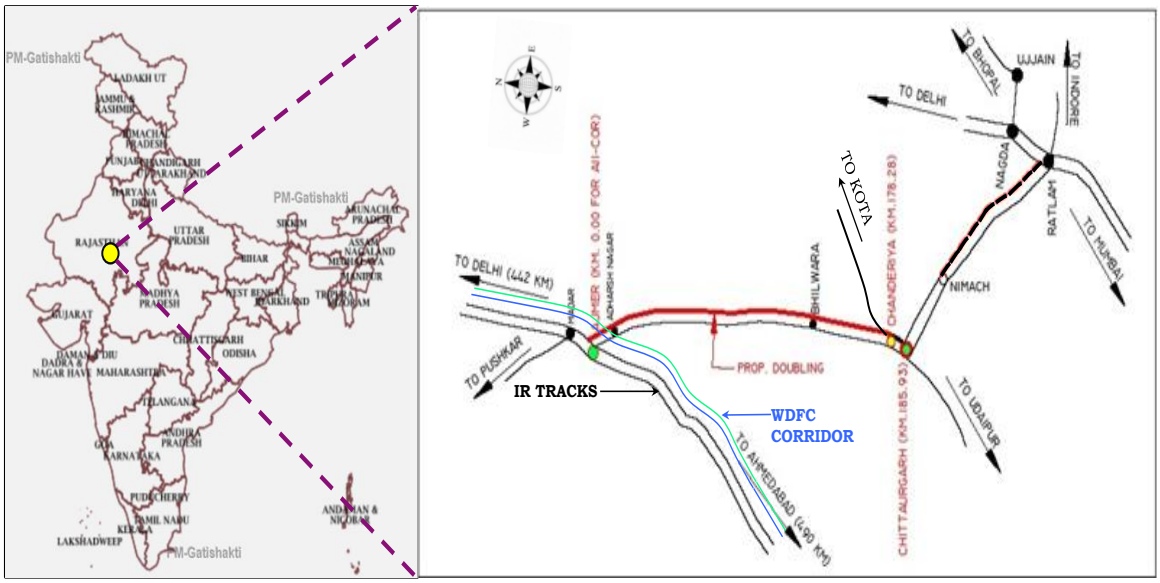
1. Road transport authorities.
2. Chamber of Commerce & Industry of Rajasthan.
3. Various Cement Plants and Zinc mines in project area.
4. Various Railway Siding Holders in the project area.
5. Rajasthan Transmission Corporations in connection with power line crossing.
6. Government of Rajasthan.

5.3.1 The key justification for the project are: -

- The existing single line section is one of the Highly Utilized Networks of Indian Railways (HUN9) having 108% track capacity utilization.
- On an average 24 goods trains and 24 passenger trains are running.
- An increase of 2 passenger trains and 9 goods trains/ day is anticipated.
- Project will be a major contribution to the social-economic development of the predominantly tribal area and also boost the local industries.
- The project provides feeder link to the Western DFC.
- The project will reduce transit time for long-distance trains passing through this route. The section beyond Chandariya towards Ratlam is already double line section.
- The project will also decongest the network to historic tourist & religious places.
- The project section also serves important food grain unloading stations like:
    - Ranapratapnagar (RPZ) ,
    - Fertilizers loading stations viz Debari (DRB) ,
    - Cement/Clinker loading stations at Shambhupura (Chanderiya) & Chittaurgarh,
    - Zinc mines at Rupehali, Spinning mills &
    - Textile hub at Bhilwara, Bijainagar & Gulabpura and major defence establishment of Nasirabad.

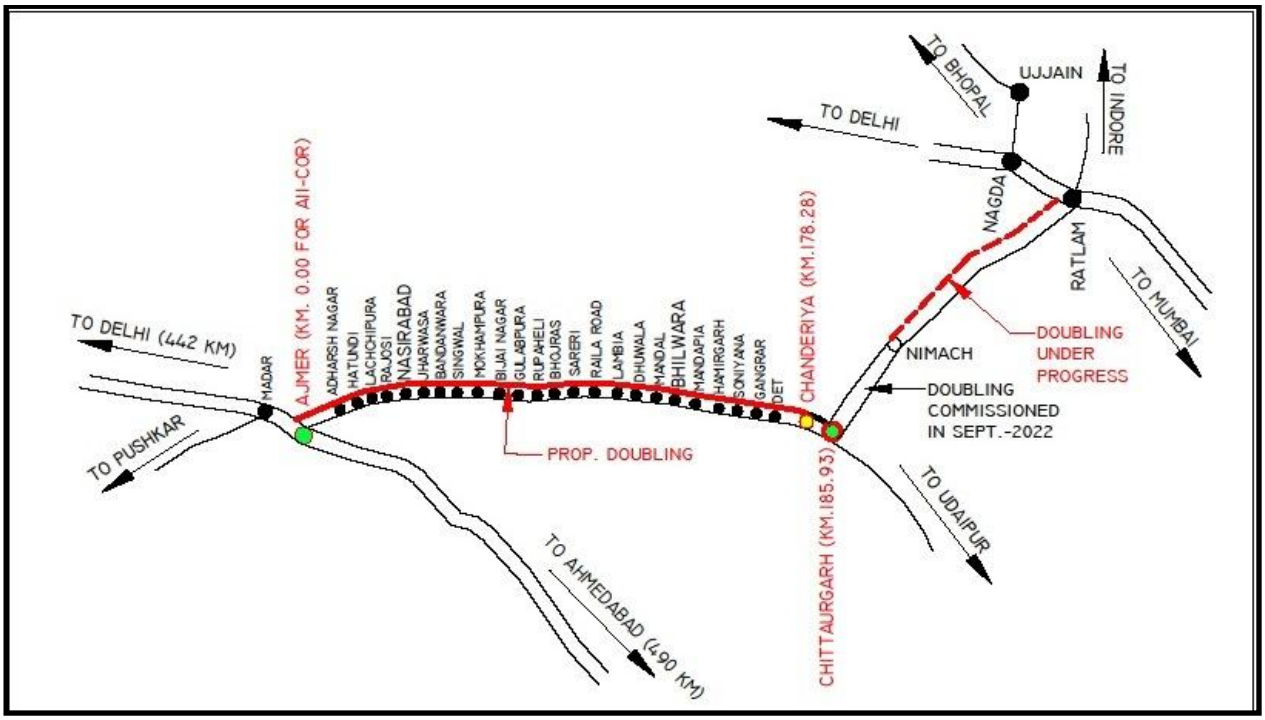
Line Map

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



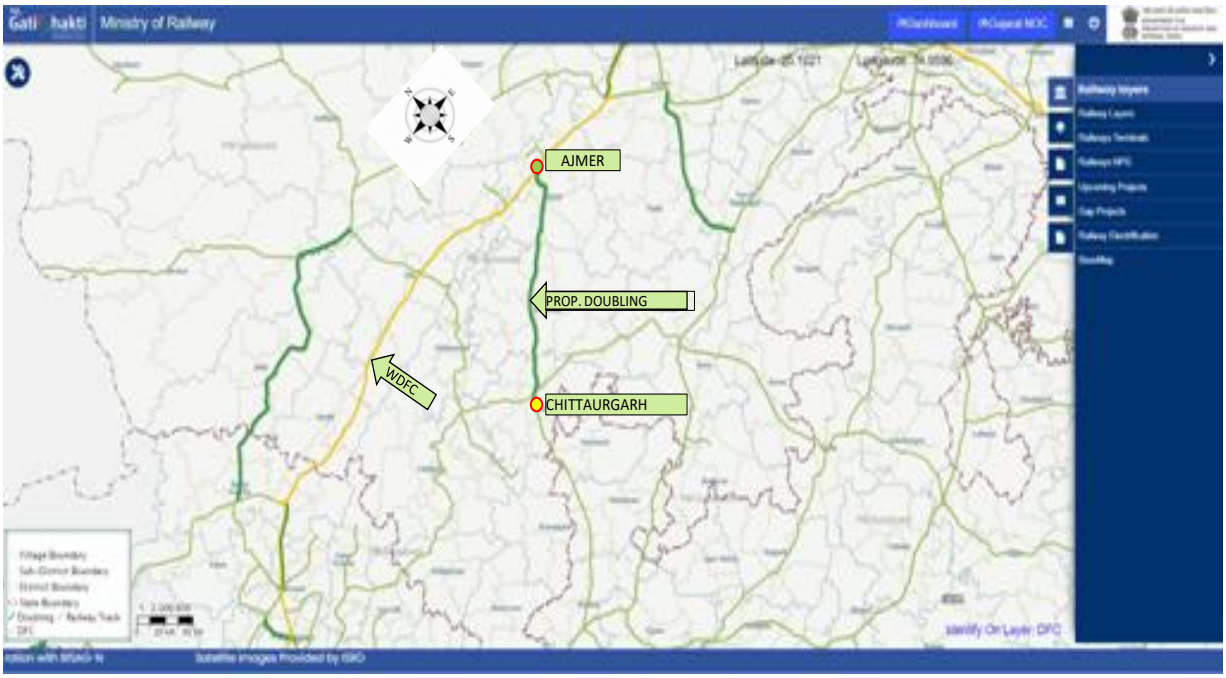
Line Map with station

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



Line Map with WDFC

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

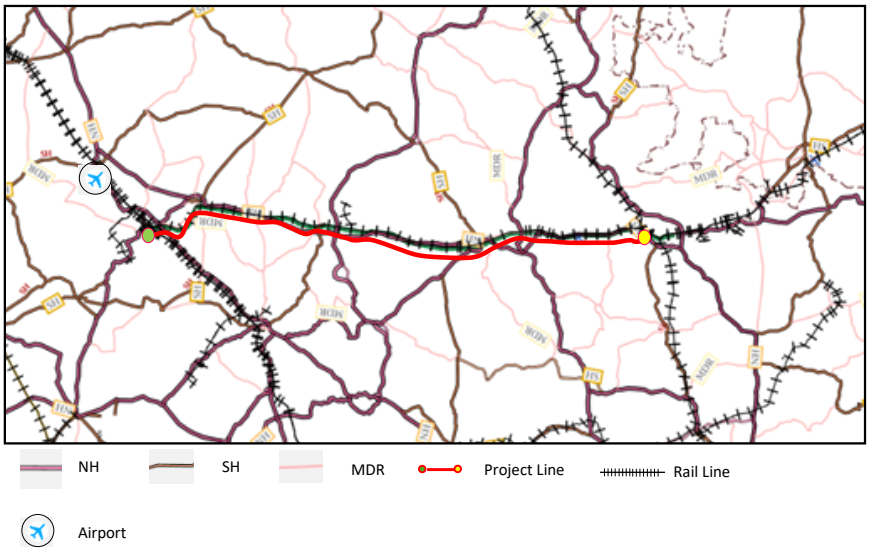


GS Principles – Multi-Modality(Air Port, WDFC & Ports)

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

GS Principles – Multi-Modality

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



Multi Modal Connectivity	
Road Connectivity	
National Highways	
NH-79 NH-158 New NH-148D New 116A NH-758 New 76 B	
State Highways SH-9 SH-12 SH-26 SH-39	

Multi Modal Connectivity	
Air Connectivity	
Kishangarh Udaipur	22 km from Ajmer 111 Km from Chittaurgarh

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5.3.2 The project is based on GS principle of Logistical Efficiency:-

- 18.95% improvement in passenger trains with savings of 40 Minutes.
- 35.65% improvement with 2 Hours 08 minutes saving in freight trains.
- Existing running time for passenger trains is 3 hrs. 31 minutes which will reduce to 2 hrs. 51 minutes.
- Existing running time for freight trains is 5 hrs. 59 minutes which will reduce to 3 hrs. 51 minutes. Project line will be an alternate route to reach Ahmedabad & Mumbai and will decongest existing network
- Project is essential to take full advantage of existing double line network beyond Chittaurgarh towards Ratlam
- The proposed project will improve and strengthen connectivity of the central part of the country with western Region.
- It will help in development of tribal region of Bhilwara & Chittaurgarh
- After doubling with reduced travel time, good amount of freight & passenger traffic is expected to shift to rail mode

GS Principles – Logistical Efficiency

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

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- 35.65% improvement with 2 Hours 08 minutes saving in freight trains.

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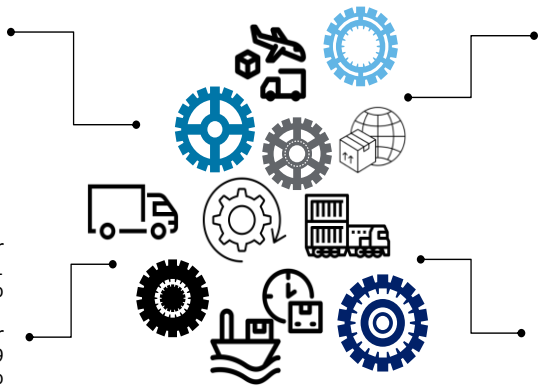

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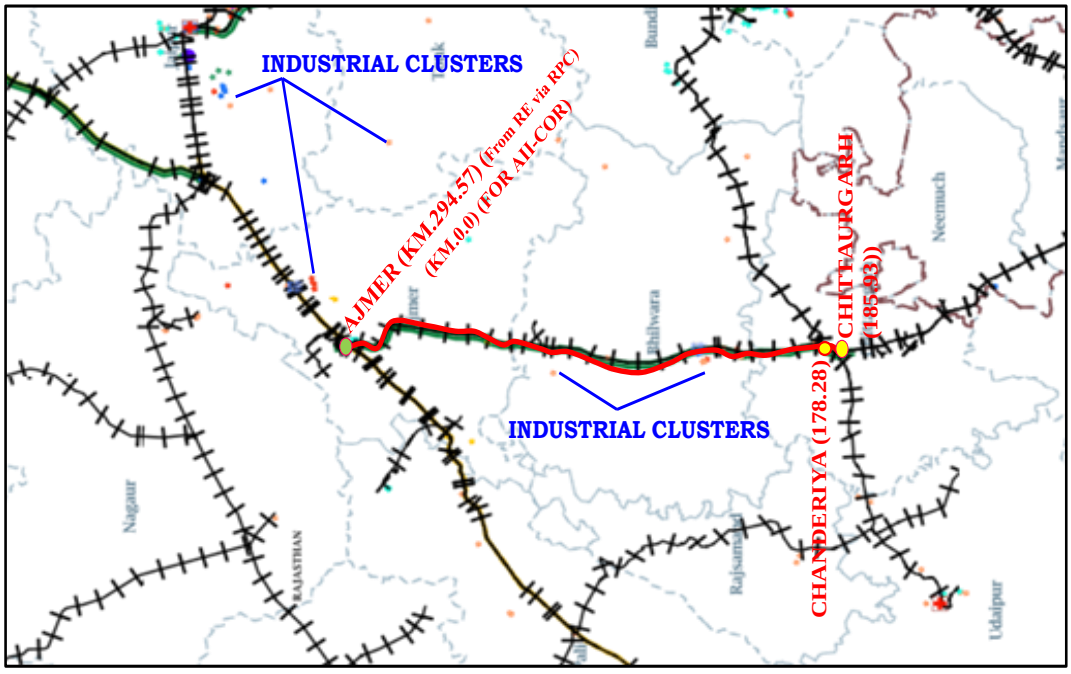
Indutrial Clusters

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



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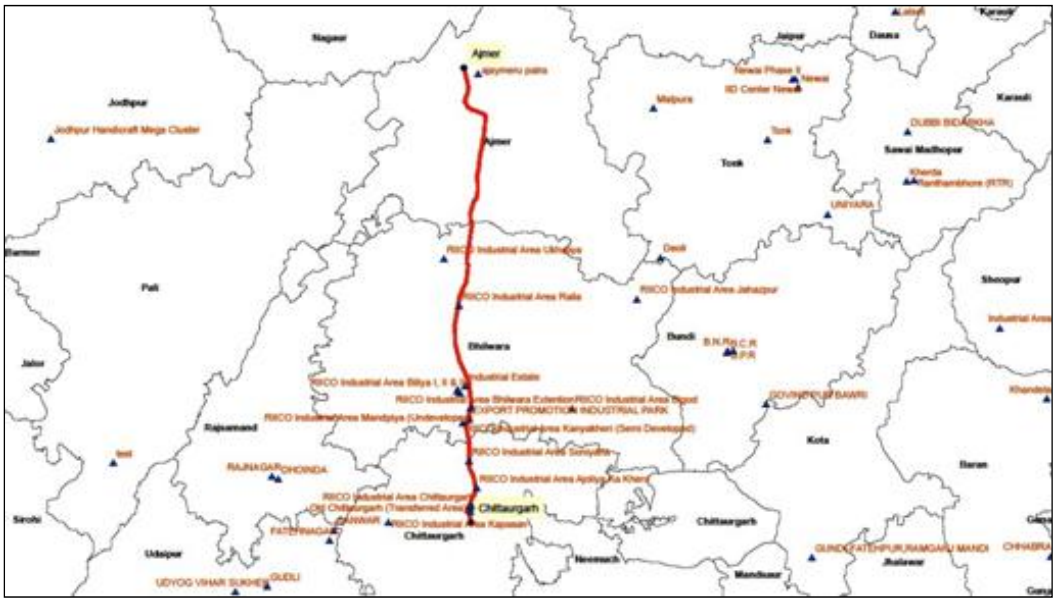
GS Principles – Economic Nodes (Industrial Parks)

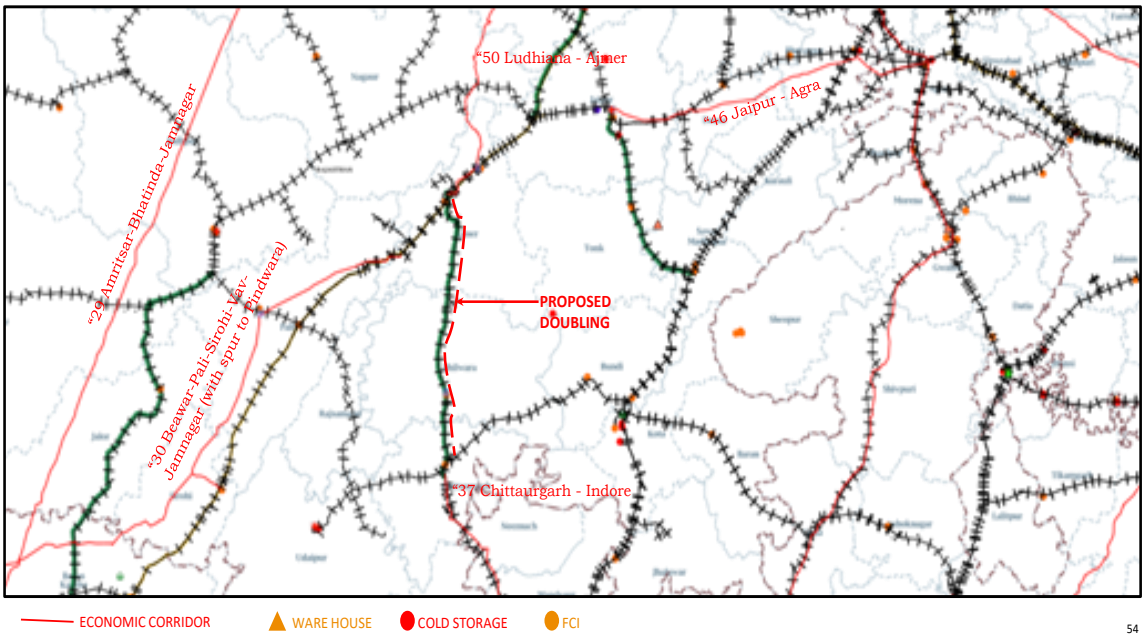
AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



