



Compendium of Use Cases

PM GatiShakti in Haryana

Department of Industries & Commerce,
Government of Haryana

August 2026



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“

Infrastructure has always been important in the sustainable development of any country. Those who study the history of infrastructure know this very well. Gati Shakti Master Plan will rejuvenate India's multi-modal infrastructure. The results of the PM Gati Shakti Master Plan are becoming visible.

”

Shri Narendra Modi
Hon'ble Prime Minister

Message





LIST OF ACRONYMS

AWC	Anganwadi Centres
BQS	Bus Queue Shelter
CHC	Community Health Centre
DCC	District Coordination Committee
DMP	District Master Plan
EGoS	Empowered Group of Secretaries
ESZ	Eco-Sensitive Zone
Forest	Forest Department
GIS	Geographic Information System
Health	Health Department
HSIIDC	Haryana State Industrial & Infrastructure Development Corporation
I&WRD	Irrigation & Water Resource Department
IMTs	Industrial Model Township
MoWCD	Ministry of Women & Child Development
NCR	National Capital Region
NH	National Highway
NoC	No Objection Certificate
NPG	Network Planning Group
PHC	Primary Healthcare Centre
PHED	Public Health Engineering Department
PMGSY	Pradhan Mantri Gram Sadak Yojna

PWD	Public Works Department
Revenue	Revenue Department
SD Goals	UN Sustainable Development Goals
SH	State Highway
SHC	Sub Health Centre
SMP	State Master Plan
TSU	Technical Support Unit
ULB	Directorate of Urban Local Bodies
WCD	Women & Child Development Department



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CONNECTED INFRASTRUCTURE, STRONGER HARYANA

Integrating Public Transport, Roads, Industries,
Irrigation, Healthcare & Early Childhood Care
for a Progressive Haryana



Govt. of Haryana
हरियाणा सरकार

ROADS

Well-planned and well-maintained roads ensuring seamless connectivity, faster travel and economic growth.



PUBLIC TRANSPORT

Reliable, accessible and affordable public transport connecting every corner of Haryana.



INDUSTRIAL CLUSTERS

Driving economic growth, creating employment opportunities and building a strong industrial ecosystem.



HOSPITALS

Quality healthcare infrastructure ensuring accessible and affordable health services for all.



IRRIGATION CANALS

Strengthening agriculture and ensuring sustainable water management for a prosperous rural Haryana.



ANGANWADIS

Nurturing our children, building a healthy and educated future for Haryana.



Integrated Infrastructure.
Inclusive Growth. Sustainable Future.



Better Connectivity
Stronger Economy



Sustainable
Development



Better Quality
of Life



Inclusive Growth for
Every Citizen



PM GATISHAKTI: AN OVERVIEW

EXECUTIVE SUMMARY

PM GatiShakti is a transformative initiative launched by the Government of India to revolutionize infrastructure planning and execution. It serves as a Digital National Master Plan that integrates 16 central ministries onto a single Geographic Information System (GIS)-based platform. The primary objective is to break departmental silos, ensure coordinated planning, and accelerate project completion. By synchronizing activities across roads, railways, ports, and utilities, the initiative aims to reduce logistics costs, enhance manufacturing competitiveness, and improve the ease of doing business. This section provides a comprehensive overview of the framework, its technological backbone, and its strategic significance for national development.

Historically, infrastructure planning in India suffered from fragmentation. Different ministries and state departments often worked in isolation, leading to inefficiencies such as roads being dug up shortly after construction to lay utility cables, or industrial zones being established without adequate transport connectivity. These coordination gaps resulted in cost overruns, time delays, and sub-optimal asset and resource utilization.

OVERVIEW

PM GatiShakti was launched on 13th October 2021 by Hon'ble PM Narendra Modi ji, to address these challenges by adopting a holistic approach. It is a methodology for planning and executing existing national schemes such as Bharatmala, Sagarmala, UDAAN, etc. more effectively. The initiative leverages technology to bring transparency, accountability, and boost infrastructure development, aligning with the vision of making India a global manufacturing hub.

The PM GatiShakti National Master Plan is driven by seven primary infrastructure sectors, referred to as the "Seven Engines". These sectors are critical for creating a robust multi-modal connectivity network.

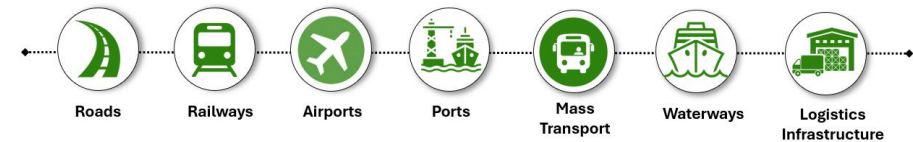


Figure 1: Seven pillars of PM GatiShakti

1. **Roads:** Focus on expanding national highways, improving last-mile connectivity to industrial clusters, and ensuring seamless freight movement, through schemes such as Bharatmala.
2. **Railways:** Development of dedicated freight corridors, upgrading station infrastructure, and integrating rail networks with ports and industrial areas.
3. **Airports:** Expansion of cargo terminals, development of new greenfield airports, and enhancing regional connectivity under UDAAN scheme.
4. **Ports:** Modernization of major ports, reducing turnaround time, and improving port-rail-road linkages to boost exports, through schemes such as Sagarmala.
5. **Mass Transport:** Development of metro rail networks and peri-urban transit systems to decongest cities and improve people mobility.
6. **Waterways:** Revival of inland waterways for cost-effective cargo movement, reducing pressure on road and rail networks.
7. **Logistics Infrastructure:** Creation of multi-modal logistics parks, cold chains, and warehousing facilities to streamline supply chains.



TECHNOLOGICAL BACKBONE: THE DIGITAL PLATFORM

At the heart of PM GatiShakti is a sophisticated digital platform that acts as a single source of truth for all infrastructure stakeholders.

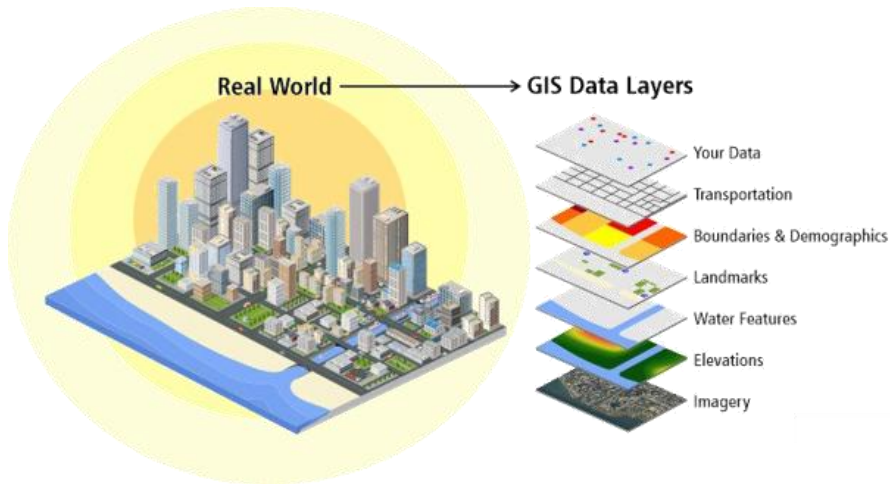


Figure 2: Data Layers on PM GatiShakti Platform

GIS-Based Mapping: The platform uses satellite imagery and GIS tools to map all existing and proposed infrastructure projects across the country. This allows planners and administrators to visualize overlaps, gaps, and dependencies in real-time.

Data Layers: Data layers are integrated into the system, including forest land, railway network, highway alignments, power grids, and telecom fiber. This ensures that environmental and concerned regulatory clearances are factored in during the planning stage itself.

Real-Time Monitoring: Project progress is tracked digitally, enabling administrators to identify bottlenecks and intervene promptly. The system provides visibility into inter-ministerial/departmental

dependencies, ensuring that delays in one sector do not stall projects in another.

GOVERNANCE & IMPLEMENTATION STRUCTURE

To ensure effective execution, a robust governance mechanism has been established under the PM GatiShakti framework. The same has been notified in the state of Haryana.

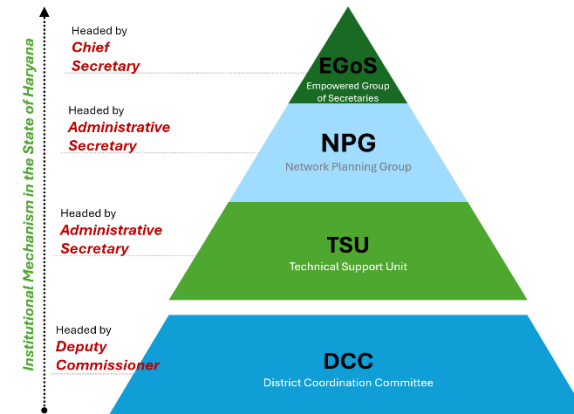


Figure 3: Implementation Structure- PM GatiShakti

- **Empowered Group of Secretaries (EGoS):** This body oversees the implementation across departments, resolving high-level policy issues and ensuring coordination between state departments.
- **Network Planning Group (NPG):** Comprising heads of planning from major departments, the NPG is responsible for reviewing and integrating infrastructure plans. They ensure that projects are aligned with the national and state master plan before approvals are granted.



- **Technical Support Unit (TSU):** Provides analytical support, data management, and platform maintenance to ensure the digital infrastructure remains robust and up to date.
- **District Coordination Committee (DCC):** It serves as the district-level platform for inter-departmental coordination and Area based Development under PM GatiShakti framework.

STRATEGIC IMPACT & OUTCOMES

The successful implementation of PM GatiShakti is expected to deliver significant economic and social benefits.

- **Reduction in Logistics Costs:** By optimizing routes and improving multi-modal connectivity, India aims to further reduce logistics costs from existing 7.97% ¹. This directly enhances the competitiveness of Indian exports.
- **Accelerated Project Completion:** Coordinated planning reduces delays caused by clearance issues or utility conflicts. Faster completion means quicker asset creation and economic returns.
- **Employment Generation:** Infrastructure development is labour-intensive. The push in construction, manufacturing, and logistics is expected to create millions of jobs, both skilled and unskilled.



Figure 4: Outcomes of PM GatiShakti

- **Ease of Doing Business:** Transparent planning and reduced regulatory friction make India a more attractive destination for foreign direct investment (FDI). Investors gain confidence knowing that infrastructure support is synchronized and reliable.
- **Sustainable Development:** The platform aids in environmental planning by identifying ecologically sensitive zones early, ensuring that infrastructure growth does not come at the cost of ecological balance.

¹ Assessment of Logistics Cost in India, PIB, 20.09.2025





INFRASTRUCTURE PROJECTS

Use Case 1 State Transport Department - Identification of Villages with no Bus Queue Shelter's

The State Transport Department, Haryana is the nodal agency responsible for developing and managing the State's passenger transport infrastructure, encompassing bus stands, bus depots, bus queue shelters, and training centres. Through its extensive infrastructure network, the Department serves as a key enabler of regional connectivity, promoting inclusive mobility, improving access to essential services, and driving socio-economic development across both urban and rural communities.

1.1 Case Introduction

The department seeks to identify the villages having bus route connectivity, but lacks Bus Queue Shelters (BQS) infrastructure, with population more than 2,000² and lacks BQS within 01 km buffer of the route. This assessment aims to identify critical infrastructure gaps and support targeted interventions to improve passenger convenience and enhance public transport accessibility.

Currently, the State transport network is supported by approximately 1,128 Bus Queue Shelters and 107 bus stands/terminals. The analysis indicates that, out of 6,833 villages across the State, nearly 4,110 villages (around 60%) lack dedicated BQS infrastructure³. These findings underscore the need for strategic expansion of public

² As per Census, 2011

transport services that shall strengthen rural connectivity and promote sustainable transport in the state.

