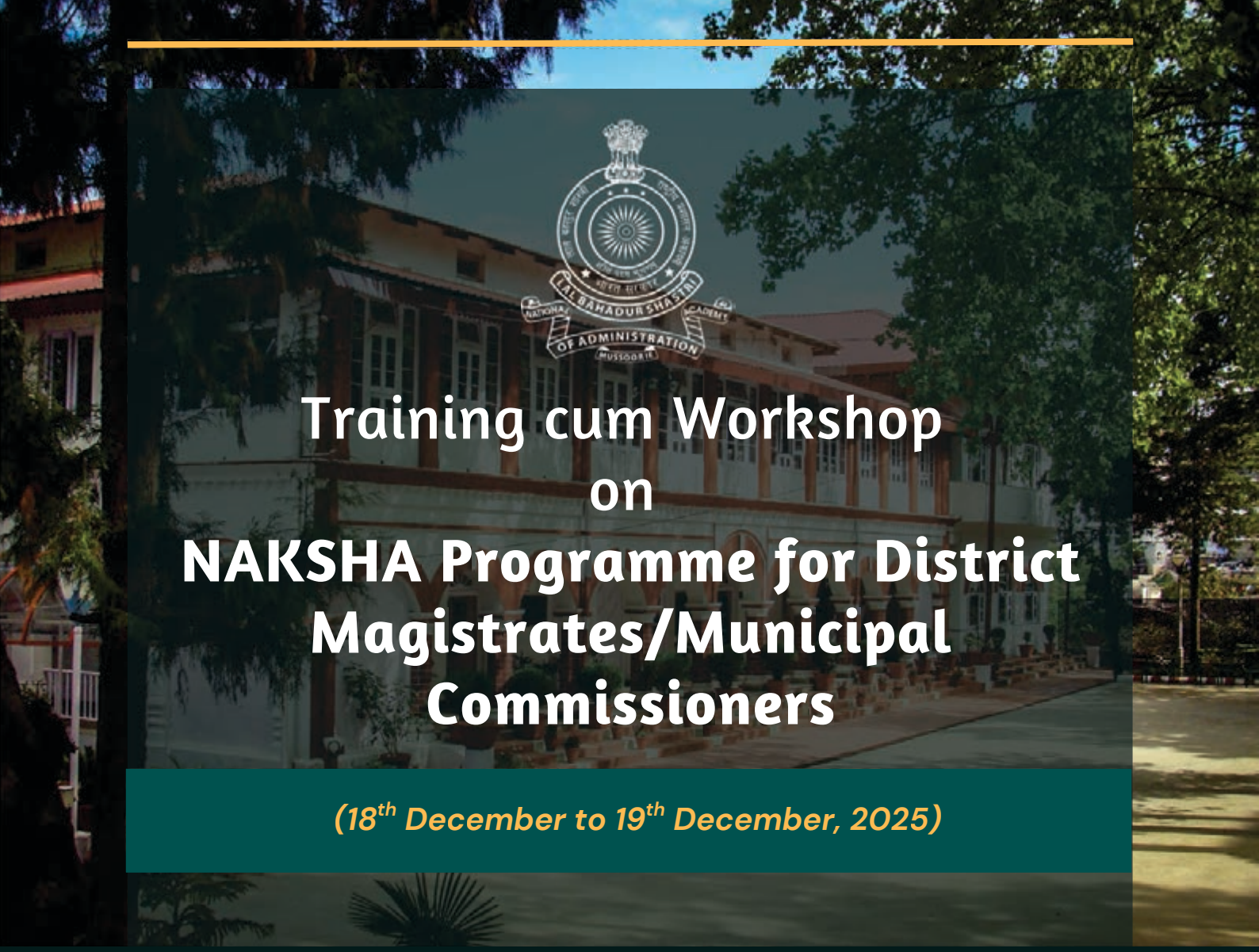

Training cum Workshop on NAKSHA Programme for District Magistrates/Municipal Commissioners

(18th December to 19th December, 2025)