53

GS Principles – Economic Nodes (Economic Corridor, Cold storages & Ware Houses)

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



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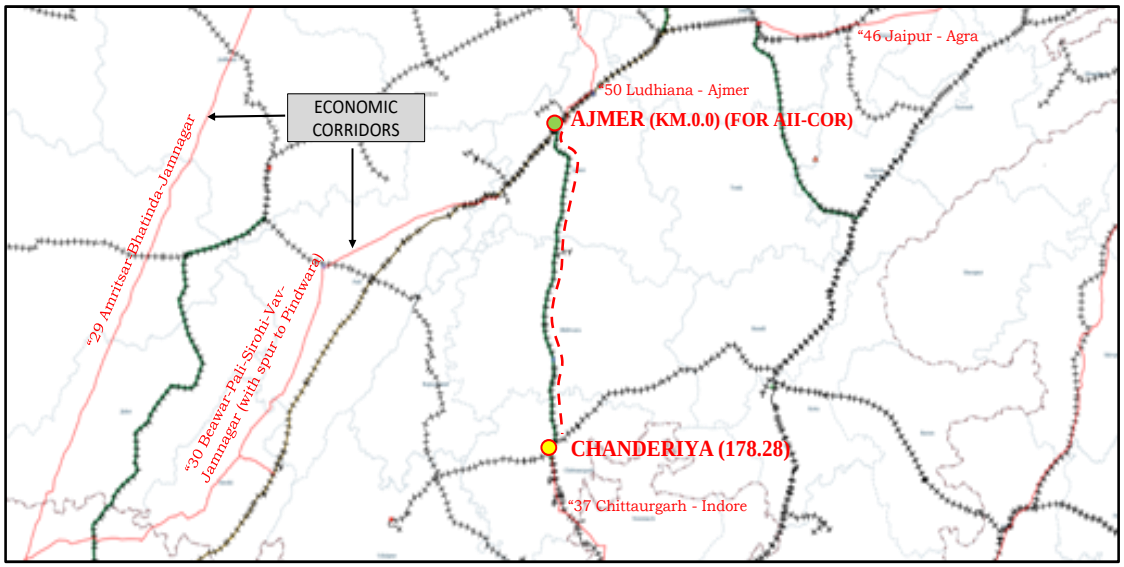
GS Principles – Economic Nodes (Economic Corridors)

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



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GS Principles – Economic Nodes

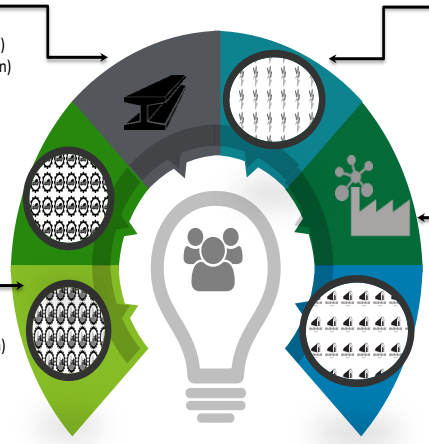
AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

Iron & Steel

- Jindal Saw Ltd at Bhilwara (In projected section)
- Iron Ore Industry at Mandal (In projected section)

Food Grains

- FCI Siding at Hamirgarh (In projected section)
- FCI Siding at Ranapratap Nagar (110 Kms from Chittaurgarh)



Cement Plants

- Ultra Tech Cement siding at Shambhupura (12 Kms from Chittaurgarh)(Capacity: 2.0 MTPA)
- J K Cement Ltd. at Nimbahera (29 km from Chittaurgarh) (Capacity: 2.8 MTPA)
- Wonder Cement Ltd. at Gambhiri Road (21 Km from Chittaurgarh) (Capacity: 11.0 MTPA)
- LAFARGE Cement Ltd. at Gambhiri Road (21 Km from Chittaurgarh) (Capacity: 3.50 MTPA)
- Birla Cement Works at Chanderiya. (Capacity: 4.0MTPA)

Industrial Cluster

- Hindustan Zink ltd. at Chanderiya.
- Marble industries at Chanderiya
- Spinning Units at (In projected section)
- MICA Industry at Mandal (In projected section)
- Agucha Mines at Rupaheli (Bhilwara)
- Adani Container Depot, Mandawariya (Kishangarh)
- CONCOR Container Depot at Swaroopganj (Sirohi)
- CONCOR Container Depot, Kanakpura (Jaipur)

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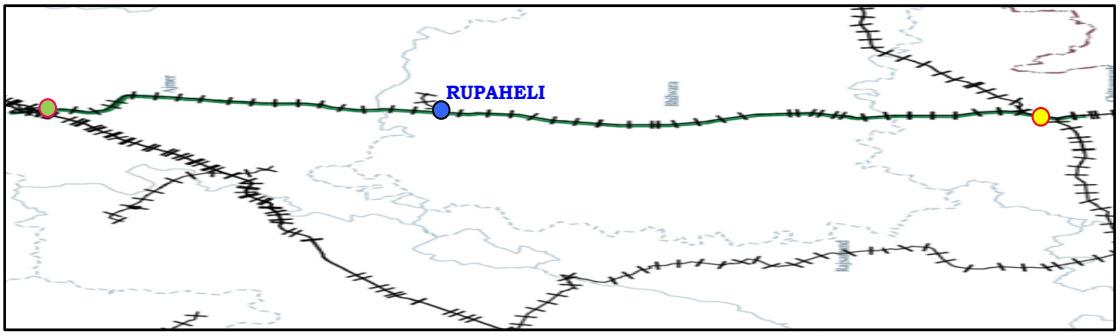
Railway Sidings

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



Sr No	Station	Industry	Railway Sidings for the Industries
1	RUPAHELI	Hindustan Zinc	Siding connected to rail

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Freight Traffic

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

Description	I Year	VI Year	XI Year
Earnings (Rs.Lakhs)	41037.45	41037.45	41037.45
Incremental Traffic (MTPA)	13.49	13.49	13.49

Project Brief

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

Sponsoring Ministry	• Ministry of Railway
Project Title	• Double Line Between Ajmer and Chanderiya Stations (178.28 Km)
Location	• State – Rajasthan • District – Ajmer, Bhilwara & Chittaurgarh
Project Proponent	• Ministry of Railway
Implementing Agency	• North Western Railway

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COMPANY WISE LOADING

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

COMPANY	CMDTY	2021-22 (Upto JAN)	2022-23 (Upto JAN)	2022-23 Vs 2021-22
		Loading in MT	Loading in MT	% MT
ULTRATECH CEMENT	Cement	3.07	3.31	7.8%
	Clinker	3.91	3.90	-0.3%
J K CEMENT	Cement	0.60	0.82	36.7%
	Clinker	1.38	1.64	18.8%
BIRLA CEMENT	Cement	0.59	0.65	10.2%
	Clinker	0.13	0.13	0.0%
WONDER CEMENT	Cement	0.68	0.99	45.6%
	Clinker	1.09	1.91	75.2%
NUVOCO CEMENT	Cement	0.21	0.30	42.9%
	Clinker	0	0.00	-
TOTAL CEMENT		**5.15**	**6.07**	**17.9%**
TOTAL CLINKER		**6.51**	**7.58**	**16.4%**

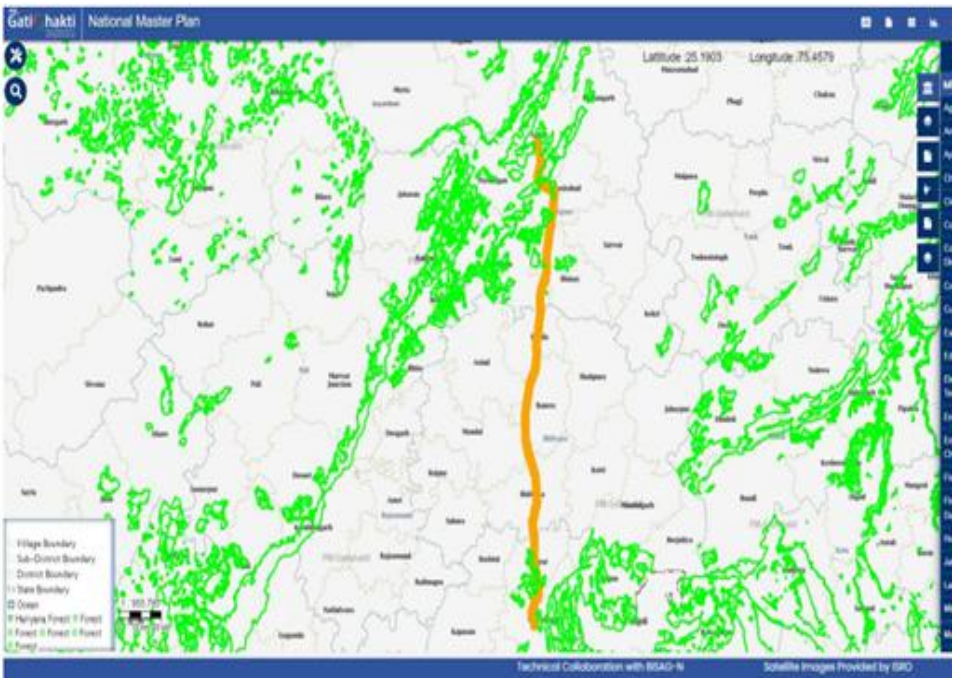
PLANT CAPACITY AND RAIL COEFFICIENT

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

Plant Name	Plant Capacity (MT) (Cement+Clinker)	RC % Upto Jan 2022		RC % Upto Jan 2023	
		Cement	Clinker	Cement	Clinker
Aditya Cement (ACS)	7.0	46.87	99.77	44.33	98.5
Vikram Cement (VCSN)	3.5	75.17	99.57	67.18	99.73
J.K. Cement (NBHS)	2.6	33.07	-	13.38	-
J.K. Cement (JKCG)	4.75	0.07	73.38	21.93	75.24
Wonder Cement (WCSG)	11	14.35	69.51	17.49	81.07
Birla Cement (BCW)	4.02	22.40	99.46	22.25	93.53
Nuvoco Vistas (LFSG)	2.08	10.96	-	15.57	-
		26.35	81.51	28.64	88.04

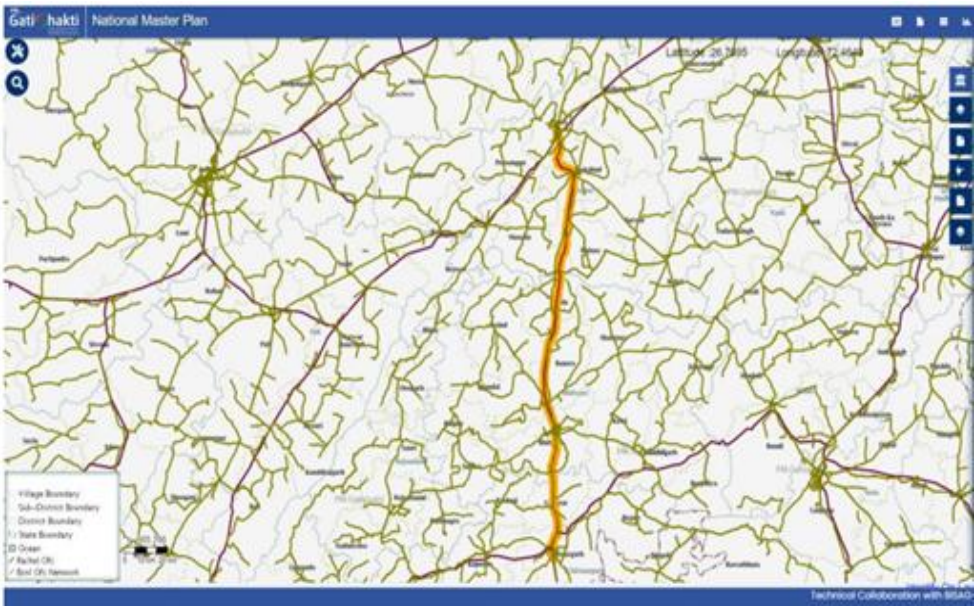
Interface with Forest

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



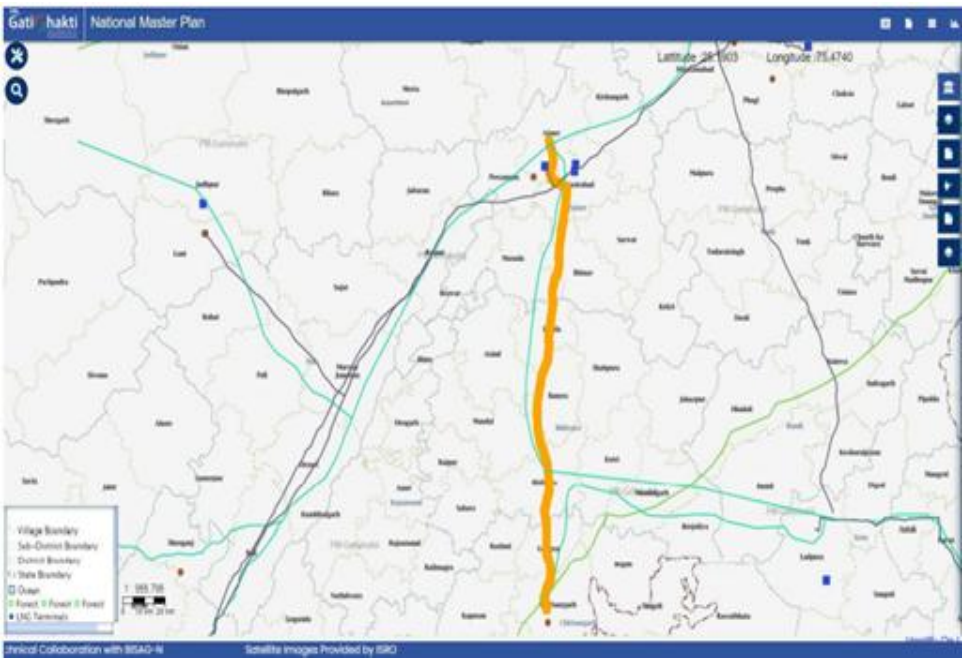
Interface with Telecom

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



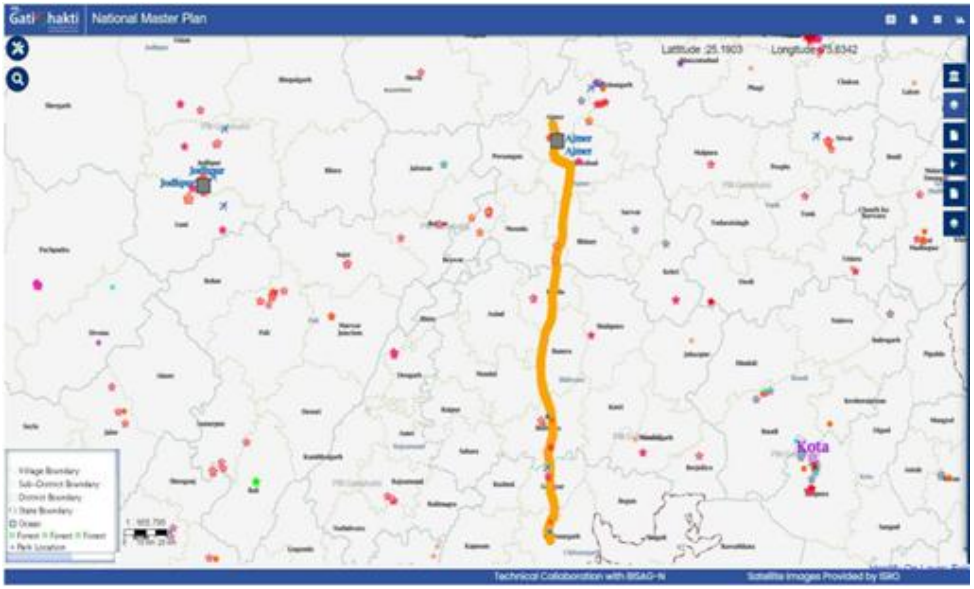
Interface with Petroleum & Natural Gas

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



Interface with Economic Zones

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)



Interface with Power Lines

AJMER-CHITTAURGARH DOUBLING PROJECT (178.28 KM.)

5.4 Amrit Bharat Station Scheme

As we now know that GatiShakti National Master Plan is a transformative approach for sustainable economic development. It has in its vision Next generation infrastructure development for *AmritkKaal.* The Ministry of Railways has come up with one other scheme for

infrastructure development which is AMRIT BHARAT STATION SCHEME which visualizes the ease of living and enhancing experience for the railway passengers.

The recently launched 'Amrit Bharat Station Scheme' for development of Stations on Indian Railways envisages development of stations on a continuous basis with a long-term approach. So far 1324 stations have been identified for development under this scheme.

The scheme involves preparation of Master Plans and their implementation in phases to improve the amenities at the stations like improvement of station access, circulating areas, waiting halls, toilets, lift/escalators as necessary, cleanliness, free Wi- Fi, kiosks for local products through schemes like 'One Station One Product", better passenger information systems, executive lounges, nominated spaces for business meetings, landscaping etc. keeping in view the necessity at each such station.

The scheme also envisages improvement of building, integrating the station with both sides of the city, multimodal integration, amenities for Divyangjans, sustainable and environment friendly solutions, 'Roof Plazas' as per necessity and feasibility and creation of city centers at the station in the long term.

Some standard elements of station design which have been thought through and are going to be part of station developments throughout India, are: -

1. **Iconic** station building
2. Spacious **Roof Plaza** (12/36/72/108 m) with all passenger amenities at one place along with spaces for retail, cafeterias, recreational facilities
3. **Integration** of both sides of city (Station building on both sides of the railway tracks)
4. **Well, designed**, horizon of 40-60 years
5. **Smooth traffic** flows, adequate Parking facilities

6. **Multi-Modal Integration**

7. **Segregation** of arrival/departures, **Clutter free** platforms, improved surfaces, fully covered platforms

8. Facilities for **Divyangjan**

9. **Comfortable** – Illumination, way finding/signages, acoustics, vibration, Lifts/Escalators/Travelators

10. **Safe** – CCTVs, Access Control

11. Certified **Green Buildings**

    - Solar energy
    - Water Conservation/ recycling
    - Improving tree cover

ANNEXURES-1

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
रेलवे बोर्ड (Railway Board)

आज़ादी का अमृत महोत्सव

Azadi Ka Amrit Mahotsav

Office Order No. 37 of 2022

Sub: Creation of Gati Shakti Directorate- Composition, Functions, Delegation of power etc.

It has been decided to create a new Directorate namely '**Gati Shakti Directorate**' by clubbing Plan Heads (PH)- 11, 14, 15, 16, 33, 35 & 81 presently dealt with by Works, Signal, RE Directorate into one Directorate as named above to bring synergy and to improve efficiency of the system so as to create additional rail infrastructure and thereby enhance railway market share in country's cargo loading and reduce logistic cost.

2. The new Gati Shakti Directorate would be headed by AM/PED designated as AM/PED(GS). **The composition and brief duty list of the Gati Shakti Directorate is enclosed at Annexure-I.**

2.1 Gati Shakti Directorate will work with the existing strength of Works, RE and Signal Directorate and of Project Branch included in Gati Shakti Directorate. Further strengthening of Gati Shakti Directorate would be undertaken in due course as per need.

2.2 As regards, **Financial Powers it would be in line with the extant instructions issued vide Office Order No. 01 of 2017 and the same procedure as enclosed at Annexure-II would be followed** for Appraisal and Approval of Public Funded Umbrella Projects dealt with by Gati Shakti Directorate.