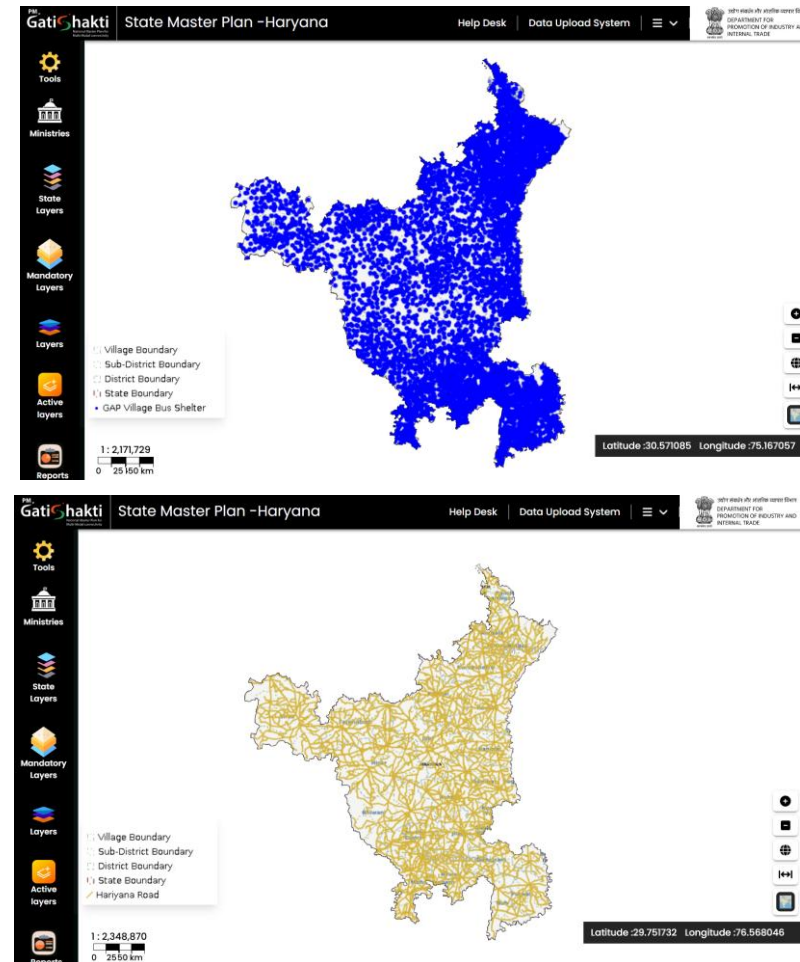


Figure 1-1 Map of Haryana highlighting villages that requires BQS (top) and villages with Existing Bus routes (bottom)

³ As per State Transport Department data, 2025



1.2 PM GatiShakti Edge and Approach

The PM GatiShakti State Master Plan (SMP) portal was leveraged to identify villages that lacks BQS. The analysis considered three major parameters— Demographics (Population), Operational Routes, Existing Supporting Infrastructure such as BQS, Stands, Terminals, etc. Using “Proposed Bus Station” tool, the Transport Department had efficiently identified stretches and villages requiring dedicated BQS to improve accessibility through Variable Proximity analysis.

1.2.1 Data Layers Considered

Departmental layers such as Transport, Revenue and PWD were identified as major stakeholders in the state. Following data were considered to identify the gaps for Bus Queue Shelters:

Table 1-1 Data layers considered

Sr. No.	Department	Data Layer
1	Transport	- Existing Bus Route Network - Existing BQS locations
2	PWD	All Roads
3	Revenue	Administrative Boundary

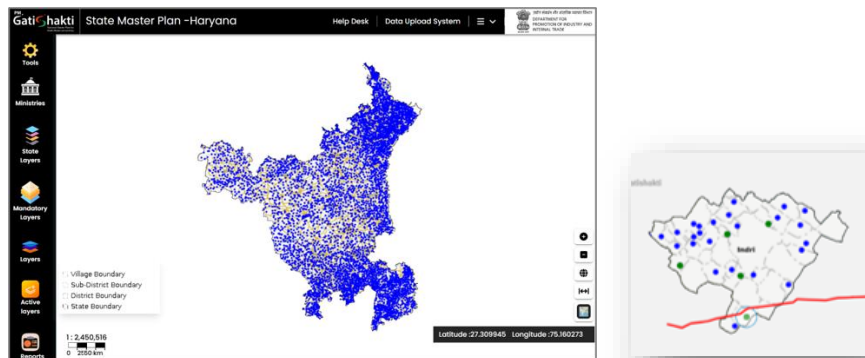


Figure 1-2 Tool developed for Transport Department

1.3 Outcomes

The gap identification analysis identified about 1,943 villages with populations higher than 2,000, located within the 01 km existing route buffer, that do lack bus queue shelters. To address this infrastructure gap, the State Transport Department may prioritize the provision of bus queue shelters in these villages, thereby improving accessibility, commuter comfort, and the overall service of the of public transport network.

The green points highlight the villages in the route buffer that lacks BQS.

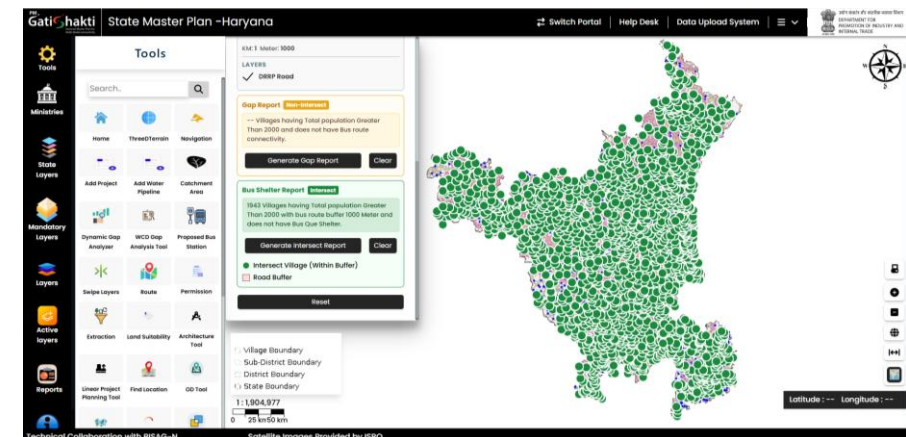


Figure 1-3 Highlighted villages lacking BQS in Haryana in the route buffer



Report

VILLAGES HAVING TOTAL POPULATION GREATER THAN 2000 WITH BUS ROUTE BUFFER 1000 METER AND DOES NOT HAVE BUS QUE SHELTER

City:

Search:

Sr. No.	Hob Id	Hob Name	Block	Dist Id	Dist Name	Taluka Id	Taluka	Vill Id	Vill Name
1	481771	Kail	Jagadhri	599	Yamuna Nagar	2330	Jagadhri	285426	Kail
2	518963	Kasandi	Gohana	519	Sonepat	1974	Gohana	308109	Kasandi
3	268486	Dhakwala	Karnal	281	Karnal	2790	Karnal	170347	Dhakwala
4	383417	Guloni	Jind	259	Jind	2508	Jind	229544	Guloni
5	345197	ganjbarh	Panipat	416	Panipat	4519	Panipat	206730	Ganjbarh
6	954689	sarai kohand	Panipat	416	Panipat	4519	Panipat	552255	Sarai Kohand
7	954955	sarabachera	Panipat	416	Panipat	4519	Panipat	552009	Sarai Bachhra
8	739477	Nada	Pinjore	414	Panchkula	4759	Pinjore	433745	Nada
9	1388482	Tehraki	Palwal	644	Palwal	7161	Palwal	0	Tehraki
10	13686	adlyana	Mahendragarh	416	Panipat	3493	Mahendragarh	11232	Adlyana

Showing 1 to 10 of 1,943 entries

Technical Collaboration with BISAG-N Satellite images Provided by ISRO

Figure 1-4 List of identified villages

The use case delivers a transformative improvement in the public transport infrastructure for passengers by developing bus queue shelters to enhance accessibility, safety and comfort, particularly for rural and peri-urban communities.

- **Improved Passenger Safety:** Provides a designated and safer waiting area, reducing passenger exposure to moving traffic.
- **Enhanced Passenger Comfort:** Protects passengers from heat, rain, and other adverse weather conditions while waiting for buses.
- **Better Public Transport Accessibility:** Improves the usability of existing bus services and encourages greater public transport adoption.
- **Reduced Traffic Disruption:** Designated stopping and waiting areas can facilitate more orderly bus boarding and alighting, reducing roadside congestion.

- **Higher Utilisation of Existing Routes:** Strengthens the effectiveness of already operational bus routes by providing supporting passenger infrastructure.

1.3.1 Economic Impact

Improved accessibility to the bus queue shelters will enhance the usage of public transport systems, thereby reducing the monthly travel expenditure for passengers. The key considerations are as follows:

Table 1-2 Improvement of economic parameter

Sr. No.	Parameter	Before*	After*
1	User's Travel Time (Mins.)	7.44	3
2	Access Transportation Cost (Rs.)#	₹ 18.05	₹ 5.00
3	Accessibility of Public Transport (km)	3.72	~1.5

*Travel time calculated considering avg. of villages inside the buffer of 1km

#Alternate mode of transport used by citizens such as 2Ws, 4Ws.

1.3.2 Social Impact

1. Community Benefits:
 - a. Improve convenience and quality of public transport services in Haryana.
 - b. Encourage the usage of public transport.
 - c. Enhance Safety and Visibility of women traveller.
2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health & Well Being	• Reduce the number of global deaths and injuries from road traffic accidents
4	Quality Education	• By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education



SD Goal No.	Domain	Goal
10	Reduced Inequalities	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
11	Sustainable cities and communities	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

3. Carbon footprint:

- Usage of public transport will reduce the carbon emission and promote sustainable transportation.
- Improve the air quality index of the state.

Sr. No.	Parameter	Before*	After*
1	PM2.5 (in KG)	6.19	2.50
2	Nox (in KG)	83.43	33.64
3	CO (in KG)	1,356.01	546.78
4	CO (in tonnes)	1.36	0.55
	Total	1,445.63	583.46
	Emission reduction through Pvt. modes	-	60%



Use Case 2 State Transport Department - Identification of Villages without bus coverage

The State Transport Department is responsible for providing well-coordinated, economical, safe, and efficient transportation services to the citizens of the State. It serves as the principal provider of passenger transport services, connecting various regions within the State as well as key destinations in neighboring states. Haryana Roadways operates about 13 lakh kilometers daily, ensuring extensive and reliable public transport connectivity across the State.

2.1 Case Introduction

The Department seeks to identify villages with a total population exceeding 2,000² that lack bus route connectivity within a 1 km radius. This analysis will help identify underserved villages and support targeted interventions aimed at improving public transport accessibility and enhancing regional connectivity.

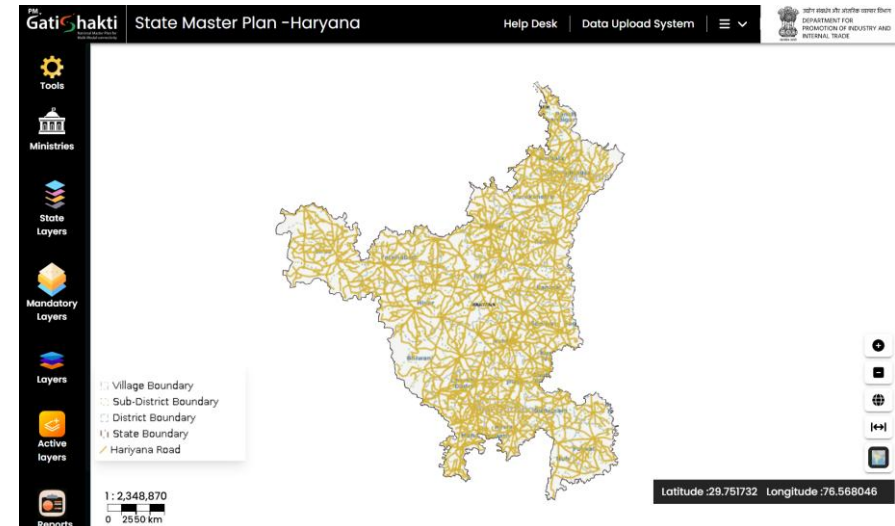


Figure 2-1 Map of Haryana highlighting Existing Bus routes

2.2 PM GatiShakti Edge and Approach

The PM GatiShakti State Master Plan was leveraged to identify villages that lack bus queue shelters. The analysis considers three parameters—Population, Operational Routes, and Proximity to Settlement—with Population and Proximity being adjustable. Using this tool, the Transport Department can efficiently identify road stretches and villages requiring bus queue shelters to improve accessibility and service coverage.

2.2.1 Data Layers Considered

Departments such as Transport, Revenue and PWD were identified as major stakeholders in the state. Following data were considered to identify the gaps for Bus Queue Shelters.



