सत्यमेव जयते
Ministry of Commerce & Industry
Government of India

PM GatiShakti
National Master Plan for
Multi-Modal connectivity

Ascending 5G with PM Gati Shakti

08 September 2022

PM GatiShakti

Transformative approach for economic growth and improving sustainable development.

National Master Plan

For integrated infrastructure and network planning.

PM GatiShakti NMP

- **Next generation infrastructure development for *AmritKaal*.**
- **Seamless multimodal connectivity for goods, people and services.**
- **Ease of living.**

Working in Silos

Guiding Principles of PM GatiShakti

I

Integrated Development with Railways, Ports, Airports, MMLPs, Urban Corridors etc.

II

Allied Infrastructure including OFC, Telecom, Power, Solar, WSAs[1] with Helipads/ Drones etc.

III

Improved Connectivity to Economic / Industrial Clusters & Backward Regions

IV

Reduced Ecological Impact through Forest Conservation, reduction of CRZ & Wildlife conflicts etc.

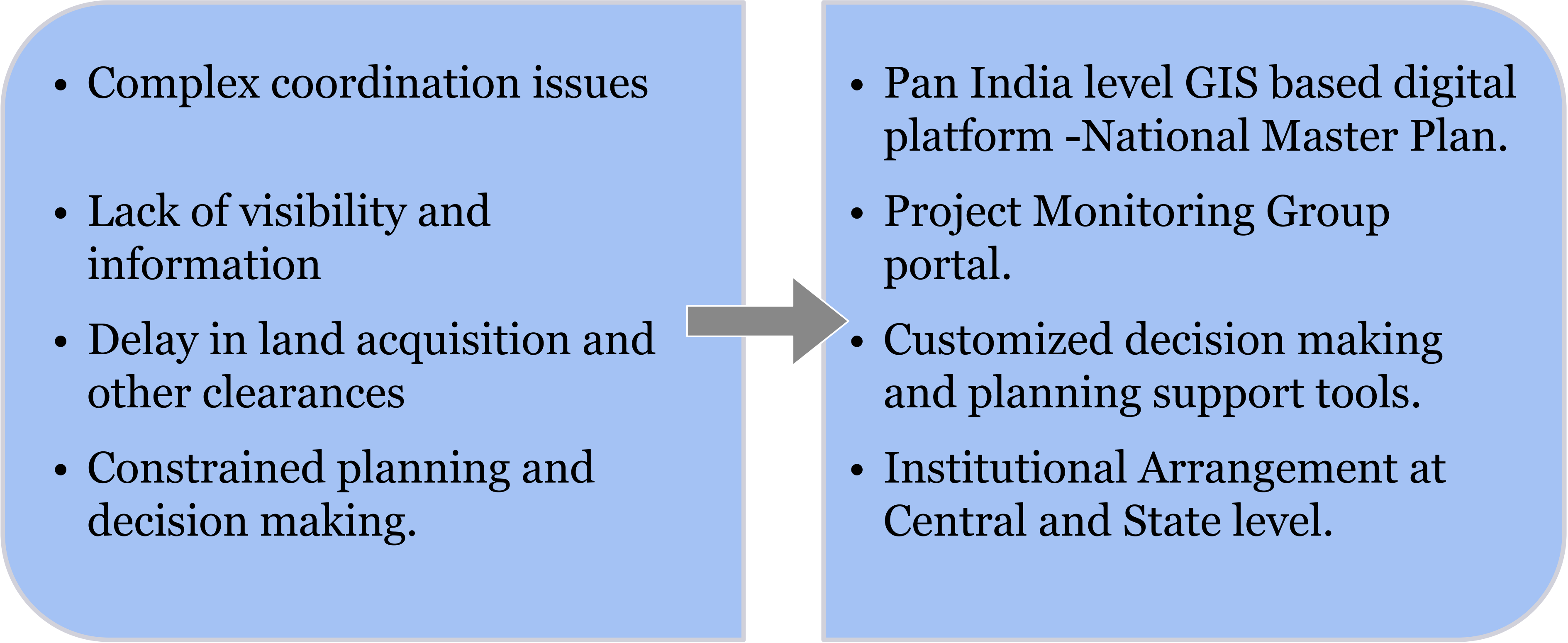
V

Expedited Land Acquisition via optimized alignment, digital land records & State coordination

VI

Minimized Clearances across ROB / RUB, Utility Shifting etc.

PM GatiShakti NMP



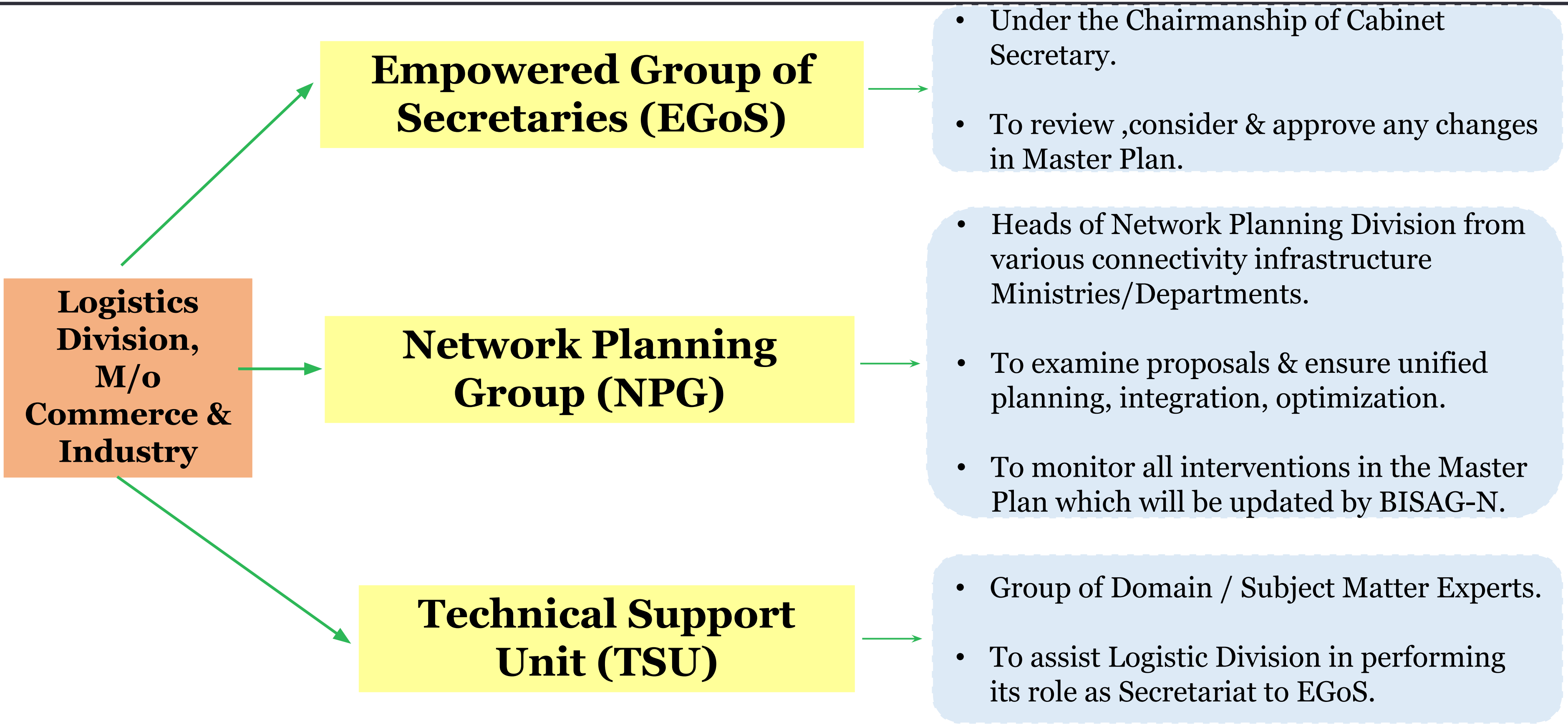
- Complex coordination issues
- Lack of visibility and information
- Delay in land acquisition and other clearances
- Constrained planning and decision making.