3. All proposals emanating from Gati Shakti Directorate will be concurred by its own Associate Finance. For technical approval of the project under PH-33 & 35, the proposal will be routed through concerned AMs.

3.1 The Survey proposals/DPRs/Survey Reports after examination and concurrence of associate finance will be put up to Board through Board memorandum/Note and same will be presented to the Board, if required. The Board may approve or modify as the case may be. Thereafter, proposal, if required, will be processed to Hon'ble MR as per the extant provisions.

4. The newly created Gati Shakti Directorate will report to Member Infrastructure, Railway Board. However, APAR of concerned EDs will be initiated by AM/PED (Gati Shakti), reviewed by concerned Board Member and accepted by CRB & CEO. Additional Member/RE will continue to report to Member Infrastructure regarding all policy matter and technical approvals of RE projects. ED/Electrical will report to AM/RE on these matters.

5. For implementation purpose, all the officers working in Gati Shakti Dte. will also work concurrently in their existing Directorate for other works listed in their subject list till the new system stabilize. The existing Directorate will mainly be involved in policy formulation in their subject matter, sanction and monitoring of works other than Gati Shakti works, Parliament related works, RTI etc.

6. The above issues with the approval of Minister of Railways.

No.2022/O&M/6/1
Dated: 26/05/2022

(B. Majumdar)
Joint Secretary/Railway Board

ANNEXURES-2

भारत सरकार (Government of India)
रेल मंत्रालय (Ministry of Railways)
रेलवे बोर्ड (Railway Board)

No: 2017/ W-1/Genl./ Board Meetings **New Delhi, dated: 16.05.2022**

The General Managers,
ECoR, NR, SECR & SWR

Sub: Setting up of Gati Shakti Units in Khurda, Bilaspur, Delhi & Bengaluru divisions

In order to fast track the construction works required by Divisions for removing infrastructure bottlenecks, improving mobility, increasing freight loading, etc., Board (MI, M(O&BD), MF and CRB & CEO) have approved setting up of Gati Shakti Units (GSUs) in Khurda, Bilaspur, Delhi and Bengaluru divisions to start with. These units will be set up in all other divisions also in due course of time. In this regard Board has approved the following:

1. Organization of Gati Shakti Units and its formation:

   1.1. The Gati Shakti Unit shall Report to DRM and comprise:

   (i) Chief Engineer - CPM [Head of Project Unit]
   (ii) CSTE/Dy CSTE
   (iii) CEE/Dy CEE
   (iv) CTM/Dy CTM
   (v) Sr DFM/ Dy FA&CAO

   1.2. The Gati Shakti Unit may be constituted in such a way that

   (i) SAG officers in Gati Shakti Unit shall be at least 2 batches junior to DRM
   (ii) SAG officers to be assisted by SG/JAG/SS/JS level officer and supervisors
   (iii) CPM shall report to DRM; Other officers of Gati Shakti Unit will report to CPM.

   1.3. Concerned General Manager will transfer officers for the respective units.

2. The works to be executed by these units shall be decided by GMs.
3. The technical, administrative and financial powers of CPM of Gati Shakti Unit and the organization below him will be analogous to the officers of Construction Organization. The powers of the CAO (C) to be used by DRMs for this purpose only. GM may further delegate any other power in consultation with PFA.

4. For design assistance from industry, design checking, testing of materials, site tests and surveys, the CPM shall have full powers. Existing divisional units dealing with yard plans, SWRs, SIPs, LOPs shall also assist the Gati Shakti Unit. Further assistance shall be arranged through PMC, General Consultants and manpower hired through service contracts etc.

5. Officers of Gati Shakti Unit will be eligible for house retention at previous place of posting.

This issues with the concurrence of Associate Finance of Railway Board.

Kindly acknowledge the receipt and ensure compliance

16/05/22

(Mohit Kumar)
Director/Works,
Railway Board

ANNEXURES-3

भारत सरकार / Government of India
रेल मंत्रालय / Ministry of Railways
(रेलवे बोर्ड / Railway Board)

No: 2021/W-I/Genl./Gatishakti (E- 3378115) New Delhi, Dated: 09.06.2022

The General Manager
North Central Railway
Paryagraj

Sub: Setting up of Gati Shakti Unit under DRM/Agra.

Board has approved setting up of Gati Shakti Unit (GSU) in Agra division. The Organisational structure, financial, technical, administrative powers and composition of officers in GSU will be same as mentioned in Board's letter No. 2017/W-I/Genl/Board Meetings dated 16.05.2022 (Copy enclosed).

Dhananjaya Singh
Executive Director/GS(Civil)-II
Railway Board

Copy to: DRM/Agra, North Central Railway.

ANNEXURES-4

आज़ादी का अमृत महोत्सव

भारतसरकार/**Government of India**
रेलमंत्रालय/**Ministry of Railways**
(रेलवेबोर्ड/**Railway Board**)

Azadi Ka Amrit Mahotsav

No.2021/W-I/Genl./Gati Shakti **New Delhi, dated:27.07.2022**

The General Managers
All Indian Railways/PUs, NF(Con), CORE
DG/RDSO/Lucknow, DG/NAIR/Vadodara

Sub: Setting up of Gati Shakti Units in Divisions.

The Railway Board had approved setting up of Gati Shakti Units (GSUs) in Khurda Road, Bilaspur, Delhi, Bengaluru and Agra divisions to fast track the construction works required to remove bottlenecks in operations and improve mobility that would lead to increased cargo loading.

This decision was communicated vide Railway Board's letter No.17/W-I/Genl./Board Meetings dated 16.05.2022 and 09.06.2022. It was also decided that GSUs will be set up in all other divisions of Indian Railways in a phased manner.

In view of the above and Hon'ble PM's vision of Gati Shakti for creation of infrastructure in the country, it has been decided to start GSUs in all the remaining divisions of IR. The organizational structure of the GSUs will be as follows.

1.0 **Organization of the divisional Gati Shakti Units:**

1.1 GSU in the division shall be headed by a CPM/Gati Shakti (GS) under the administrative control of DRM. Post of CPM/GS will be open to all cadres (except IRPFS). CPM/GS will be selected based on his capabilities (knowledge & skills) and experience. GM will post suitable officers including CPM/GS in the GSUs of the divisions.

1.2 If divisions are having more than two ADRMs, the post of one ADRM will be re-designated as CPM/Gati Shakti of that division.

1.3 In case there are two or less ADRMs in the division, CPM/GS will be posted by making suitable adjustment in the cadre in accordance with the post codes mentioned in **Annexure 'A'** (at present) to fast track the execution of infrastructure works. However, in future, these post codes may be changed, if required by the GM.

1.4 Establishment expenditure of the Gati Shakti units including

2.0 **Technical, Administrative and Financial Powers of GSUs of the Divisions**:

2.1 CPM/Gati Shakti will have technical, administrative and financial powers analogous to the officers of construction organization for the projects executed by the division.

2.2 DRMs will exercise the powers of CAO/Construction for works of Gati Shakti Unit in the division.

2.3 Gati Shakti Units shall be facilitated to utilize the existing clerical, technical, drawing & design staff of the division for day to day works. DRMs will ensure this aspect.

2.4 Proposal requiring sanction of Railway Board will be sent directly to the GSU of Railway Board with concurrence of the associate finance of the GSU of the division, and with the administrative approval of the GM.

2.5 For design assistance from industry, design checking, testing of materials, site tests and surveys, the CPM/GS shall have powers of SAG officer of the construction unit.

Existing divisional units dealing with ESPs, SWRs, SIPs, and LOPs shall also assist the GSU. Further assistance, if required, may be arranged through outsourcing.

3.0 **Field Supervision and Execution of works:**

3.1 Gati Shakti Unit of division can use PSSA (Project Supervisors Services Agencies) and PMS as per the need of the project.

3.2 Gati Shakti unit of Division can hire retired railway supervisors below the age of 65 years with the approval of DRMs within the

overall provisions in the estimates of the projects being executed by the GSUs.

4.0 Gati Shakti Unit will monitor approvals of all Plans, L-Sections, ESPs, SIPs, LOPs, GADs, Yard plans, Blocks and PNIs/NIs of all the works executed by the GSU.

5.0 Officers/Sr. Supervisors in GSU may be permitted to travel by air in connection with Gati Shakti works, outside the Zonal Railways with the approval of DRM without finance concurrence.

6.0 Vehicles for field officers and supervisors shall be provided within the overall provisions in the estimate, to facilitate faster execution and supervision of works.

7.0 In case of shortage of accommodations in division/sub-division, leased accommodation nearest to the place of the works may be provided to officers and supervisors as per railway's extent rules with the approval of DRM.

House retention is also allowed at previous place of posting upto one year or scholastic year whichever is earlier.

8.0 GMs will nominate one SAG/ HAG Officer as zonal co-coordinator for the divisional Gati Shakti Units in respective zones.

9.0 The works to be executed by Gati Shakti Units of Divisions are given in **Annexure 'B'**.

10.0 This issues with the approval of Board (M/Infra, M/TRS, M/O&BD, MF and CRB&CEO).

27.07.22

(Mohit Kumar)
Director/Gati Shakti (Civil) III
Railway Board

ANNEXURES-5

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No. 2021/W-1/ Genl./Gatishakti

New Delhi, Dated 27.07.2022

The General Managers,
All Indian Railways.

Sub: Submission of document for projects costing more than Rs. 500 crore each.

Ref: (i) Ministry of Finance/Department of Expenditure's OM No. 01(03)/PFC-I/2022 dtd. 28.04.2022. (copy enclosed)

(ii) Ministry of Commerce & Industry (DPIIT) 's OM No. DSJJ/Log/EGoS/2022 dtd. 24.05.2022. (copy enclosed)

The railway projects costing above Rs. 500 crore each are sanctioned by Hon'ble MR/CCEA depending upon the value of the work after appraisal by NITI Aayog and Expanded Board for Railways (EBR).

2.0 Vide OM at ref (i) above, MoF has advised that all projects more than Rs. 500 crore each are required to be examined by Network Planning Group (NPG) for unified planning and integration of the proposals and issued revised format of PIB/EBR memorandum for appraisal of projects duly incorporating the recommendations of NPG. Further, vide ref (ii) above, DPIIT has issued format for submitting details of project to NPG.

3.0 In regard to above, following action need to be taken by Railways for the projects costing more than Rs. 500 crore each at the time of submission of Final DPR (after clearance of DPR by EDs' committee) :

(i) To prepare and submit the details of the project in NPG format (as per ref ii above) and to upload the alignment of New line /Doubling/Multi tracking etc. on PM Gatishakti Portal.

(ii) To prepare and submit the draft EBR/PIB Memo (as per revised format) as per ref. (i) above.

(iii) To prepare and submit draft Executive Summary of the project in the format enclosed as Annexure-III.

(iv) To prepare and submit draft OM as per the format enclosed as Annexure-IV.

The above details/information in soft (editable) copy as well as hard copy may be sent by email to edprojm@gmail.com, dir.w2rb@gmail.com & dirgs2rb@gmail.com.

DA : As above.

Vikas 27/7/22

(Vikas Kumar Jain)
Executive Director/GS(Civil)-I
Railway Board
Tele: 011-47845476

ANNEXURES-6

आज़ादी का अमृत महोत्सव

भारत सरकार/**GOVERNMENT OF INDIA**
रेल मंत्रालय/**MINISTRY OF RAILWAYS**
(रेलवे बोर्ड/**RAILWAY BOARD**)

No.2021/W-I/Genl./Gati Shakti **New Delhi, dated: 28.10.2022**

The General Managers
All Indian Railways/PUs, NFR(Con), CORE
DG/RDSO/Lucknow, DG/NAIR/Vadodara

Sub.: Fast tracking the sanction & execution of Projects.

Ref.: Office Order No.37 of 2022 dated 26/05/2022 - Creation of Gati Shakti Directorate.

Railway Board has prepared mission 3,000 MT master plan to enhance the existing carrying capacity of about 1,400 MT to 3,000 MT within next 5-7 years. This requires planning, sanction and consequent execution of a large number of capacity enhancement works like Doubling/Multi-tracking/Traffic facility works/ Yard re-modeling as well as setting up of new lines. To achieve the required pace of work the existing systems need to be re-engineered to enable fast tracking of Project Delivery. Accordingly the following has been decided for fast tracking sanction & execution of projects:

1. The RET/PET surveys will be called as **feasibility studies** from now onwards. Necessary correction in Engineering Code in this regard is being processed separately.

2. DRMs/GMs are empowered to sanction feasibility studies for required projects in their Division/Zonal Railway considering coal, port connectivity, revenue potential for cargo loading, etc. subject to availability of funds. The proposal of conducting feasibility studies shall be put up for DRMs/GMs approval through Divisional/Zonal Finance, as the case may be.

3. Feasibility study of projects shall be carried out by Gati Shakti units of Divisions in the Division and CAO/C for inter Division and inter Zonal Railway projects (for NL, Doubling, GC, etc.) as per coverage of length and jurisdiction using resources & capability available on the "PM Gati Shakti" portal, designed/hosted by BISAG-N, and engagement of expert agency.

4. Each Division and Zonal Railway Headquarter will have a Network Planning Group (NPG) for selecting feasible projects for the preparation of DPR to improve mobility, throughput/loading in the Railway. The constitution of NPG will be as given below:

   4.1. **Zonal Level:** Under PCOM/CTPM of Railway (PCOM/CTPM & SAG officers of Engineering, Electrical, S&T & Finance) as approved by GM.

   4.2. **Division Level:** Under CPM/GS (Dy. CPM/GS/T or equivalent with SG/JAG officers of Engineering, Electrical, S&T, Operating, Mechanical & Finance) as approved by DRM.

4.3. The feasibility study for projects lying exclusively within the Division can be approved by DRM.

4.4. Similarly, feasibility study of inter-divisional projects within the Zonal railways jurisdiction can be approved by General Manager.

4.5. Feasibility study of Inter Railway projects will continue to be approved by the Board as at present.

5. Approval of the DRM/GM will be obtained for preparation of DPR for feasible projects required to be executed by Zonal Railway for improving mobility, throughput, and loading in the Railway. DRMs/GMs are empowered to sanction works for preparation of DPRs for such projects (whose feasibility study was approved by them) that are found feasible.

6. The details of all feasibility studies & DPR sanctions shall be advised to ED/GS (Civil)-I, Railway Board as and when sanctioned for records.

7. DPR will be prepared by Gati Shakti unit of Division for Divisional projects and CAO (for NL, Doubling, GC etc.) projects in Zonal Railway for inter Division/inter Zonal Railway projects after approval of the proposal for DPR by the DRM/General Manager as per the standard template laid down by Gatishakti directorate of Railway Board. DPR should be prepared by executing agency of the project as decided by GM and guidelines issued from time to time.

8. The rates for feasibility study and preparation of DPR shall be as per prevailing rates and guidelines communicated by Railway Board from time to time. The current guideline is issued vide letter no.-2020/W-1/Genl./Survey Rates (E-3334464) dated 16.06.2021. Rates for feasibility study are ₹ 50,000/Km, DPR preparation are ₹2.5 lakh/Km for NL & ₹2.0 lakh/Km for DL and multi-track).

   The cost of preparation of DPR can be increased (wherever required) with the personal approval of GM depending upon the type of terrain within the limits as mentioned in the circular No 2020/W-I/Genl./Survey Rates (E-3334464) dated 16.06.2021, to make the project ready at the time of sanction.

9. DPRs will be submitted by DRM to Gati Shakti Directorate of Railway Board with finance concurrence of Divisional Gati Shakti Unit through PCOM/NPG and approval of GM.

10. DPRs of inter-division/inter Zonal Railway works will be submitted to GS Directorate of Railway Board by CAO/C with the concurrence of FA&CAO/C through PCOM and approval of GM.

11. Budget Provision: The expenditure limit for each Zonal Railway for feasibility study/DPR will be authorized by Railway Board at the beginning of the financial year. The Budgeting and accountal of feasibility studies and DPRs shall be as under:

    Once work to undertake feasibility study/DPR is approved, Railways will project the requirements under Revised Estimates for the current year and Budget Estimates for next year

under MH 3001 Minor Head 005 Surveys (erstwhile Demand No 2). Expenditure will be incurred by Zonal Railways against the budget provision. Zonal Railways are authorized to re-distribute funds among sanctioned feasibility study / DPR works. If the construction of a project is undertaken, the expenditure on the Survey is transferred to Capital or other appropriate heads by Credits to Revenue, irrespective of the year in which the expenditure was originally incurred (Para 634 IREC).

12. Notification in the local Government gazette should be given before DPR works are taken up as per Indian Railways Code for the Engineering Department para E-253 before field survey and site investigations are taken up.

    Consultation with Irrigation department, Civil authorities, Military authority etc to be done as per Indian Railways Code for the Engineering Department para E-254 to E-266 before final DPR is cleared by NPG of Division/Zonal Railway. This should be part of DPR preparation.

13. Help of "PM Gati Shakti – National Master Plan" (BISAG-N portal) should be taken for feasibility study to fix alignment duly avoiding wildlife sanctuaries, water bodies etc. depending on topography of terrain or geographical features.

14. Guidelines for the preparation of a Detailed Project Report (DPR) including detailed estimates are given in Indian Railways Code for the Engineering Department. DPR should cover all items given in Indian Railways Code for the Engineering Department and should additionally include project-specific items depending upon nature of project as per standard format circulated vide letter dt 02.09.2022 by Railway Board.

15. DPRs will be submitted by Division/Zonal Railway to Gati Shakti Directorate of Railway Board along with all check lists/proforma etc and a copy of power point presentation for NPG/EBR.

16. Standard yard layouts and standard SIPs issued by Board may be adopted in DPRs, to the extant feasible. Any deviation from Standard layouts may be brought out with proper justification as to why it was unavoidable. Any item processed through RSP should not be part of the DPR Estimate. 2x25KV OHE system should be part of electrical estimate, as conveyed by Railway Board vide letter 2022/RE/161/4 dtd. 27/05/2022.

17. The traffic survey details with calculation of FIRR and EIRR considering all social &economic development in the area and network effect should be submitted as per Indian Railways Finance code Volume-I, Chapter-II. The guidelines for calculation of EIRR for Railway projects have been issued vide letter dtd 19.08.2022.

18. To enhance accuracy, reduce time & cost, Surveys and alignment fixing should be done using latest survey technologies/tools available such as satellite images, drone Photogrammetry, LiDAR and "PM Gati Shakti- National Master Plan portal" created by BISAG.

19. The following activities shall be carried out at the time of preparation of DPR:

19.1. Identification of Govt. land, Private land, Forest land, wild life or any other category of land and process for obtaining NOC/clearances of authorities as required.

19.2. Topographical survey, Preparation of Longitudinal section and Plan, Survey for trees, soil investigation, etc.

19.3. Hydrological survey and waterway calculation for the design of bridges wherever required.

19.4. Indicative type and span arrangements of bridges & tunnel details wherever needed.

19.5. Field, Traffic, and other surveys are required for the calculation of Financial IRR and Economic IRR (including Network Effect).

20. Evaluation of DPRs in Boards office shall be done by the NPG/ nominated EDs committee of Railway Board in a time bound manner, normally within 10 days of DPR receipt (normally on alternate Tuesday/Wednesday). Zonal Railway or CPM/GS of Divisions will make a presentation through VC or in person along with their team to the NPG/Committee.

21. Minor corrections pointed out by the NPG/Committee/Railway Board are to be done immediately by the field team & DPR is to be resubmitted within 3 days.