Table 2-1 Data layers considered

Sr. No.	Department	Data Layer
1	Transport	Existing Bus Route Network
2	PWD	All Roads (NH, SH, PMGSY, etc.)
3	Revenue	Administrative Boundary - Village

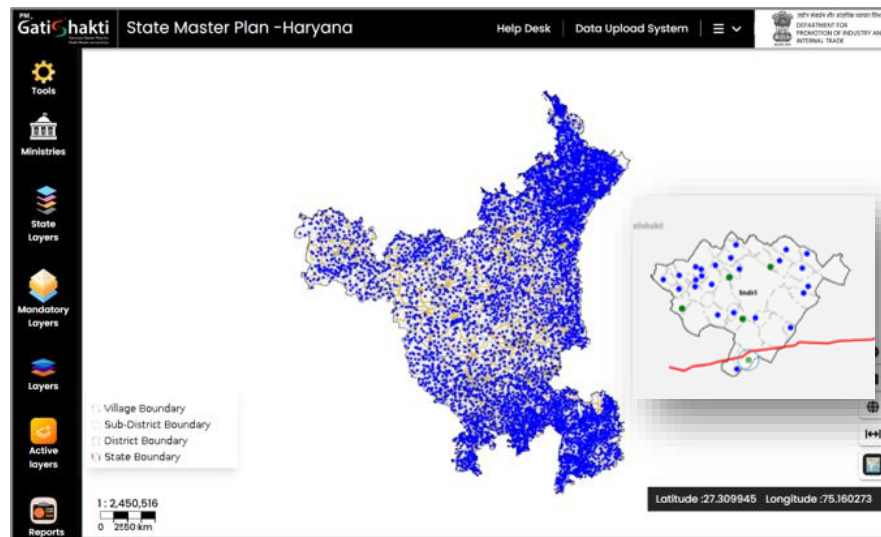


Figure 2-2 Tool developed for Transport Department

2.3 Outcomes

The gap identification analysis identified about 693 villages with a population more than 2,000 that do not have access to bus route connectivity within a radius of 01 km the existing bus network. These villages represent potential public transport service gaps and may be prioritized by the State Transport Department for the provision of bus services to enhance accessibility and improve regional connectivity.

The green-highlighted points in the figure represent villages located beyond the 01 km service radius of the existing bus routes, indicating areas that currently lack adequate bus route connectivity.

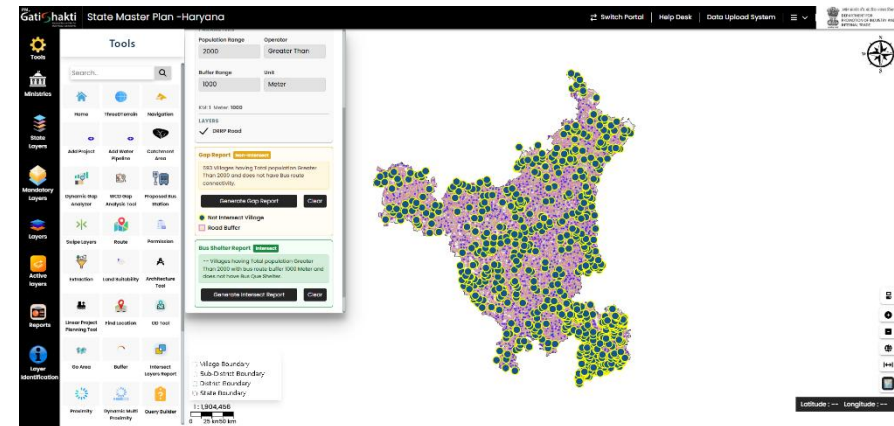


Figure 2-3 Highlighted villages with no bus connectivity

VILLAGES HAVING TOTAL POPULATION GREATER THAN 2000 AND DOES NOT HAVE BUS ROUTE CONNECTIVITY									
Sr. No.	Hab Id	Hab Name	Block	Dist Id	Dist Name	Taluka Id	Taluka	Vill Id	Vill Name
1	62815	Bhadani	Jhajjar	254	Jhajjar	2488	Jhajjar	85079	Bhadani
2	1262844	Tain	Nuh	645	Mewat	7164	Nuh	704709	Tain
3	1389179	Barahlu	Loharu	74	Bhiwani	3429	Loharu	0	Barahlu
4	65600	Baganwala	Tosham	74	Bhiwani	6132	Tosham	43049	Baganwala
5	1371374	Sasauli	Jagadhri	599	Yamuna Nagar	2330	Jagadhri	557094	Sasauli
6	671164	Mangali Jhara	Hisar I	222	Hisar	2230	Hisar I	399633	Mangali Jhara
7	671166	Mangali Mahbat	Hisar I	222	Hisar	2230	Hisar I	399634	Mangali Mahbat
8	1078473	Usmanpur	Sahawas	264	Jhajjar	5263	Sahawas	628973	Usmanpur
9	1262893	KHERLITER	Punhana	645	Mewat	7165	Punhana	704784	Kherliter
10	1262535	DHANNA	Ferozepur Jhirka	645	Mewat	7162	Ferozepur Jhirka	704461	Dhanana

Showing 1 to 10 of 693 entries

Figure 2-4 List of identified villages with no bus connectivity having population >2,000

The use case delivers a transformative improvement in the Public Transport access travel efficiency for passenger traffic by significantly



reducing the travel time and lowering associated cost and carbon emissions.

- **Enhanced Public Transport Accessibility:** Improved spatial coverage of bus transport infrastructure is expected to facilitate easier access to public transport services for residents, particularly in underserved areas.
- **Economic Benefits for Commuters:** Better access to bus services is likely to reduce first-mile transportation expenses and improve the affordability of daily travel.
- **Support for Sustainable Mobility:** Increased accessibility to public transport has the potential to promote greater public transport usage, reduce dependency on private vehicles, and contribute to environmental sustainability through lower transport-related emissions.

Collectively, these outcomes shall enhance passenger convenience and improve economic benefits.

2.3.1 Economic Impact

Accessibility to public transport system will reduce to monthly expenditure on travel cost. Considerations are as mentioned below:

Table 2-2 Improvement of economic parameter

Sr. No.	Parameter	Before*	After*
1	User's Travel Time (mins.)	8.22	3
2	Transportation Cost (Rs.)#	₹ 19.94	₹ 5.00
3	Nearest connectivity to Public Transport (km)	4.11	~1.5

*Travel time calculated considering avg. of villages beyond the buffer of 1km

#Alternate mode of transport used by citizens such as 2Ws, 4Ws.

Social Impact

1. Community Benefits:

- Enhance the quality, accessibility, and overall convenience of public transportation services across Haryana.
- Encourage the usage of public transport as a safe, reliable, and efficient mode of travel.
- Strengthen the safety, security and visibility of women and girl passengers, fostering a more inclusive and gender-responsive public transport system.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health & Well Being	Reduce the number of global deaths and injuries from road traffic accidents
4	Quality Education	By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
10	Reduced Inequalities	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
11	Sustainable cities and communities	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations,



SD Goal No.	Domain	Goal
		women, children, persons with disabilities and older persons

3. Carbon footprint:

- a. Usage of public transport will reduce the carbon emission and promote sustainable transportation.
- b. Improve the State's air quality through sustainable mobility.

Sr. No.	Parameter	Before*	After*
1	PM2.5 (in KG)	8.45	3.08
2	Nox (in KG)	113.79	41.53
3	CO (in KG)	1,849.59	675.03
4	CO (in tonnes)	1.85	0.68
	Total	1,971.83	720.32
	Emission reduction through Pvt. modes	-	63%



Use Case 3 Public Works Department - Preliminary Alignment Feasibility of Kosli Bypass Extension

Kosli is a prominent town in Rewari district of Haryana, strategically located along the Delhi–Jaipur railway line and near National Highway–48 (NH-48). Its strategic connectivity has contributed to the town's emergence as a significant commercial centre in the surrounding region. However, increasing traffic volumes are leading to congestion, road safety concerns, and adverse environmental impacts within the town. These challenges highlight the need for developing a suitable road bypass to divert through traffic and improve mobility, safety, and overall urban congestion in Kosli, Rewari.



Figure 3-1 Spatial location of Kosli in Haryana

3.1 Case Introduction

PWD (Roads) Department proposes to undertake preliminary road alignment analysis for approximately 3.9 km of the Kosli Bypass Extension. The analysis will support identification of a technically feasible and suitable alignment by considering settlements, road and rail network, soil type, topography, existing utilities and connectivity requirements. The exercise will provide an evidence-based outcome for further planning and development of the proposed bypass.

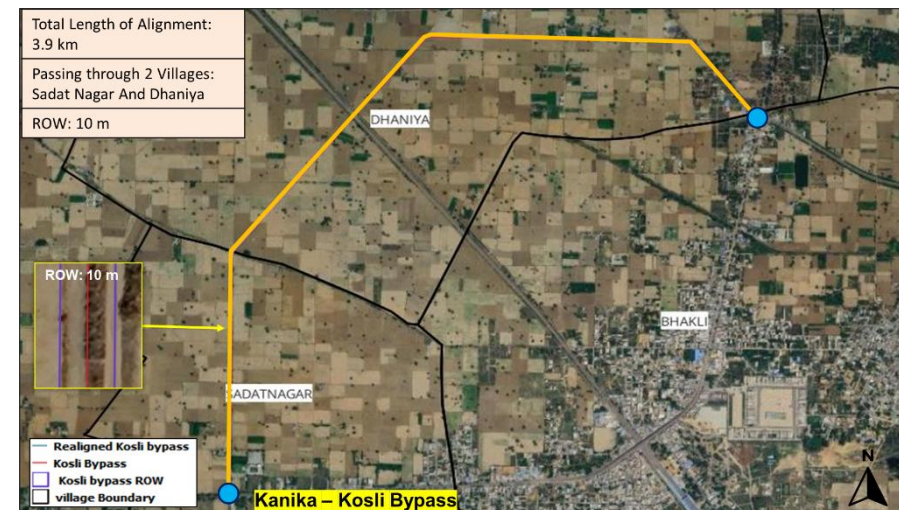


Figure 3-2 Alignment of Kosli Bypass

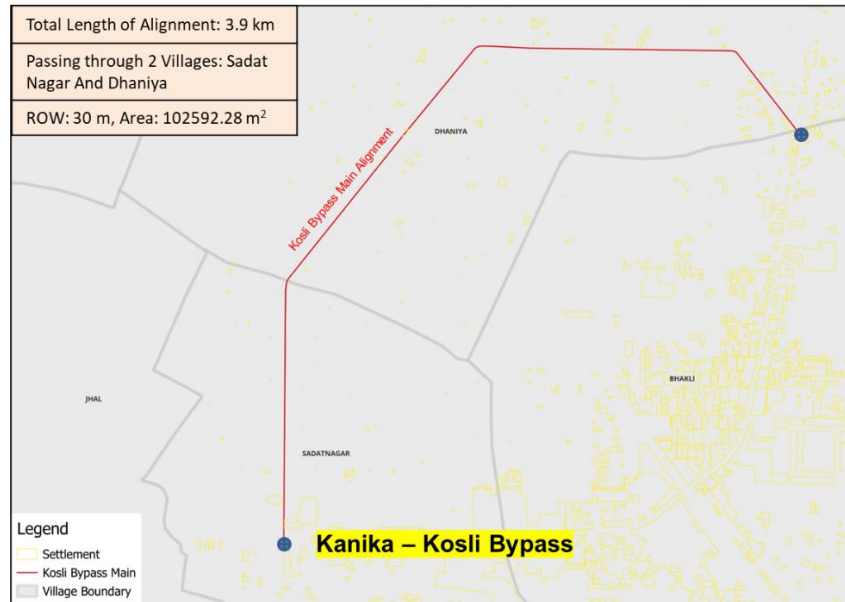


Figure 3-3 Settlement impacted along Kosli Bypass

3.2 PM GatiShakti Edge and Approach

The State Master Plan (SMP) portal was leveraged to enable integrated infrastructure identification to finalize the alignment of Kosli Bypass extension as a part of preliminary feasibility.

3.2.1 Data Layers Considered

Departments such as Revenue, PWD, Energy, Forest, etc. were identified as major stakeholders in the state. The following data layers were considered for the planning of Kosli Bypass: -

Table 3-1 Data layers considered

Sr. No.	Department	Data Layer
1	PWD	All Roads
2	Railways	Railway line

Sr. No.	Department	Data Layer
3	Energy Department	Electric Pole
		Distribution Transformer
		Feeder line
4	Agriculture	Soil type
5	Revenue	Cadastral maps
6	Forest	Trees
7	Survey of India	Topography (Contours)
8	I&WRD	Canals, Rivers, Drains, etc.