COURSE REPORT

B.N. Yugandhar Centre for Rural Studies
Lal Bahadur Shastri National Academy of Administration,
Mussoorie – 248179

In collaboration with
Centre of Excellence on Land Governance (CoELG),
Guwahati Centre

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January, 2026

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DAY 1

Training cum Workshop on NAKSHA Programme for District Magistrates/Municipal Commissioners

18th to 19th December, 2025

Assam Administrative Staff College, Khanapara,

Group photo of the participants of "Training cum workshop on NAKSHA programme for District Magistrates /Municipal Commissioners" with "Shri Rajesh Meena", Deputy Director and Centre Director, B. N. Yugandhar Centre for Rural Studies (BNYCRS), LBSNAA, "Shri Snehasis Mishra", Assistant Professor, BNYCRS, LBSNAA, and Guest speakers of the sessions.

Objective and deliverables

Objective

To provide orientation and hands-on exposure to District Collectors on the complete NAKSHA workflow and their strategic leadership role in facilitating inter-departmental coordination, survey supervision, and grievance redressal.

Deliverables

Comprehensive understanding of:

o Map-1: Aerial survey and feature extraction

o Map-2: Ground truthing and field validation

o Map-3: Handling public objections and finalization of UrPro Cards

o Exposure to GNSS/ETS-based surveying, Web-GIS portal, and coordination protocols.

Inaugural Session

The inaugural session of the Training-cum-Workshop on the NAKSHA Programme at the Assam Administrative Staff College, Guwahati, commenced with a warm welcome address by Shri Snehasis Mishra, Assistant Professor, B. N. Yugandhar Centre for Rural Studies (BNYCRS), LBSNAA. He extended a cordial welcome to all dignitaries, senior officers, resource persons and participants from various states, highlighting the collaborative efforts of the Department of Land Resources, Government of India, LBSNAA and the Government of Assam in organizing the programme. He emphasized the significance of the workshop in strengthening institutional capacities in urban land governance and expressed gratitude to the Centre of Excellence on Land Governance at Assam Survey and Settlement Training Centre for hosting and supporting the event. He encouraged participants to actively engage in deliberations and benefit from the collective expertise over the two-day programme.

This was followed by an orientation address by Shri Rajesh Meena, Deputy Director and Centre Director, BNYCRS, LBSNAA, who outlined the objectives

and broader context of the NAKSHA Programme. He underscored NAKSHA as a flagship initiative under the Digital India–Land Records Modernization Programme aimed at modernizing urban land records through advanced geospatial technologies. He highlighted the role of capacity building, inter-institutional collaboration and leadership alignment for successful implementation of the programme. Emphasizing the importance of translating technical knowledge into field-level outcomes, he encouraged participants to use the workshop as a platform for learning, experience-sharing and problem-solving relevant to urban land administration.

The session was enriched by the address of Shri Kailash Karthik, Director, Land Records and Surveys, Government of Assam. He warmly welcomed all participants to Guwahati, noting the pleasant weather and conducive learning environment. He shared key updates on the implementation of NAKSHA in Assam, highlighting that 10 pilot towns have been selected, with Phase I completed and Phase II currently underway. Phase I focused on ORI generation, feature extraction, deployment of RTK rovers, integration of survey data with cadastral maps, linkage with registration systems and development of urban property records to support property taxation and municipal utilities. Phase II emphasizes ground-level ownership confirmation and application development, with works in progress through MPSeDC Application.

Shri Kailash Karthik further highlighted the establishment of the 5th Centre of Excellence on Land Governance in Guwahati, led by Shri Prabir Kumar Dhatta, Principal, Assam Survey and Settlement Training Centre. He appreciated the Centre's exceptional contribution in conducting training programmes on modern survey techniques and NAKSHA across the North-Eastern region. He also drew attention to the unique challenges of the region, including customary laws, difficult terrain, jhum cultivation practices and river erosion. He requested the Centre Director, BNYCRS, LBSNAA, to strengthen collaboration in organizing future capacity-building programmes, particularly in the areas of land laws, legal drafting and NAKSHA implementation, for the benefit of Assam and the wider North-Eastern region. Concluding his address, he conveyed his best wishes to the participants and encouraged them to make the most of the learning opportunities offered by experts from diverse domains of land governance and survey techniques over the next two days.