    If major corrections are to be done in DPR by Division/Zonal Railway, CPM/GS of Division or Zonal Railway to carry out corrections and corrected DPR to be submitted within 20 days to Railway Board.

22. Where DPR is accepted by NPG/committee/Railway Board, minutes will be drawn on the same day, and then after firming up the RoR of the Project, necessary In-Principle Approval (IPA) of MF shall be processed.

23. For the Projects with FIRR more than prevailing hurdle rate or as decided by competent authority, as pre construction activities, following items shall be taken up by railways once IPA is granted by the competent authority to avoid/minimize delay in commencement of main construction work once project is sanctioned:

    23.1. Preparation of all Revenue & Forest land plans, submission to authorities, uploading of Forest clearance documents on PARIVESH portal, field verification of land & forest plan with revenue & forest official during Joint Measurement Survey (JMS). Field verification by forest officials may be combined with Revenue verifications in JMS to avoid repetition & loss of time. However, payment should be made only after sanction of the project by the competent authority.

    23.2. Preparation of GAD/Plans for shifting of utilities like HT line crossing, sewage line, etc., and necessary application to authorities for shifting/clearances. However, payment should be made only after sanction of the project by the competent authority.

    23.3. Preparation of GAD of bridges/ROBs/RUBs/Tunnels, station building plans, ESPs, SIP etc and obtaining approval of Competent Authority.

23.4. Detailed Geotechnical investigations at all critical locations such as formations, Bridges, ROBs, Tunnels etc.

23.5. Packaging and preparation of draft EPC Bid documents. A separate package may be planned for works on Govt. land and for long lead items.

23.6. EPC bids may be invited with approved ESP/SIP as attached document as per powers delegated under SOP and bids can also be opened, however, finalization and LOA shall not be issued until the project is sanctioned by the competent authority. Bids should be called for on the basis of Detailed Estimate (DE) or on the basis of Abstract Estimate (AE) if DE is same as AE. LoA may be issued when competent authority DRM/CAO is of the opinion that work can be taken up without any break. No change shall be allowed in approved ESP/SIP after invitation of tender.

24. After obtaining IPA, the project shall be further processed for approval of competent Authority after appraisal by Board/NITI Aayog/EBR depending upon the cost of the project as per the prevailing delegation of powers.

This is issued with the approval of Board (CRB & CEO, MF, MoBD and MI).

Encl.: As above.

28/10/22

Joint Director/GS(Civil)-II

No.2021/W-I/Genl./Gati Shakti

New Delhi dt. 28.10.2022

ANNEXURES-7

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No. 2022/W-I/Gen /DPR proforma (E-off: 3404238) **New Delhi, Dt. 02.09.2022**

The General Managers,
All Indian Railways.
CMD/RVNL, IRCON, RITES, MRVC, KRCL

Sub: Proforma for preparation and submission of Detailed Project Report for New Line / Doubling /Multi Tracking/ Gauge Conversion.

As per existing instructions, Detailed Project Reports (DPRs) containing Detailed Estimates are required to be prepared for all works costing above Rs. 50 Crore. DPRs are sent by Zonal Railways/PSUs to Railway Board for appraisal and obtaining sanction of the competent authority as per the prevailing delegation of powers. As per Mission 3000 MT plan, large no of capacity enhancement works are required to be sanctioned in near future for which DPRs are being prepared and sent by zonal railways to Railway Board.

2.0 On perusal of DPRs of the various projects received in Board, it has been observed that there is no uniformity in submission of DPRs and sometimes important aspects are also not covered in DPR, resulting in difficulty in the appraisal of DPRs. Therefore, in order to bring uniformity in DPR preparation and to effectively appraise the DPR, Standard Format for preparation of DPR has been prepared. **The DPR to be prepared in two volumes as under**:

(i) **DPR (Vol-I): The Volume I of DPR should contain Executive summary and chapters on various components** as per the Format attached as **Annexure-A**.

(ii) **DPR (Vol-II): The Volume-II of DPR should contain Detailed Estimate of the Project** as per Engineering code.

2.1 The DPR to be submitted through a Covering letter signed by officer not below SAG level officer. The covering letter should contain following:

- Brief details and justification of project,
- Pink Book reference (if included in Pink Book)/ FLS reference,
- Table showing Total cost and Dept wise cost,
- Basis of rates and certification about estimated cost at current price level,
- Validation of alignment on BISAG
- Completion period,
- Summary of Projected Freight and Passenger traffic, projected earnings, FIRR & EROR.
- Mention about finance concurrence and approval of GM.

Documents related to internal correspondence and vetting of Associate finance of Zonal Railways need not to be incorporated in DPR. **One PPT is required to be submitted with DPR**.

2.2 Final DPR to be submitted after it is cleared by EDs' committee. **Documents such as NPG format, draft EBR memo etc as mentioned in Railway Board's letter no 2021/W-I/GenI/Gatishakti dtd 27.07.22 to be submitted alongwith Final DPR**

DA: As above

(Vikas Kumar Jain)
Executive Director/GS(Civil)-I
Railway Board

ANNEXURE-8

e-3378115

भारत सरकार /GOVERNMENT OF INDIA
रेल मंत्रालय /MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No. 2021/W-I/Genl./Gati Shakti **New Delhi, dated 26.10.2023**

The General Managers
All Indian Railways/Pus, NF (Con), CORE
DG/RDSO/Lucknow, DG/NAIR/Vadodara

Sub: Corrigendum to Railway Board's letter no. 2021/W-I/Genl./Gati Shakti dt. 27.07.2022 for Setting up of Gati Shakti Units in Divisions.

Ref: RB letter no. 2021/W-I/Genl./Gati Shakti dt. 27.07.2022

The Railway Board had approved setting up of Gati Shakti Units (GSUs) over IR divisions vide ref (i) above to fast track the construction works required to remove bottlenecks in operations and improve mobility that would lead to increased cargo loading.

Accordingly, GSUs have been created and established over Indian Railway and many works are assigned to them for various Plan Heads. As per **Annexure-B** of above referred letter, Divisional Gati Shakti Units were also responsible for planning and execution of works of various Plan Heads including PH-30: Road Under Bridges and Road Over Bridges.

It is observed that the progress of works assigned to GSUs has not been satisfactory under PH-30 (Road Safety Work- ROB/RUB works), specially where land acquisition is involved. Such works are large in numbers and scattered all over the division. In view of several other on-going priority works, adequate monitoring of PH-30 works by GSUs is therefore observed not being done by GSUs. In order to speed up the works of Plan Head-30, it is hereby decided that no fresh works should be assigned to GSUs and following actions may be taken :

i. New sanctioned ROB works should be assigned to concerned CAO/C or PSUs of Railway/State Govt. or their PSUs as per the procedure.
ii. New sanctioned works of RUB/LHS or Foot Over Bridges (FOBs) may be assigned to concern DEN/Sr DEN of section or CAO/C considering the work load in hand and possibility of faster execution.
iii. Existing works of PH-30, assigned to Gati Shakti Units, may also be critically reviewed & assigned to other agencies without affecting adversely, the targets fixed for the current year.
iv. The initiation of Proposals for sanctioning of new works in PH-30 shall be continued with GSUs.
v. Annexure- 'B' to Railway Board letter dated 27.07.22 is revised accordingly and attached herewith.

This has approval of Board (Member/Infra and CRB & CEO).

26/10/2023

(Avdhesh Kumar Verma)
Jt. Director/Gati Shakti (Civil)-III
Railway Board
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ANNEXURES-9

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
रेलवे बोर्ड (RAILWAY BOARD)

No: 2021/W-I/Genl/Gatishakti (E-3378115) New Delhi, Dated: 24.(

The General Manager,
All Indian Railways

Sub: Development of short video by Project Proponent on the Proposed I

Ref: (i) DPIIT, Ministry of Commerce & Industry Email 27.07.2023(Copy enclosed).
(ii) Special Secretary (Logistics), DPIIT D.O. No. L – 18023/ Logistics Division-Part(1) dated 16.08.2023 (Copy Enclosed).
(iii) DPIITs OM No. 18/4/PMGatiShakti/NPG/2021/Logistics (I dated. 22nd August, 2023.

DPIIT while acknowledging the valuable work carried out by the M/o Railways u GatiShakti National Master Plan (NMP) has stated that it aims to showcase the si contributions of each Ministry in an engaging and creative manner and for this purp video highlighting the core functions. Use cases and how using PM Gati Shakti NMI of a multimodal mix of transportation, reduced logistics cost. integrated developmen mile connectivity is being achieved.

2. Moreover, in the 51 Network Planning Group meeting under the chairmanship o Secretary, DPIIT, it was discussed that a short video may be prepared by Project prop the proposed project(s) incorporating brief details about the project, project outcome/b Use of PM GatiShakti NMP and its benefits etc. and also in the Minutes of the 5 meeting, it has been specifically mentioned while recommending the MOR projects, t short video showcasing the project.

3. Therefore, all Zonal Railways are advised to prepare short videos on the proje executed under PM GatiShakti NMP so that the same may be shared with Network Group of DPIIT.

ANNEXURES-10

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड RAILWAY BOARD)

No: 2021/W-I/Genl/Gatishakti (e-3378115) New Delhi, Dated: 18 .08.2023

The General Manager,
All Indian Railways

Sub: Level Crossings on New Line/Gauge Conversion/Doubling/Multi Tracking projects.

Ref: (i) Board's Letter No. 2019/W1/Genl./land-LC dated 10/06/2019.

(ii) Board's Letter No. 2017/CE-IV/LX/Misc./244 (LCs) Pt. dated 02/03/2023.

The policy for level crossings on New line/Gauge conversion/Doubling/Multi tracking projects is modified as below:-

i. **New Line Project**:- No Level crossing shall be planned in a New Line Project.

ii. **Doubling/Multitracking Project**:- Existing LCs may be planned for elimination with ROB/RUB if project viability is not affected i.e. FIRR remains above hurdle rate of 10%. Otherwise, elimination of balance LCs should be planned under PH-30 (ROB/RUB works).

iii. **Gauge Conversion Project**:- As these projects are sanctioned under Uni-gauge policy, all LCs may be planned for elimination with ROB/RUB. However, RUBs shall be planned only when no substantial increase in earthwork is involved. Otherwise, ROBs can be planned based on cost benefit analysis.

iv. **For ongoing projects**:- ROB/RUB can be provided to eliminate level crossings by revising the estimate of the ongoing project, if the formation level permits its construction without any substantial raising or lowering, else these ROB/RUBs can be sanctioned separately under PH-30. Such revision in estimate shall not be treated as material modification.

v. Elimination of Level Crossing shall not be linked with commissioning of doubling/ multi tracking.

The Zonal Railways are advised to prepare the detailed project reports (DPR) of projects accordingly. This supersedes all previous instructions on the subject.

This issues with the concurrence of Finance Dte. and approval of Board (MI, MF and CRB & CEO).

18/8/23

(Abhishek Jagawat)
Jt. Director/Gati Shakti (Civil)-II
Railway Board

ANNEXURE-11

भारत सरकार / Government of India
रेल मंत्रालय / Ministry of Railways
(रेलवे बोर्ड / Railway Board)

No. 2022/W-I/Genl/DPRproforma (E-off:3404238) New Delhi, Dt. 13 .12.2023

The General Managers,
All Indian Railways.

Sub: Proforma for submission of Detailed Project Report.

As per existing instructions, Detailed Project Reports (DPRs) containing Detailed Estimates are prepared for all works costing above Rs 50 Crore and are sent by Zonal Railways/PSUs to Railway Board for obtaining sanction of the competent authority as per the extent of delegation of powers. Instructions have been issued vide Board's letter No. 2021/W-I/Genl/Policy dated 12.05.2022 wherein Railways were advised to send details as per prescribed proformas in Executive Summary/covering letter of DPR/DE/RE of new/sanctioned projects before sending to Board.

On perusal of DPRs of the various projects, it has been observed that there is no uniformity in submission of DPRs due to which some important aspects do not get covered, resulting in difficulty in the appraisal of DPRs. Also, the projects are now planned as per PM Gatishakti framework and appraised by Network Planning Group (NPG). Therefore, in order to bring uniformity in DPR preparation and to effectively appraise the DPR, Standard Format has been prepared. The initial DPR submission to contain the following:-

(i) **Covering letter**: It should contain Brief details and justification of project, Pink Book reference (if included in Pink Book), FLS reference, Table showing Total cost and Dept wise cost, Basis of rates and certification about estimated cost at current price level, Completion period, Existing & Projected Freight and Passenger traffic, projected earnings, FIRR & EROR. Covering letter should also mention about finance concurrence and approval of GM. It should be signed by officer not below **SAG level officer**;

(ii) **DPR (Vol-I)**: The volume I of DPR should contain Executive summary and chapters on various components as per the Format attached as Annexure-I;

(iii) **DPR (Vol-II)**: The Volume-II of DPR should contain Detailed Estimate of the Project as per Engineering code.

A checklist on Cash Outflows (Construction cost, Working expenses) and Cash Inflows (Traffic earnings and residual value) is also required to be submitted.

Documents related to Internal correspondence and vetting of Associate finance of Zonal Railways are not required to be made part of DPR.

This supersedes instructions issued vide letter dated 02.09.2022

13/12/2023

(Rajesh Kumar Garg)
Executive Director/GS(Civil)-I
Railway Board.

ANNEXURES- 12

Statewise List of Amrit Stations (1321 Stations)

S.N.	State	No. of Stations	Names of stations
1	**Andhra Pradesh**	**73**	Adoni, Anakapalle, Anantapur, Anaparthi , Araku, Bapatla , Bhimavaram Town , Bobbili Jn, Chipurupalli, Chirala, Chittoor, Cuddapah, Cumbum, Dharmavaram, Dhone, Donakonda, Duvvada, Elamanchili , Eluru, Giddalur, Gooty, Gudivada , Gudur, Gunadala , Guntur, Hindupur, Ichchpuram, Kadiri, Kakinada Town Jn, Kottavalasa Jn, Kuppam, Kurnool city , Macherla, Machilipatnam , Madanapalle Road, Mangalagiri, Mantralayam Road, Markapur Road, Nadikude Jn, Nandyal Jn, Narasapur , Narasaraopet, Naupada Jn, Nellore, Nidadavolu Jn, Ongole, Pakala Jn, Palasa, Parvatipuram, Piduguralla, Piler, Rajahmundry, Rajampet, Rayanapadu , Renigunta, Repalle, Samalkot , Sattenapalle, Satya Sai Prashanti Nilayan, Simhachalam, Singaraykonda, Sri Kalahasti, Srikakulam Road, Sullurpeta, Tadepalligudem, Tadipatri, Tenali , Tirupati, Tuni , Vijayawada, Vinukonda, Vishakhapatnam, Vizianagaram Jn
2	**Arunachal Pradesh**	**1**	Naharlagun (Itanagar)
3	**Assam**	**50**	Amguri, Arunachal, Chaparmukh, Dhemaji, Dhubri, Dibrugarh, Diphu, Duliajan, Fakiragram Jn., Gauripur, Gohpur, Golaghat, Gosai gaon hat, Guwahati, Haibargaon, Harmuti, Hojai, Jagi Road, Jorhat Town, Kamakhya Jn, Kokrajhar, Lanka, Ledo, Lumding Jn, Majbat, Makum Jn, Margherita, Mariani Jn, Murkongselek, Naharkatiya, Nalbari, Namrup, Narangi, New Bongaigaon Jn, New Haflong, New Karimganj Jn, New Tinsukia Jn, North Lakhimpur, Pathshala, Rangapara North Jn, Rangiya Jn, Sarupathar, Sibsagar Town, Silapathar, Silchar, Simaluguri, Tangla, Tinsukia, Udalguri, Viswanath Chariali

S.N.	State	No. of Stations	Names of stations
4	Bihar	92	Anugraha Narayan Road, Ara, Arariya Court, Bakhtiyarpur, Banka, Banmankhi, Bapudham Motihari, Barauni, Barh, Barsoi Jn, Begusarai, Bettiah, Bhabua Road, Bhagalpur, Bhagwanpur, Bihar Sharif, Bihiya, Bikramganj, Buxar, Chakia, Chausa, Chhapra, Dalsingh Sarai, Darbhanga, Dauram Madhepura, Dehri On Sone, Dholi, Dighwara, Dumraon, Durgauti, Ekma, Fatuha, Gaya, Ghorasahan, Guraru, Hajipur Jn, Jamalpur Jn, Jamui, Janakpur Road, Jaynagar, Jehanabad, Kahalgaon, Karhagola Road, Khagaria Jn, Kishanganj, Kudra, Labha, Laheria Sarai, Lakhminia, Luckeesarai Jn, Madhubani, Maheshkhunt, Mairwa, Mansi Jn, Masrakh, Motipur, Munger (Monghyr), Muzaffarpur Jn, Nabinagar Road, Narkatiaganj Jn, Naugachia, Nawadah, Paharpur, Piro, Pirpainti, Rafiganj, Raghunathpur., Rajendra Nagar Terminal (Patna), Rajgir, Ram Dayalu Nagar, Raxaul, Sabaur, Sagauli, Saharsa, Sahibpur Kamal, Sakri, Salauna, Salmari, Samastipur, Sasaram, Shahpur Patoree, Shivanarayanpur, Simri Bakhtiyarpur, Simultala, Sitamarhi, Siwan, Sonpur Jn., Sultanganj, Supaul, Taregna, Thakurganj, Thawe
5	Chhattisgarh	32	Akaltara, Ambikapur, Baikunthpur Road, Balod, Baradwar, Belha, Bhanupratappur, Bhatapara, Bhilai, Bhilai Nagar, Bhilai Power House, Bilaspur, Champa, Dallirajhara, Dongargarh, Durg, Hathbandh, Jagdalpur, Janjgir Naila, Korba, Mahasamund, Mandir Hasaud, Marauda, Nipania, Pendra Road, Raigarh, Raipur Jn, Raj Nandgaon, Sarona, Tilda-Neora, Urkura, Uslapur
6	Delhi	13	Adarshnagar Delhi, Anand Vihar, Bijwasan, Delhi, Delhi Cantt., Delhi Sarai Rohilla, Delhi Shahadra, Hazrat Nizamuddin, Narela, New Delhi, Sabzi Mandi, Safdarjung, Tilak Bridge
7	Goa	3	Madgaon, Sanvordem, Vasco-da-gama
8	Gujarat	87	Ahmedabad, Anand, Ankleshwar, Asarva, Bardoli, Bhachau, Bhaktinagar, Bhanvad, Bharuch,