3.3 Outcomes

The SMP portal facilitates the overlaying of multiple planning layers, with around 10 parameters considered for the preliminary feasibility assessment of the proposed alignment. This enables potential conflicts to be identified at an early stage and allows timely realignment of sections that may otherwise hinder the execution of the bypass. The parameters considered are as listed below:

Table 3-2 Parameters considered for planning

Sr. No.	Parameter	Particular
1	Total Length	3.9 km
2	ROW	10 m
3	No. of Road Crossing	2
4	No. of Railway Crossing	1
5	Utility Shifting: Electric Poles	2
6	Utility Shifting: Distribution Transformer	1



Sr. No.	Parameter	Particular
7	Utility Shifting: Feeder Line Crossing	4
8	No. of Tree Cutting	Approx. 50
9	Area for Land Acquisition	34,076.34 m ²
10	Soil Type	Loamy
11	Topography (Contour)	-
12	Canals, Drain, River	-

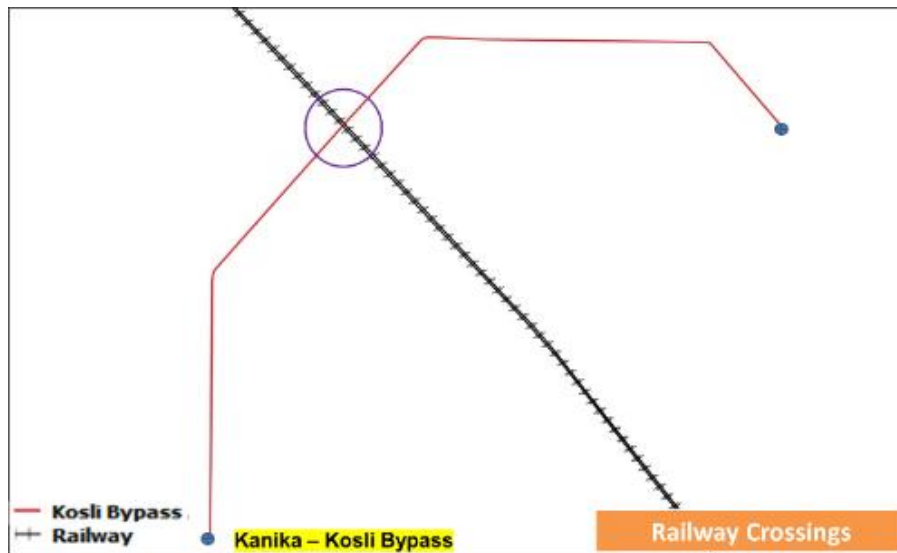


Figure 3-4 Railway crossing intercepting Kosli Bypass

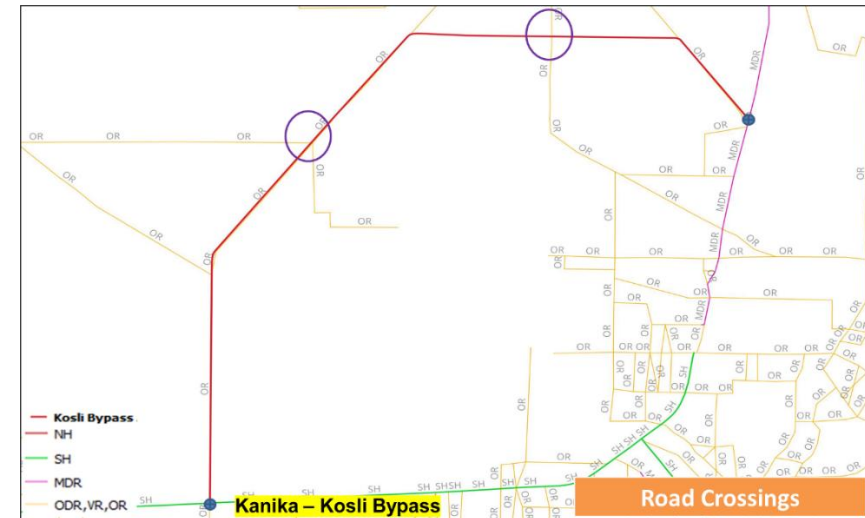


Figure 3-5 Roads connecting Kosli Bypass

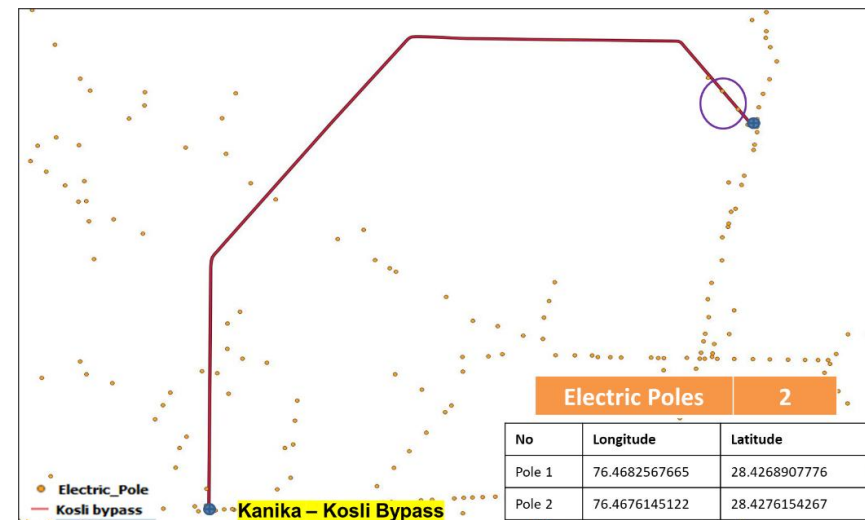


Figure 3-6 Electric pole along Kosli Bypass

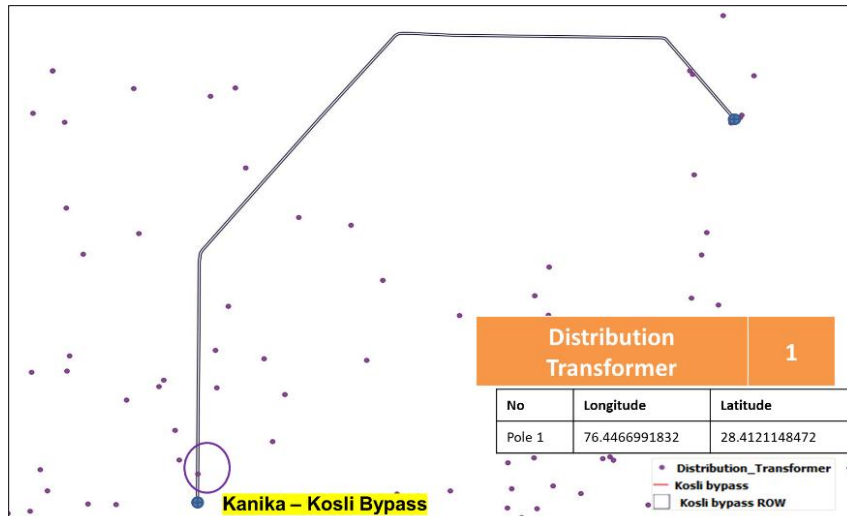


Figure 3-7 Distribution Transformer along Kosli Bypass

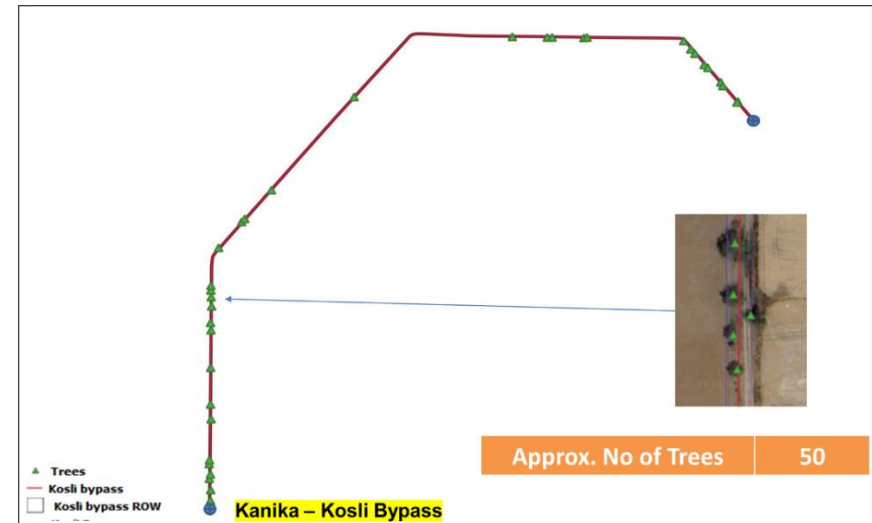


Figure 3-9 Trees along Kosli Bypass

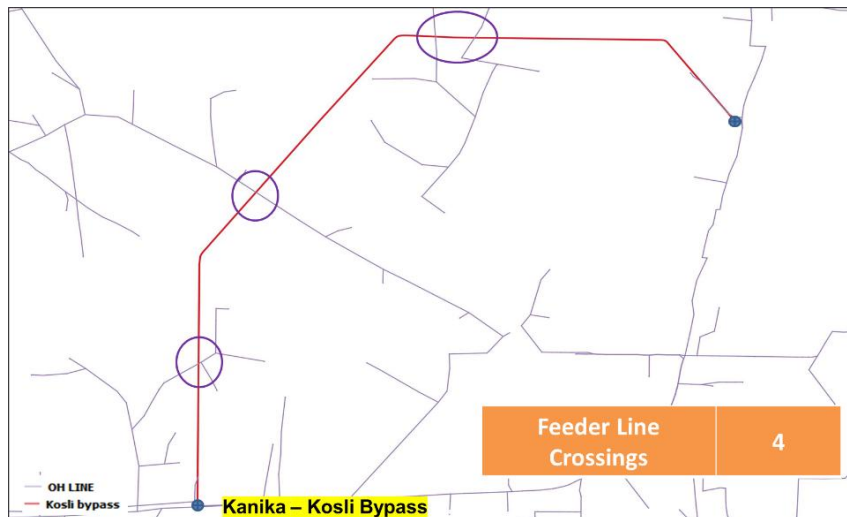


Figure 3-8 Feeder lines along Kosli Bypass

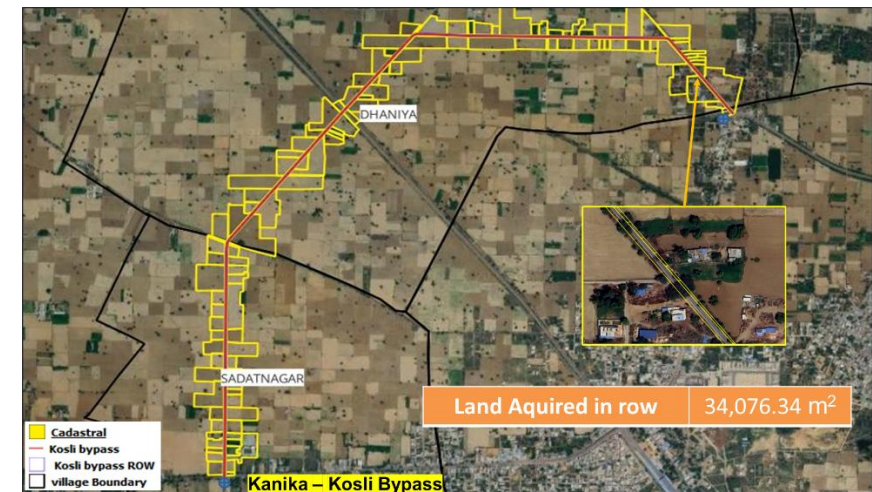


Figure 3-10 Cadastral map along Kosli Bypass

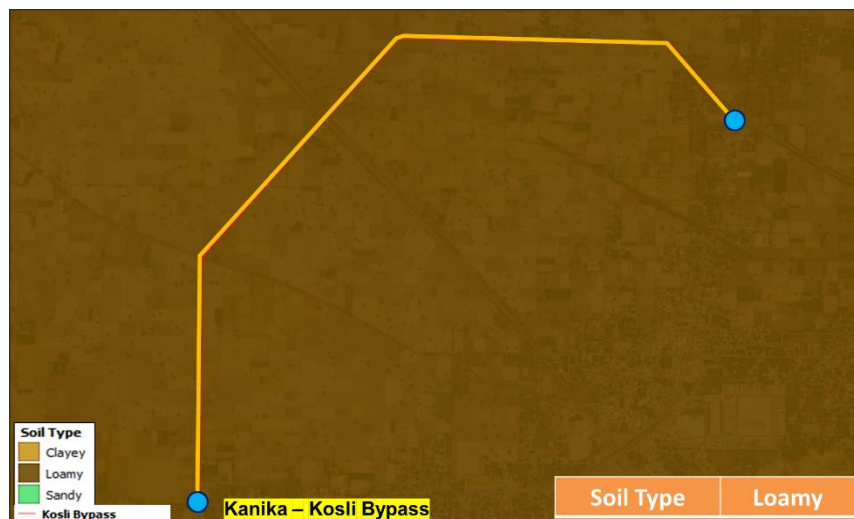


Figure 3-11 Soil typology of Kosli Bypass

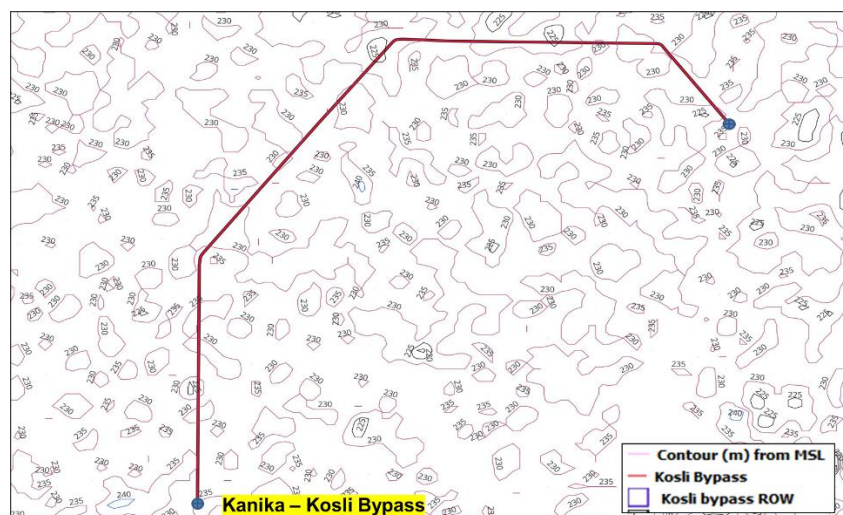


Figure 3-12 Topography of Kosli Bypass

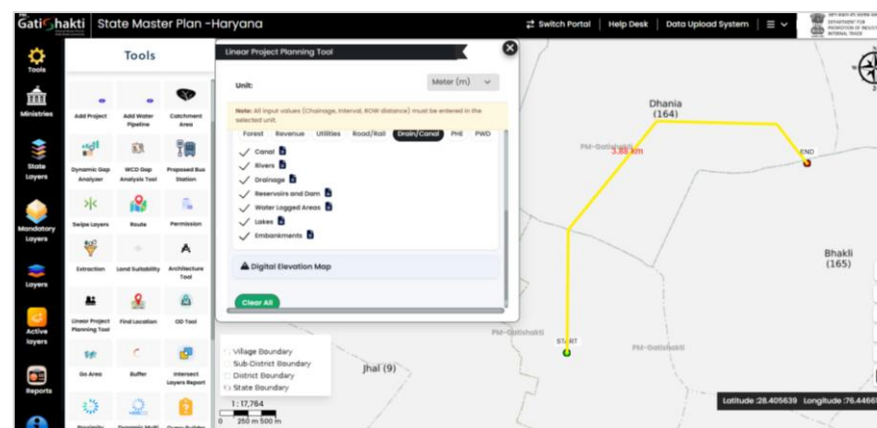


Figure 3-13 River/Canal/Drain crossings at Kosli Bypass

3.3.1 Economic Impact

The Kosli bypass extension shall have significant economic impacts by reducing congestion in the town, thereby reducing travel time and cost. Existing situation of the traffic congestion in the town is presented in the Figure 3-14 below.

Table 3-3 Improvement of economic parameter

Sr. No.	Parameter	Before*	After^
1	Travel Time (mins.)	10	7
2	Travel Cost Saving (Rs.) #	-	~₹30

*Considering avg. speed of 24 kmph, Source: Google maps

^Assuming avg. speed of 35kmph

#Assuming avg. cost saving of Rs. 10 per minute of time saved

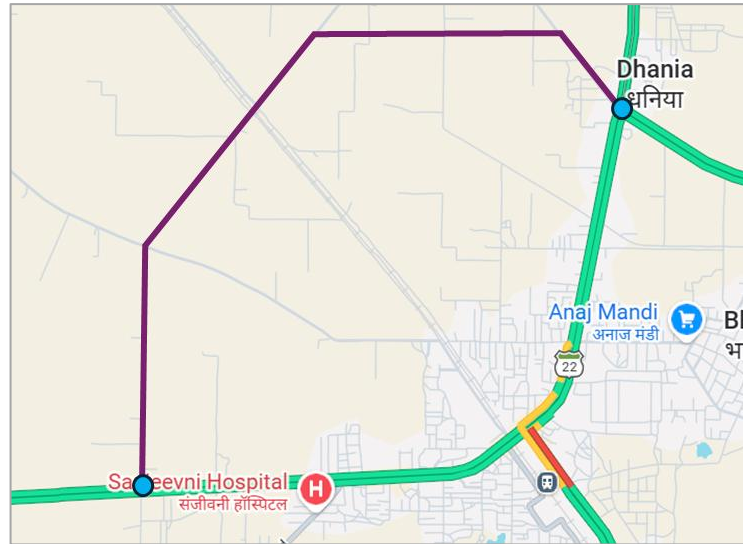


Figure 3-14 Existing Traffic condition in the Kosli town

Source: Google Maps (Secondary)

3.3.2 Social Impact

1. Community Benefits:

- Improved road safety by reducing the risk of accidents.
- Lower noise and air pollution.
- Enhanced mobility for residents/locals through reduced congestion in the core city.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health & Well Being	- Reduce the number of global deaths and injuries from road traffic accidents. - By 2030, substantially reduce the number of deaths and illnesses from

SD Goal No.	Domain	Goal
		hazardous chemicals and air, water and soil pollution and contamination.
9	Industry, Innovation and Infrastructure	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
10	Reduced Inequalities	- By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries - By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. - Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.
