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भारत 2023 INDIA

सुमिता डावरा, भा.प्र.से.
विशेष सचिव (लॉजिस्टिक्स)
SUMITA DAWRA, IAS
Special Secretary (Logistics)

सत्यमेव जयते

आज़ादी का
अमृत महोत्सव

भारत सरकार
वाणिज्य एवं उद्योग मंत्रालय
उद्योग संवर्धन एवं आंतरिक व्यापार विभाग
Government of India
Ministry of Commerce & Industry
Department for Promotion of Industry & Internal Trade

D.O. No.L-18048/205/2022-Logistics Division   **Dated the 18th December 2023**

Subject: Handbook for District Collector, PM Gati Shakti National Master Plan for Area Development Planning

Dear Sir/Madam,

PM GatiShakti NMP is well established at the Central and State levels and has generated successful use cases across sectors such as urban transport, tourism, roadways, railways, etc., along with the benefits to users. To further enhance PMGS adoption, we are taking the NMP to the district level.

2.   In this regard, a **Handbook for District Collectors: PM GatiShakti National Master Plan for Area Development Approach** has been launched by the Hon'ble Commerce and Industries Minister, on 18th Dec 2023 **(as enclosed)**. The link to access the handbook is provided below:
https://drive.google.com/drive/folders/1QFBo8VaqKWIaF0q9t7dDMkRbskJ1ytnM

3.   This handbook provides a detailed overview of the principles of **Area Development Planning**, and the critical role of **District / Local level administration** in the achievement of the desired objectives.

4.   Intended as a guidebook, it provides a complete understanding of the **roles and responsibilities of stakeholders** at the district / local level, involved in planning and implementation of social and economic infrastructure, for seamless district-level adoption of PM GatiShakti.

5.   In this regard, it is requested that States and UTs appropriately and effectively **disseminate** the learnings of the document to **all districts** through **State Departments** and Advanced Training Institutes (**ATIs**) for effective infrastructure planning through PM GatiShakti National Master Plan.

with regards,

Yours Sincerely

(Sumita Dawra)

Encl.: as above

To:
The Chief Secretaries / Advisor to Administrator
All States / UTs

DEPARTMENT FOR PROMOTION OF
INDUSTRY AND INTERNAL TRADE
MINISTRY OF COMMERCE & INDUSTRY,
GOVERNMENT OF INDIA

PM
Gati Shakti
National Master Plan for
Multi-Modal Connectivity

HANDBOOK
FOR DISTRICT COLLECTORS:
PM GATISHAKTI NATIONAL MASTER
PLAN FOR AREA DEVELOPMENT PLANNING

LOGISTICS DIVISION
DPIIT, MINISTRY OF COMMERCE AND INDUSTRY

"*PM Gatishakti National Master Plan is not only giving speed to the construction of infrastructure but also giving emphasis to* *AREA DEVELOPMENT and PEOPLE DEVELOPMENT*"

Shri. Narendra Modi
Hon'ble Prime Minister of India

Table of Content

Preface

PM GatiShakti National Master Plan (NMP) was launched by the Hon'ble PM on 13th October 2021. It is a **transformative approach** for integrated planning of multimodal connectivity to various economic zones, using technology and innovation. PM GatiShakti is a flagship programme of the Government of India, facilitating the development of Next Generation Infrastructure, Ease of Doing Business and Ease of Living. Two key elements of this programme include: (i) a GIS platform that brings together a National Master Plan (NMP) and (ii) an Institutional framework to drive implementation of planning of multimodal infrastructure connectivity on the NMP.

The PM GatiShakti NMP is a **GIS data-based digital platform**, developed with the support of our technical partner – Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N). In the spirit of **Atmanirbhar Bharat** this platform is developed using ISRO satellite imagery and indigenous data of different Ministries/Departments and States/UTs, to bridge the digital divide.

The GIS platform includes visual depiction of **data layers and attributes** required for project planning and implementation including trunk and utility infrastructure, land use, existing structures (e.g., bridge, railway crossing, a culvert), soil quality, habitation sprawl, tourism sites, forest-sensitive areas, etc. With multiple functionalities and analytical tools available on the platform, it serves as a **data-based decision support system** for infrastructure development that enables critical gap assessment, identification of priority areas, and promoting multimodal infrastructure development.

The **institutional framework** under PM GatiShakti including an Empowered Group of Secretaries (EGoS) at the apex level, a Network Planning Group (NPG) to provide technical inputs, and a Technical Support Unit (TSU) to support the NPG, have been operationalized both at Centre and State level.

As on today, the NMP has been enriched with more than **1450 data layers** and individual portals of **39 line Ministries/Departments** (585)[1] and States/UTs (878)[2], after due cleaning and consolidation. 585 Central Layers = 268 layers of Infra Ministries + 234 layers of Economic Ministries[3] + 83 layers of Social Ministries and **36 States/UTs** have been developed and integrated with the NMP at the backend. These data layers together form the National Master Plan (NMP) and it is being used by various Ministries/

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[1] Out of 585 layers' central layers, 189 layers have been fixed by the Infrastructure Ministries as per the SOP prepared by respective Infrastructure Ministries (Annexure 3).

[2] For identified 30 essential layers, few layers are not applicable for few States/ UTs. For instance, for the land locked States like Bihar, Chhattisgarh, Haryana, etc. the Coastal Regulation Zone (CRZ) layer is not applicable. Therefore, only 1022 layers (of all States/ UTs) are applicable and only 878 layers have been uploaded on SMP portals (Annexure 4)

[3] Layers for Social (83) and Economic Ministries (234) are right now under discussion and SOPs are under development. The layers will be fixed once SOPs are finalized.

Departments and States/UTs for integrated planning and coordinated implementation of infrastructure connectivity projects. This has paved way for enabling **comprehensive socio-economic development in the spirit of Area Development Approach**, across the country.

This **handbook** has been prepared to facilitate the comprehensive understanding and effective implementation of the PM GatiShakti-National Master Plan platform at **district/grass-root level**. It gives an overview of **roles and responsibilities** for government officials, policymakers, and stakeholders who are involved in the **planning and implementation** of infrastructure (social and economic) projects.

A. Background

Since the launch of the PM GatiShakti NMP, various infrastructure Ministries have used the NMP for planning their **big ticket infrastructure**, duly following the principles of GatiShakti, namely: (i) ensure **multimodal connectivity** to various **economic zones**, (ii) address critical infrastructure gaps, (iii) enhance **logistics efficiency** for seamless movement of goods, people and services, (iv) minimise disruptions with **integrated planning** of adequate connectivity in regional (v) align infrastructure planning to avoid duplicity of infrastructure and use infrastructure network for laying of utilities at the same time, (vi) reduce the impact on ecology, (vii) minimize clearances required by **ensure minimum intersection** with existing assets, forest area, etc, thereby avoiding requirement of clearances where possible, etc.