- 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.

PM GatiShakti NMP

- GIS based platform for better visibility.
- 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.

Monitoring & Coordination framework



Logistics Division, M/o Commerce & Industry

Empowered Group of Secretaries (EGoS)

- Under the Chairmanship of Cabinet Secretary.
- To review ,consider & approve any changes in Master Plan.

Network Planning Group (NPG)

- Heads of Network Planning Division from various connectivity infrastructure Ministries/Departments.
- To examine proposals & ensure unified planning, integration, optimization.
- To monitor all interventions in the Master Plan which will be updated by BISAG-N.

Technical Support Unit (TSU)

- Group of Domain / Subject Matter Experts.
- To assist Logistic Division in performing its role as Secretariat to EGoS.

Layers to be uploaded on NMP

Suggested 28 (24+4) layers to be mapped in mission mode:

Land records	Rivers	Power transmission and distribution	Drainage
Forest	Embankments	Mining areas	Economic zones
Wildlife	Canals	ASI sites	Industrial parks
Eco sensitive zones	Reservoirs dams	Tourism sites	**Electric Poles***
CRZ	Soil type	Roads	**Traffic Light Poles***
Reserve forest	Seismicity	Water supply pipelines	**Bus Terminal & Bus Shelters***
Water resources	Flood maps	Sewer lines	**Government Buildings (State/Central/PSU)***

Note: * Layers identified for Installation for 5G small cells

PM GatiShakti NMP: Planning & Decision Making Tools

1. **Road alignment**
2. **Utility shifting**
3. **Tree Cutting**
4. **Road cutting/Filling**
5. **Land acquisition including Land Parcel Valuation**
6. **Soil disposal planning**

7. **Data creation tools**
8. **Go/No-Go area**
9. **Dynamic Query Module**
10. **Navigation**
11. **Proximity Analysis**
12. **API Integration Tool**

Facilitation from Logistics Division, DPIIT

- Conduct workshops & training sessions for stakeholders.
- Hand-holding support to state (Institutional set-up & Layer updation)
- Mapping of geo spatial data layers in coordination with BISAG-N
- Assist in development of various planning, review and monitoring tools

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National Master Plan for
Multi-Modal connectivity

GatiShakti Sanchar Portal

https://gatishaktisanchar.gov.in/

GatiShakti Sanchar Portal

- "GatiShakti Sanchar Portal" is a collaborative institutional mechanism between all stakeholders including Central and State/UT Government(s), Local bodies, and Service Providers to facilitate the Right of Way (RoW) Application Process through a single interface.
- This portal envisages bringing transparency, accountability and responsiveness to all stakeholders while processing the application.
- Ease of Doing business

GatiShakti Sanchar Portal

- **Single Portal**
  - A Centralized Portal integrated with all the state portal and central ministries. Provides a mechanism to access RoW portal of any state.

- **Effective Monitoring**
  - Report of all states is available. District wise Status can be tracked. Report include total number of Application Received, Approved, Rejected & Pending

- **Orders and Circular**
  - Orders, Policies and Circular of all states are available on a single platform

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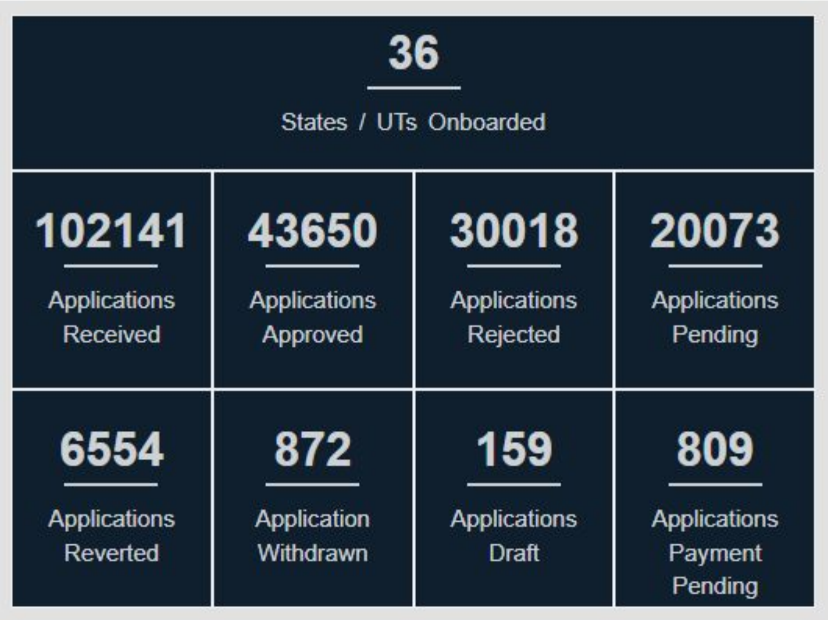
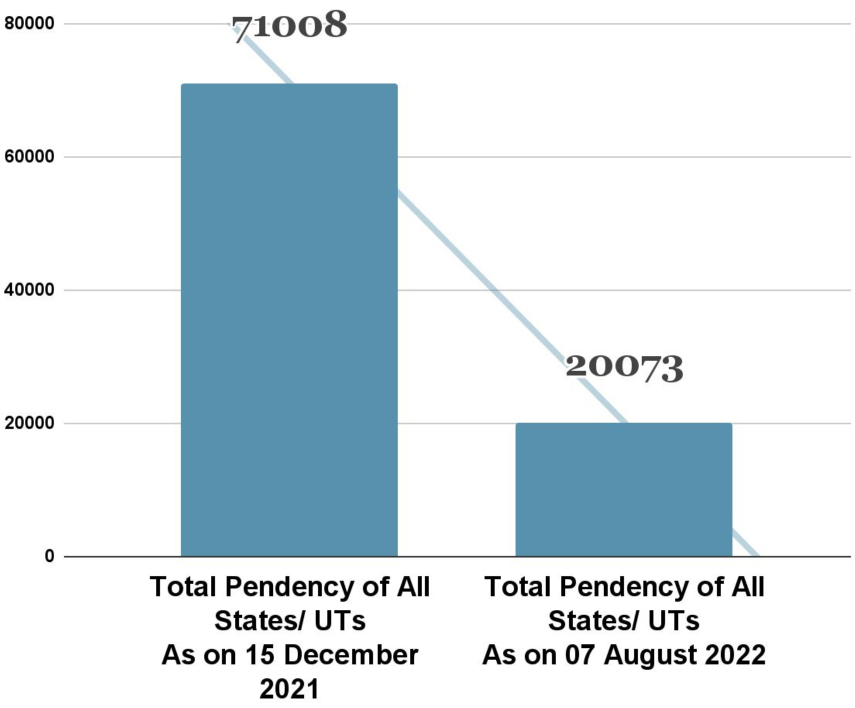
GatiShakti Sanchar Portal