S.N.	State	No. of Stations	Names of stations
			Bhatiya, Bhavnagar, Bhestan, Bhildi, Bilimora Jn, Botad Jn., Chandlodia, Chorvad Road, Dabhoi Jn, Dahod, Dakor, Derol, Dhrangadhra, Dwarka, Gandhidham, Godhra Jn, Gondal, Hapa, Himmatnagar, Jam Jodhpur, Jam Wanthali, Jamnagar, Junagadh Jn, Kalol Jn, Kanalus Jn, Karamsad, Keshod, Khambhaliya, Kim, Kosamba Jn, Lakhtar, Limbdi, Limkheda, Mahemadabad Kheda Road, Mahesana Jn, Mahuva, Maninagar, Mithapur, Miyagam Karjan Jn, Morbi, Nadiad Jn, Navsari, New Bhuj, Okha, Paddhari, Palanpur Jn, Palitana, Patan, Porbandar, Pratapnagar, Rajkot Jn, Rajula Jn, Sabarmati BG, Sabarmati MG, Sachin, Samakhiyali, Sanjan, Savarkundla, Sayan, Siddhpur, Sihor Jn., Somnath, Songadh, Surat, Surendranagar, Than, Udhna, Udvada, Umargaon Road, Unjha, Utran, Vadodara, Vapi, Vatva, Veraval, Viramgam, Vishvamitri Jn., Wankaner
9	**Haryana**	**34**	Ambala Cantt., Ambala City, Bahadurgarh, Ballabhgarh, Bhattu, Bhiwani Jn, Charkhi Dadri, Faridabad, Faridabad New Town, Gohana, Gurugram, Hansi, Hisar, Hodal, Jind Jn, Kalanwali, Kalka, Karnal, Kosli, Kurukshetra Jn, Loharu, Mahendragarh, Mandi Adampur, Mandi Dabwali, Narnaul, Narwana Jn, Palwal, Panipat Jn, Pataudi Road, Rewari, Rohtak, Sirsa, Sonipat, Yamunanagar Jagadhari
10	**Himachal Pradesh**	**4**	Amb Andaura, Baijnath Paprola, Palampur Himachal, Shimla
11	**Jharkhand**	**57**	Balsiring, Bano, Barajamda Jn, Barkakana, Basukinath, Bhaga, Bokaro Steel City , Chaibasa, Chakradharpur, Chandil, Chandrapura, Daltonganj, Dangoaposi, Deoghar, Dhanbad, Dumka, Gamharia, Gangaghat, Garhwa Road, Garhwa Town, Ghatsila, Giridih, Godda, Govindpur Road, Haidar Nagar, Hatia, Hazaribagh Road, Jamtara, Japla, Jasidih Jn, Katrasgarh, Koderma Jn, Kumardubi, Latehar, Lohardaga, Madhupur Jn, Manoharpur, Muhammad Ganj, Muri Jn, N.S.C.B. Jn Gomoh, Nagar Untari, Namkom, Orga, Pakur,

S.N.	State	No. of Stations	Names of stations
			Parasnath, Piska, Rajkharswan, Rajmahal, Ramgarh Cantt, Ranchi Jn, Sahibganj, Sankarpur, Silli, Sini, Tatanagar, Tatisilwai, Vidyasagar
12	**Karnataka**	**59**	Almatti, Alnavar, Arsikere Junction, Badami, Bagalkot, Ballary, Bangalore Cantt., Bangarpet, Bantawala, Belagavi, Bidar, Bijapur, Chamaraja Nagar, Channapatna, Channasandra, Chikkamagaluru, Chikodi Road, Chitradurga, Davangere, Dharwad, Dodballapur, Gadag, Gangapur Road, Gangavathi, Ghataprabha, Gokak Road, Harihar, Hassan, Hosapete, Kalaburagi Jn (Gulbarga), Kengeri, Koppal, Krantivira Sangolli Rayanna (Bengaluru Station), Krishnarajapuram, Malleswaram, Malur, Mandya, Mangalore Central, Mangalore Jn, Munirabad, Mysuru Jn (Mysore), Raibag, Raichur Jn, Ramanagaram, Ranibennur, Sagar Jambagaru, Sakleshpur, Shahabad, Shivamogga Town, Shree Siddharoodha Swamiji Hubballi Jn, Subramanya Road, Talguppa, Tiptur, Tumakuru, Udupi, Wadi, Whitefield, Yadgir, Yesvantpur
13	**Kerala**	**35**	Alappuzha , Angadippuram, Angamali For Kaladi , Chalakudi , Changanassery, Chengannur , Chirayinikil, Ernakulam, Ernakulam Town, Ettumanur, Ferok, Guruvayur , Kannur, Kasargod, Kayankulam Jn, Kollam Jn (Quilon), Kozhikode Main (Calicut), Kuttippuram, Mavelikara, Neyyattinkara , Nilambur Road, Ottappalam, Parappanangadi, Payyanur, Punalur, Shoranur Jn., Thalassery, Thiruvananthapuram, Thrisur, Tirur, Tiruvalla , Tripunithura, Vadakara, Varkala, Wadakancheri
14	**Madhya Pradesh**	**80**	Akodia, Amla, Anuppur, Ashoknagar, Balaghat, Banapura, Bargawan, Beohari, Berchha, Betul, Bhind, Bhopal, Bijuri, Bina, Biyavra Rajgarh, Chhindwara, Dabra, Damoh, Datia, Dewas, Gadarwara, Ganjbasoda, Ghoradongri, Guna, Gwalior, Harda, Harpalpur, Indore Jn, Itarsi Jn, Jabalpur, Junnor Deo, Kareli, Katni Jn, Katni Murwara, Katni South, Khachrod, Khajuraho Jn,

S.N.	State	No. of Stations	Names of stations
			Khandwa, Khirkiya, Laxmi Bai Nagar, Maihar, Maksi Jn, Mandla Fort, Mandsor, MCS Chhatarpur, Meghnagar, Morena, Multai, Nagda Jn, Nainpur Jn, Narmadapuram (Hoshangabad), Narsinghpur, Nepanagar, Nimuch, Orchha, Pandhurna, Pipariya, Ratlam, Rewa, Ruthiyai, Sanchi, Sant Hirdaram Nagar, Satna, Saugor, Sehore, Seoni, Shahdol, Shajapur, Shamgarh, Sheopur Kalan, Shivpuri, Shridham, Shujalpur, Sihora Road, Singrauli, Tikamgarh, Ujjain, Umaria, Vidisha, Vikramgarh Alot
15	**Maharashtra**	**126**	Ahmednagar, Ajni (Nagpur), Akola, Akurdi, Amalner, Amgaon, Amravati, Andheri, Aurangabad, Badnera, Balharshah, Bandra Terminus, Baramati, Belapur, Bhandara Road, Bhokar , Bhusawal, Borivali, Byculla, Chalisgaon, Chanda Fort, Chandrapur, Charni Road, Chhatrapati Shivaji Maharaj Terminus, Chinchpokli, Chinchwad, Dadar, Daund, Dehu Road, Devlali, Dhamangaon, Dharangaon, Dharmabad , Dhule, Diva, Dudhani, Gangakher , Godhani, Gondia, Grant Road, Hadapsar, Hatkanangale, Hazur Sahib Nanded, Himayatnagar , Hinganghat, Hingoli Deccan, Igatpuri, Itwari Jn (Nagpur), Jalna, Jeur, Jogeshwari, Kalyan Jn, Kamptee, Kanjur Marg, Karad, Katol, Kedgaon, Kinwat , Kolhapur SCSMT, Kopargaon, Kurduwadi Jn, Kurla Jn, Lasalgaon, Latur, Lokmanya Tilak Terminus, Lonand Jn, Lonavla, Lower Parel, Malad, Malkapur, Manmad Jn, Manwath Road , Marine Lines, Matunga, Miraj Jn, Mudkhed Jn, Mumbai Central, Mumbra, Murtizapur Jn, Nagarsol , Nagpur Jn, Nandgaon, Nandura, Nandurbar, Narkher Jn, Nashik Road, Osmanabad, Pachora Jn, Palghar, Pandharpur, Parbhani Jn, Parel, Parli Vaijnath, Partur , Phaltan, Prabhadevi, Pulgaon Jn, Pune Jn, Purna Jn, Raver, Rotegaon , Sainagar Shirdi, Sandhurst Road, Sangli, Satara, Savda, Selu , Sewagram, Shahad, Shegaon, Shivaji Nagar Pune, Solapur,

S.N.	State	No. of Stations	Names of stations
			Talegaon, Thakurli, Thane, Titvala, Tumsar Road, Umri, Uruli, Vadala Road, Vidyavihar, Vikhroli, Wadsa, Wardha, Washim , Wathar
16	**Manipur**	**1**	Imphal
17	**Meghalaya**	**1**	Mendi Pathar
18	**Mizoram**	**1**	Sairang (Aizawl)
19	**Nagaland**	**1**	Dimapur
20	**Odisha**	**59**	Angul, Badampahar, Balangir, Balasore, Balugaon, Barbil, Bargarh Road, Baripada, Barpali, Belpahar, Betnoti, Bhadrak, Bhawanipatna, Bhubaneswar, Bhubaneswar New , Bimlagarh, Brahmapur, Brajrajnagar, Chatrapur, Cuttack, Damanjodi, Dhenkanal, Gunupur, Harishanker Road, Himgir, Hirakud, Jajpur Keonjhar Road, Jaleswar, Jaroli, Jeypore, Jharsuguda Jn, Jharsuguda Road, Kantabanji, Kendujhargarh, Kesinga, Khariar Road, Khurda Road Jn, Koraput Jn, Lingaraj Temple Road, Mancheswar, Meramandali, Muniguda, Panposh, Paradeep, Parlakhemundi, Puri, Raghunathpur, Rairakhol, Rairangpur, Rajgangpur, Rayagada, Rourkela, Sakhi Gopal, Sambalpur, Sambalpur city, Soro, Talcher, Talcher Road, Titlagarh Jn.
21	**Punjab**	**30**	Abohar, Amritsar, Anandpur Sahib, Beas, Bhatinda Jn, Dhandari Kalan, Dhuri, Fazilka, Firozpur Cantt, Gurdaspur, Hoshiarpur, Jalandhar Cantt Jn, Jalandhar City Jn, Kapurthala, Kot Kapura Jn, Ludhiana Jn, Malerkotla, Mansa, Moga, Muktsar, Nangal Dam, Pathankot Cantt., Pathankot City, Patiala, Phagwara Jn, Phillaur Jn, Rup Nagar, Sangrur, SASN Mohali, Sirhind
22	**Rajasthan**	**85**	Abu Road, Ajmer, Alwar, Anupgarh, Asalpur Jobner, Balotra, Bandikui, Baran, Barmer, Bayana, Beawar, Bharatpur, Bhawani Mandi, Bhilwara, Bijainagar, Bikaner, Bundi, Chanderiya, Chhabra Gugor, Chittorgarh Jn., Churu, Dakaniya Talav, Dausa, Deeg, Degana, Deshnoke, Dholpur, Didwana, Dungarpur, Falna, Fatehnagar, Fatehpur

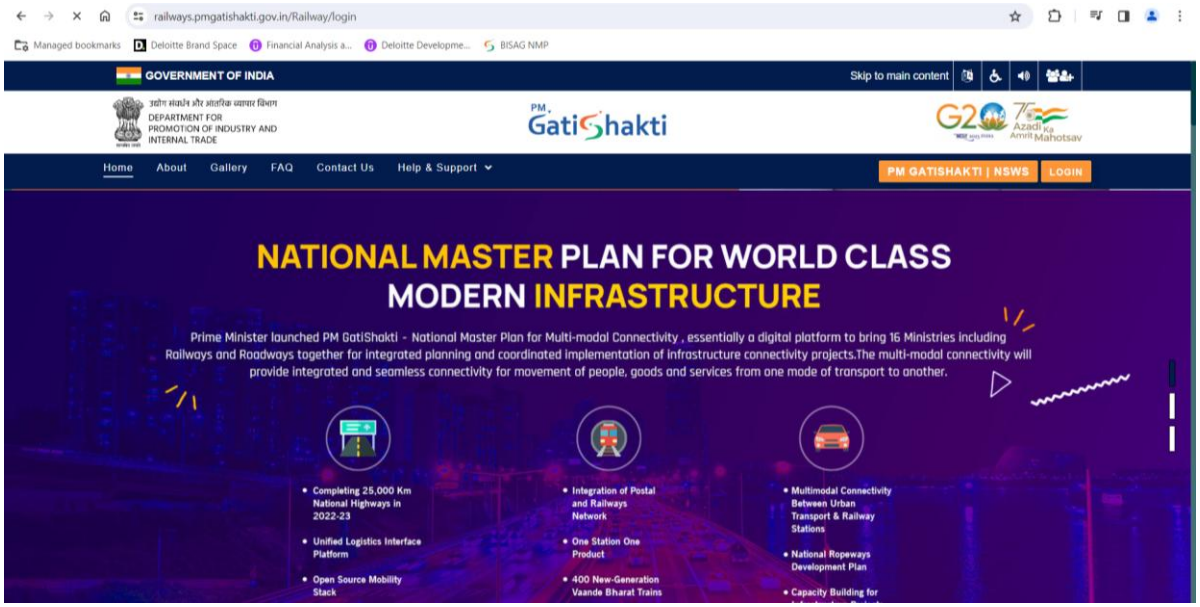
S.N.	State	No. of Stations	Names of stations
			Shekhawati, Gandhinagar Jaipur, Gangapur City, Gogameri, Gotan, Govind Garh, Hanumangarh, Hindaun City, Jaipur Jn, Jaisalmer, Jalor, Jawai Bandh, Jhalawar City, Jhunjhunu, Jodhpur, Kapasan, Khairthal, Kherli, Kota Jn, Lalgarh Jn, Mandal Garh, Mandawar Mahwa Road, Marwar Bhinmal, Marwar Jn, Mavli Jn, Merta Road Jn, Nagaur, Naraina, Nim ka Thana, Nokha, Pali Marwar, Phalodi Jn, Phulera Jn, Pindwara, Rai singh nagar, Rajgarh, Ramdevra, Ramganj Mandi Jn, Ranapratapnagar, Rani, Ratangarh Jn, Ren, Ringas, Sadulpur, Sanganer, Sawai Madhopur, Shri Mahaveerji, Sikar, Sojat Road, Somesar, Sri ganganagar, Sujangarh, Suratgarh, Udaipur City
23	**Sikkim**	**1**	Rangpo
24	**Tamil Nadu**	**77**	Ambasamudram, Ambattur, Arakkonam Jn, Ariyalur, Avadi, Bommidi, Chengalpattu Jn, Chennai Beach, Chennai Egmore, Chennai Park, Chidambaram, Chinna Salem, Chrompet, Coimbatore Jn, Coimbatore North, Coonoor, Dharmapuri, Dindigul, Dr. M.G. Ramachandran Central, Erode Jn., Guduvancheri, Guindy, Gummidipundi, Hosur, Jolarpettai Jn, Kanniyakumari Terminus, Karaikkudi Jn, Karur Jn, Katpadi Jn, Kovilpatti, Kulitturai, Kumbakonam, Lalgudi, Madurai Jn, Mambalam, Manaparai, Mannargudi, Mayiladuturai Jn, Mettupalayam, Morappur, Nagercoil Jn, Namakkal, Palani, Paramakkudi, Perambur, Podanur Jn., Pollachi Jn, Polur, Pudukkottai, Rajapalayam, Ramanathapuram, Rameswaram, Salem, Samalpatti, Sholavandan, Srirangam, Srivilliputtur, St.Thomas Mount, Tambaram, Tenkasi, Thanjavur Jn, Thiruvarur Jn., Tiruchendur, Tirunelveli Jn, Tirupadripulyur, Tirupattur, Tiruppur, Tirusulam, Tiruttani, Tiruvallur, Tiruvannamalai, Tuticorin, Udagamandalam, Vellore Cantt., Villupuram Jn., Virudhunagar, Vriddhachalam Jn.

S.N.	State	No. of Stations	Names of stations
25	Telangana	40	Adilabad, Basar, Begumpet, Bhadrachalam Road, Gadwal, Hafizpeta, Hi-tech city, Huppuguda, Hyderabad, Jadcherla, Jangaon, Kacheguda, Kamareddi, Karimnagar, Kazipet Jn, Khammam, Lingampalli, Madhira, Mahbubabad, Mahbubnagar, Malakpet, Malkajgiri Jn, Manchiryal, Medak, Medchal, Miryalaguda, Nalgonda, Nizamabad Jn, Peddapalli Jn, Ramagundam, Secunderabad, Shadnagar, Sri Bala Brahmeswara Jogulamba, Tandur, Umdanagar, Vikarabad, Warangal, Yadadri, Yakutpura, Zahirabad
26	Tripura	4	Agartala, Dharmanagar, Kumarghat, Udaipur
27	UT of Chandigarh	1	Chandigarh
28	UT of Jammu and kashmir	4	Budgam, Jammu Tawi, Shri Mata Vaishno Devi Katra, Udhampur
29	UT of Puducherry	3	Karaikal, Mahe, Puducherry
30	Uttar Pradesh	157	Achnera, Agra Cantt., Agra Fort, Aishbagh Jn, Akbarpur Jn, Aligarh, Amethi, Amroha, Anand Nagar Jn., Aonla, Ayodhya Dham Junction, Azamgarh, Babatpur, Bachhrawan, Badaun, Badshahnagar, Badshahpur, Baheri, Bahraich, Balamau Jn., Ballia, Balrampur, Banaras, Banda, Barabanki Jn, Bareilly, Bareilly City, Barhni, Basti, Belthara Road, Bhadohi, Bharatkund, Bhatni, Bhuteshwar, Bijnor, Bulandsahar, Chandauli Majhwar, Chandausi, Chilbila, Chitrakut dham karwi, Chopan, Chunar Jn., Daliganj, Darshannagar, Deoria Sadar, Dhampur, Dildarnagar, Etawah Jn., Farrukhabad, Fatehabad, Fatehpur, Fatehpur Sikri, Firozabad, Gajraula, Garhmukteshwar, Gauriganj, Ghatampur, Ghaziabad, Ghazipur City, Gola Gokarnath, Gomtinagar, Gonda, Gorakhpur, Govardhan, Govindpuri, Gursahaiganj, Haidergarh, Hapur, Hardoi, Hathras City, Idgah Agra Jn, Izzatnagar, Janghai Jn, Jaunpur City, Jaunpur Jn, Kannauj, Kanpur Anwarganj, Kanpur Bridge Left Bank,