Similarly, **economic and social sector** Departments/Ministries have also subsequently onboarded their assets on the NMP for planning as per **GatiShakti principles**. Today, any infrastructure project relating to connectivity is expected to give connectivity to not just centres of economic growth, such as industrial parks, but also to social infrastructure such as schools, hospitals, *anganwadi* centres, etc. At the same time, the **GatiShakti approach** is helping States/UTs to plan disaster management, location of social sector assets, development of tourism circuits, location of wheat purchase centres, etc., in a manner to give maximum connectivity for the users.

Building upon the **vision** of this programme, and the outputs it has already showcased in the form of the significant usage by both **infrastructure and social sector Ministries/Departments**, and also by States/UTs.

> *"It is envisaged that the objective of developing **infrastructure** to benefit both **economic and social sector** objectives be **integrated** under the concept of an **AREA DEVELOPMENT APPROACH**"*

Accordingly, the Logistics Division of the Department for Promotion of Industry and Internal Trade (DPIIT), along with members of the Network Planning Group (NPG), has undertaken an initiative under PM GatiShakti - the **Area Development Approach** to achieve **comprehensive, holistic and integrated planning around** infrastructure investments.

B. Area Development Approach (ADA)

In line with the directions given by the Hon'ble Prime Minister, holistic and integrated planning of defined areas on PM GatiShakti principles, is being adopted under the **'Area Development Approach'** initiative. Emphasis on the development of **social infrastructure and integrated planning for holistic area-based development**, was also among the various topics taken up during the **Governing Council meeting**, held in May, 23.

*"PM GatiShakti **Area Development Approach** is to plan an infrastructure network for a defined location to achieve the goal of highest logistics efficiency and its holistic economic development."*

Vision- To create **adequate infrastructure** for catalysing **socio-economic development** in a sustainable manner, within a rational geographical location, based on a **convergence approach**.

Focus - On **saturation of the area** with adequate multimodal connectivity infrastructure and **enhanced** last mile **connectivity,** to ease movement of goods and people, promote right modal mix, contribute to **economic & social development**, attract investments in that particular area to fulfil the objectives of **people-centric development**.

It is certain that while developing **major infrastructure** like expressways, freight lines, airports, mega food parks, etc., in any area, related investment plans or development needs for connectivity, skill development centers, agriculture production and marketing facilities, schools, hotels, hospitals, etc. will emerge in the vicinity.

(i)   Key sectors for planning:

Major areas of planning may include **aspects of Infrastructure planning**, **economic analysis**, planning for **social infrastructure, agriculture** and **allied activities, natural resources, tourism**, etc. using institutionalized governance systems at State/District/local levels. The indicative list of key sectors for planning is shown below:

Key sectors of Planning for ADA		
Governance ● State/UT administration ● District Headquarters ● Block/Tehsil Headquarters ● Urban Local Bodies ● Municipal Authorities	**Infrastructure** ● Transport/Connectivity ● Bus Stations/Railway Stations/Airport ● Transmission lines ● Power Grids ● Mobile towers ● Energy ● Water	**Resources** ● Water Resources ● Mineral Resources
Social Infrastructure ● Hospitals/Health Centres/Wellness Facilities ● Schools/Colleges/ Educational Institutions ● Anganwadi Centres	**Economic Activity** ● Industrial Areas/ Economic clusters ● Agriculture & Allied Activities ● Manufacturing units ● Market Areas/ Warehouses /Cold Storage/ Aggregation Centres ● Horticulture & Agriculture clusters for Vegetables & Fruits	**Tourism** ● Tourist places ● Hotels / Rest houses/ Homestays, etc. ● Ropeway ● Recreational ● Sports/Stadium

(ii)   Location Identification

Identification of location will be based on **multiple parameters** such as (i) existing / potential multimodal connectivity; (ii) economic potential (in terms of GDP, investment, EXIM, etc.); (iii) regional and sectoral development priorities; (iv) development activities (economic infra/social infra/industrial); (v) Government schemes (ODOP, Industrial Park, Manufacturing units under Production Linked Incentive (PLI) Scheme, etc.); (vi) availability of usable land; (vii) tourism potential, etc. These locations could be playing **multifunctional roles** including service centres, manufacturing centres, logistics hubs, aggregation centres, etc.

Approach to Location Identification

Organic Clusters	Sector specific clusters	Corridor Approach	Regional Development Priorities
• Existing industrial parks/zones • Urban agglomerations • Logistics hubs (MMPLs, cargo terminals) • Agriculture / Manufacturing zones	• Supply driven – natural endowments • Demand driven - connectivity requirements, greenfield nodes • Cluster development - economic zones, PCPIR	• Influence region development around transport spines.	• Development of North East & Hilly Region

Location identification may be **demand driven or induced**.

- In case it is **demand driven**, infrastructure deficits will be identified and plugged. In addition, development of **economic hubs** with adequate hinterland connectivity, connectivity to major markets, connectivity of EXIM infra (ICDs, CFS, ports), will be facilitated.
- Alternatively, to **induce regional** or area development around certain locations (due to limited investments, difficult geographical terrain, limited natural endowments or availability of skilled manpower), plans will be developed to attract investments and growth opportunities.

Focus will be on creation of **social, economic infrastructure and logistics ecosystem** (MMLPs, warehouses, townships, rapid transport systems, centres of excellence for R&D, lab infra, skill and training centres, etc.) in an optimum and comprehensive manner.

The **identified strategic locations** could be an area of **approximately 150-200 sq. kms** where existing significant economic activity already exists or is projected to have high economic potential. **Schemes of the Government of India** (for e.g., the One District One Product) may be mapped by Districts on the NMP to identify potential locations of economic development and infrastructure gap and deficits can be analysed. These locations can be targeted for planning infrastructure that will enhance **last mile connectivity** and ensures **adequate infrastructure** to support their marketing and development.

C. Approach to Development of Area Development Plan – Emerging Models:

In the work done by the **Network Planning Group** (NPG), so far, following models for driving Area Development Approach have emerged:

o **Around Major Infrastructure Projects** – e.g., Development of locomotive hub in Dahod, Gujarat by Ministry of Railways;

o **Industrial Area Development** – e.g., mega food parks, pharma & medical devices parks, MITRA parks, etc.;

o **Around Greenfield projects** – e.g., Development of Vadhavan port area by MOPSW and development of Bichom Dam area as a Tourist site by Government of Arunachal Pradesh.