36

States / UTs Onboarded

102141 Applications Received	43650 Applications Approved	30018 Applications Rejected	20073 Applications Pending
6554 Applications Reverted	872 Application Withdrawn	159 Applications Draft	809 Applications Payment Pending



Pendency of RoW Applcations

Illustrations of ‘Click before You Dig’ solution

Save OFC from Cuts – ‘Click before You Dig’ solution

Problem

- Nearly 10 Lakh Optic Fiber Cable Cuts/year across India
- **Huge Economic Losses**
  - Rs. 3000 cr/year wasteful expense for TSPs/ISPs
  - Inconvenience to citizens
  - Business losses

Solution/App

- **BISAG - “Call before You Dig” App**
  - Excavation route entered in App
  - App will alert utility owners
- **States/UTs**
  - Mandate all contractors to use this solution
  - Mandate all utilities to map all their utilities (cables/pipelines)

The Solution

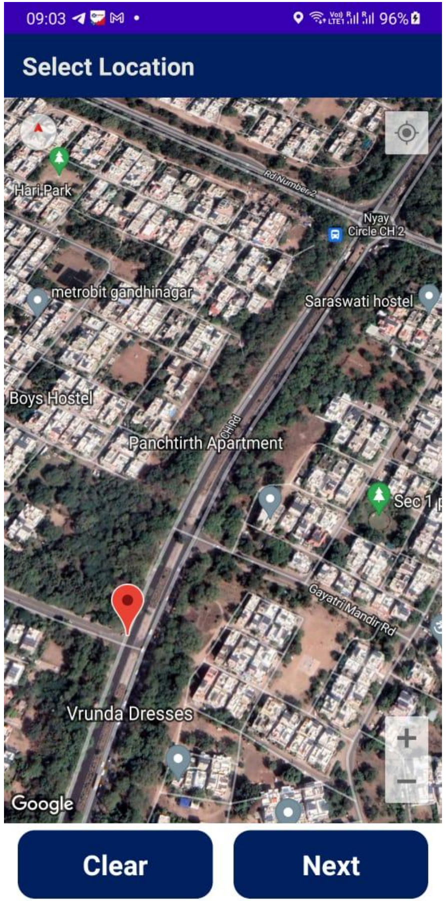
For Diggers

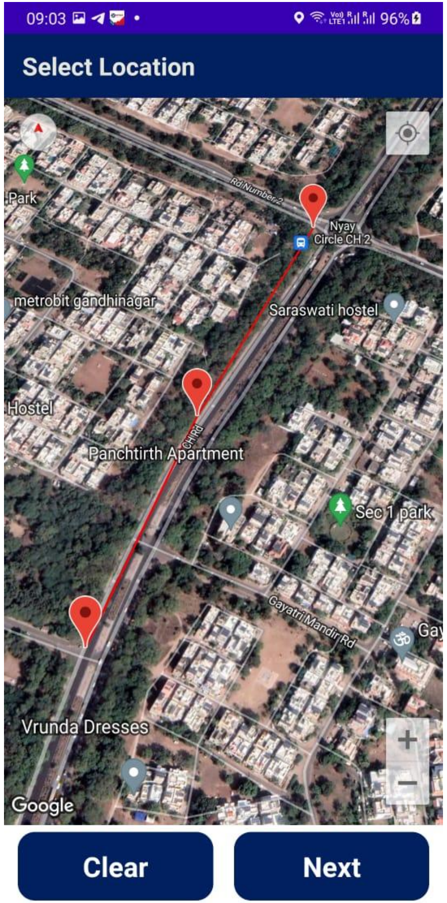
- To provides an interface to enquire /to know about the existing underground utility assets like Optical Fibre Cables, Water Pipelines, Electric Cables, Gas Pipelines etc.
- To inform owners of existing assets about its digging plan.
- To coordinate and safeguard existing utility assets during digging activity and avoid damage charges.
- To carry out digging activity without causing any damage to existing underlying assets

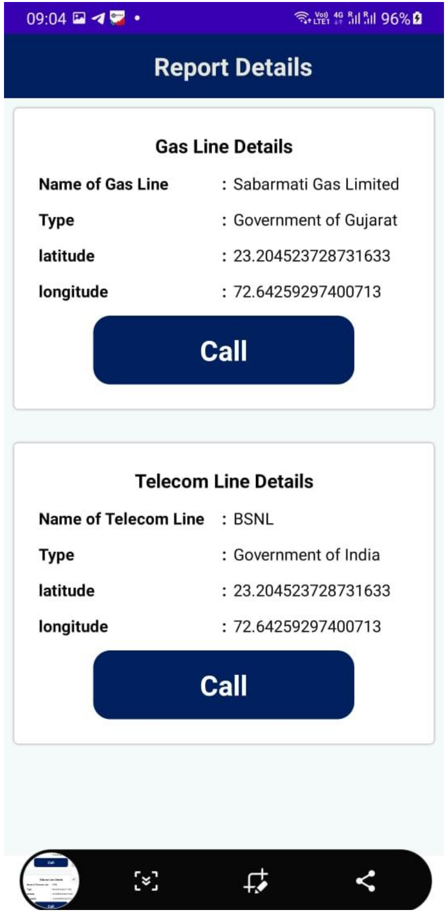
For Asset Owners

- To know about the imminent digging activities around their utility assets
- To inform Diggers about presence of their assets at digging site
- To take precautionary measures before the actual digging
- Utilities can be saved from unwanted cuts and wasteful cost towards restoration.

Click before you dig – App based Approach


09:03
96%
Select Location
Hari Park
Rd Number 2
Nyay Circle CH 2
metrobit gandhinagar
Saraswati hostel
Boys Hostel
CH Rd
Panchtirth Apartment
Sec 1 p
Gayatri Mandir Rd
Vrunda Dresses
Google
Clear
Next


09:03
96%
Select Location
Park
Rd Number 2
Nyay Circle CH 2
metrobit gandhinagar
Saraswati hostel
Hostel
CH Rd
Panchtirth Apartment
Sec 1 park
Gayatri Mandir Rd
Gay
Vrunda Dresses
Google
Clear
Next


09:04
96%

Report Details

Gas Line Details

Name of Gas Line : Sabarmati Gas Limited
Type : Government of Gujarat
latitude : 23.204523728731633
longitude : 72.64259297400713

Call

Telecom Line Details

Name of Telecom Line : BSNL
Type : Government of India
latitude : 23.204523728731633
longitude : 72.64259297400713