Overview of NAKSHA Programme

Shri Shyam Kumar, Director, Department of Land Resources, Ministry of Rural Development, GoI

Shri Shyam Kumar delivered a comprehensive and strategic overview of the NAKSHA Programme, presenting it as one of the most significant national initiatives aimed at bringing scientific precision, transparency and interoperability into urban land governance. He began by outlining the core challenges facing urban India, including rapid and uneven urbanization, fragmented and outdated land ownership records, obsolete cadastral maps and weak coordination among land-related departments. He noted that these systemic issues have led to a rise in land disputes, compromised town planning, delays in infrastructure development and erosion of municipal revenue bases.

He explained that the fundamental objective of the NAKSHA Programme is to establish a modern, accurate and unified urban land record ecosystem through the use of high-resolution geospatial technologies. Shri Shyam Kumar elaborated on the collaborative implementation framework, with the Department of Land Resources (DoLR) providing overall policy direction, the Survey of India (SOI) serving as the technical authority, MPSEDC developing the Web-GIS platform, NIC supporting cloud infrastructure and hosting and States and Union Territories acting as the primary implementing stakeholders.

Detailing the pilot phase, he informed that the programme covers 27 States and 3 Union Territories, encompassing around 1,000 Urban Local Bodies (ULBs), with an approved financial outlay of ₹194 crore under DILRMP. He further shared the long-term vision of scaling the programme to all 4,912 ULBs across the country. Emphasizing its transformative nature, he clarified that NAKSHA goes beyond urban mapping and is intended to support property tax reforms, scientific urban planning, slum redevelopment, smart city initiatives, utility management and improved access to institutional credit.

Shri Shyam Kumar explained the programme's three-stage workflow. Map-1 involves aerial surveys and data processing, wherein SOI generates high-resolution outputs such as 5 cm Orthorectified Imagery (ORI), DSM, DTM, 3D mesh models and vector layers, creating a highly accurate scientific base map for urban areas. Map-2 focuses on ground truthing and integration, including GNSS-based property validation, Record of Rights integration, field corrections, attribute collection and verification of parcel boundaries. Map-3 emphasizes citizen participation through claims and objections, dispute resolution, appeals, final map publication and issuance of Urban Property Cards (UrPro).

He highlighted the extensive use of advanced technologies such as nadir and oblique cameras, LiDAR, UAV platforms, GNSS rovers, CORS networks and AI-enabled data processing to achieve unparalleled spatial accuracy. He also underscored the importance of the NAKSHA Web-GIS platform in enabling end-to-end, transparent and citizen-accessible digital land records, thereby supporting evidence-based property taxation, infrastructure planning, disaster management and overall improvement in ease of living.

In conclusion, Shri Shyam Kumar stated that NAKSHA represents a transformative shift in urban spatial governance. By integrating precise geospatial science, a robust digital platform, legal backing and active public participation, the programme is poised to become a cornerstone of India's 21st-century urban governance ecosystem.

State Experiences of Karnataka under NAKSHA

Shri Rajender Kumar Kataria , IAS, Principal Secretary, Revenue Department, Bengaluru, Karnataka

Shri Rajender Kumar Kataria presented the experience of Karnataka in implementing the NAKSHA Programme, highlighting the state's strong institutional foundation in urban land records and its progressive adoption of modern survey technologies. He explained that Karnataka has a long history of conducting city surveys under the Karnataka Land Revenue Act, with conventional city surveys already completed in 48 towns and cities. Building on this legacy, the state launched the Urban Property Ownership Records (UPOR) project in 2010–11 using Electronic Total Stations (ETS) and DGPS and later introduced drone-based surveys in Bengaluru and newly developed urban areas such as Navanagara, Bagalkot.