It is believed that in case of **major infrastructure** works funded by Govt. of India, the Ministry would have already developed close working relationship with relevant State Government departments and with district level authorities to be able to drive the **Area Development Approach around the major infrastructure investment** in a meaningful manner.

It is also recognised that major role can be played by States/UTs and District authorities **in planning, executing** the Area Development Approach. Hence, the other model for driving the Area Development Approach would be through projects identified by State Departments around States/UTs funded infrastructure works, or by District Administration in various clusters of Gram Panchayat/Municipal Areas, following the principle of roughly **150-200 sq. km area** as per administrative convenience.

Major dimensions of planning around these locations will include aspects of **multimodal infrastructure** planning, **last and first mile** connectivity, **logistics facilities**, proximity to source of **inputs / consumption / aggregation centres**, accessibility of **skilled manpower**, development of **social infrastructure**, etc., using institutionalised governance systems at State/District/local levels. An array of information is needed at States/UTs & District/local level to develop such holistic plans.

Based on **analysis of the on-ground scenario**, economic potential, existing infrastructure gaps, training needs, requirements for **economic restructuring** and social inclusion, urban and town planning, and **future demand projections**, various project proposals pertaining to **governance, economic and social infrastructure, commercial activity**, development needs, tourism, etc. will be identified as part of the Area Development Plan. For instance, if a tourist site is the location chosen for area approach, in its planning stage various other related projects such as development of connectivity, homestays, ropeways, restaurants, etc. will also be identified.

Post determination of a concrete number of projects to be undertaken under different heads, and consultations with implementing agencies for **project feasibility and prioritization**, a

comprehensive implementation plan, including timelines, monitoring framework, role of different stakeholders, will have to be developed for each Area. For ease of implementation, project prioritisation or phasing may be done in consultation with concerned stakeholders.

D.   Availability of Spatial Data Infrastructure using PM GatiShakti NMP

The PM GatiShakti NMP/SMP portals are continuously **enriched with geo-tagged data**[4] and attributes (aggregated and disaggregated individual data sets; spatial and attribute related line Department data; criteria-based data; satellite images; digital cadastral maps, city survey maps, etc.), relevant for project planning and implementation. The data is cleaned, standardised and the GIS layers are created for Ministries/Departments /States/UTs.

On these modules, various **functionalities are available** [spatial application models, dynamic multipurpose geospatial data bases (Departmental assets / schemes; demographic data), mobile applications, tools]. Using these functionalities and tools, and data available on the portals, drafting of the area development plan will be done using the NMP/SMP.

E.   Adoption of PM GatiShakti at the grass-root/district level

PM GatiShakti NMP has been effectively adopted at central and State level. During this process, a need has been felt for **active involvement** of different institutions at the grassroots level. The active participation of central, state, and district-level authorities becomes crucial in enhancing the NMP/SMP platform and ensuring its widespread implementation.

District Collectors possess a unique and comprehensive understanding of their respective districts, including their priorities and infrastructure requirements. They hold valuable knowledge about the specific challenges and needs of their districts and can also verify data at the grassroots level. This underscores the pivotal role played by District Collectors in promoting the adoption of PM GatiShakti at the grassroots level.

*For example, in the event of a disaster warning requiring evacuation, the District Collector can utilize the PM GatiShakti portal to analyze the situation and create an effective evacuation plan for the area, thereby minimizing potential losses. Likewise, it will promote **realistic scenario building** based on infra gaps / deficits at grassroot level and **comprehensive area-based development**.*

For instance, with the onboarding of District Collectors/Municipal Commissioners and their regular usage of PMGS portals for planning, **enrichment of portals** will become demand-driven, data requirements according to their planning needs will be conveyed to State Officials (as per Departmental / Institutional hierarchy), who will in turn facilitate data uploading using the

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[4] Data and attribute maps are superimposed on geo- referenced satellite data (Base map on 1:5000 scale for rural areas and 1:1000 for urban areas in GIS environment).

existing institutional mechanism, State Master Portals (SMPs) and engagement with the DPIIT, BISAG-N and other stakeholders at the Central level.

F. Convergence with Aspirational District Programme

Aspirational Districts Programme aims to achieve the comprehensive **socio- economic development** of 500 under developed Blocks. The objective is to reaching the last mile through **convergence, collaboration and competition**. Time bound block specific action plan for the next 2 years. Special focus to be given to marginalized communities, tribal population. To **focus** on **improving governance to enhance the quality of life** of citizens in the most difficult and underdeveloped blocks of India

It is understood that **Aspirational Districts/Blocks Programme** has **05 major themes** (Health & Nutrition, Education, Agriculture and Allied Services, Social Development and Basic Infrastructure) having **39 Key Performance Indicators** (KPIs).

In this regards, a thorough analysis was conducted to gauge the availability of data layers on the NMP that align with these **KPIs**. The findings revealed that data layers out of the **39 KPIs**, **various data layers** already have corresponding data layers accessible on the NMP. This integrated data and relevant attributes will be helpful for **effective planning and decision-making** of **socio economic development** in the region.

As of now, various Ministries/Departments are using PM GatiShakti NMP tools for development of various assets such as **Ministry of Women and Child Development (MoWCD)** is utilizing site suitability tool, Query based gap analysis tool for the identification of locations of new anganwadi, road connectivity proposals are being developed simultaneously, etc. At the same time, *poshan* tracker has been developed for data collection regarding nutrition of children and other parameters for Anganwadi centres under mission *poshan*. Integrating the *poshan* tracker with PMGS portal will enable monitoring of each AWC on nutritional levels, while also enabling analysis of infrastructure deficits that might be impacting nutritional gains of children and women.

Similarly, **Department of School Education and literacy (DoSEL)** is utilizing **Query-based Gap Analyzer tool** on PM GatiShakti to assess the first and last-mile road connectivity, power line distribution, drinking water access, and sanitation infrastructure in proximity to the nearest education infrastructure, as a part of a comprehensive use case and identification of **suitable sites for new schools** using site suitability tool.

Therefore, integrating **PM GatiShakti National Master Plan (NMP)** with **Aspirational Districts/Blocks Programme** will be beneficial for **better planning, governance and collaboration** between different Ministries/Departments by leveraging geospatial technology and data available on NMP portal (agriculture, schools, hospitals etc.) for strategically planning and executing development initiatives in aspirational blocks and accordingly, develop the Block Development Strategy.