Call

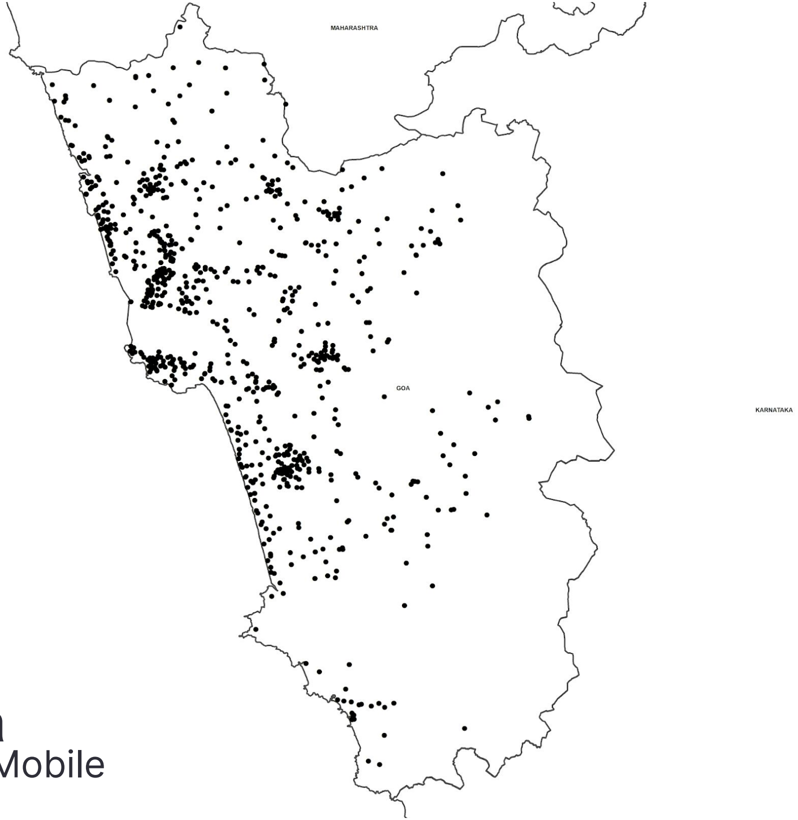
PM GatiShakti
National Master Plan for
Multi-Modal connectivity

Illustrative Examples of NMP usage by Dept. of Telecom

DOT- OFC connectivity tool (Non-fiberized tower to fiberized tower)	Planning Tool – improving Mobile Connectivity
DOT- 5G roll out facilitation	‘Call before You Dig’ solution

Illustrations of DOT- OFC connectivity tool (Non-fiberized tower to fiberized tower)

Status/Issue before usage of National Master Plan



Non Fiberized Tower: Goa

● Non Fiberized Mobile Towers

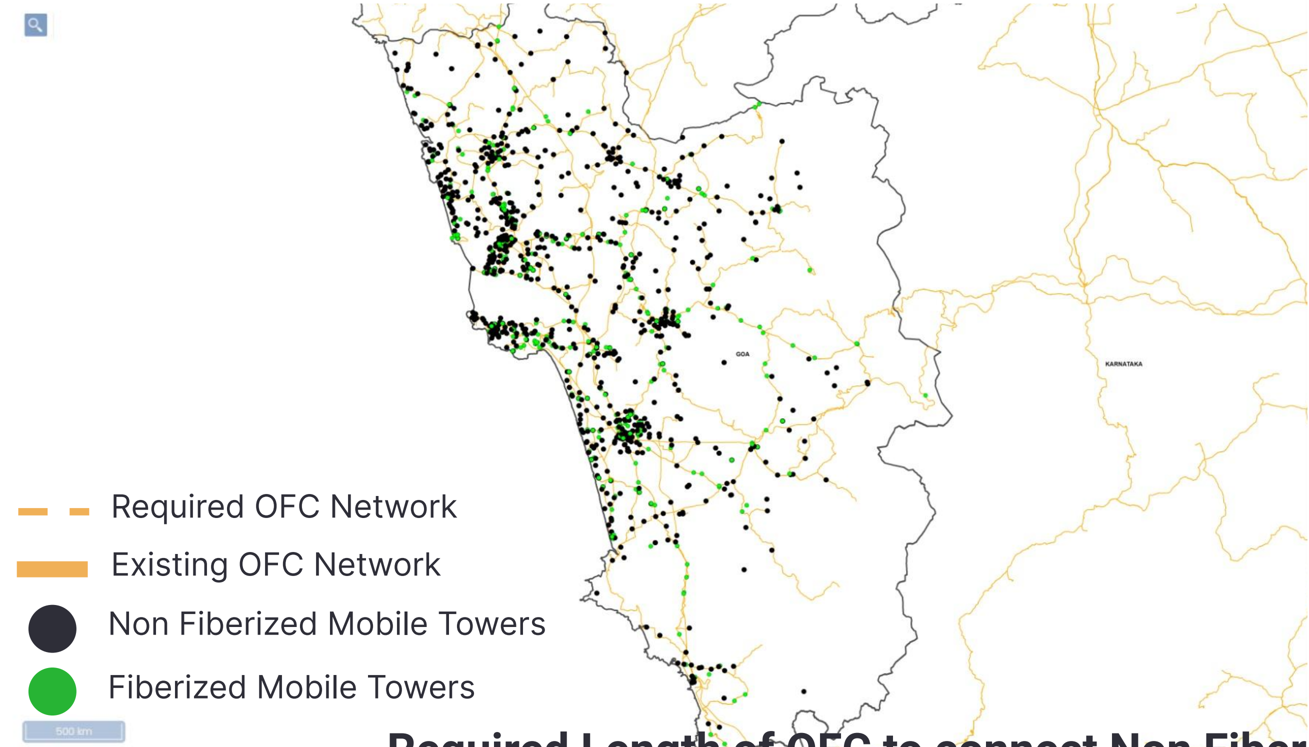
STATUS AS OF NOW:

- Under National Broadband Mission, one of the objective is to provide 50 Mbps of bandwidth to the citizens.
- To serve the above purpose all the non-fiberized towers will be connected through the OFC.

How usage of National Master Plan has improved the situation

Ministry Of TeleCommunication

Required OFC to connect Non Fiberized Towers : Goa



- - Required OFC Network
▬ Existing OFC Network
● Non Fiberized Mobile Towers
● Fiberized Mobile Towers

IMPROVEMENTS MADE:

- All the non fiberized towers and existing OFC Network is mapped on the Department of Telecommunication GatiShakti Portal.
- Based on the data and Planning criteria, the tool is being developed to get the length of required OFC and cost of OFC Laying.