11	Sustainable cities and communities	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.



SD Goal No.	Domain	Goal
		• By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. • Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.



Use Case 4 HSIIDC - Prefeasibility Study for Planning of Industrial Estates – IMT Naraingarh, Panchkula

The Haryana State Industrial & Infrastructure Development Corporation (HSIIDC) plays a pivotal role in promoting industrial growth and infrastructure development across Haryana. Its core mandate includes planning and developing industrial parks and integrated industrial infrastructure at strategically identified locations to support economic activity and attract investment.

4.1 Case Introduction

Haryana State Industrial & Infrastructure Development Corporation (HSIIDC) is planning the development of 08 Industrial Estates/Industrial Model Townships (IMTs) at Naraingarh, Faridabad, Jind, Rai, Saral, New Township Gohana, Rewari, and Ambala. Among these, the Naraingarh Industrial Model Township (IMT) has been selected as a representative case, with its planning and assessment process presented in detail below.

Naraingarh is a town located in Ambala district, near the Haryana-Himachal Pradesh border. The proposed IMT site is situated along NH 07 and SH 04 covering parts of Dera, Toka, Hamidpur and Ferozepur village. HSIIDC seeks to undertake a preliminary feasibility assessment for the proposed IMT Naraingarh, spanning over an area of approximately 16.78 sq.km.

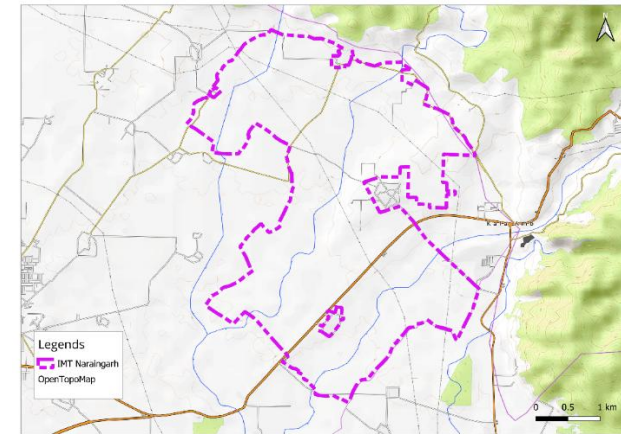


Figure 4-1 Spatial location of IMT Naraingarh

4.2 PM GatiShakti Edge and Approach

PM GatiShakti Haryana plays a vital role in this endeavour by enabling a comprehensive assessment of site feasibility and infrastructure connectivity, including road network, power (electricity) network, forest area and water supply network etc.

The State Master Plan (SMP) portal was leveraged to facilitate integrated infrastructure assessment for the proposed IMT Naraingarh site as part of the prefeasibility study.

4.2.1 Data Layers Considered

Various data layers were considered from departments such as PWD, Revenue, Forest, I&WRD and Energy Department in the state. The considered layers are as follows:

Table 4-1 Data layers considered

Sr. No.	Department	Data Layer
1	PWD	All Roads
2	Energy Department	Power Utilities



Sr. No.	Department	Data Layer
3	Revenue	Cadastral maps
4	Forest	Forest Area
5	I&WRD	Waterbodies

4.3 Outcomes

The SMP Portal facilitated the overlay of multiple planning layers, with approximately five key parameters considered for the pre-feasibility assessment of the proposed IMT area. This enabled the identification of areas that may conflict with the proposed industrial model township, allowing for timely planning and necessary interventions, including the relocation or shifting of utilities that could otherwise impede the development and execution of the industrial park. The considered parameters are listed below:

Table 4-2 Parameters considered for planning

Sr. No.	Parameter
1	Forest Area
2	Power Utility – Transmission Line/Poles
3	Revenue
4	Water Body – River/Canal/Drain
5	Road Network