G. Institutional Mechanism for District Level Planning and Appraisal:

Institutional strengthening: A District Coordination Committee is proposed to be established with ToR and composition mentioned below-

a) Proposed Terms of Reference of the District Coordination Committee:

1. **Visualization** of PM GatiShakti NMP.
2. Adoption of PM GatiShakti National Master Plan for **project planning and implementation at District / Local level**.
3. **Inter-agency coordination**.
4. **Resolution of issues raised** by project implementing agencies including land acquisition, clearances, utility shifting coordination, administrative support etc.

b) Composition of the District Coordination Committee:

S. No	Officer	Role
1.	District Collector	Chairperson
2.	Divisional Forest Officer (DFO)	Member
3.	CEO - Zila Parishad / Additional Collector, Rural Development	Member
4.	Additional Collector, Revenue	Member
5.	Commissioner- Development Authority/ Municipal Commissioner	Member
6.	District Land Acquisition officer	Member
7.	District Transport officer	Member
8.	Executive Engineer (EE)- NH, PWD, WRD, energy, DWSS	Member
9.	District level officers from town planning, health, education, mines, maritime and IWT.	Member
10.	General Manager- District Industries Centre	Member
11.	Representatives of Project Implementing Agency(s)	Member
12.	District Informatics Officer (DIO)- National Informatics Centre (NIC)	Member
13.	Any other officers from PM GatiShakti perspective, nominated by Chairperson.	Member
14.	Two to four representatives from industry and logistics service provider / associations, to be nominated by Chairperson.	Member

* Chairperson will nominate a suitable member as Convener.
** Any other member may be co-opted by the Chairperson.
***Roles and responsibilities of various stakeholders (Annexure 1)

i. Resources at District level:

At the district level, **District Informatics Centers (DIC)** of NIC may be designated as district resource agency. BISAG-N is the apex national institute can build capacities of officials and professionals of the District NICs. District NICs can be enabled for data uploading and updation and promote adoption of NMP in project planning and implementation. District NICs to provide **technical support and coordination** with BISAG-N. This will facilitate quick and easy access to information by District Officials who will be trained to visualize data layers, and use the NMP for **infrastructure planning and implementation**. In addition, resolution of issues including land acquisition, clearances, utility shifting coordination, administrative support etc., can be expedited and time bound project implementation can be facilitated. **Training and capacity building** of the **Committee members and concerned Officials**, along with support for **geo-tagging of data** will be facilitated by the Logistics Division with support of BISAG-N.

ii. Capacity building at District/ULB level:

Significant resources are being made available to **ULBs and RLBs for capacity building**, IT support and manpower under 15th Finance Commission Grants. MoHUA and M/o Panchayati Raj may issue suitable instructions to create a pool of professionals at ULB/ Zila Parishad level to augment GIS based planning. A team of **dedicated personnel** may help in viewing of **GIS data layers, regular updation, creation of new data layers** and also for adoption of various tools for social sector and infrastructure planning.

iii. Pilots undertaken by BISAG-N:

Convergence of different **institutionalised governance** systems upto district level has been successfully illustrated by the **State of Gujarat**. Individual portals for Gujarat's district and block level master planning have been developed to enable convergence in planning using data-based decision support system. A pilot for **State of Uttar Pradesh** has also undertaken. Individual district level portals for **75 districts have been developed**. Schemes such as development of Anganwadi Centres, Jal Jeevan Mission, Poshan tracker, etc., have also been integrated with these portals for **people-centric holistic development**.

Similarly, the following **example** from Bichom, Arunachal Pradesh, Dahod district, Gujarat, Sharvasti, Uttar Pradesh illustrates the utility of the NMP/SMP in **development of spatial plans**. (Annexure 2)

Using the **data-based decision support system** of PM GatiShakti NMP/SMP, spatial plans for **comprehensive infrastructure connectivity**, assessment of **existing infrastructure** (need for capacity augmentation or new projects); **critical infrastructure deficits /gaps** (last and first mile and /or multimodal connectivity gaps); **social/economic infrastructure requirements** (development of assets such as tourist places, storage centres, schools, townships, skilling centres, etc. and / or connectivity to social/economic assets), can be developed under ADA.

H.   Expected Outcomes and Benefits:

➢ **Social and economic benefits** such as infra connectivity of remote areas; site suitability; better utilization of existing assets; improvement in maternal health; literacy rates; etc.; will be ensured.

➢ **Comprehensive development** of area/locations, adequately equipped with passenger and freight connectivity infrastructures, accessible social sector assets, townships, and decongested cities, will create massive employment opportunities and reduction of migration and family distress especially in remote and economically weaker parts of the country.

➢ **Effective implementation** of existing schemes and programmes such as ODOP through integration with PMGS (700+ export plans to promote district as export hubs can be integrated with PMGS) can be leveraged.

➢ With **domain knowledge and grass-root level adoption**, all GIS data will be brought on a single platform. Wider adoption will promote faster and accurate decision making & improved planning, thereby reducing project pendency, time, and cost overruns.

I.   Way Ahead

With the objective of **holistic, integrated** development of the area it is important to encourage the adoption of PM GatiShakti at the **grass root/district level**. The key principles of Centre-State Coordination under PM GatiShakti model may also be **effectively utilized** by States at the district/ local level to ensure that **projects planning and implementation** will be in **fast-track mode**.

On the lines of National Master Plan / State Master Plan, **District Master Plans (DMP)** for all **700+ districts** will be developed with support of BISAG-N, for effective implementation of the ADA. More than **1500 Senior District Level Officers** will be onboarded, with systematic capacity building, using audio-visual content. Usage, authentication, and augmentation of **GIS district level data layers**, will be done by **District Level Officers**. In addition, gap analysis/site suitability/ connectivity planning / performance assessment/ dashboards, etc. tools, will be developed on the NMP/SMP/DMP portals based on problem statements of **District Level Officers**.

It will facilitate holistic planning based on **infra gaps/deficits** at **grass-root level** and **comprehensive area-based socio-economic development**.

Steps to be proposed at **district level** are :-

➢ Creation of Login credentials (username and password) for all District Collectors (DCs)

➢ Sharing of **Data** available on National Master Plan and State Master Plan portals (existing Centre and State/UT data layers).

- Sharing of existing **tools** (Annexure 5) on district level portals, immediately after individual portals are developed.

- Development of **additional tools**

- **Training & Capacity Building** of DCs with support of BISAG-N

- Sharing **best practices / use cases** on adoption of PM GatiShakti in infrastructure and social sector planning.