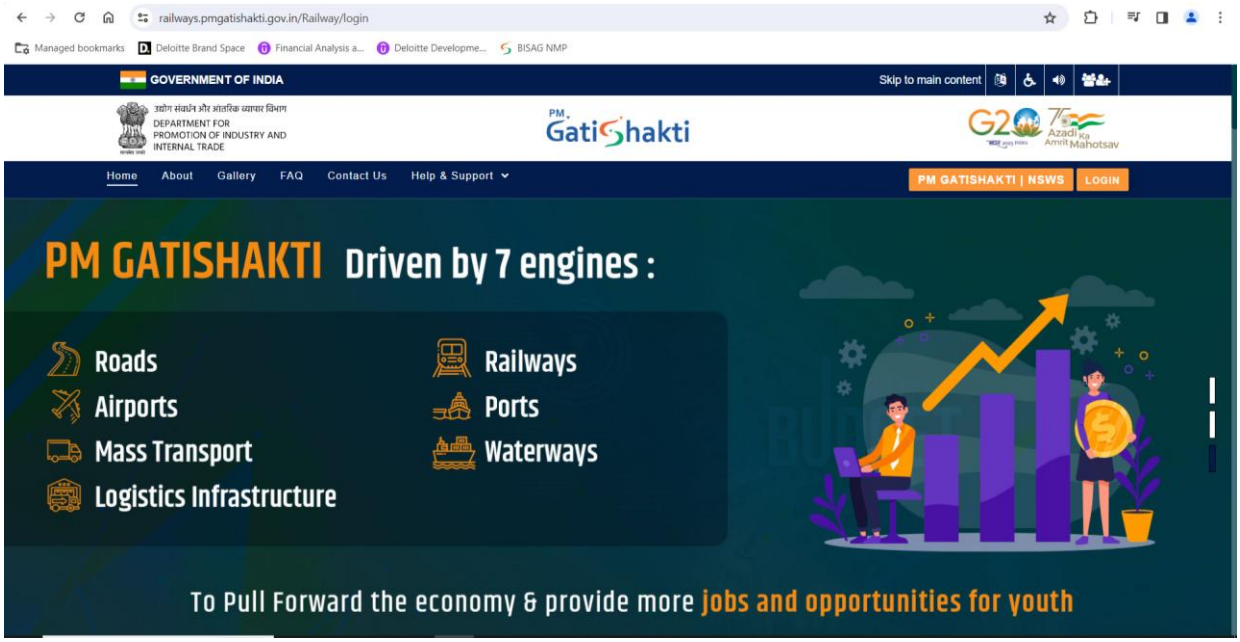
S.N.	State	No. of Stations	Names of stations
			Kanpur Central, Kaptanganj Jn, Kasganj Jn, Kashi, Khalilabad, Khorason road, Khurja Jn., Kosi Kalan, Kunda Harnamganj, Lakhimpur, Lalganj, Lalitpur Jn, Lambhua, Lohta, Lucknow (Charbagh) NR, Lucknow city, Lucknow Jn. (NER), Maghar, Mahoba Jn, Mailani Jn, Mainpuri Jn, Malhaur, Manak Nagar, Manikpur Jn, Mariahu, Mathura Jn, Mau Jn, Meerut City Jn, Mirzapur, Modinagar, Mohanlalganj, Moradabad Jn, Muzaffarnagar, Nagina, Najibabad Jn, Nihalgarh, Orai, Panki Dham, Phaphamau Jn, Phulpur, Pilibhit Jn, Pokhrayan, Pratapgarh Jn, Prayag Jn, Prayagraj Jn, Pt. Deen Dayal Upadhyay Jn , Rae Bareli Jn, Raja Ki Mandi, Ramghat Halt, Rampur Jn, Renukoot, Saharanpur Jn., Salempur, Seohara, Shahganj Jn, Shahjahanpur, Shamli, Shikohabad Jn., Shivpur, Siddharth nagar, Sitapur Jn., Sonbhadra, Sri Krishna Nagar, Sultanpur Jn, Suraimanpur, Swaminarayan Chappia, Takia, Tulsipur, Tundla Jn., Ujhani, Unchahar, Unnao Jn, Utraitia Jn, Varanasi Cantt., Varanasi City, Vindhyachal, Virangana Lakshmibai, Vyasnagar, Zafarabad
31	**Uttarakhand**	**11**	Dehradun, Haridwar Jn., Harrawala, Kashipur Jn, Kathgodam, Kichha, Kotdwar, Lal Kuan Jn, Ramnagar, Roorkee, Tanakpur
32	**West Bengal**	**99**	Adra, Alipur duar Jn., Aluabari Road, Ambika kalna, Anara, Andal Jn., Andul, Asansol Jn., Azimganj, Bagnan, Bally, Balurghat, Bandel Jn., Bangaon Jn., Bankura, Barabhum, Barasat, Barddhaman, Barrackpore, Belda, Berhampore court, Bethuadahari, Bhaluka Road, Binnaguri, Bishnupur, Bolpur Shantiniketan, Burnpur, Canning, Chandan nagar, Chandpara, Chandrakona Road, Dalgaon, Dalkhola, Dankuni, Dhulian Ganga, Dhupguri, Digha, Dinhata, Dum Dum Jn., Falakata, Garbeta, Gede, Haldia, Haldibari, Harishchandrapur, Hasimara, Hijli, Howrah Jn, Jalpaiguri, Jalpaiguri Road, Jangipur Road, Jhalida, Jhargram, Joychandi Pahar Jn,

S.N.	State	No. of Stations	Names of stations
			Kaliyaganj, Kalyani, Kalyani Ghoshpara, Kamakhyaguri, Katwa Jn, Khagraghat Road, Kharagpur Jn, Kolkata, Krishnanagar City Jn, Kumedpur Jn, Madhukunda, Madhyamgram, Malda Court, Malda Town, Mecheda, Medinipur (Midnapore), Nabadwip Dham, Naihati Jn, New Alipurduar, New Cooch Behar, New Farakka Jn, New Jalpaiguri Jn, New Mal Jn, Ondagram, Panagarh, Pandabeswar, Panskura Jn, Purulia Jn, Rampurhat Jn, Sainthia Jn, Salboni, Samsi, Sealdah, Shalimar, Shantipur, Sheoraphuli Jn., Siliguri Jn., Sitarampur, Siuri, Sonarpur Jn., Suisa, Tamluk, Tarakeswar, Tulin, Uluberia
	TOTAL	**1321**	

NMP Home page



NMP home 3



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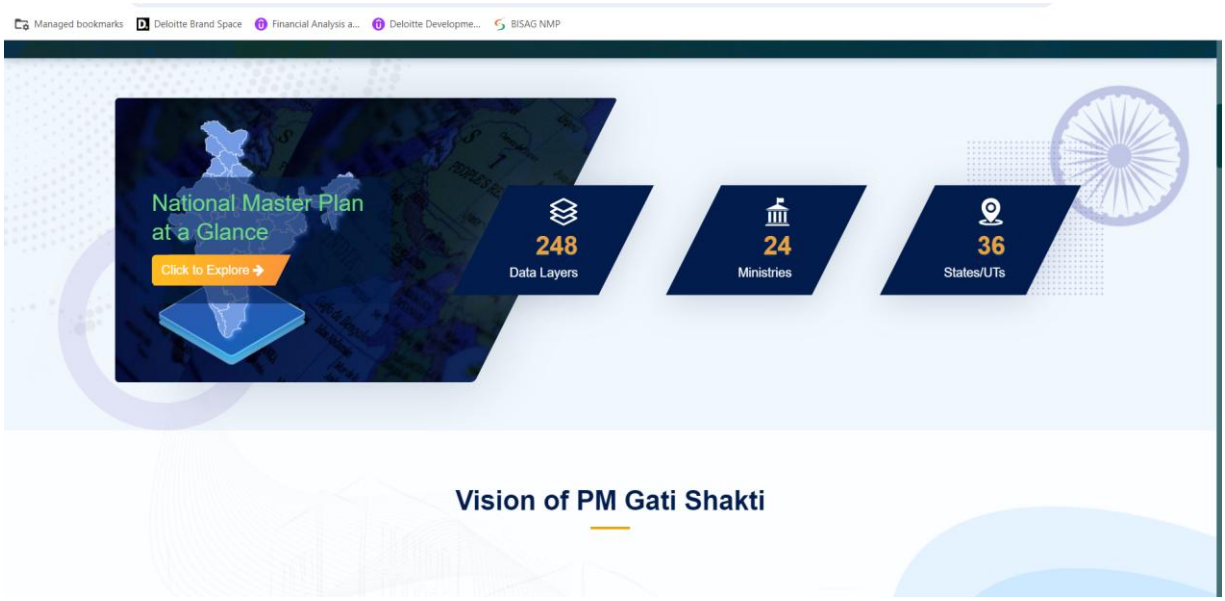
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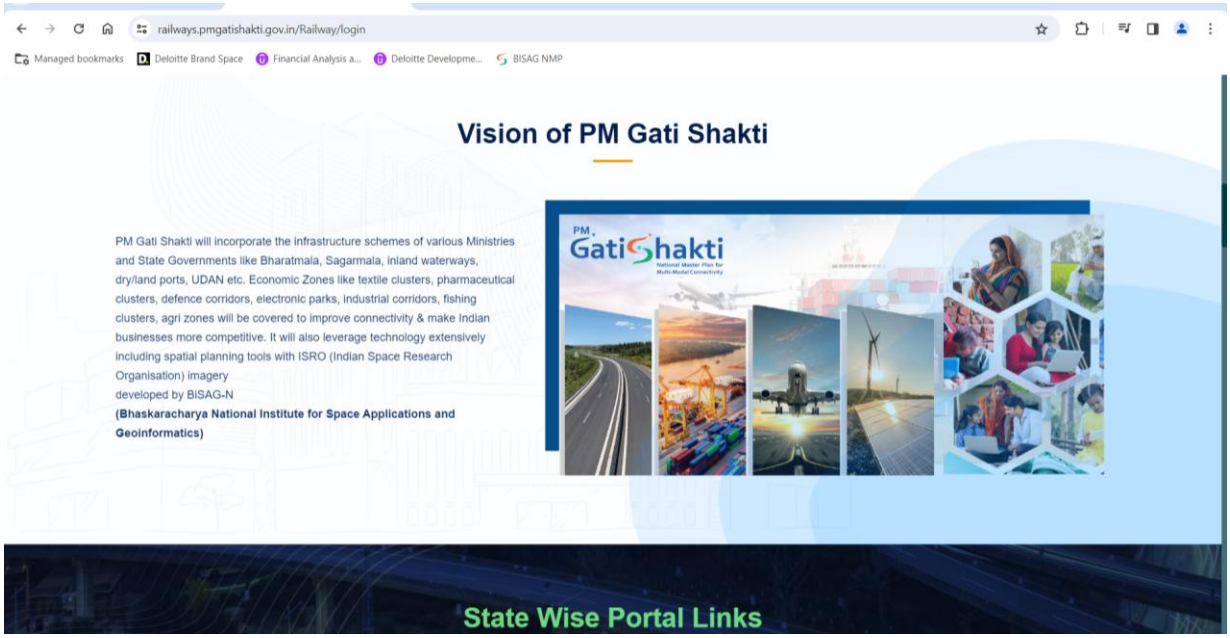
BISAG NMP
National Master Plan at a Glance
Click to Explore
248
Data Layers
24
Ministries
36
States/UTs
Vision of PM Gati Shakti

Home3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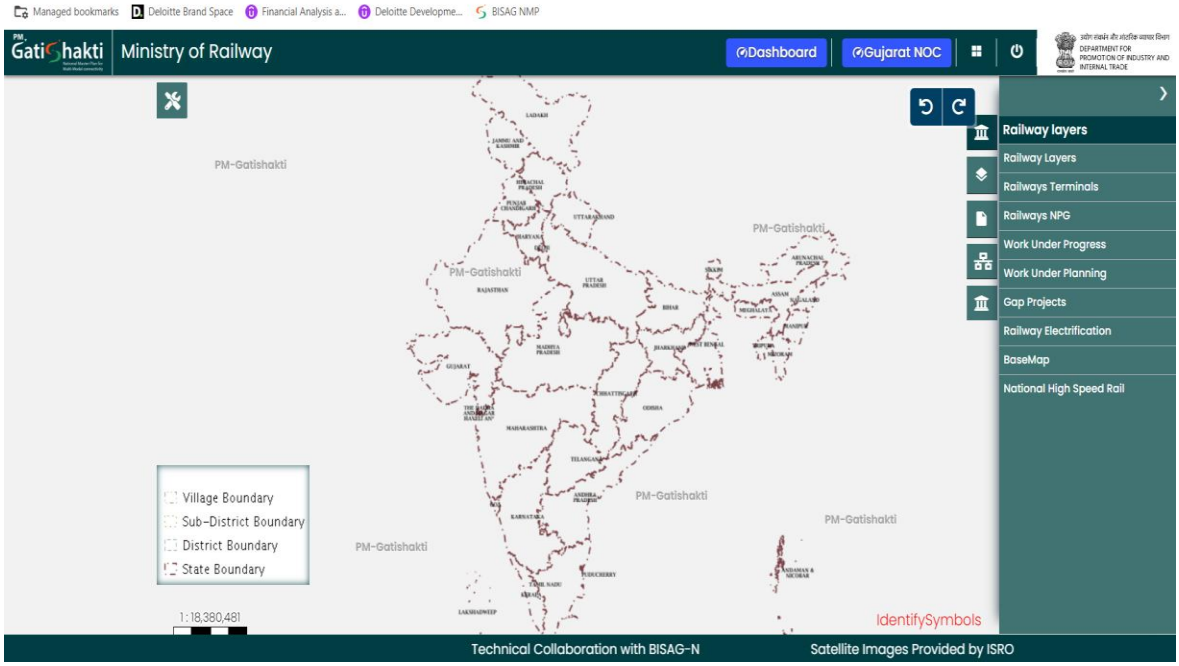
BISAG NMP
Vision of PM Gati Shakti
PM Gati Shakti will incorporate the infrastructure schemes of various Ministries and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc. Economic Zones like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones will be covered to improve connectivity & make Indian businesses more competitive. It will also leverage technology extensively including spatial planning tools with ISRO (Indian Space Research Organisation) imagery
developed by BISAG-N
(Bhaskaracharya National Institute for Space Applications and Geoinformatics)
PM GatiShakti
State Wise Portal Links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Railway layers
Railway Layers
Railways Terminals
Railways NPG
Work Under Progress
Work Under Planning
Gap Projects
Railway Electrification
BaseMap
National High Speed Rail
PM-Gatishakti
Village Boundary
Sub-District Boundary
District Boundary
State Boundary
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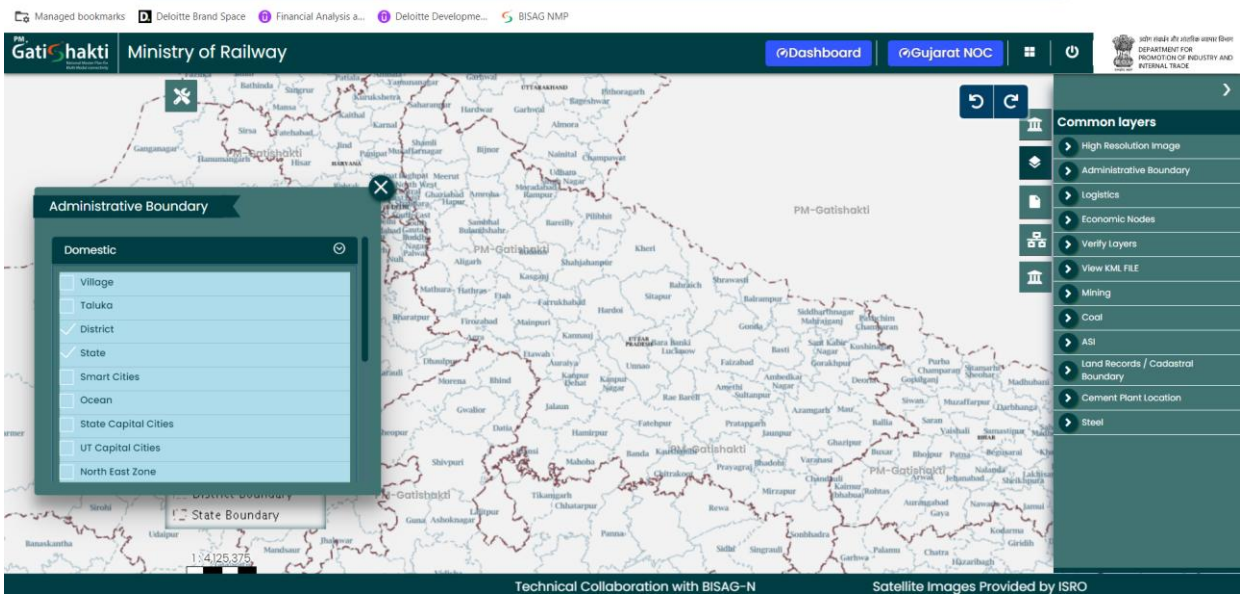
IdentifySymbols
Technical Collaboration with BISAG-N
Satellite Images Provided by ISRO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Cement Plant Location
Steel
Administrative Boundary
Domestic
Village
Taluka
District
State
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State Capital Cities
UT Capital Cities
North East Zone
State Boundary
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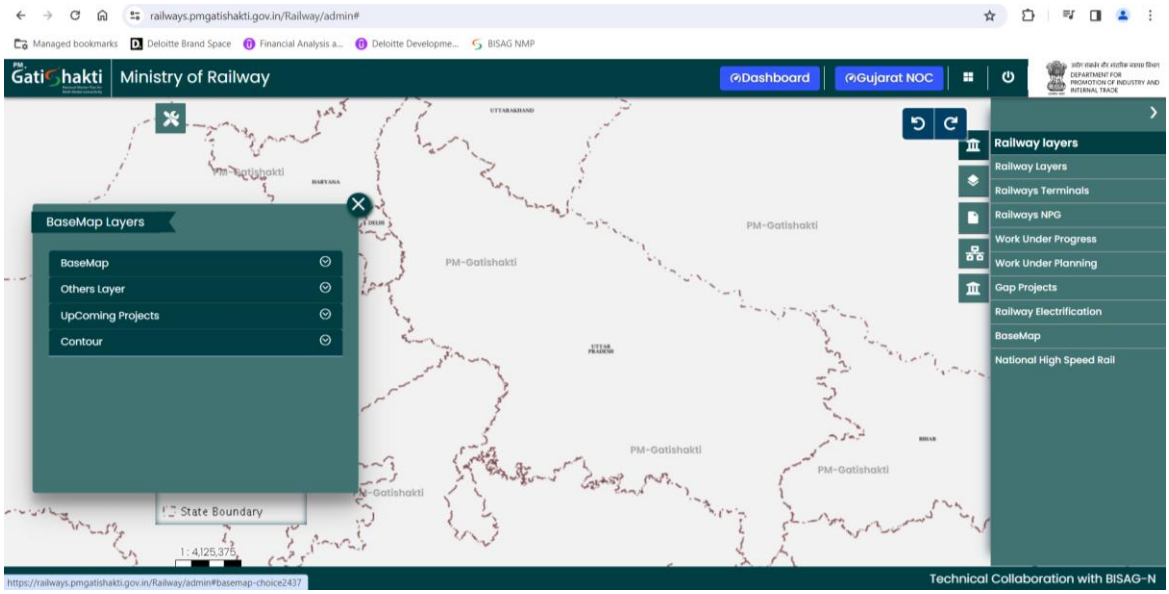
Technical Collaboration with BISAG-N
Satellite Images Provided by ISRO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BaseMap Layers
BaseMap
Others Layer
UpComing Projects
Contour
State Boundary
1 : 4,125,375
Railway layers
Railway Layers
Railways Terminals
Railways NPG
Work Under Progress
Work Under Planning
Gap Projects
Railway Electrification
BaseMap
National High Speed Rail
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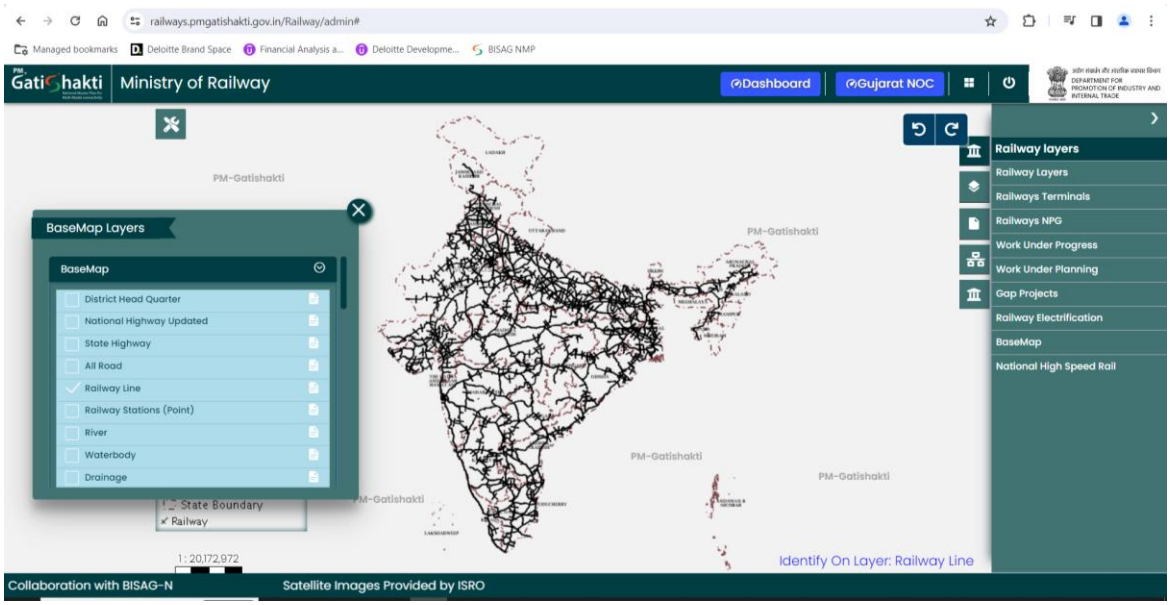
IR network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BaseMap Layers
BaseMap
District Head Quarter
National Highway Updated
State Highway
All Road
Railway Line
Railway Stations (Point)
River
Waterbody
Drainage
State Boundary
Railway
1 : 20,172,972
Railway layers
Railway Layers
Railways Terminals
Railways NPG
Work Under Progress
Work Under Planning
Gap Projects
Railway Electrification
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National High Speed Rail
PM-Gatishakti
Identify On Layer: Railway Line
Collaboration with BISAG-N
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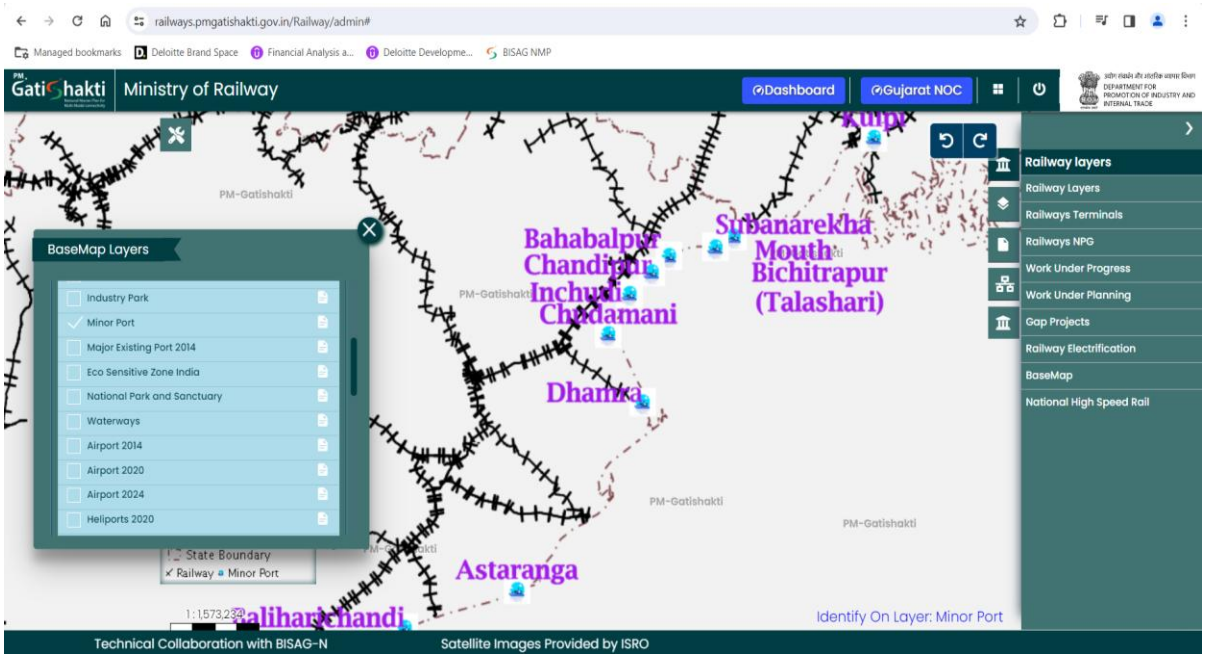
Minor ports