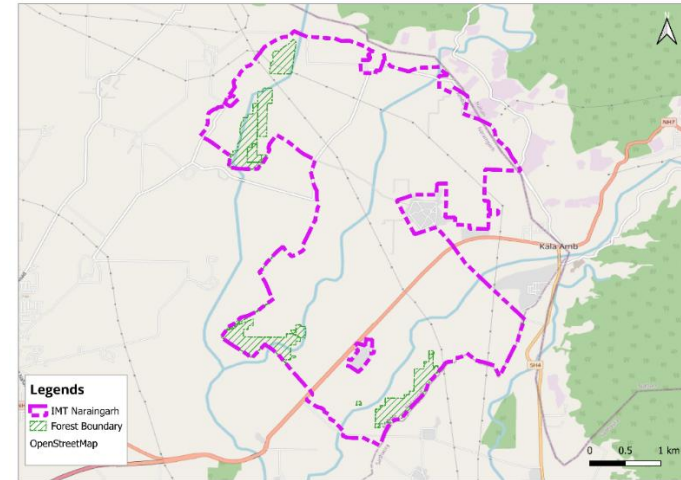


Figure 4-2 Forest cover within IMT boundary

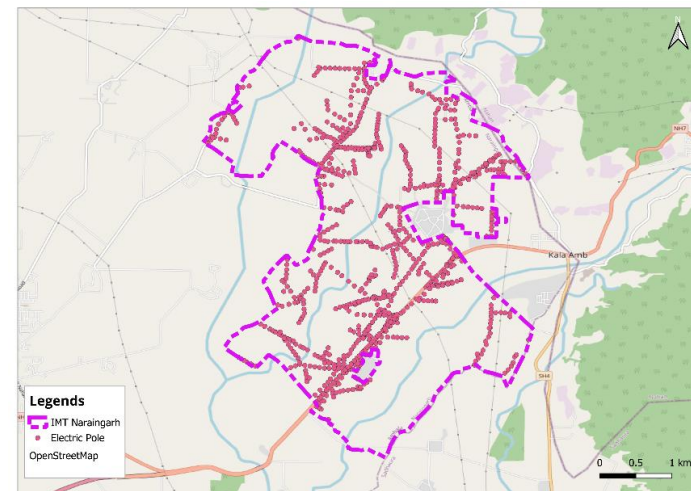


Figure 4-3 Transmission network within IMT boundary

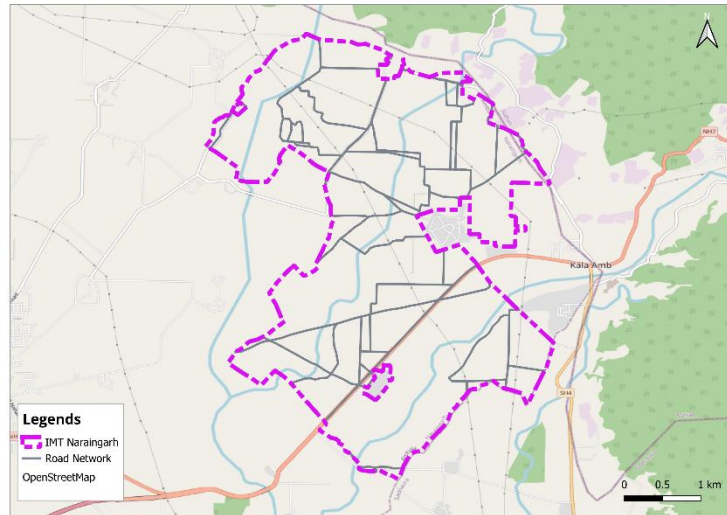


Figure 4-4 Road network within IMT boundary

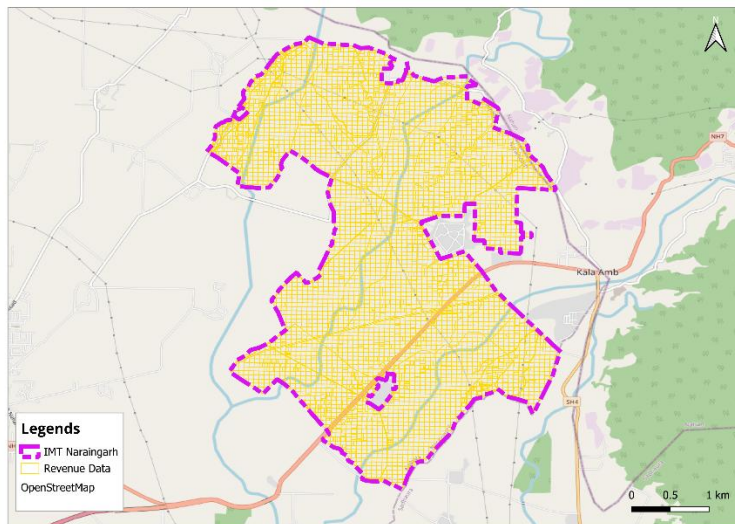


Figure 4-5 Revenue plots within IMT boundary

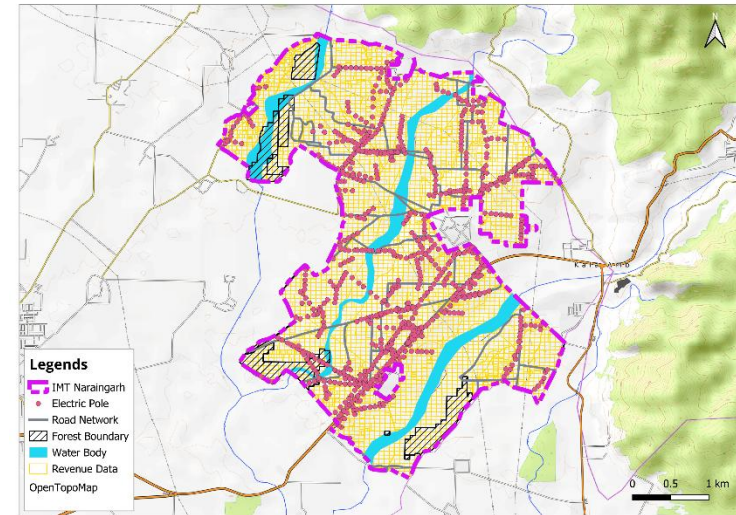


Figure 4-6 All Intersecting layers within IMT boundary

Through the SMP Portal, HSIIDC was able to undertake faster and more informed site selection and investment decisions through integrated, GIS-based and data-driven spatial analysis. The portal will support early identification of site constraints, infrastructure conflicts, and development risks, thereby enable optimized land utilization and reduce planning uncertainties. It will also facilitate the identification of applicable NOCs and statutory clearances, promoting coordinated planning, streamlined approvals, and efficient development of upcoming industrial estates.

4.3.1 Economic Impact

The proposed Industrial Model Township (IMT) at Naraingarh is expected to drive regional economic growth by attracting industrial investment, generating employment, and promoting business development. The project will create direct and indirect job opportunities, supporting the growth of local community, ancillary industries, and improve infrastructure and related connectivity.



4.3.2 Social Impact

1. Community Benefits

- Improved Standard of Living of the community
- Enhance Skill Development
- Promote Women participation

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
1	No Poverty	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
5	Gender Equality	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.
8	Decent Work and Economic Growth	Promote development-oriented policies that support productive activities, decent job creation,

SD Goal No.	Domain	Goal
		entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
10	Reduced Inequalities	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
12	Responsible Consumption and Production	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Use Case 5 Public Works Department Farukhnagar Ring Road Pre-feasibility in Gurugram District

Farrukhnagar is an important industrial and logistics hub in the Gurugram region, connecting surrounding industrial areas with Gurugram, Jhajjar, Rewari and the wider NCR. Significant cargo movement passes through the town, carrying industrial raw materials and finished goods to and from nearby industrial areas. In addition, the archaeological heritage site within the city creates a major traffic bottleneck, with heavy vehicles sharing the constrained urban road network with local traffic. This results in severe congestion, freight delays and reduced efficiency of cargo movement through the town.

5.1 Case Introduction

Public Works Department (PWD), Haryana, plans to develop a greenfield bypass in Farrukhnagar, Gurugram to divert through and heavy commercial traffic away from the core city. This project will improve freight movement efficiency, reduce congestion, and enhance connectivity with surrounding industrial and regional corridors.

5.2 PM GatiShakti Edge and Approach

Public Works Department, Haryana utilised the PM GatiShakti State Master Plan Portal to undertake the pre-feasibility assessment of the proposed greenfield bypass alignment. The platform facilitated an integrated assessment of the proposed alignment, enabling identification of potential constraints & conflicts and supporting validation of its overall feasibility prior to detailed project development.



Figure 5-1 Spatial location of Farukhnagar ring road in Haryana

5.2.1 Data Layers Considered

Public works Department, during pre-feasibility assessment utilised various relevant spatial data layers, which are as follows: -

Table 5-1 Data layers considered

Sr. No.	Department	Data Layer
1	Forest Department	Forest, Eco-sensitive Zone
2	Energy Department	Power Utilities
3	Revenue	Cadastral maps
4	PWD	Road Network
5	ULB/ PHED	Water and Sewer Utility
6	I&WRD	Canals, Rivers, Drains, etc.



5.3 Outcome

The assessment indicated that a portion of the alignment falls within an Eco-Sensitive Zone (ESZ), with about 02 transmission line crossings, 10 road intersections and 04 distribution transformers along the proposed corridor. The alignment would require approximately 71.65 acres of land acquisition. These findings provided a basis for further evaluation, obtaining necessary clearances, coordinating with utility agencies and planning subsequent stages of project development.

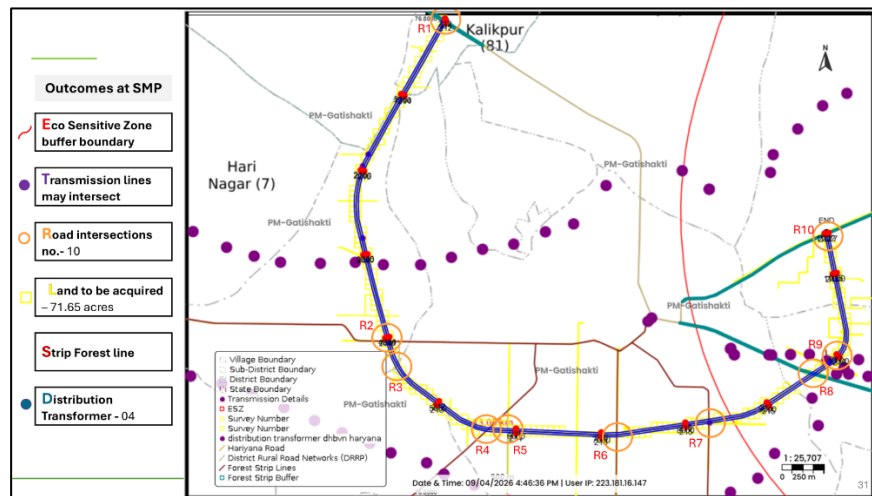


Figure 5-2 Intersection Data Layers with proposed alignment

5.3.1 Economic Impact

- **Reduced Urban Congestion:** By diverting traffic - including heavy freight - away from city arteries, inner-city traffic flow improves significantly, reducing delays and easing strain on municipal roads.
- **Economic Linkages:** The greenfield bypass can serve as an **economic connectivity corridor**, strengthening linkages between Farukhnagar, MET City Jhajjar, Gurugram's industrial

clusters, regional logistics infrastructure and NCR markets, while improving freight efficiency and creating opportunities for logistics, warehousing and allied industrial development.

- **Travel Time & Speed:** Average speeds projected to increase by 40 km/h. And the average Travel time shall be cut by ~50% (20 mins to 10 mins).

5.3.2 Social Impact

1. Community Benefits:
 - a. Improved road safety by reduction the risk of accidents.
 - b. Lower noise and air pollution.
 - c. Enhanced mobility for locals – reduced congestion in the core-city.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health & Well Being	• Reduce the number of global deaths and injuries from road traffic accidents. • By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
10	Reduced Inequalities	• By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries. • By 2030, reduce the adverse per capita environmental impact of cities,



SD Goal No.	Domain	Goal
		including by paying special attention to air quality and municipal and other waste management. • Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.
11	Sustainable cities and communities	• By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries. • By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. • Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.



Use Case 6 Irrigation & Water Resource Department – Bhiwani - Hisar Drain

Bhiwani and Hisar are characterised by relatively flat terrain and low surface gradients, with several areas susceptible to monsoon-induced waterlogging. Intense rainfall with limited natural drainage and localized low-lying pockets can result in temporary flooding and disruption to roads and agricultural activities during the rainy season.

6.1 Case Introduction

The Irrigation and Water Resources Department (I&WRD), Haryana proposed augmentation of the existing drainage network to address recurring waterlogging and excess runoff in the Bhiwani–Hisar region. The proposed interventions aim to improve drainage capacity and divert excess stormwater towards the Ghaggar River system, thereby reducing the risk of flooding and water accumulation in low-lying areas. This approach is expected to enhance the overall resilience of the regional drainage network during high-rainfall events.

I&WRD has divided the proposed intervention into two sections: (i) Bhiwani–Hisar Drain and (ii) Hisar–Ghaggar Drain. The present report focuses on the Bhiwani–Hisar Drain section

6.2 PM GatiShakti Edge and Approach

The Irrigation and Water Resources Department, Haryana utilised the PM GatiShakti State Master Plan (SMP) Portal to undertake the pre-feasibility assessment of the proposed brownfield drain augmentation project. The platform facilitated an integrated assessment of potential constraints and conflicts, supporting validation of the project's overall feasibility.



Figure 6-1 Spatial location of Bhiwani – Hisar Drain in Haryana

6.2.1 Data Layers Considered

Irrigation and Water Resources Department (I&WRD), Haryana, during pre-feasibility assessment utilised various relevant spatial data layers. Departments including PWD (B&R), Energy, ULBs, PHED, I&WRD, Forest were identified. The following data were considered to undertake the assessment, which are as follows: -

Table 6-1 Data layers considered

Sr. No.	Department	Data Layer
1	Forest Department	Forest
2	Energy Department	Power Utilities
3	I&WRD	Existing Drains and Canals
4	PWD	Road Network



Sr. No.	Department	Data Layer
5	ULB/ PHED	Water and Sewer Utility

6.3 Outcome

The assessment indicated 10 canal intersections, 20 road intersections, 04 drain intersections. These findings provided a basis for further evaluation, obtaining necessary clearances, coordinating with utility agencies and planning subsequent stages of project development.

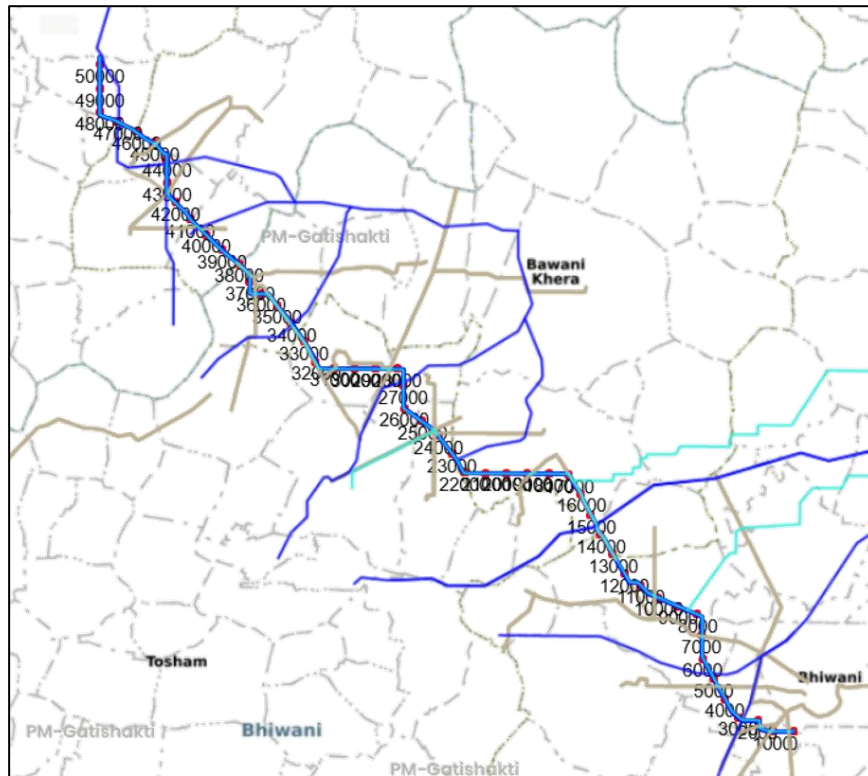


Figure 6-2 Intersecting Data Layers with alignment

6.3.1 Economic Impact

The drain augmentation is expected to generate economic benefits by reducing flood-related damage and disruption to agriculture, transport, businesses and public infrastructure. Improved drainage will support continuity of economic activities during the monsoon, reduce infrastructure maintenance costs and enhance the overall resilience and investment attractiveness of the Bhiwani–Hisar region.