Annexure 1 - Roles & Responsibilities of Stakeholders

This section details the roles and responsibilities of all stakeholders for effective functioning of the PM GatiShakti. An indicative list of roles and responsibilities* of stakeholders is given in the table below:

Role	Stakeholder(s)	Responsibilities
Facilitation & Coordination	Logistics Division, DPIIT (a PMU will be established)	• Facilitate necessary coordination among concerned ministries/state governments/stakeholders. • Consultations with Subject Matter Experts; Spatial Planning Institutes; Think Tanks, etc. for knowledge building; • Promote adoption of NMP; facilitate uploading data on NMP; trainings and capacity building; • Screening of proposals / projects (using the existing institutional framework at Central and State level); • Monitoring implementation of projects through PMG.
Planning & Digital Partner	BISAG-N	• Development of District Master Plans; • Using NMP/SMP, identification of locations and Development of spatial plans in consultation with line Ministries, States/UT administration, District Headquarters, Block/Tehsil Headquarters. • Training and capacity building; • Facilitate implementation of plan and quality management.
Execution/Implementation & Monitoring	• Nodal officers of line Ministries; • State/UT administration	• Adoption of PM GatiShakti National Master Plan (NMP) for project planning and implementation at District / Local level. o At the district level, District Informatics Centers (DIC) of NIC & other similar agencies, may be designated as district

	• Heads of industrial clusters (SEZ / Industrial nodes / Parks, etc.) • District Headquarters • Block/Tehsil Headquarters • Urban Local Bodies; • Municipal Authorities	resource agency. BISAG-N can build capacities of officials and professionals of the District NICs. o Support in Planning (information sharing, mapping data on NMP/SMP portals, onboarding remote sensing agencies, district informatics centres, etc.). o Inter-agency coordination. • Identification of infrastructure gaps and deficits, social sector assets, logistics facilities, etc., to be developed; o Project prioritization; o Project implementation and monitoring; o Facilitate resolution of issues including land acquisition, clearances, utility shifting coordination, administrative support etc.

Note-

➢ *For continuous capacity building and training sessions, demonstration on layers and use of NMP, the District Information Centres (DIC) can be augmented.*

Annexure 2 - Examples of districts adopting Area Development Approach

Use Case 1- Unleashing Tourism, socio-economic development, and Empowering Communities around Bichom Dam, Arunachal Pradesh

Project Brief:

Enhance last-mile connectivity for Bichom Dam, a hydroelectric power generation facility, by adopting **Area development approach**. The aim is to **promote comprehensive, holistic, and integrated infrastructure development** with a view to harness the **potential of tourism** and **economic potential** in the region.

Problem Statement:

Bichom dam is situated in the remote hinterlands of West Kameng district in Arunachal Pradesh, characterized by **limited accessibility** and **minimal integration** with the **social and economic centres** of the region.

This area has **huge tourism potential** and remained untapped due to the following-

- Challenges in **last mile connectivity** and basic amenities.
- Availability of **aggregation centres/mandis** and storage facilities, etc.
- Absence of **essential social infrastructure** such as schools and health centres etc.

Usage of PM GatiShakti National Master Plan:

The PM GatiShakti National Master Plan (NMP) has facilitated the identification and implementation of over 190 projects in the dam area and its surroundings. These projects include multi sectoral approach for connectivity and socio economic development. Identification of new roads for unconnected villages, the development of homestays and horticulture Cluster.

Figure 1 Identified Road projects using NMP

Possibilities of Water Sports activities, wellness centers, handicraft parks and logistics infrastructure etc. was also planned using PM GatiShakti NMP.

To plan and execute these projects effectively, various tools such as proximity analysis, detailed project reports (DPR)and shortest distance were used. Additionally, on site verification, discussion with district officers and local people were also conducted.

Figure 2 Proposed tourism activities in and around Bichom dam using NMP

Expected Impact:

- Provide last mile connectivity to tourist circuits, homestays, areas of agriculture & horticulture production such as Apples, kiwis etc., thus **bringing access to markets.**
- Planning of infrastructure in **inaccessible areas** especially near Bichom dam became easy.
- Reduction in time of Planning from 6 months to 1 month including field survey.

Use Case 2- Revitalizing Shravasti district with an objective of holistic development of the area by using area development approach in Uttar Pradesh

Project Brief:

Shravasti is a north eastern district of Uttar Pradesh, which is **one of the 112 aspirational districts** identified under Aspirational Districts Programme (ADP).PM GatiShakti NMP is being used for **rural area development** approach keeping agriculture as the key sector.

Problem Statement:

Shravasti being a border district in Uttar Pradesh has some socio-economic issues regarding underutilized agricultural resources. Despite its **agricultural potential**, the district faces a decline in agricultural productivity. Hence boosting the agriculture sector is critical for the **comprehensive development** of the district.

Usage of PM GatiShakti (NMP):.

Using PM GatiShakti National Master Plan (NMP) platform, an area development approach was prepared for catering the agriculture issues within the district. The visualization of available data layers, helps in identifying various projects such as- **last-mile connectivity gaps** to rural areas, **suitable locations** for cold storage units and warehouses, various **infrastructure projects**, like location of water storage facilities, irrigation systems and canals.The PM GatiShakti platform revealed disparities in access to banking facilities in areas with high population densities and vice versa. This was thoroughly analyzed using the portal, facilitating the need of new banking facilities based on demographic data.
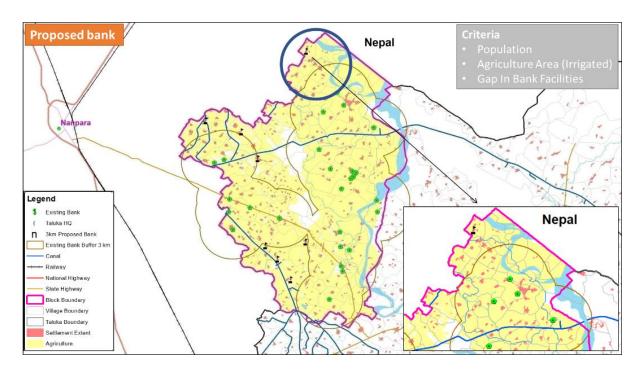
Figure 1 Proposed banking facilities in shravasti district using NMP