A key highlight of the presentation was Karnataka's proactive legal enablement, wherein the state amended the Karnataka Land Revenue Act and Rules to formally recognize UAV and remote sensing technologies for creation, storage, updating and maintenance of land records. These

amendments provided legal sanctity, bankability and scope for automation, including provisions for auto-mutation once records are fully digitized. The introduction of enhanced Property Cards incorporating spatial data, ownership details, photographs and ULPIN was emphasized as a major reform.

Shri Kataria detailed the workflow adopted under NAKSHA, beginning with extensive IEC activities, public notifications and GNSS-based ground truthing conducted in the presence of property owners. Each property boundary is captured using GNSS rovers, supported by document collection and preparation of on-site statements. A robust quality control mechanism ensures accuracy, topology validation and supervisory approvals before finalization. Karnataka has established a strong geospatial ecosystem, including a statewide CORS network, procurement of GNSS rovers and adoption of open-source, OGC-compliant platforms such as PostGIS, GeoServer and QGIS.

He highlighted the integration of NAKSHA spatial data with KANAJA and e-Khata systems, enabling transparent property taxation and improved municipal governance across 316 ULBs. Challenges such as legacy record

gaps, absentee ownership, unauthorized constructions and mismatches between possession and registered deeds were discussed, along with policy measures to address them. He concluded by outlining Karnataka's vision to merge urban and rural property records into a single legally robust and spatially enabled property card, positioning NAKSHA as a cornerstone of future land governance.

Map-1 Workflow & deliverables under NAKSHA Programme.

Shri Uday Shanker Prasad, Director, A&N and TMMz Geospatial Directorate, Survey of India

Shri Uday Shanker Prasad explained Map-1 as the foundational component of the NAKSHA Programme, representing a Survey of India–validated, high-accuracy base map created through aerial surveys. He emphasized that Map-1 serves as the scientific reference for all subsequent stages of urban land record updation and governance. The session provided a step-by-step overview of the Map-1 workflow, beginning with the finalization of the Area of Interest (AOI) in close coordination with States, UTs and Urban Local Bodies, taking into account ground realities and restricted zones.

He described the standardized planning framework based on the 1:2,000 UTM grid, ensuring complete and uniform coverage of urban areas. Detailed flight planning processes were explained, including determination of altitude,

overlaps, ground sampling distance (5 cm GSD) and regulatory clearances. Shri Prasad highlighted the importance of rigorous ground control through the establishment of Ground Control Points (GCPs) and checkpoints using the Survey of India CORS network, ensuring horizontal accuracy better than 10 cm RMSE.

The session elaborated on different survey methodologies employed under Map-1, including nadir camera surveys, oblique imagery and LiDAR-based data acquisition, selected based on urban density and terrain complexity. He explained the orthorectification process, quality assurance protocols and feature extraction standards that ensure geometrically accurate and GIS-ready datasets.

Shri Prasad outlined the comprehensive deliverables under Map-1, including Ortho Rectified Imagery (ORI), Digital Surface Model (DSM), Digital Terrain Model (DTM), 2D vector layers, LoD-2 compliant 3D city models and detailed QA/QC and survey reports. He clarified the division of responsibilities between third-party agencies, Survey of India and States/UTs, ensuring consistency, accuracy and interoperability. He concluded by reiterating that Map-1 provides the authoritative spatial foundation upon which ground truthing, ownership validation and final land record publication are built under NAKSHA.

Map-1: Aerial data acquisition & data processing

Shri Irzad Kareem, Assistant General Manager, Aerial Services, GarudaUAV, Noida

Shri Irzad Kareem delivered a detailed technical presentation on aerial data acquisition and data processing under the NAKSHA Programme, emphasizing the role of high-resolution geospatial data in creating accurate urban base maps. He explained that NAKSHA leverages a combination of manned aircraft, UAVs, LiDAR, photogrammetry, DGNSS and GIS technologies to achieve 5 cm ground sampling distance outputs suitable for precise urban land mapping.