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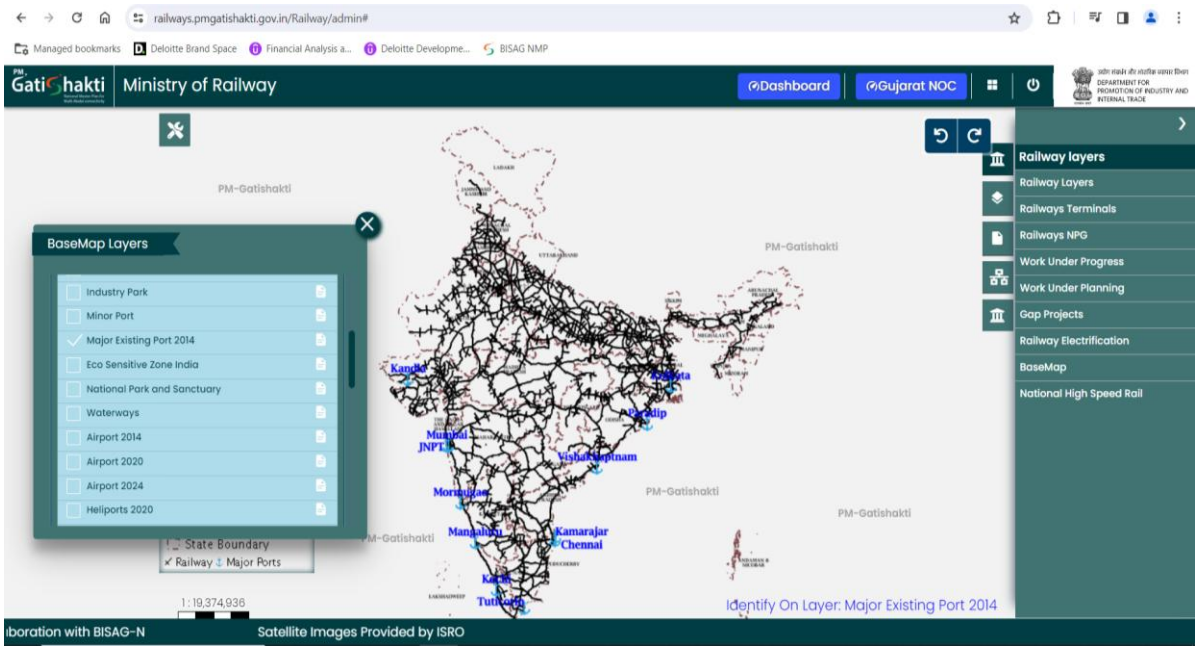
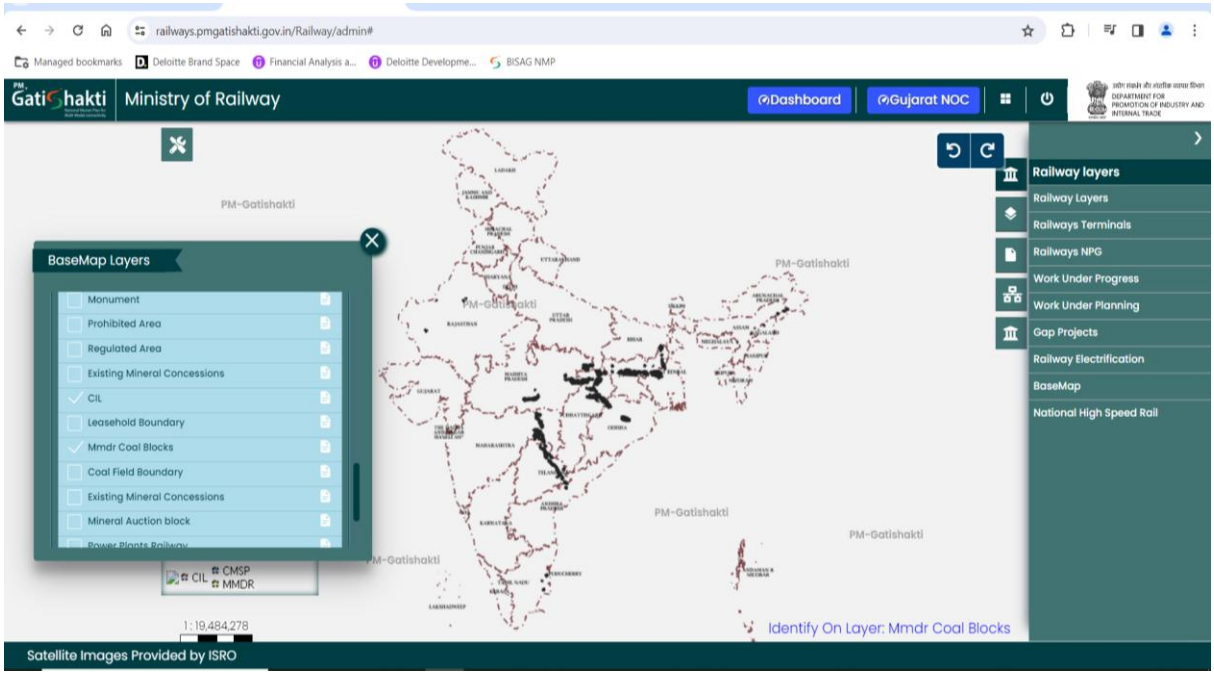


Coal reserves



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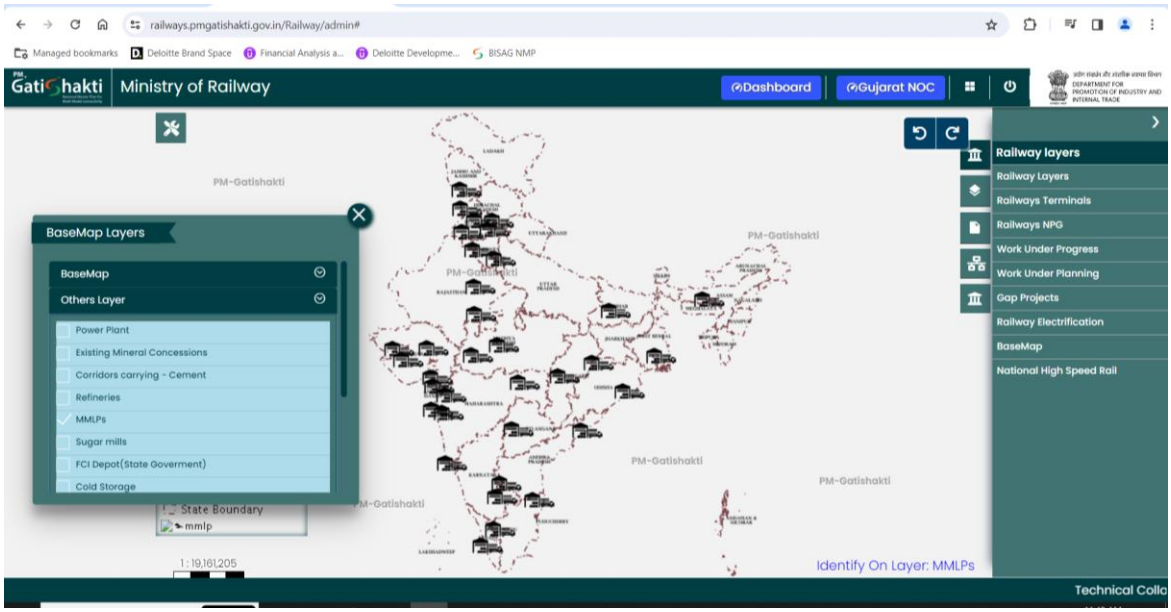
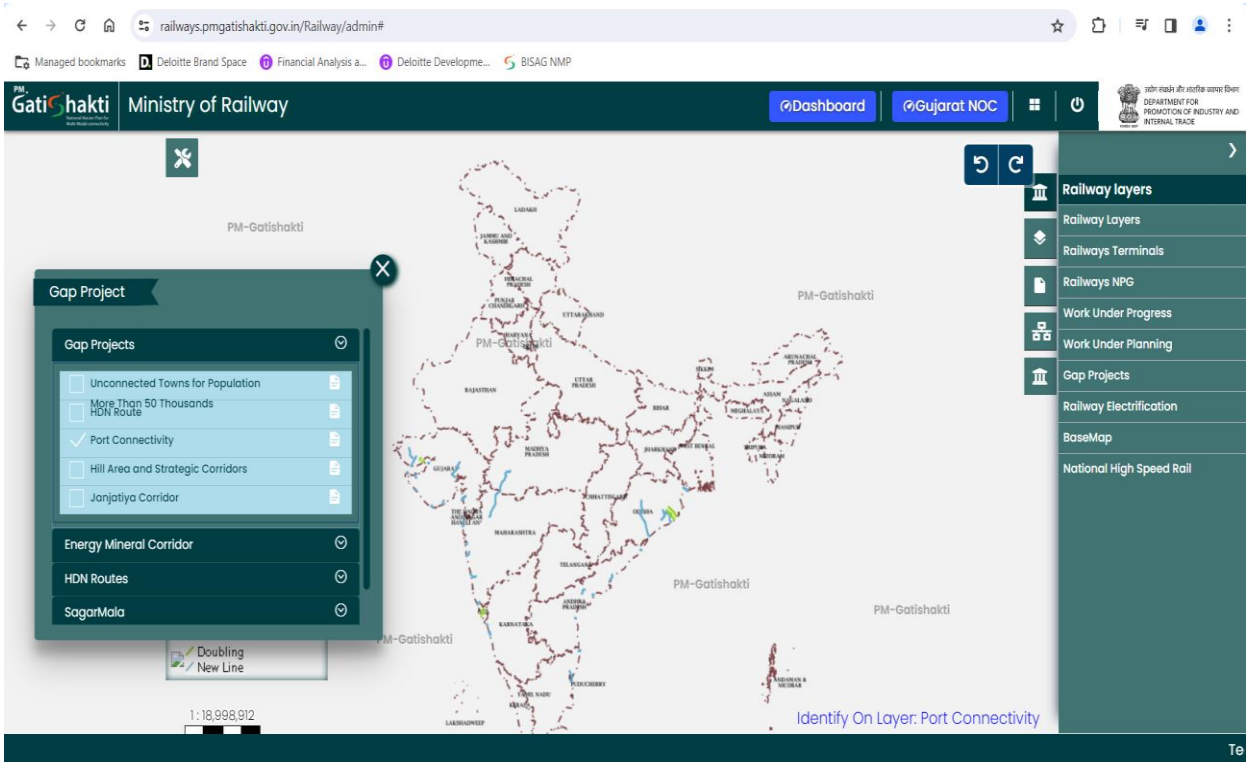
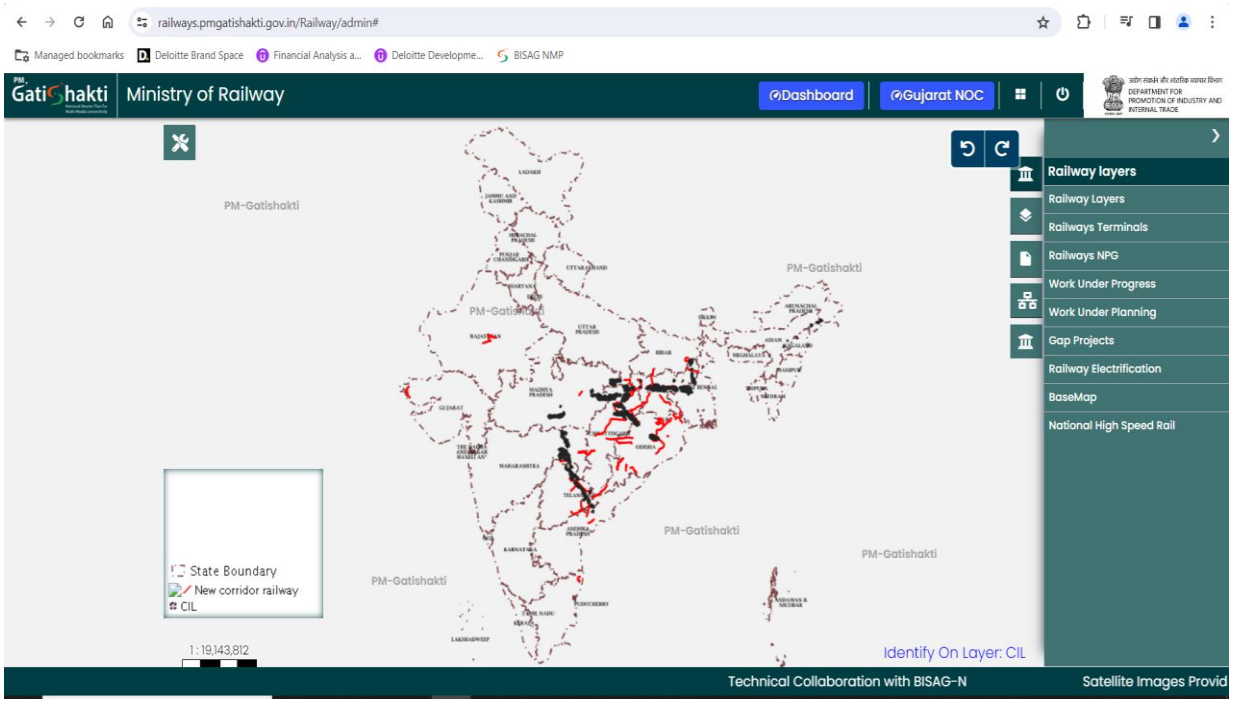


Gap projects



Gap projects with respect to coal reserves



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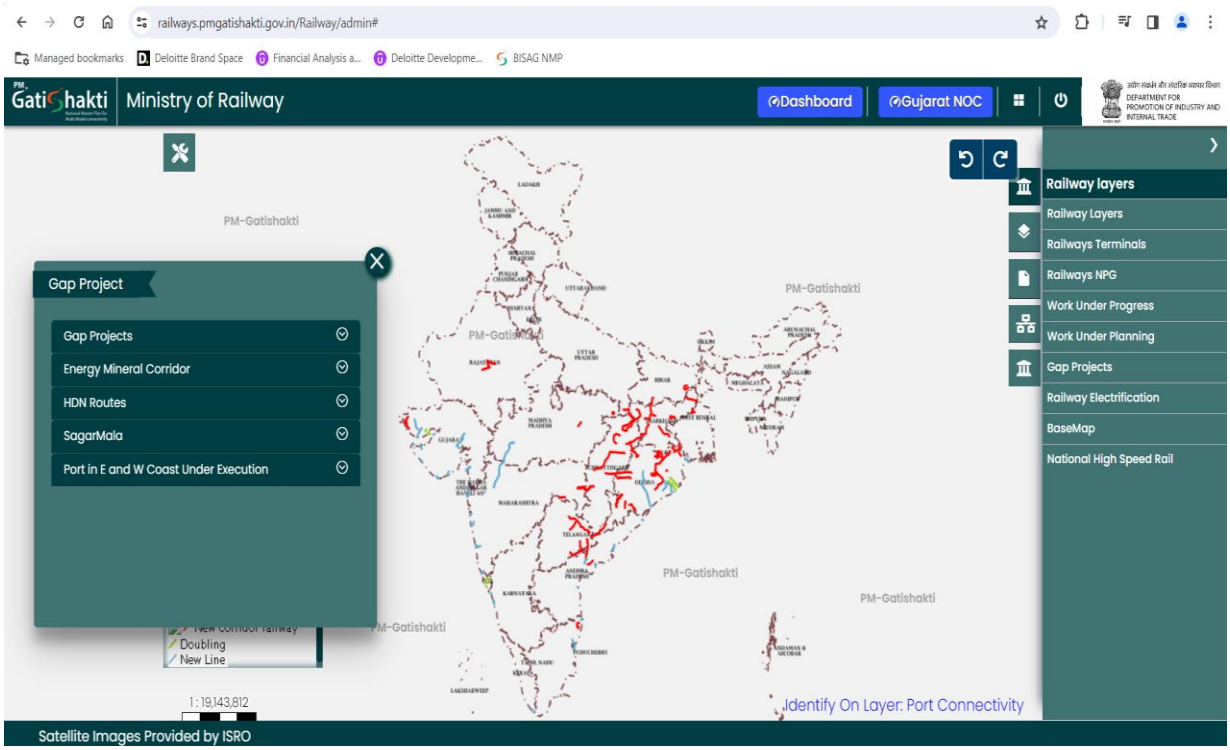