6.3.2 Social Impact

1. Community Benefits:

- Reduced flood and waterlogging-related disruption** - to communities, particularly in low-lying settlements.
- Improved public health and sanitation** - by reducing prolonged water stagnation and associated risks.
- Improved agricultural resilience** - by reducing prolonged water accumulation on agricultural land.
- Improved quality of life** - by reducing recurring disruption caused by monsoon waterlogging.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health & Well Being	- Reduce the number of global deaths and injuries from road traffic accidents. - By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
9	Industry, Innovation and Infrastructure	Develop quality, reliable, sustainable and resilient infrastructure to support economic development and human



SD Goal No.	Domain	Goal
		well-being, with a focus on affordable and equitable access for all.
11	Sustainable cities and communities	• By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries. • By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. • Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

Use Case 7 Health Department - Site Feasibility of Proposed District Civil Hospital in Hisar District

The Health Department plays a pivotal role in strengthening healthcare infrastructure by planning, funding, and overseeing the development and upgradation of medical facilities such as District Civil Hospitals, CHC, PHC and SHC. It ensures the availability of quality healthcare services through the provision of modern medical equipment, adequate staffing, specialized departments, and improved healthcare facilities to meet the growing needs of the population.

7.1 Case Introduction

The Department of Health seeks to conduct site feasibility for the development of a 300- bedded District Civil Hospital at DCM Road near Airport Chowk, Hisar to strengthen healthcare infrastructure and meet the growing healthcare needs of the district/ region.

7.2 PM GatiShakti Edge and Approach

The PM GatiShakti State Master Plan was leveraged to assess the feasibility of the proposed hospital site through analysis through geospatial layers including connectivity, utilities, environmental features such as green belt, soil, forest, contours, administrative boundaries and revenue records etc. The assessment helps to identify site-specific constraints and opportunities, availability of supporting infrastructure, and regulatory considerations (Airport, Forest, Development control norms).

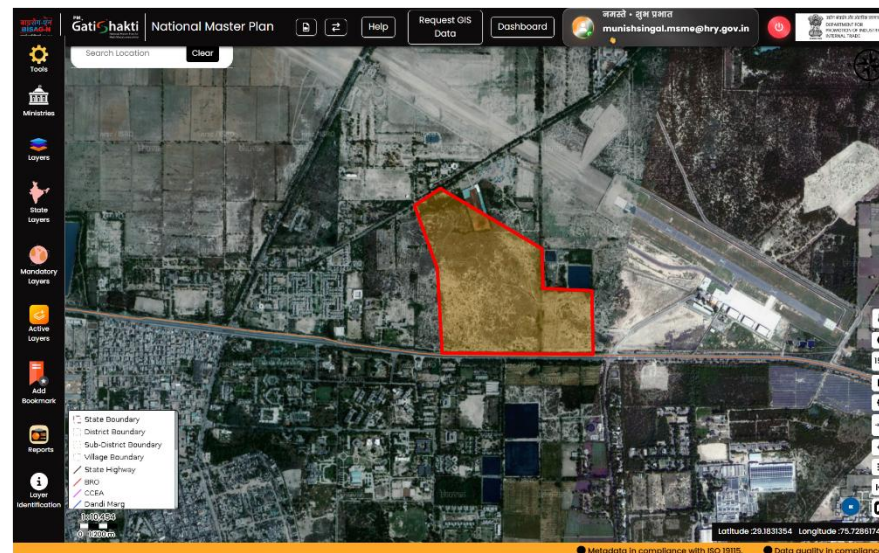


Figure 7-1 Spatial location of Proposed District Civil Hospital at Hisar

7.2.1 Data Layers Considered

Departments including PWD (B&R), Energy, ULBs, PHED, Forest, Revenue, and Town & Country Planning were identified as key stakeholders at the state level for providing the requisite datasets. The following data were considered for undertaking the feasibility assessment of the proposed site:

Table 7-1 Data layers considered

Sr. No.	Department	Data Layer
1	Forest Department	Forest
		Green Belt
		Eco-sensitive Zone
		Strip Buffer
2	Energy Department	Power Utilities
3	Revenue	Cadastral maps

Sr. No.	Department	Data Layer
4	PWD	Road Network
5	ULB/ PHED	Water and Sewer Utility

7.3 Outcomes

The PM GatiShakti analysis indicated that the identified land parcel is largely suitable for development of the proposed District Civil Hospital with 300 beds.

Assessment of contour data shows that the site is not located in a low-lying area, thereby supporting construction feasibility with minimal topographical constraints as shown in the image below:

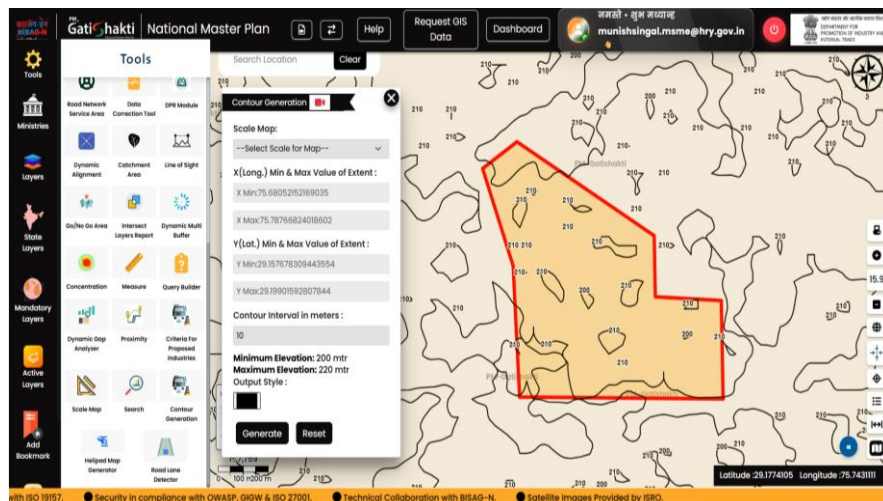


Figure 7-2: Topographical map of proposed sites

The analysis further identified that a portion of the site adjoining the National Highway falls within the Green Belt zone, requiring an appropriate setback of approximately 100 metres before commencement of construction activities as depicted in image below:



Figure 7-3: 100 metres green belt passing along the proposed site

Additionally, site's good regional connectivity was observed through adjoining National Highway and its proximity to Hisar Airport, along with the availability of nearby power, water supply, sewerage, and feeder utility networks. The assessment also enabled identification of specific revenue Khasra parcels proposed for land transfer, facilitating informed planning and regulatory compliance. The figures of the assessment are placed below:

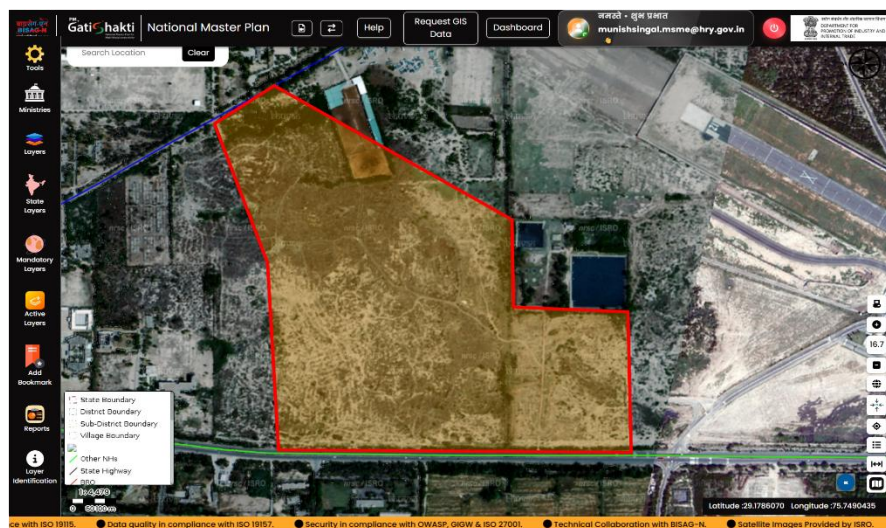


Figure 7-4 Connectivity of Proposed land with National Highway

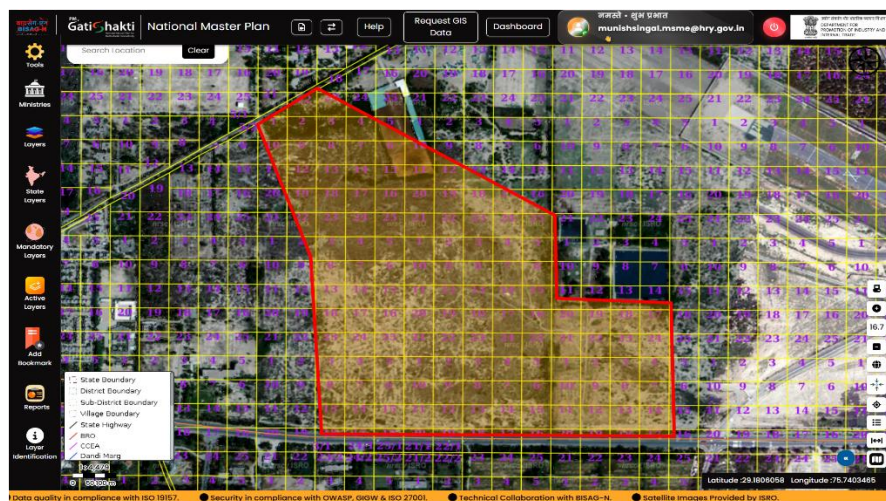


Figure 7-5 Highlighted Khasra within the boundary to be acquired for the development of proposed site

7.3.1 Economic Impact

- **Optimized Project Planning and Reduced Risks:** PM GatiShakti tool enabled the Health department to carry out the pre- feasibility site assessment facilitating early identification of land-use constraints, utility availability, and regulatory requirements hence reducing implementation delays and costs.
- **Reduced New Infrastructure Development Costs:** Availability of nearby water supply, sewerage, power, and road infrastructure minimizes the need for extensive new utility investments.
- **Efficient Utilization of Government Land:** The project utilizes an existing Government land parcel, eliminating land acquisition costs and associated procedural delays.
- **Long-Term Economic Benefits:** Improved healthcare infrastructure is expected to support regional development, generate direct and indirect employment opportunities, and enhance the attractiveness of area as a healthcare service hub.

7.3.2 Social Impact

1. Community Benefits:
 - a. **Enhanced Healthcare Accessibility:** The proposed 300-bed District Civil Hospital will improve access to quality healthcare services for residents of Hisar and surrounding areas through its strategic location and strong road connectivity.
 - b. **Reduced Travel Time and Improved Emergency Response:** Proximity to major transport corridors and the airport will facilitate faster access to emergency and critical care services.
 - c. **Reduced Burden on Existing Facilities:** The new hospital will help decongest the existing Civil Hospital, leading to improved patient care and service delivery.



- d. **Improved Public Health Outcomes:** Increased healthcare capacity and availability of specialized services will contribute to better health outcomes and overall community well-being.

2. Connecting to SD goals:

SD Goal No.	Domain	Goal
3	Good Health and Well-being	- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births. - By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births - By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. - By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of

SD Goal No.	Domain	Goal
		reproductive health into national strategies and programmes - Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. - Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks
6	Clean Water and Sanitation	Support and strengthen the participation of local communities in improving water and sanitation management
9	Industry, Innovation and Infrastructure	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

SOCIAL PROJECTS

AREA BASED PROJECTS

Use Case 8 Women & Child Development Department - Leveraging PM GatiShakti for Gap Identification of Anganwadi in Nuh District

Anganwadi's are community centers aiming to support health, nutrition and early learning needs of young children, additionally assisting pregnant and lactating mothers.



Image Source: WCD Department, Haryana

8.1 Case Introduction

The Government of Haryana is adopting the PM GatiShakti District Master Plan (DMP) as an enabling platform for improving the planning, development of Anganwadi infrastructure through a GIS based and data-driven approach. The platform integrates geospatial framework that enables identification of evidence-based infrastructure gaps.