He described the aerial survey lifecycle, beginning with sensor selection and flight planning, followed by ground control surveys, data capture and post-processing. The processing workflow includes aerial triangulation, geo-referencing, tie-point densification, ground classification, breakline generation, orthorectification and seamless true ORI creation. He highlighted the importance of quality checks at each stage to ensure positional accuracy, completeness and usability of datasets.

Shri Kareem highlighted the advantages of manned aircraft surveys for large urban areas, including higher altitude coverage, faster acquisition speeds, larger daily coverage and efficient processing timelines. UAVs were described as complementary tools for smaller, constrained, or sensitive areas. The session showcased final outputs such as orthophotos, point clouds, DSM, DTM, contours, 2D feature layers, 3D mesh models and LoD-2 building models.

He emphasized that these high-quality aerial datasets form the backbone of Map-1 and directly support downstream activities such as feature extraction, ground truthing, property boundary delineation and integration with legal and administrative records. He concluded by stating that robust aerial data acquisition and processing are critical to ensuring the scientific accuracy, credibility and long-term sustainability of urban land records under the NAKSHA Programme.

Demo of NAKSHA Web-GIS portal and its modules

Shri Sharad Kumar Alha, GIS Data Specialist, MPSeDC and Shri Parth Brahmankar (Online), Business Analyst, MPSeDC

The technical session on the NAKSHA Web-GIS Portal was conducted by Shri Parth Brahmankar, Business Analyst, Madhya Pradesh State Electronics Development Corporation (MPSeDC), along with Shri Sharad Kumar Alha, GIS Data Specialist, MPSeDC. The session provided participants with a comprehensive understanding of the end-to-end digital architecture, workflows and functional modules of the NAKSHA platform, which forms the technological backbone of the programme.

Shri Parth Brahmankar explained that the NAKSHA Web-GIS Portal has been conceptualized as an integrated, role-based and end-to-end computerized system supporting the complete lifecycle of urban land surveys—from aerial data ingestion and validation to final publication and record updation. He elaborated on the three core components of the platform, namely the Web Application, Mobile Application and Desktop Utilities, each designed to cater to distinct user roles including national and state administrators, Survey of India officials, district and ULB administrators, survey teams and citizens.

He highlighted the major Web Application modules, which include onboarding and user-role management aligned with state-specific legal frameworks, Area of Interest (AOI) upload, survey data verification, plot verification and correction, Record of Rights (RoR) integration, grievance redressal mechanisms, dashboard-based monitoring and draft and final map publication. The platform also facilitates public participation through online claims and objections, consent management and issuance of Urban Property Cards (UrPro) in state-specific formats.

The Mobile Application was presented as a critical field-level tool enabling offline data download and synchronization, GNSS/CORS-based ground truthing, plot verification, split and merge operations, RoR tagging, owner