Required Length of OFC to connect Non Fiberized Towers: 2314 RKm

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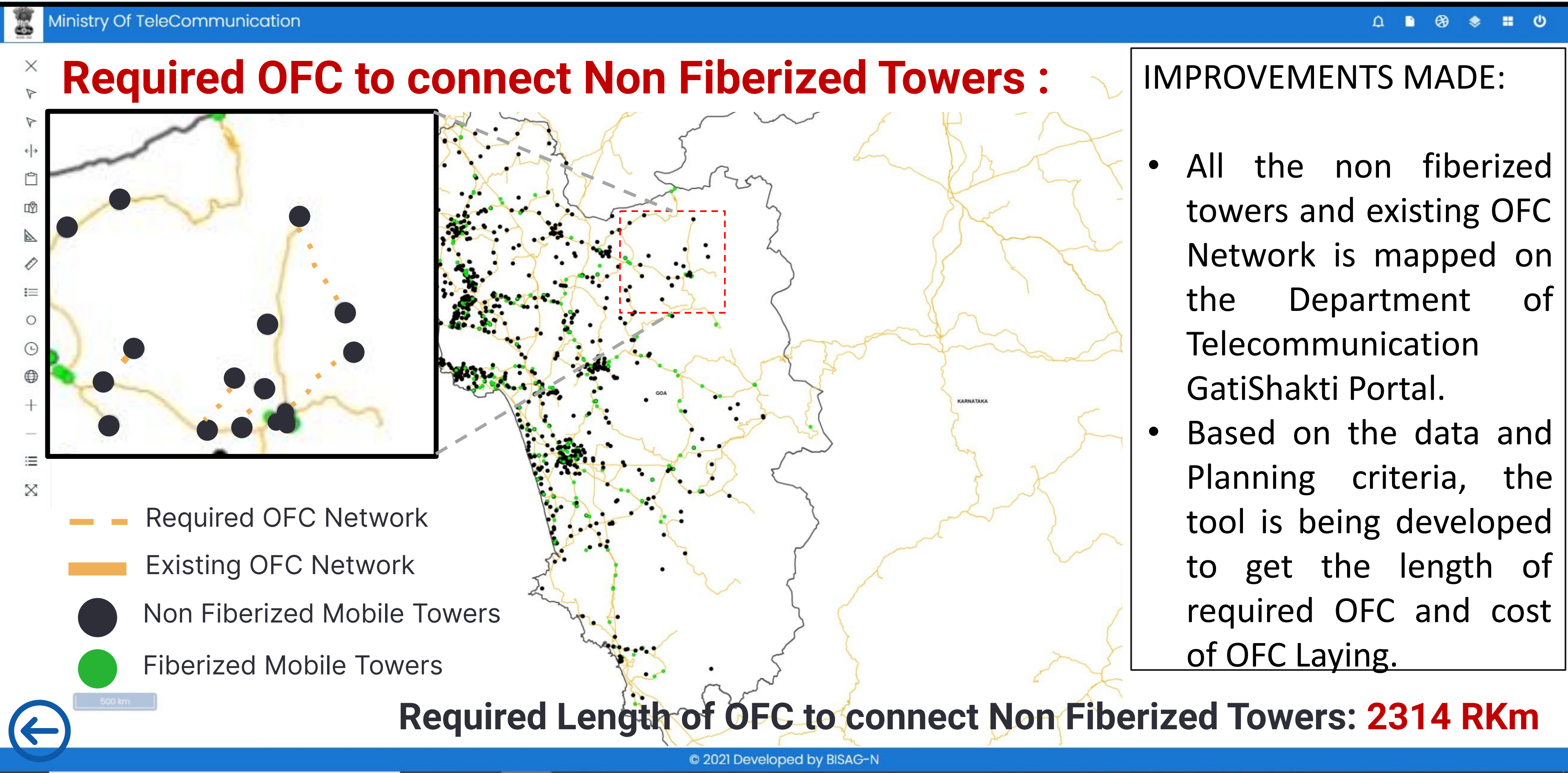
How usage of National Master Plan has improved the situation


Ministry Of TeleCommunication
GOA
KARNATAKA
500 km
© 2021 Developed by BISAG-N

Required OFC to connect Non Fiberized Towers :

- - - Required OFC Network
▬ Existing OFC Network
● Non Fiberized Mobile Towers
🟢 Fiberized Mobile Towers

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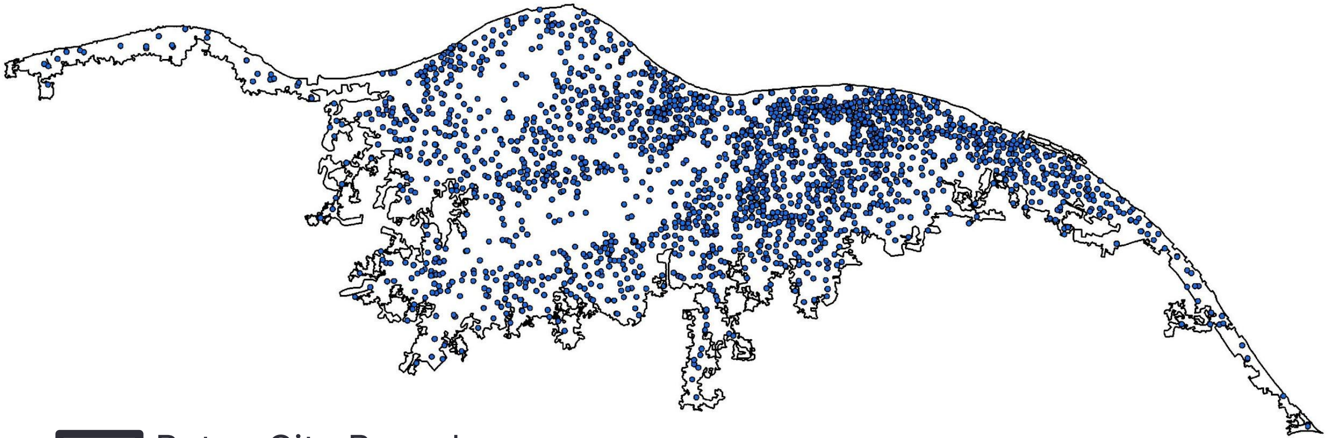
Required Length of OFC to connect Non Fiberized Towers: 2314 RKm

Illustrations of DOT- 5G roll out facilitation

Status/Issue before usage of National Master Plan

Existing Tower location: Patna City.



▭ Patna City Boundary

● Existing Mobile Towers

STATUS AS OF NOW:

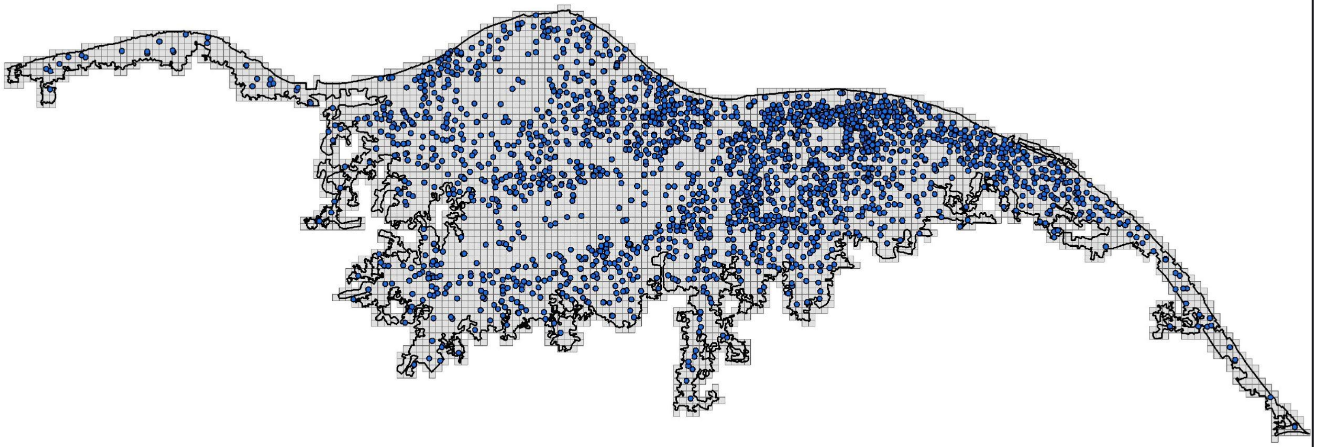
- Under National Broadband Mission, one of the objective is 5G roll out facilitation.
- To serve the above purpose all the existing towers coverage will be analyzed and entire city will be covered with 5G Connectivity.

Total Existing Mobile Tower: 2333 Nos.

How usage of National Master Plan has improved the situation

Ministry Of TeleCommunication

Providing 5G Connectivity to Potential Areas : Patna City



▭ Patna City Boundary

● Existing Mobile Towers

▭ 200 Sq. m. Grid for Coverage

IMPROVEMENTS MADE:

- Existing towers are mapped on the Department of Telecommunication GatiShakti Portal and to provide 5G Connectivity, entire city divided by 200 Sq.m. Grid.
- Based on the area covered by 200 sq.m grid, remaining potential areas are analyzed to erect 5G Towers.

Total Grid covered by Existing Tower: 1517 Nos.
Total Uncovered grid: 3098 Nos.