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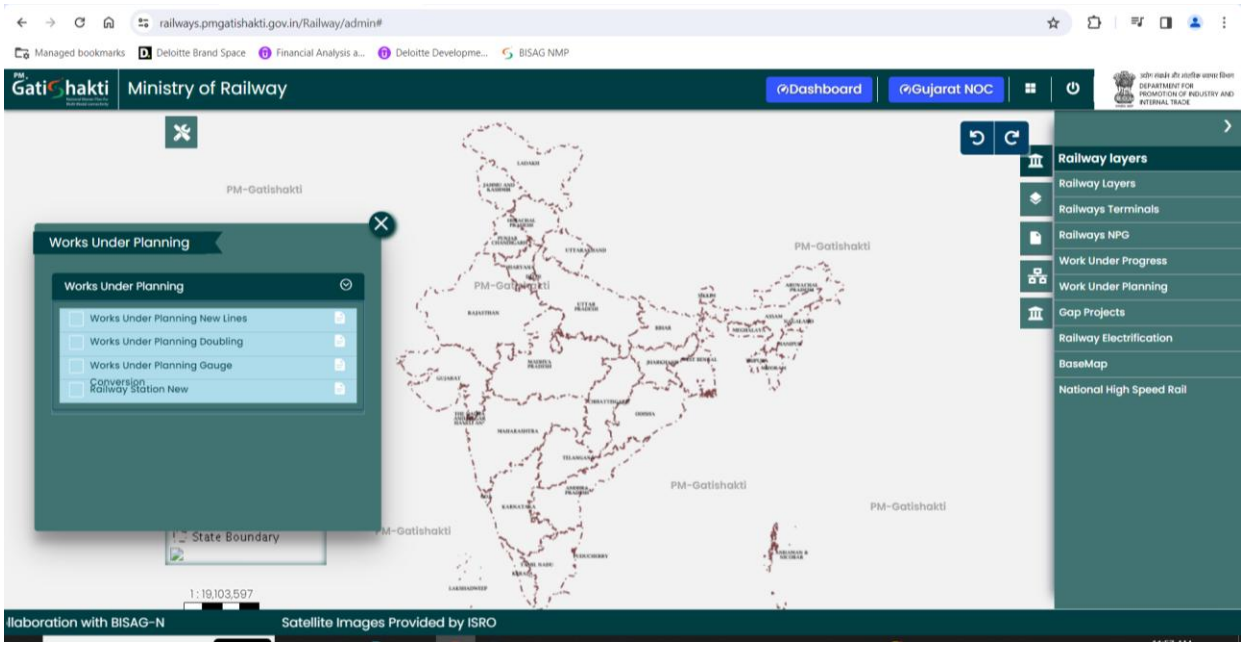

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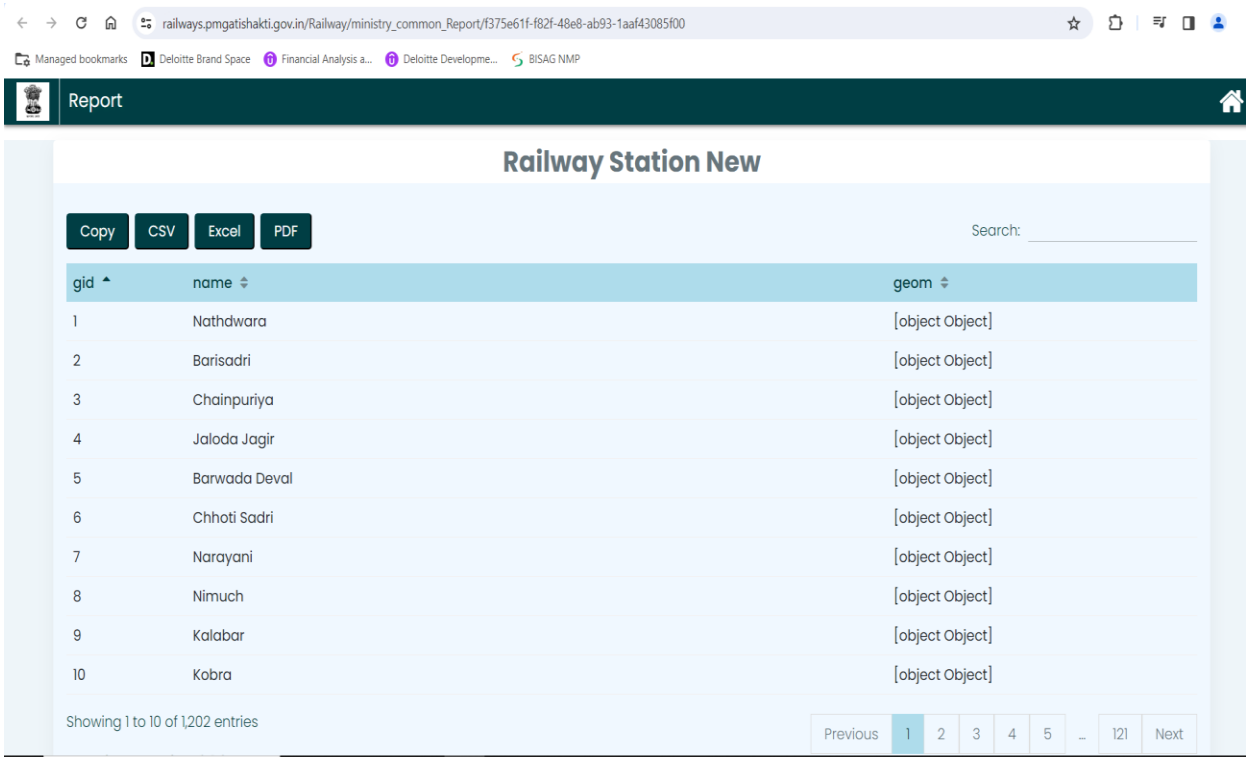

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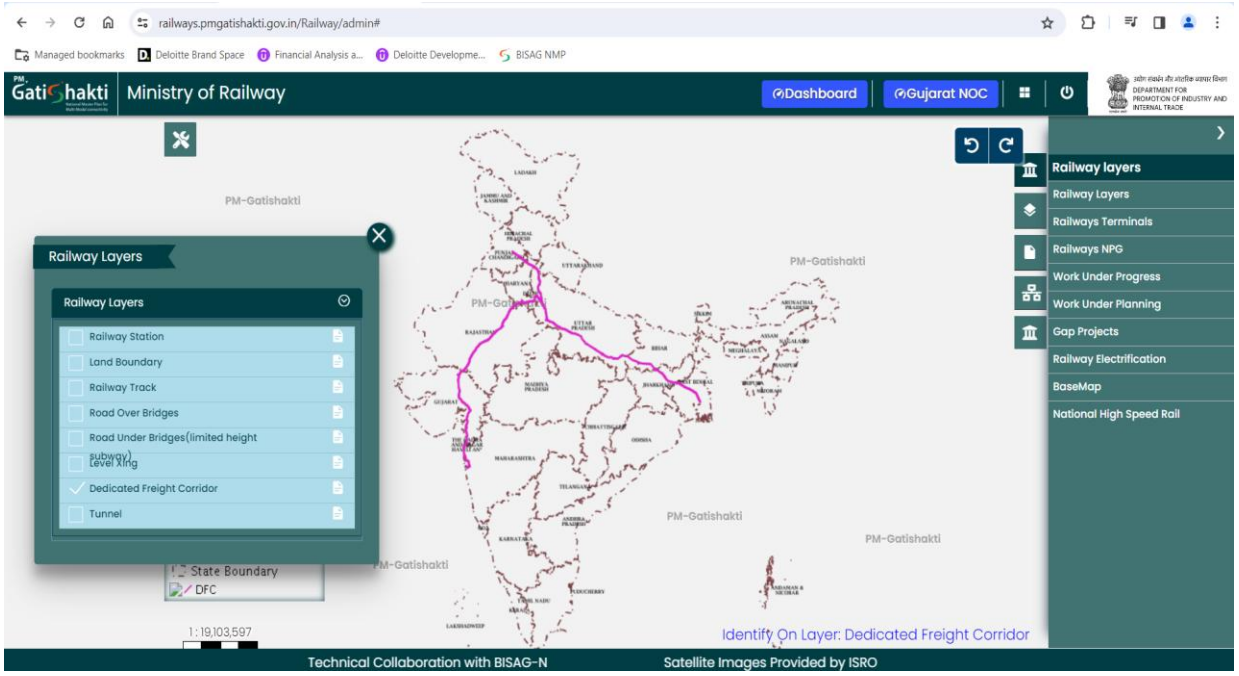
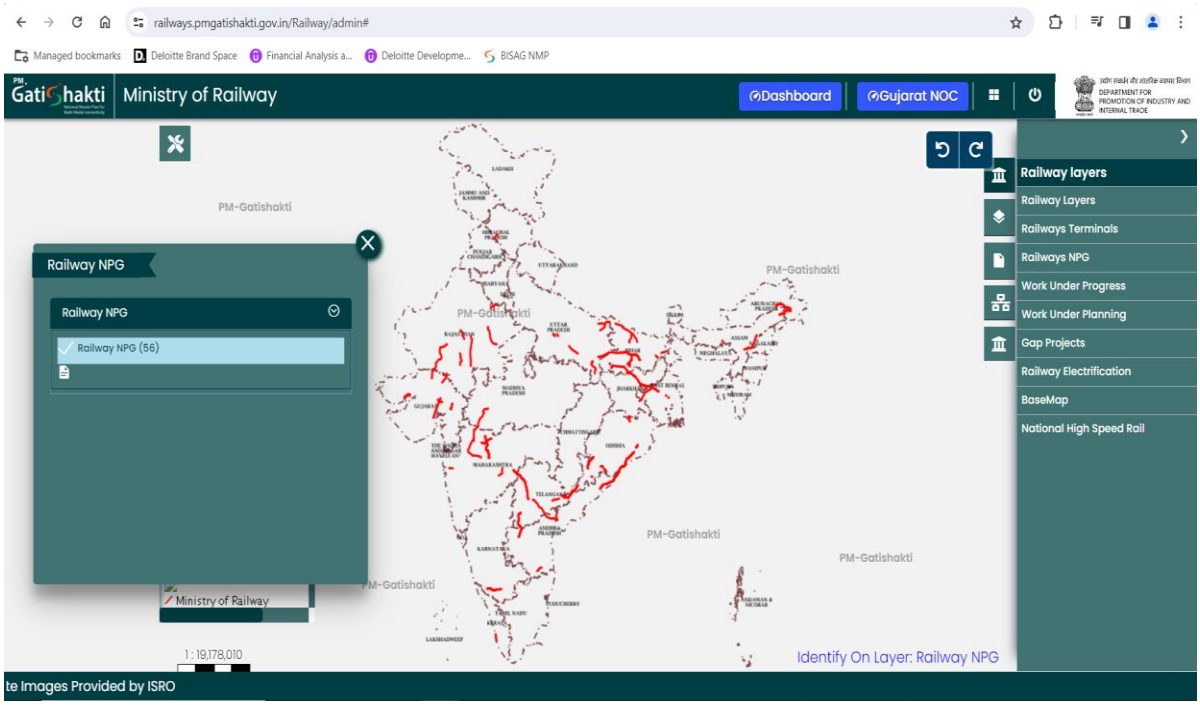


NPG Projects



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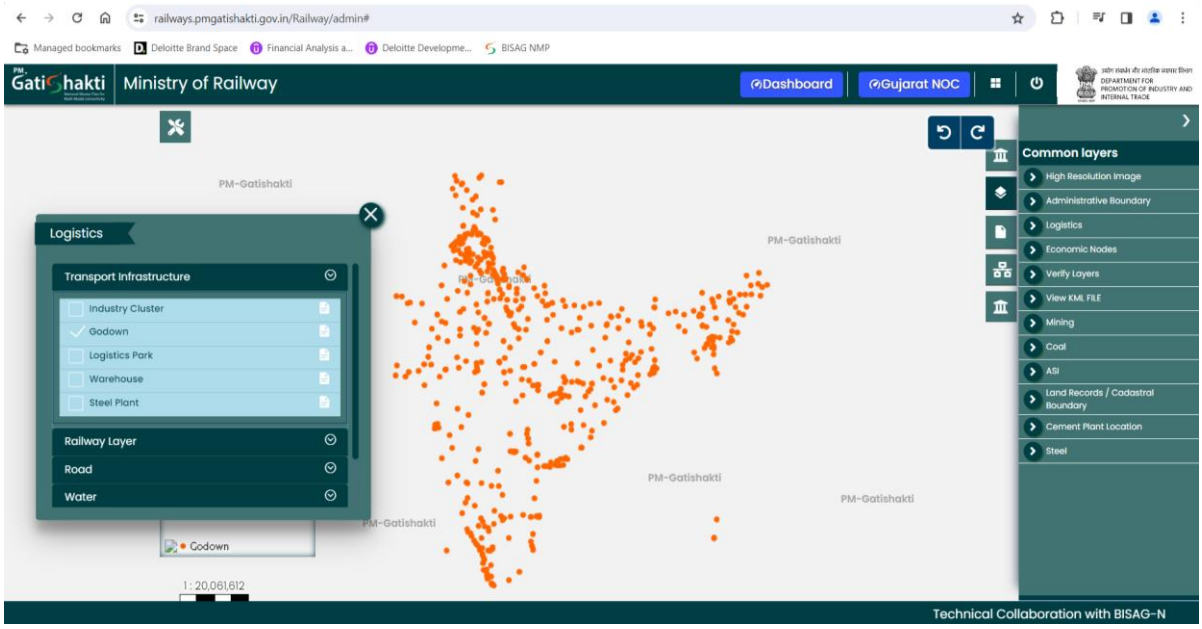

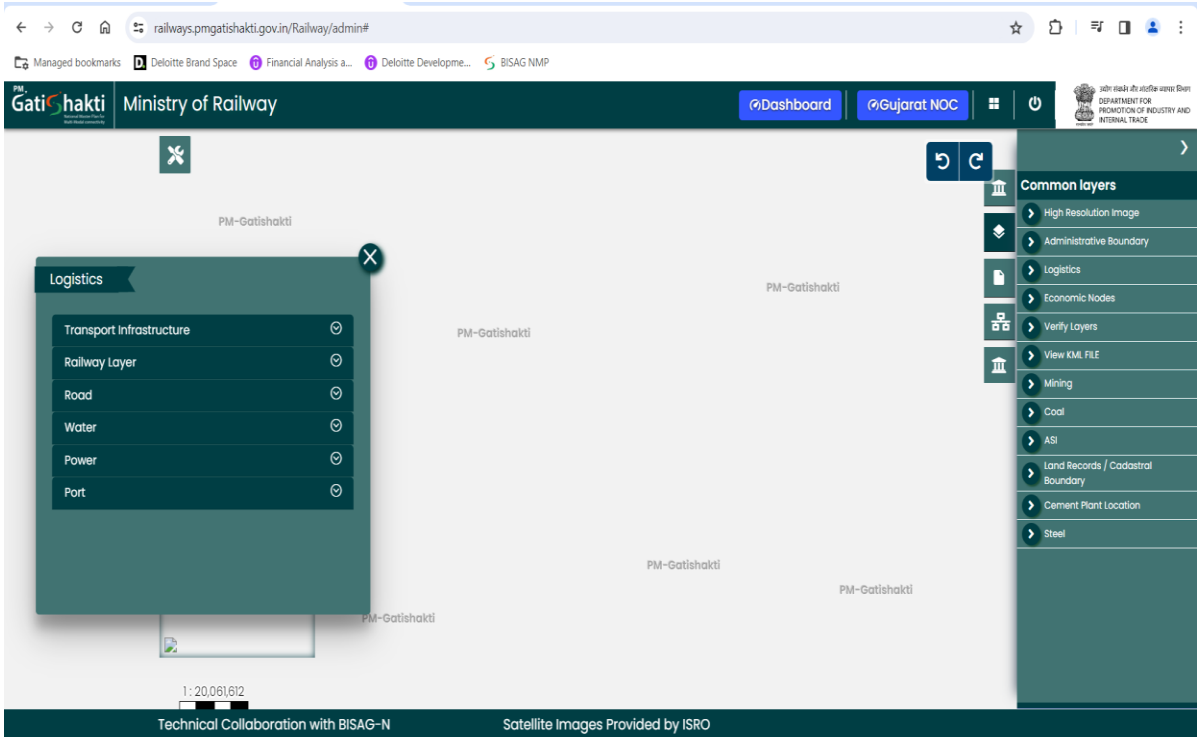
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Power
Port
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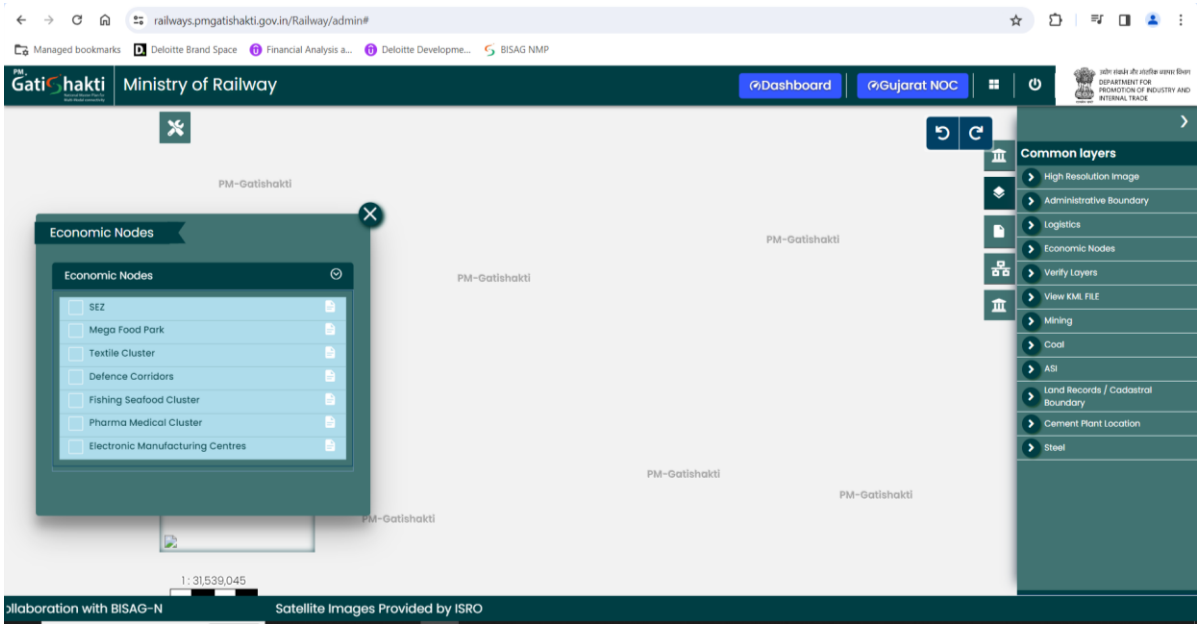
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Economic Nodes
Economic Nodes
SEZ
Mega Food Park
Textile Cluster
Defence Corridors
Fishing Seafood Cluster
Pharma Medical Cluster
Electronic Manufacturing Centres
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1 : 31,539,045
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X. NMP Portal