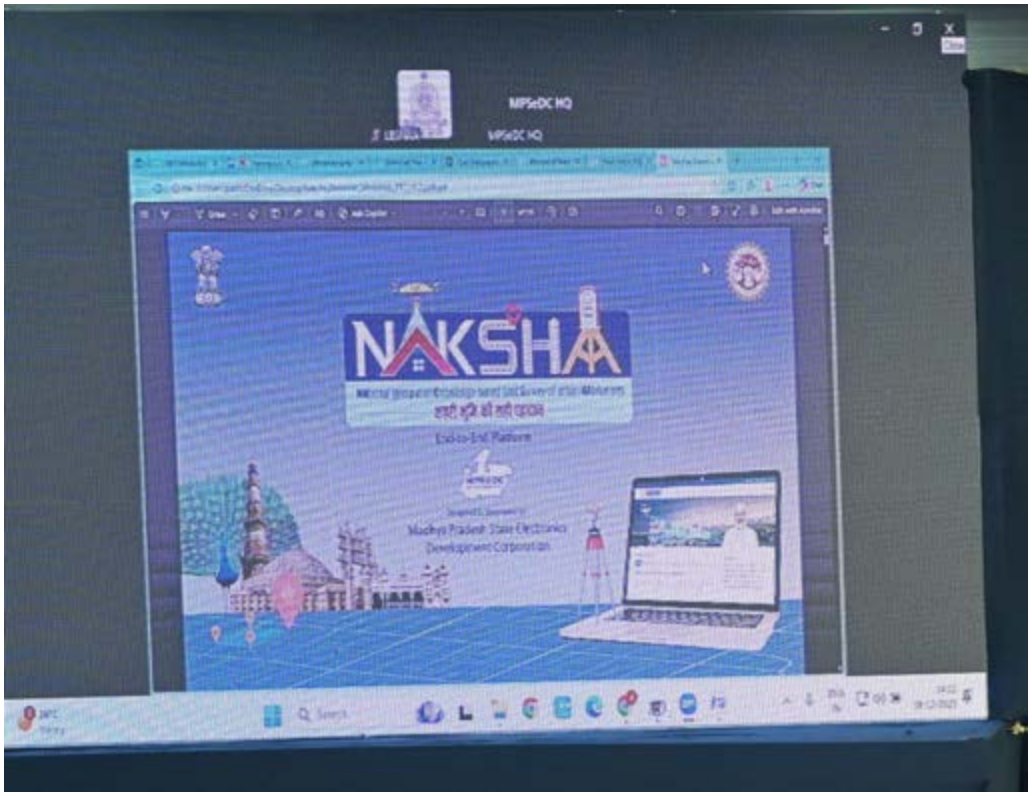
document capture and metadata creation. The Desktop Utilities Support Survey of India workflows by enabling validation and upload of ORI (TPK), feature extraction (GDB), DSM, DTM and 3D datasets, thereby ensuring data quality and technical compliance prior to system integration.

Shri Brahmankar further outlined the technology stack underpinning the platform, including PostGIS-enabled databases, ArcGIS Server and GeoServer for GIS services, Angular-based front-end frameworks, Flutter and .NET MAUI for mobile applications and Power BI-enabled dashboards for monitoring and reporting. He emphasized the platform's API-based interoperability with external systems such as registration portals, municipal databases and state land record systems.

The session concluded with an interactive Q&A led by Shri Sharad Kumar Alha, who addressed practical implementation challenges such as non-uniform property card formats across states, delays in API integration with state IT systems, variations in survey methodologies, GNSS/CORS connectivity issues, data synchronization constraints in low-connectivity areas and the need for

enhanced hands-on training for field personnel. He noted that these challenges are being addressed through iterative customization, continuous user feedback and targeted capacity-building initiatives.

Overall, the session provided participants with a clear operational understanding of the NAKSHA Web-GIS Portal and its deployment, reinforcing its role as a robust, scalable and citizen-centric digital platform for modernizing urban land records across India.



State Experiences (Assam): Implementation approaches and best practices under NAKSHA

Ms Tanvi Ahmed, Additional Director of Surveys, Government of Assam

Ms Tanvi Ahmed presented Assam's experience in implementing the NAKSHA programme, focusing on the use of modern geospatial technologies combined with robust ground verification to address inconsistencies in urban land records. She highlighted emerging trends in land mapping, including drone-based aerial surveys, LiDAR, oblique imagery, GNSS rovers and GIS platforms, which together enable high-accuracy urban cadastral mapping.

The presentation emphasized the importance of ground truthing to reconcile legacy cadastral maps with present-day ground realities. Case examples from urban local bodies demonstrated how outdated ward boundaries and legacy dag numbers were corrected or subdivided following field verification. These practices helped align official records with actual possession and usage, thereby improving data accuracy and reducing future disputes.

Ms Ahmed also highlighted the integration of spatial and attribute data as a key best practice. Property-related attributes such as ownership details, land use, building footprints and taxation data were linked with geospatial layers to create comprehensive land records. The use of geo-tagged property photographs, unique property identification numbers and satellite imagery further strengthened record authenticity.