Additionally, the PM GatiShakti NMP played a crucial role in identifying the locations for establishing Skilling Centers, such as Krishi Vigyan Kendras (KVKs), schools, and youth skilling centers. Uncovered villages without 4G saturation were also identified using NMP.
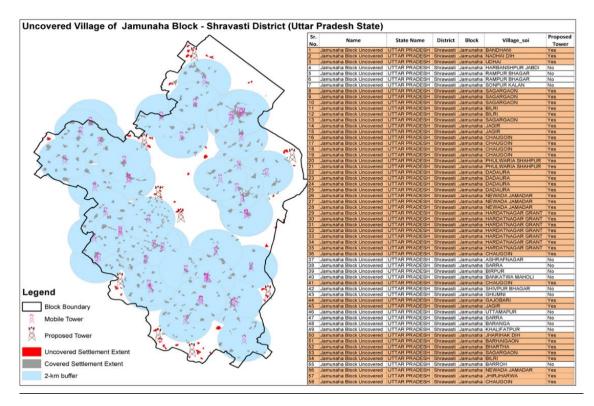

Uncovered Village of Jamunaha Block - Shravasti District (Uttar Pradesh State)

Sr. No.	Name	State Name	District	Block	Village_soi	Proposed Tower
1	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BANDHANI	Yes
2	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	NADHAI DIH	Yes
3	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	UDHAI	Yes
4	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARBANSHPUR JABDI	No
5	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	RAMPUR BHAGAR	No
6	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	RAMPUR BHAGAR	No
7	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SONPUR KALAN	No
8	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SAGARGAON	Yes
9	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SAGARGAON	Yes
10	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SAGARGAON	Yes
11	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BILRI	Yes
12	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BILRI	Yes
13	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SAGARGAON	Yes
14	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	JAGIR	Yes
15	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	JAGIR	Yes
16	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
17	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
18	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
19	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
20	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	PHULWARIA SHAHPUR	Yes
21	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	PHULWARIA SHAHPUR	Yes
22	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	DADAURA	Yes
23	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	DADAURA	Yes
24	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	DADAURA	Yes
25	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	DADAURA	Yes
26	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	NEWADA JAMADAR	Yes
27	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	NEWADA JAMADAR	Yes
28	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	NEWADA JAMADAR	Yes
29	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
30	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
31	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
32	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
33	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
34	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
35	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	HARDATNAGAR GRANT	Yes
36	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
37	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	ASHRAFNAGAR	No
38	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SARRA	No
39	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BIRPUR	No
40	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BANKATWA MAHOLI	No
41	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes
42	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SHIVPUR BHAGAR	No
43	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	GHUMNI	No
44	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	GAJOBARI	Yes
45	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	JAGIR	Yes
46	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	UTTAMAPUR	No
47	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SARRA	No
48	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BARANGA	No
49	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	KHALIFATPUR	No
50	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	JHARIHAK DIH	Yes
51	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BARHAIGAON	Yes
52	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BHARTHA	Yes
53	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	SAGARGAON	Yes
54	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BILRI	Yes
55	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	BARROH	No
56	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	NEWADA JAMADAR	Yes
57	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	JHIRJHARWA	Yes
58	Jamunaha Block Uncovered	UTTAR PRADESH	Shravasti	Jamunaha	CHAUGOIN	Yes

Figure 2 Identification of uncovered villages (4G Saturation) using NMP

Subsequently, the NMP data analysis uncovered a correlation between higher numbers of fishing ponds/clusters and lower income levels in certain areas. This led to a gap analysis study through NMP, which highlighted deficiencies in infrastructure support for fisheries cooperatives.

<u>Expected Benefit:</u>

- Using NMP platform the district was able to planning new demand-based infrastructure in the area and implementation of new scheme for district development.
- PM GatiShakti facilitated the identification of profit-making opportunities within the district, including dairy cooperatives, through the analysis of animal husbandry data and PM GatiShakti NMP and tools.
- Provide last mile connectivity to rural areas, villages, banking facilities etc.
- Reduction in time of planning from 6 months to 1 month.

Likewise, it will promote **realistic scenario building** based on infra gaps / deficits at grass-root level and **comprehensive area-based development.**

Use Case 3- Dahod District's Agri-Economic Renaissance: Doubling Cropped Areas and irritating more than 1000 hectares of adjoining region

Project brief-

Dahod, on the eastern border of Gujarat, stands as the state's largest tribal district. With a predominantly rural and agriculture-focused landscape, the district's sustained prosperity hinges on its access to water resources.

Problem statement - low level of **economic and agricultural activity** due to unirrigated land, high dependence on monsoon, soil erosion, low productivity of animals, etc. The objective was to **develop adequate infrastructure** to increase the share of irrigated land in the district and level of economic activity.

Usage of PM GatiShakti NMP-

Using the PM GatiShakti NMP/SMP, an analysis was done to analyze the 'water coverage area' of all reservoirs located in the Dahod district during the months of November, March, and May for the years 2022 and 2023. This facilitated the development of comprehensive expansion plans for these reservoirs, with the aim of significantly increasing the double-cropped agricultural area within the district.
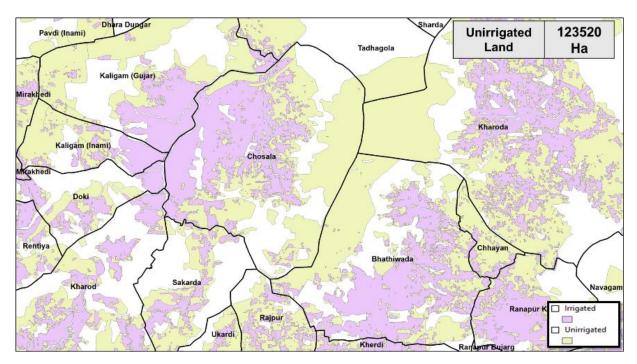

Figure 1 Irrigated and Unirrigated land in Chosala village, Dahod, district

Later, 21 villages to be irrigated in the district were identified based on parameters including geographic area; agriculture area; non-agriculture area; irrigated and non-irrigated area; cattle, buffalo and goat population. Waterbodies, and dams nearest to each of these villages, which can

provide water supply all year, were identified using satellite imagery across the four seasons in a year.