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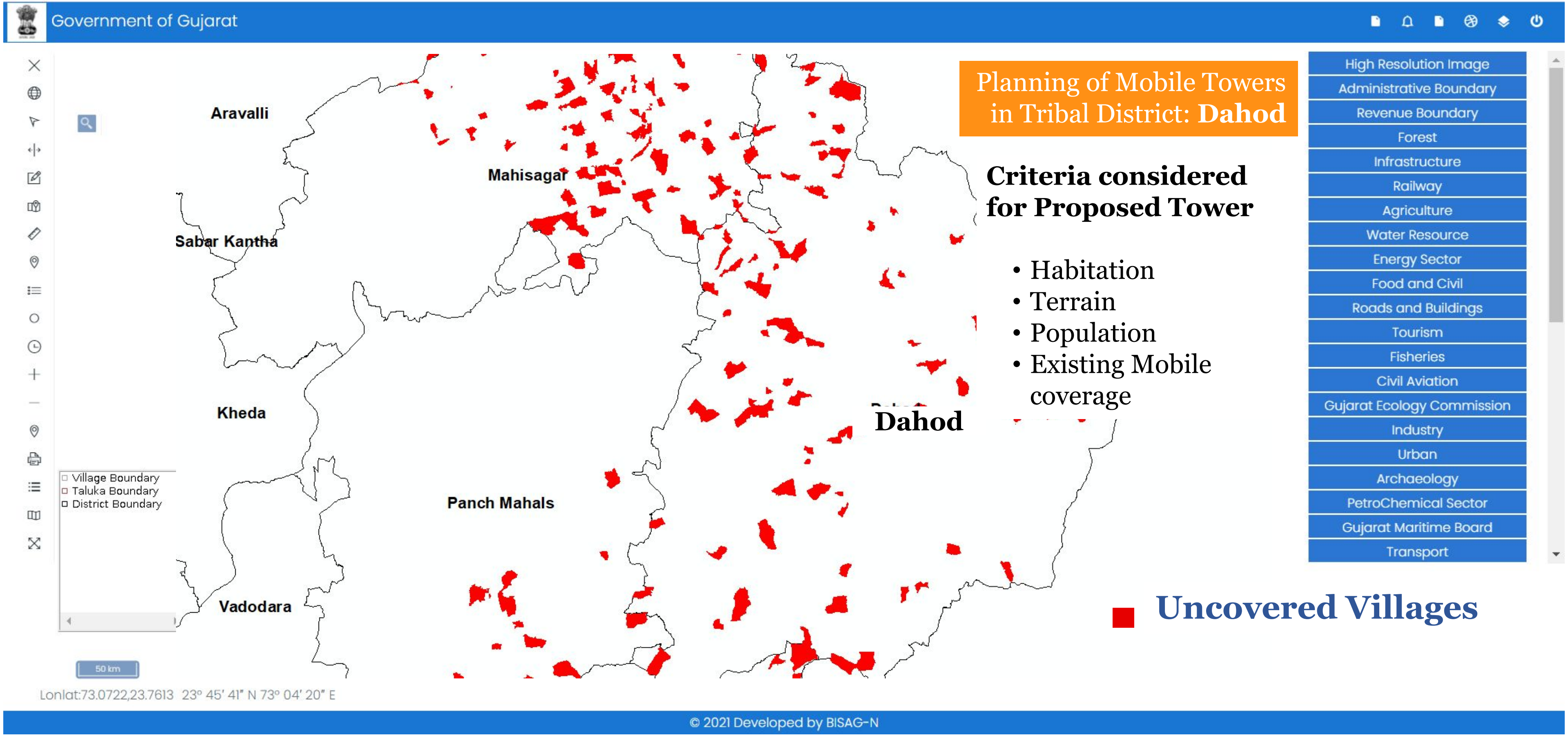
Illustrations of Planning Tool – improving Mobile Connectivity

Planning Tool – improving Mobile Connectivity (1/5)


Government of Gujarat
Aravalli
Mahisagar
Sabar Kantha
Kheda
Panch Mahals
Vadodara
Dahod
☐ Village Boundary
☐ Taluka Boundary
☐ District Boundary
50 km
Lonlat:73.0722,23.7613 23° 45' 41" N 73° 04' 20" E
High Resolution Image
Administrative Boundary
Revenue Boundary
Forest
Infrastructure
Railway
Agriculture
Water Resource
Energy Sector
Food and Civil
Roads and Buildings
Tourism
Fisheries
Civil Aviation
Gujarat Ecology Commission
Industry
Urban
Archaeology
PetroChemical Sector
Gujarat Maritime Board
Transport
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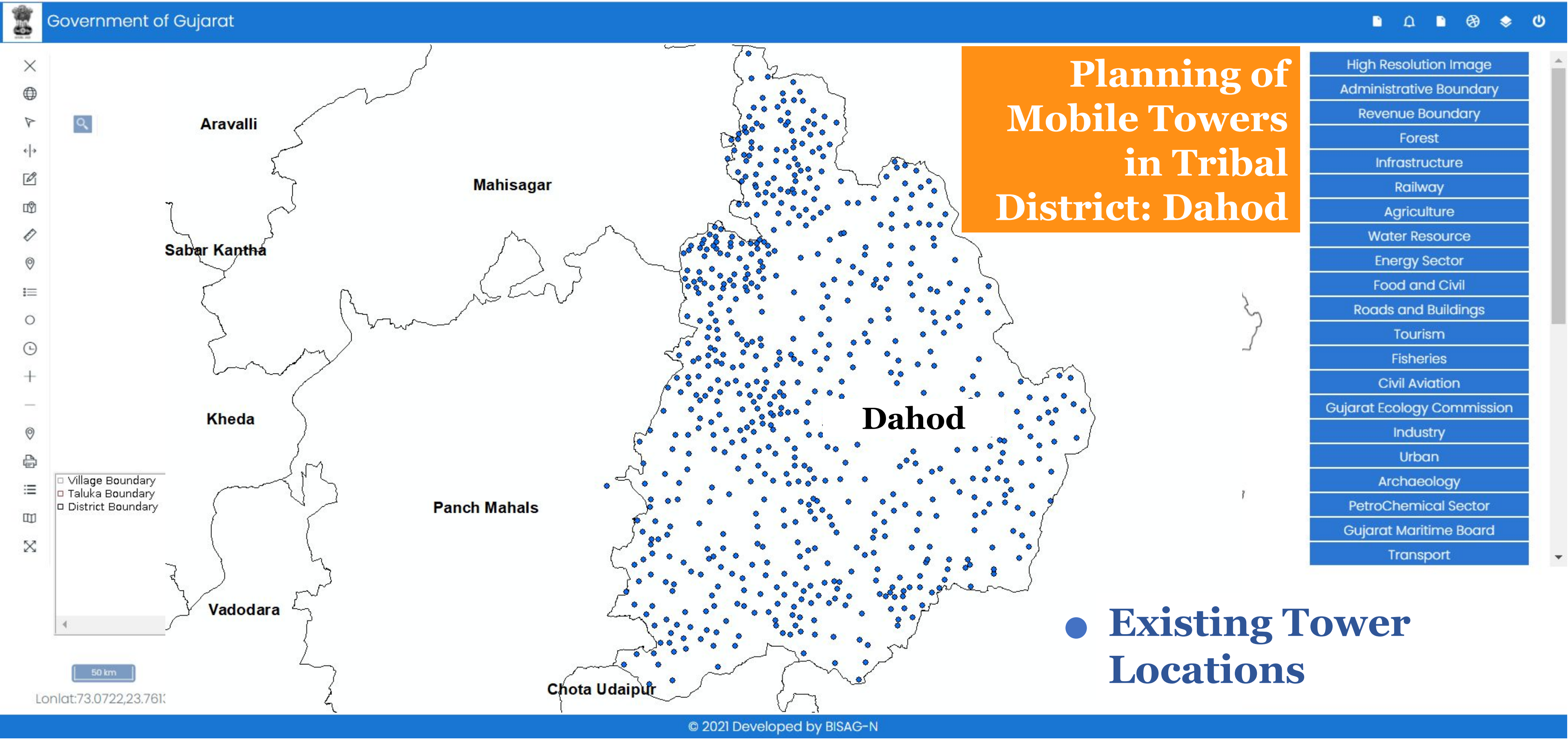
Planning of Mobile Towers in Tribal District: **Dahod**