8.2 PM GatiShakti Edge & Approach

Through PM GatiShakti Master Plan, Women and Child Development (WCD) Department is evaluating the coverage network of existing Anganwadi Centers and identify the infrastructure gaps in the state based on the beneficiary population range prescribed notification of Ministry of Women and Child Development (MoWCD) vide 18.11.2008.

8.2.1 Data Layers Considered

Data layer from the Women and Child Development Department (WCD), is considered for geo-spatial analysis, as mentioned below:

Table 8-1 Data layers considered

Sr. No.	Department	Data Layer
1	WCD	Anganwadi (AWC)

8.3 Outcomes

The Dynamic Gap Analyzer tool helps in identifying the coverage gaps, by generating coverage map of the specific facility in the Nuh district. The tool had identified about 02 villages in the district having village population >800⁴ and creating a buffer of 1km from the village that are yet to have Anganwadi within 1km vicinity. This analysis helped in identifying infrastructure requirements for the uncatered areas in the

⁴ MoWCD Notifcation, 18.11.2008



district. The insights shall help officials concern in establishing the infrastructure. The listed parameters were considered for this analysis:

Table 8-2 Parameters considered

Sr. No.	Parameters
1	Anganwadi Locations
2	Village Population - Census
3	Buffer 1km from the village

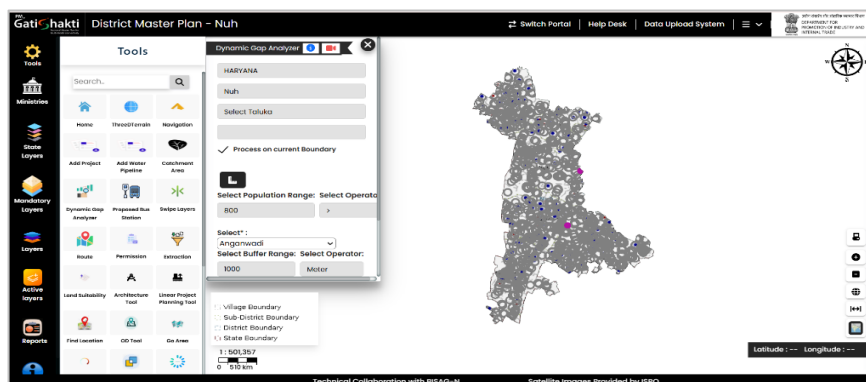


Figure 8-1 Gap identification of Anganwadi's in Nuh District



Figure 8-2 Identified village in Nuh District - Kontalka

The outcome of the tools shall help in the following ways:

8.3.1 Potential Economic Benefits

1. **Reduced Planning Time** - The tool shall help in identifying the gaps within 10-15 minutes as compared to the conventional planning on paper and hence reduction of man-hours spends in the planning process.
2. **Improved Accessibility**– About 50%⁵ reduction in travel time from existing spatial distance of 1.5 kms.
3. **Efficient Resource Allocation** - Identify coverage gaps helps optimization of government budget allocation by targeting uncatered areas.
4. **Better planning** -Enables data-driven decision making for future establishment.

8.3.2 Social Impact

1. Community Benefits:

⁵ Considering avg. spatial distance reduction to 500-700 meters.



- a. **Improved Access to Women & Child** – Ensures nutrition and early education services to children and mothers in remote areas.
- b. **Health Benefits** – Better coverage leads to improved child nutrition and maternal health indicators.
- c. **Equity** – Enhances welfare service delivery across the state.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
2	Zero Hunger	By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
3	Good Health and Well-being	By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
4	Quality Education	By 2030, ensure that all girls and boys have access to quality early childhood development, care

SD Goal No.	Domain	Goal
		and pre-primary education so that they are ready for primary education. Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all.
5	Gender Equality	- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life. - Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels
10	Reduced Inequalities	- By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status - Ensure equal opportunity and reduce inequalities of outcome, including by eliminating



SD Goal No.	Domain	Goal
		discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard



Use Case 9 Health Department - District-level Gap Identification of Health facilities in Nuh District

Primary Health Centres (PHCs) are vital component of State public health ecosystem. They serve as a link between first level of primary care (such as Sub Health Centres (SHC)) and community and higher order facilities (such as CHCs and District Hospitals) in the state.



Image Source: Health Department, Haryana

9.1 Case Introduction

Health Department, Haryana aims to identify infrastructure gap of Primary Health Centre (PHC) in Nuh District. By leveraging PM GatiShakti District Master Plan (DMP) portal the department enables data-driven and integrated approach to healthcare infrastructure planning.

9.2 PM GatiShakti Edge & Approach

Through PM GatiShakti Master Plan, Women and Child Development (WCD) Department is evaluating the coverage network of existing Anganwadi Centers and identify the infrastructure gaps in the state based on the beneficiary population range prescribed notification of Ministry of Women and Child Development (MoWCD) vide 18.11.2008. Through PM GatiShakti Master Plan, Health Department identified villages for development of health care facilities based on beneficiary villages.

9.2.1 Data Layers Considered

GIS based data layers from the Health Department is considered for geo-spatial analysis as listed below:

Table 9-1 Data layers considered

Sr. No.	Department	Data Layer
1	Health	Primary Healthcare Centre (PHC)

9.3 Outcomes

The Concentration Tool of PM GatiShakti District Master Plan (DMP) was utilized to identify priority clusters/villages for health care interventions. A specific cluster in the Nuh District was considered based on the beneficiary population of the clusters and availability of higher order healthcare facility i.e., Primary Healthcare Centre (PHC).

The analysis helped in identifying the infrastructure requirement through demographics and spatial data analysis, improving health care facility in the vicinity. The parameters considered are listed below:

Table 9-2 Parameters considered

Sr. No.	Parameters
1	Primary Healthcare Centre (PHC)



Sr. No.	Parameters
2	Village Population - Census

Sr. No.	Village	Population (Census 2011)
	Total	33,581

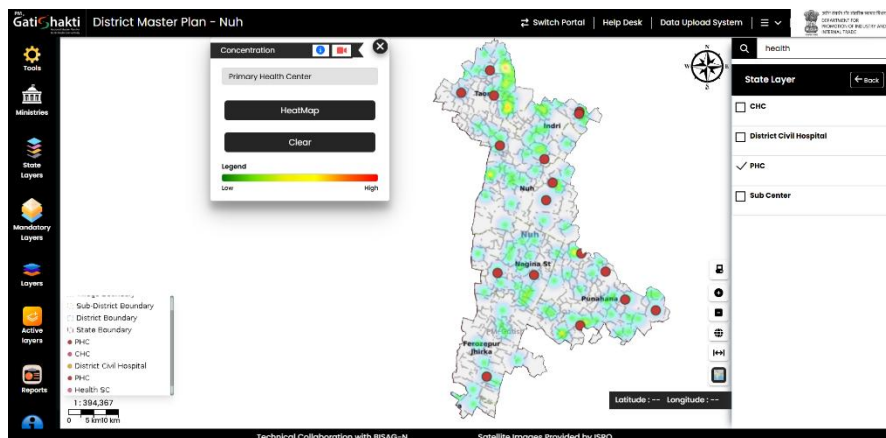


Figure 9-1 Improving PHC network in Nuh District

Based on the holistic map, a specific area was identified for the development of PHC. A cluster of 06 villages was identified, cumulatively having population of 33,581 (Census, 2011), more than 30,000 range for development of PHC as per the Indian Public Health Standards (IPHS). The details of the 06 villages is as listed below:

Table 9-3 Villages Considered along with Demographics

Sr. No.	Village	Population (Census 2011)
1	Chandeni	5,226
2	Salamba	7,578
3	Palla	5,581
4	Beema	1,208
5	Sonkh	2,490
6	Firojpur Namak	11,498

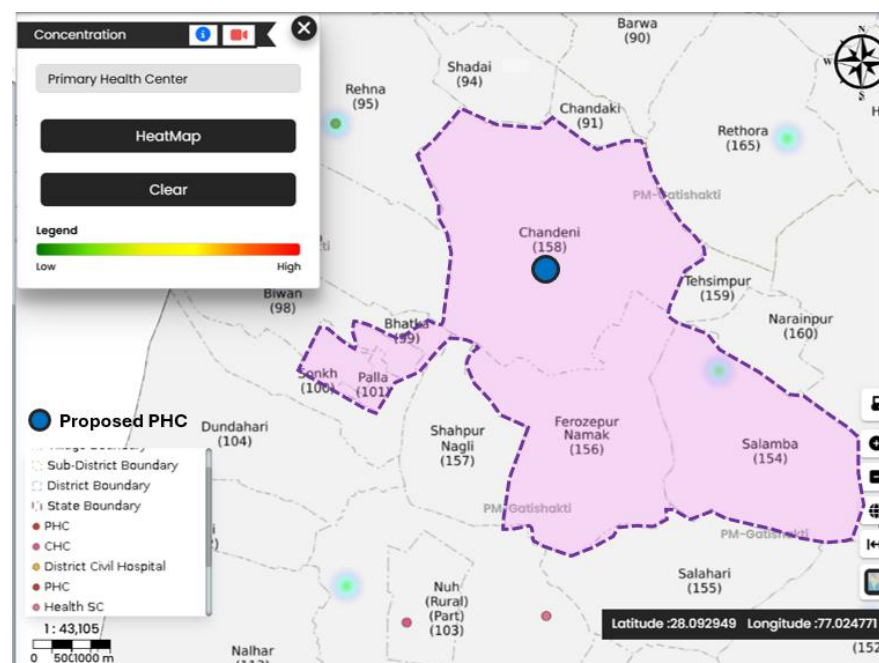


Figure 9-2 Cluster of 06 villages for formation of PHC

Additionally, a proximity analysis was conducted to understand the current situation of cluster villages. It was observed that the nearest PHC centre from the Chandeni village is at spatial distance of more than 5 kms.

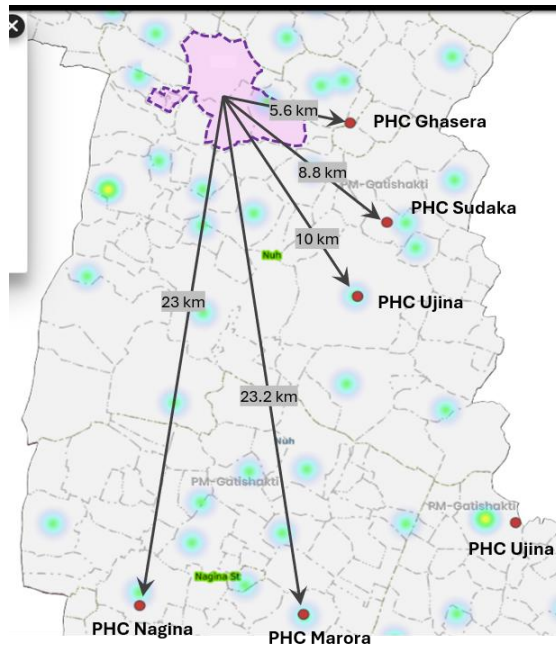


Figure 9-3 Proximity analysis of the Chandeni residents to nearest PHC

Based on the proximity analysis an detailed feasibility was conducted by the Health Department, Nuh and the decision to develop the PHC Chandeni was taken. About 1.8 acres of land is allocated by the Gram Panchayat for the development.

9.3.1 Potential Economic Benefits

1. **Reduced Planning Time** - The tool shall help in identifying the gaps within 10-15 minutes as compared to the conventional planning on paper and hence reduction of man-hours spend in the planning process.

⁶ Considering the avg. spatial distance of 12.4 km to proposed 3.2 km for 06 villages

2. **Improved Accessibility**– About 70%⁶ Travel time reduction to the nearest medical facility
3. **Better planning** -Enables data-driven decision making for future establishment.

9.3.2 Social Impacts

1. Community Benefits:
 - a. **Reducing Emergency Response Time** – By reducing the travel time in case of a medical emergency.
 - b. **Better Maternal and Child health** – Strengthens access to maternal care and child health services.
 - c. **Reduced productivity losses** – Timely treatment can reduce illness response time.
 - d. **Improve health awareness** – Support community outreach, health education and adoption of healthy behavior.
 - e. **Health Benefits** – Better coverage leads to improved child nutrition and maternal health indicators.

2. Connecting to SD Goals:

SD Goal No.	Domain	Goal
3	Good Health and Well-being	• By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births. • By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal



SD Goal No.	Domain	Goal
		mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births - By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. - By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes - Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. - Strengthen the capacity of all countries, in particular developing countries, for early

SD Goal No.	Domain	Goal
		warning, risk reduction and management of national and global health risks
6	Clean Water and Sanitation	Support and strengthen the participation of local communities in improving water and sanitation management
9	Industry, Innovation and Infrastructure	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.



Government of Haryana
Department of Industries and
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