The availability of 3 Dimensional data (Digital elevation model) on PM GatiShakti portal help in connecting reservoirs with 142 circles and 3450 hectares unirrigated land.
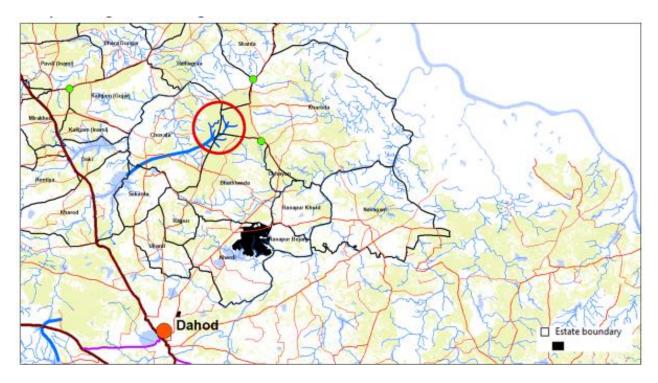

Figure 2 Proposed agro processing industries using PM GatiShakti NMP

Expected Benefits-

Using NMP portal, infrastructure gaps / deficits were identified and the following projects have been proposed:

- A pipeline network (5 to 7 km) from Kali dam to **un-irrigated agricultural area** in the village.
- **Identification of suitable crop type** e.g., Millets, Vegetables, Pulses etc.
- Convergence with GGRC (Gujarat Green Revolution Co. Ltd.) to improve **agricultural practices** in the area.
- **Land levelling** of survey numbers with undulating land.
- Development of **an agro processing zone / aggregation centres** within the 100 sq. km area as the selected location has proximity to the upcoming Delhi-Mumbai Expressway.
- Development of the **Dam site as a tourist site near** Kali reservoir, Shiv Temple, etc.

Use Case 4- Identification of suitable locations for banks in Jodhpur and Jaisalmer districts, Rajasthan

Project brief-

Development of suitable bank site locations in Jodhpur and Jaisalmer districts of Rajasthan through the implementation of PM GatiShakti, with the goal of enhancing financial accessibility and fostering economic growth.

Problem Statement –

Jodhpur and Jaisalmer districts in Rajasthan face significant challenges in terms of economic development and financial accessibility. Despite the presence of a predominantly rural population with vast untapped potential, the lack of adequate banking infrastructure hampers the region's growth. This deficiency in financial services restricts the economic activities of the local population, hindering entrepreneurship, investment, and overall socio-economic development.

By leveraging PM GatiShakti NMP, districts strategically identify suitable locations for banks in Jodhpur and Jaisalmer districts, ensuring that the establishment of these banks aligns with the broader goals of PM GatiShakti.

Usage of PM GatiShakti NMP-

Firstly, an assessment of existing bank locations involves identifying their distribution and evaluating the services they currently provide. Population density analysis follows, with a priority on areas with higher concentrations to enhance accessibility and service outreach. Additionally, the coverage within a 5 km radius of existing banks is evaluated to pinpoint underserved regions, while road connectivity and terrain conditions are considered to ensure easy accessibility, especially in challenging topographies.

Collaboration with Gram Panchayat and Co-operative Societies for enhancing community engagement, and the establishment of a 7 km buffer around proposed bank locations further expands outreach and service coverage.

Table 1 Showcase the numbers of bank proposed in both the districts

Details	Jodhpur	Jaisalmer
No of Proposed Bank	102	72
No of villages covered within 5km buffer of proposed bank	465	205
Total population Within 5 km buffer of proposed bank	717347	198623

This comprehensive approach has been considered for propose suitable locations for the banks to cater the diverse needs of the local population, fostering economic development, and aligning

with the PM GatiShakti principles. By considering these criteria, a comprehensive plan is developed for the establishment of banks in Jodhpur and Jaisalmer districts, emphasizing accessibility, connectivity, and collaboration with local communities.
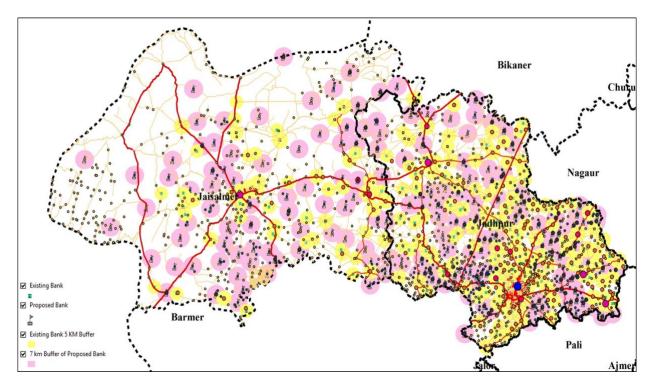

Figure 1 Jodhpur and Jaisalmer district Proposed bank 7 km Buffer

Expected Benefits-

Using NMP portal, infrastructure gaps / deficits were identified and the following projects have been proposed:

- Improved accessibility to banking services for the residents of Jodhpur and Jaisalmer districts, fostering financial inclusion.
- Facilitation of economic activities through the establishment of strategically located banks, promoting entrepreneurship and local business development.
- Contribution to the creation of sustainable and resilient infrastructure that supports the long-term development goals of the districts.
- Strengthened collaboration between the government, financial institutions, and local stakeholders, fostering a supportive ecosystem for sustained development.

Annexure 3 - Number of Layers from Ministry/ Department (as on 31st May 2023)

No.	Name of Ministry / Department	No. of Layers*
1	Department of Fisheries	6
2	Ministry of Mining	11
3	Ministry of Environment, Forest, and Climate Change	0
4	Ministry of New and Renewable Energy	61
5	Ministry of Power	49
6	Department of Agriculture	7
7	Consumer Affairs, Food and Public Distribution	24
8	Ministry of Textiles	5
9	Department of Fisheries Animal Husbandry and Dairying	3
10	Ministry of Railways	24
11	Ministry of Petroleum and Natural Gas	35
12	Ministry of Commerce and Industry	70
13	MSME	0
14	Ministry of Electronics and Information Technology	10
15	Ministry of Coal	22
16	Ministry of Road Transport and Highways	27
17	Ministry of Food Processing Industries	0
18	Department of Chemicals and Petrochemicals	1
19	Ministry of Tourism	18
20	Ministry of Women and Child Development	2
21	Ministry of Skill Development and Entrepreneurship	4
22	Department of Fertilizers	1
23	Ministry of Housing and Urban Affairs	40
24	Ministry of Development of Northeastern Region	0
25	Ministry of Steel	4
26	Ministry of Telecom	30
27	Ministry of Civil Aviation	7
28	Ministry of Ports, Shipping and Waterways	35

29	Earth Science	10
30	Department of Higher Education	14
31	Department of School Education & Literacy	26
32	Ministry of Jal Shakti	13
33	Ministry of Culture	3
34	Department of Health & Family Welfare	0
35	Department of youth Affairs	1
36	Department of Sports	1
37	Department of Panchayati Raj	0
38	Department of Post	3
39	Department of Rural Development	9
40	Ministry of Tribal affairs	3
41	Ministry of Labour & Employment	4
42	Ministry of Social Justice and Empowerment	2
	Total	585

Essential layers have been identified by all the 8 Infrastructure Ministries through development of Standard Operating Procedures. Other Ministries/ Departments are under progress of developing Standard Operating Procedures.