Criteria considered for Proposed Tower

- Habitation
- Terrain
- Population
- Existing Mobile coverage

🟥 **Uncovered Villages**

Planning Tool – improving Mobile Connectivity (2/5)



Government of Gujarat
High Resolution Image
Administrative Boundary
Revenue Boundary
Forest
Infrastructure
Railway
Agriculture
Water Resource
Energy Sector
Food and Civil
Roads and Buildings
Tourism
Fisheries
Civil Aviation
Gujarat Ecology Commission
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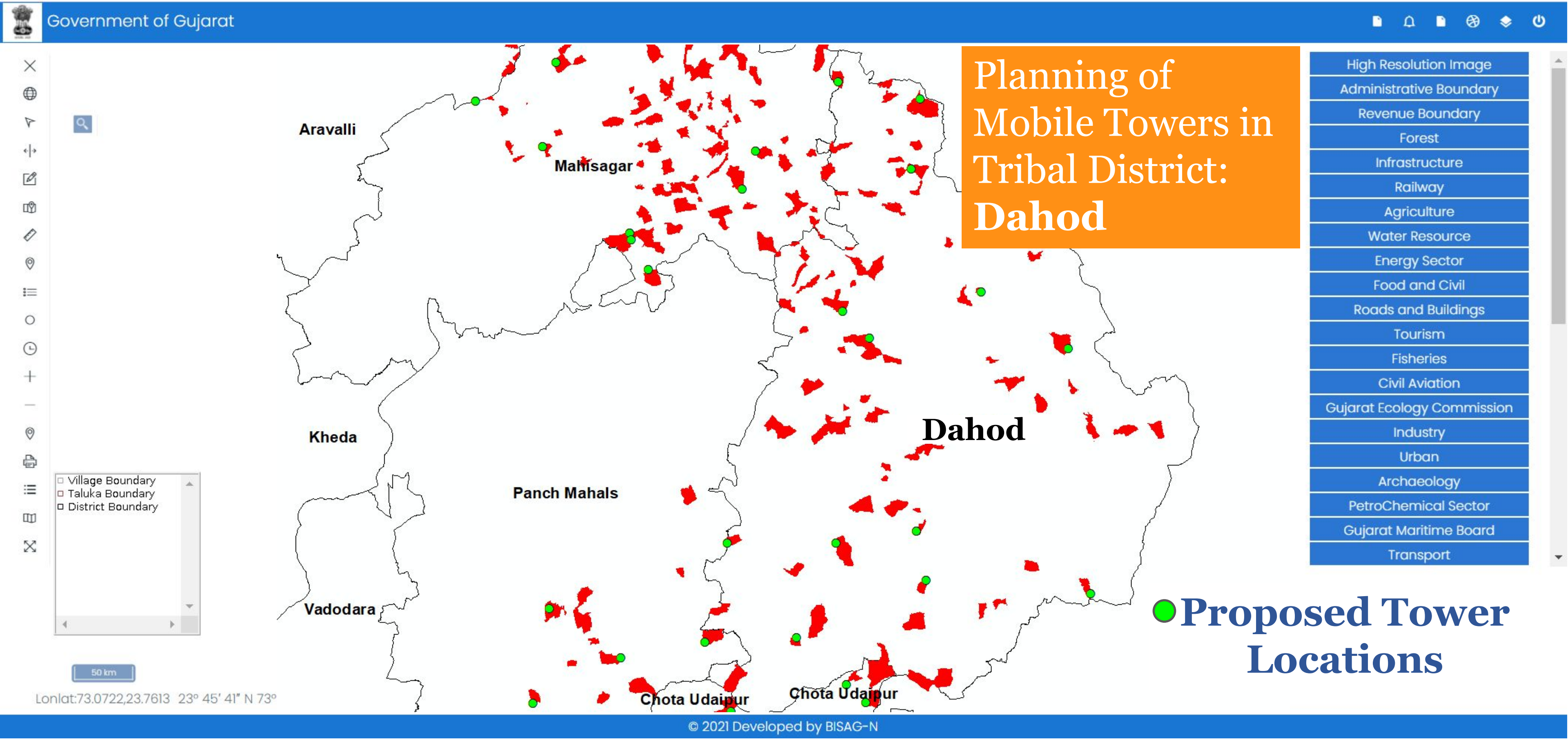
PetroChemical Sector
Gujarat Maritime Board
Transport
Aravalli
Mahisagar
Sabar Kantha
Kheda
Panch Mahals
Vadodara
Chota Udaipur
Dahod
☐ Village Boundary
☐ Taluka Boundary
☐ District Boundary
50 km
Lonlat:73.0722,23.761
© 2021 Developed by BISAG-N

Planning of Mobile Towers in Tribal District: Dahod

● Existing Tower Locations

Planning Tool – improving Mobile Connectivity (3/5)


Government of Gujarat
Aravalli
Mahisagar
Kheda
Panch Mahals
Dahod
Vadodara
Chota Udaipur
Chota Udaipur
☐ Village Boundary
☐ Taluka Boundary
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50 km
Lonlat:73.0722,23.7613 23° 45' 41" N 73°
High Resolution Image
Administrative Boundary
Revenue Boundary
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PetroChemical Sector
Gujarat Maritime Board
Transport