Annexure 4 - Number of Layers from States/ UTs (as on 31st May 2023)

Sl. No	State/UT	Total layers applicable out of 30 essential layers*	Layers update as on 1.05.23
1	Andaman & N Islands	26	22
2	Andhra Pradesh	30	30
3	Arunachal Pradesh	26	26
4	Assam	29	22
5	Bihar	29	28
6	Chandigarh	28	25
7	Chhattisgarh	28	25
8	Daman & Diu and Dadra Nagar Haveli	29	24
9	Delhi	29	26
10	Goa	30	29
11	Gujarat	30	29
12	Haryana	29	27
13	Himachal Pradesh	29	25
14	Jammu and Kashmir	29	26
15	Jharkhand	29	26
16	Karnataka	30	25
17	Kerala	30	28
18	Ladakh	29	10
19	Lakshadweep	16	13
20	Madhya Pradesh	29	23
21	Maharashtra	29	24
22	Manipur	29	29
23	Meghalaya	28	26
24	Mizoram	25	23
25	Nagaland	29	21
26	Odisha	30	21
27	Puducherry	27	25

28	Punjab	29	21
29	Rajasthan	30	21
30	Sikkim	27	19
31	Tamil Nadu	30	29
32	Telangana	29	27
33	Tripura	28	28
34	Uttar Pradesh	29	29
35	Uttarakhand	29	27
36	West Bengal	30	19
Total		1022	878

*For **identified 30 essential layers**, few layers are not applicable for few States/ UTs. For instance, for the land locked States like Bihar, Chhattisgarh, Haryana, etc. the Coastal Regulation Zone (CRZ) layer is not applicable. Therefore, only 1022 layers (of all States/ UTs) are applicable and only 878 layers have been uploaded on SMP portals*

Annexure 5- List of tools and applications on NMP portal

1. **Home:** The Home tab gives an overall view of the NMP portal. It also enables users to initiate a fresh start whenever desired during their work on NMP.

2. **3D Terrain:** This tool provides users with the ability to visualize a selected area in three dimensions. By clicking on the 3D Terrain button, users can access the NMP's 3D terrain data for visualization purposes.

3. **Navigations:** The Navigation tool allows users to zoom in and navigate to specific administrative boundaries within the portal. Users can utilize this tool to zoom from State level to a more granular level, such as City, District, and Village boundaries.

4. **Swipe Layers:** A tool that interactively compares two maps within the same area by revealing a layer underneath the map. As you drag and move the vertical bar between the two maps, the selected swipe layer is revealed on one side of the map and hidden on the other.

5. **Route:** The Route tool enables users to determine the shortest path between two selected points on the map within the portal. Users can choose a start location and an end location, and the tool calculates the shortest path based on these inputs.

6. **Add Projects:** Within the portal, users have the ability to create and visualize new projects through the drawing of points, lines, and polygons on the map. This functionality assists users in visually representing and planning new projects initiated by Ministries, Departments, States, and UTs on the NMP platform. The ability to draw these project elements provides valuable information for decision-making and planning activities on the NMP.

7. **Extraction:** The Extraction tool allows users to navigate to a specific administrative boundary within the portal. Users have the capability to select and visualize the desired layers for analysis within this administrative boundary. Upon selection, the tool generates a comprehensive report that includes all the chosen layers within the administrative boundary. Additionally, the report includes information such as distances and attributes associated with the selected layers. This functionality facilitates in-depth analysis and reporting of selected layers within a specific administrative boundary.

8. **KML for NOC:** User has been provided with the facility to upload a KML file. Once the file is uploaded on the portal, it provides the user with the report of NOC's desired against the alignment provided in the KML file.

9. **Find Location:** User has been provided with the facility to locate a particular location using different criteria. User can navigate to a location based on:

   a. Latitude or Longitude

b. Grid

c. DMS (Degree, Minutes and Seconds)

10. **DPR Module:** The DPR (Detailed Project Report) Module tool within the portal enables users to plan a specific alignment on the NMP. Users have the capability to physically draw the alignment and then select desired layers for analysis. A comprehensive report is generated based on the selected layers, providing the user with the option to identify all intersections between the drawn alignment and the selected layers. This functionality assists the user in optimizing the alignment by leveraging the analysis provided in the report. The DPR Module tool facilitates informed decision-making and alignment optimization within the NMP.

11. **Line of Sight:** The Line-of-Sight tool within the portal enables users to specify a start and end location on the map. Utilizing the underlying 3D datasets, this tool calculates the height parameters for the specified locations. It performs a visibility analysis, determining which portions of a line between the start and end points are visible and which are not. This spatial analysis provides insights into the visibility and non-visibility aspects along the specified line, allowing users to assess visibility conditions for planning and decision-making purposes.

12. **Go/ No Go Area:** User has the option to select a particular layer as per the list provided in this tool. User also has the option to draw a particular alignment on the map. Based on the alignment and the layers selected, user is provided with a report which provides the information of go/ no go area for that layer against the alignment drawn.

13. **Intersect Layers Report:** User is allowed to upload a KML file. Once the KML file is uploaded, this tool helps the user to select the layer for which intersection report is desired against the particular KML alignment.

14. **Buffer:** User has the option to provide a numerical value in meters based on which a reclassification based on distance: classification of within/without a given proximity.

15. **Print:** Print tool is a preconfigured service provided to users to facilitate them to creates a printable document using one of a set of predefined map layouts.

16. **Measure:** The measure tools measure distances, areas, offsets, and feature locations on a map or scene. User can draw a point, line to measure length, draw a polygon to measure area, or click an individual feature to get measurement information.

17. **Query Builder:** Query Builder provides a graphical user interface for creating query in a simplified way to help users filter records within a particular data layer as per their requirement.

18. **Proximity:** The Proximity tool enable users to determine the proximity of features within one or more data layers. This tool can identify features that are closest to one another or calculate the distances between or around them. A report would be generated to provide proximity to selected layers in form of a table.

19. **Scale Map:** Scale is a ratio between measurements on a map view and measurements in the real-world. Each view on map has its own independent scale. If user want to visualize a particular area/ feature in a particular scale, user has the option to bring the present map into its own desired scale.

20. **Default Map:** User has the option to view the map as it was when a new instance was initiated. Thus, while working on NMP at any given points of time the user can go back to the standard default view of the map using single click of this button.