Planning of Mobile Towers in Tribal District: **Dahod**

● **Proposed Tower Locations**

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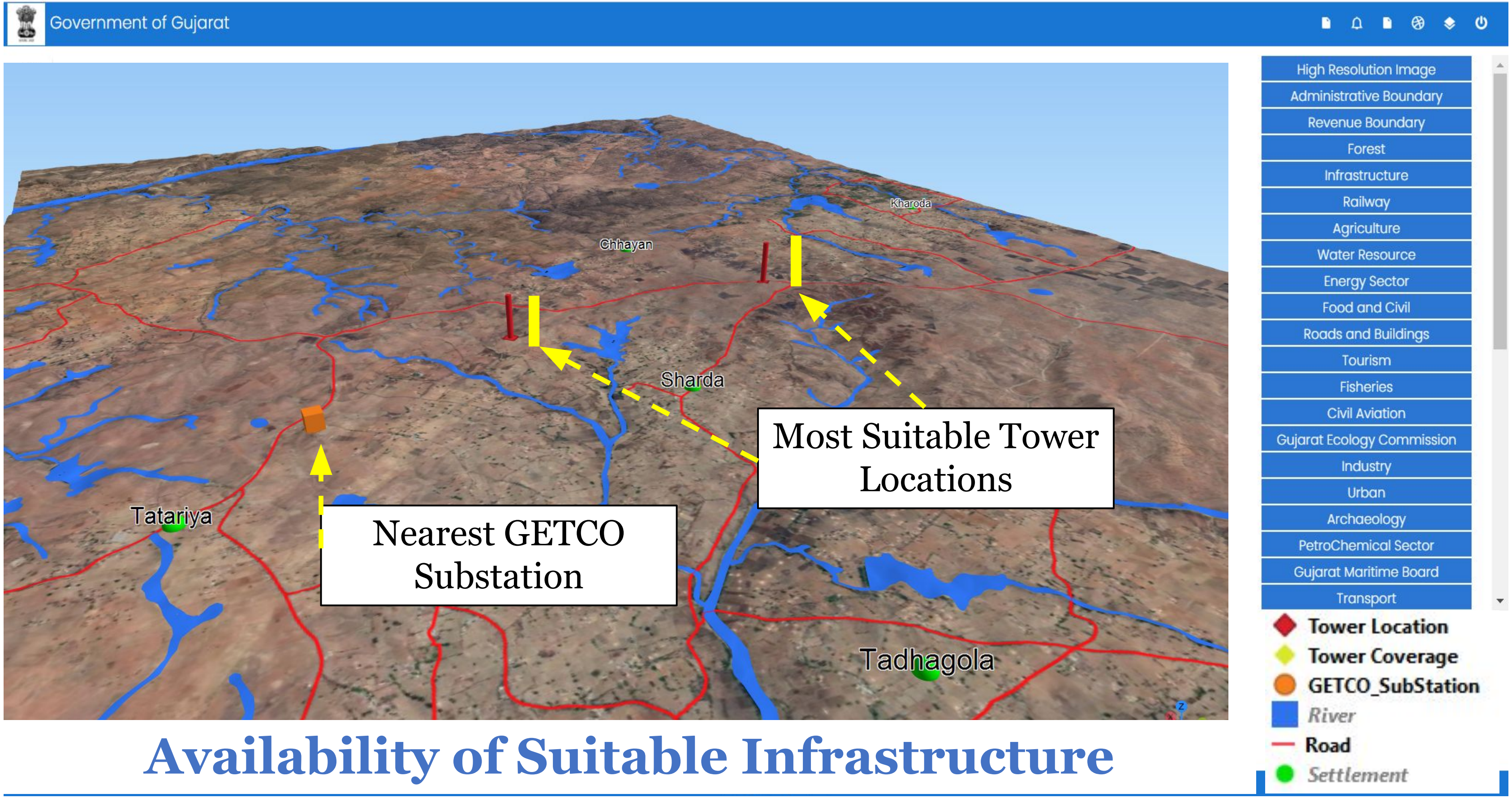
Planning Tool – improving Mobile Connectivity (4/5)


Government of Gujarat
Kharoda
Chhayan
Sharda
Tatariya
Tadhagola
High Resolution Image
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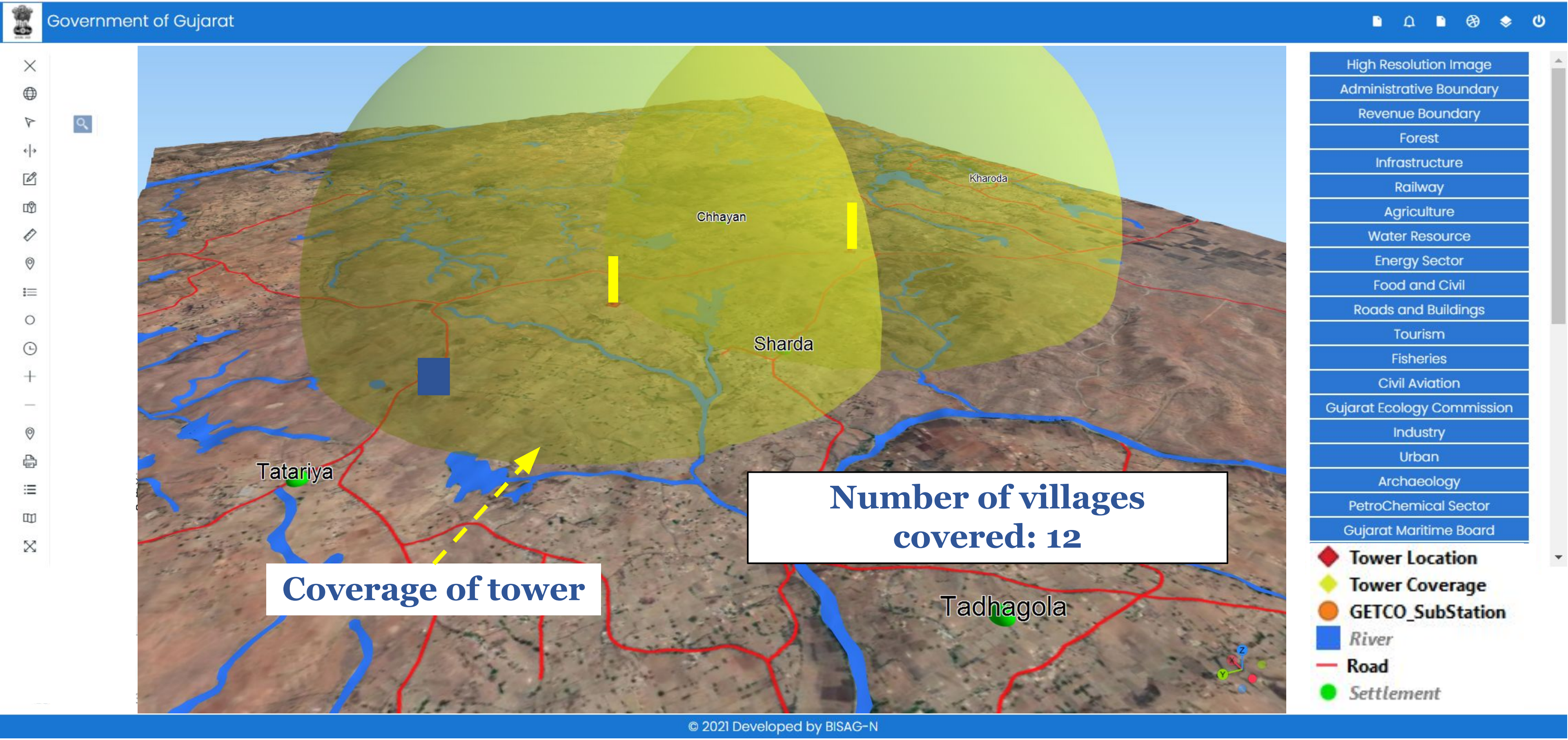
Gujarat Ecology Commission
Industry
Urban
Archaeology
PetroChemical Sector
Gujarat Maritime Board
Transport
♦ Tower Location
♦ Tower Coverage
● GETCO_SubStation
■ River
— Road
● Settlement

Most Suitable Tower Locations

Nearest GETCO Substation

Availability of Suitable Infrastructure

Planning Tool – improving Mobile Connectivity (5/5)


Government of Gujarat
High Resolution Image
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Chhayan
Sharda
Tatariya
Tadhagola
◆ Tower Location
◆ Tower Coverage
● GETCO_SubStation
■ River
— Road
● Settlement
© 2021 Developed by BISAG-N

Number of villages covered: 12

Coverage of tower

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National Master Plan for
Multi-Modal connectivity

Thank you