A significant outcome of NAKSHA implementation in Assam has been the creation of a unified data framework through digital platforms such as UrPRO cards. These platforms integrate ULPIN, ward information, ownership documents and GIS maps, enabling interoperability across departments. The session concluded by underscoring that technology-enabled surveys, when supported by field validation and institutional coordination, can substantially enhance transparency, efficiency and credibility in urban land governance

Day 2

Best practices on IEC and awareness plans for NAKSHA implementation

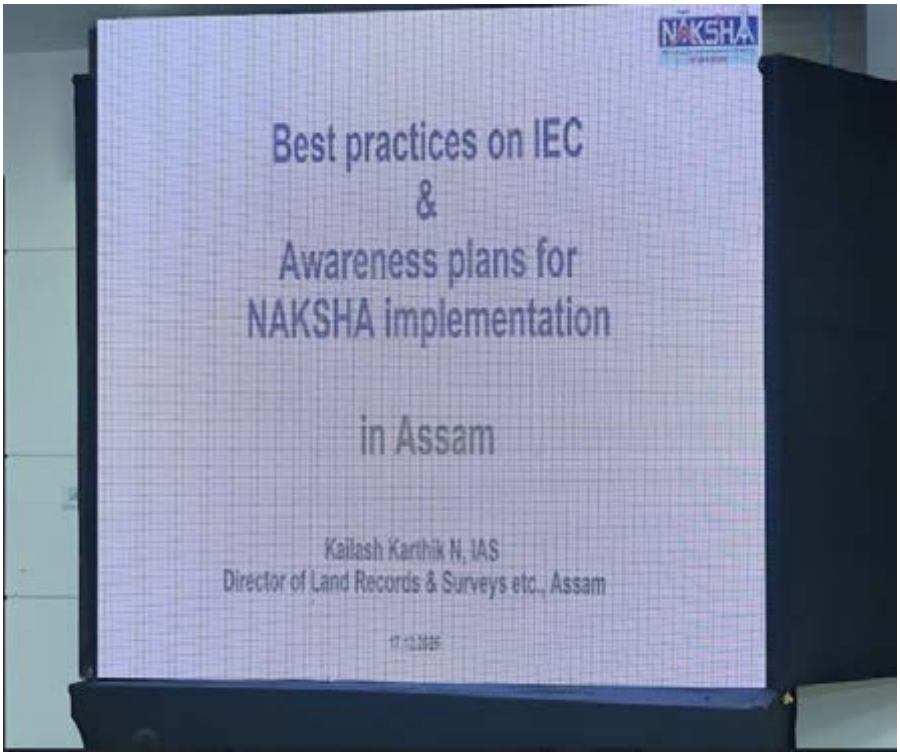
Shri Kailash Karthik, IAS, Director, Land Records & Surveys, Govt. of Assam

Shri Kailash Karthik's presentation focused on the role of Information, Education and Communication (IEC) as a critical enabler for successful NAKSHA implementation. He linked effective IEC to the broader objective of building citizen trust, particularly in a context where outdated cadastral records and fragmented land administration systems have historically affected public confidence.

The session outlined a phase-wise IEC strategy tailored to different stages of the survey process. During aerial and drone surveys, proactive communication was emphasized to clarify the purpose of surveys, address privacy and security concerns and prevent public resistance. Prior to detailed ground surveys,

ward-level meetings with elected representatives, municipal officials and residents were highlighted as essential for sensitization and expectation setting. During ground truthing, transparent engagement with landowners was stressed to ensure consent, reduce objections and minimize post-survey grievances.

Clear roles were assigned to key officials such as Circle Officers, Executive Officers, ADCs and DCs to ensure consistent messaging, inter-departmental coordination and citizen outreach. The use of IEC tools—including posters, banners, local media coverage and demonstrations of digital outputs—was presented as an effective means of outreach.



The session also shared insights from pilot land literacy and training programmes, which revealed strong participation from women and a clear demand for hands-on guidance and mobile-based solutions. Overall, the presentation reinforced that sustained and well-planned IEC is central to trust-building, dispute reduction and long-term sustainability of NAKSHA outcomes.

Administrative & legal framework for NAKSHA implementation

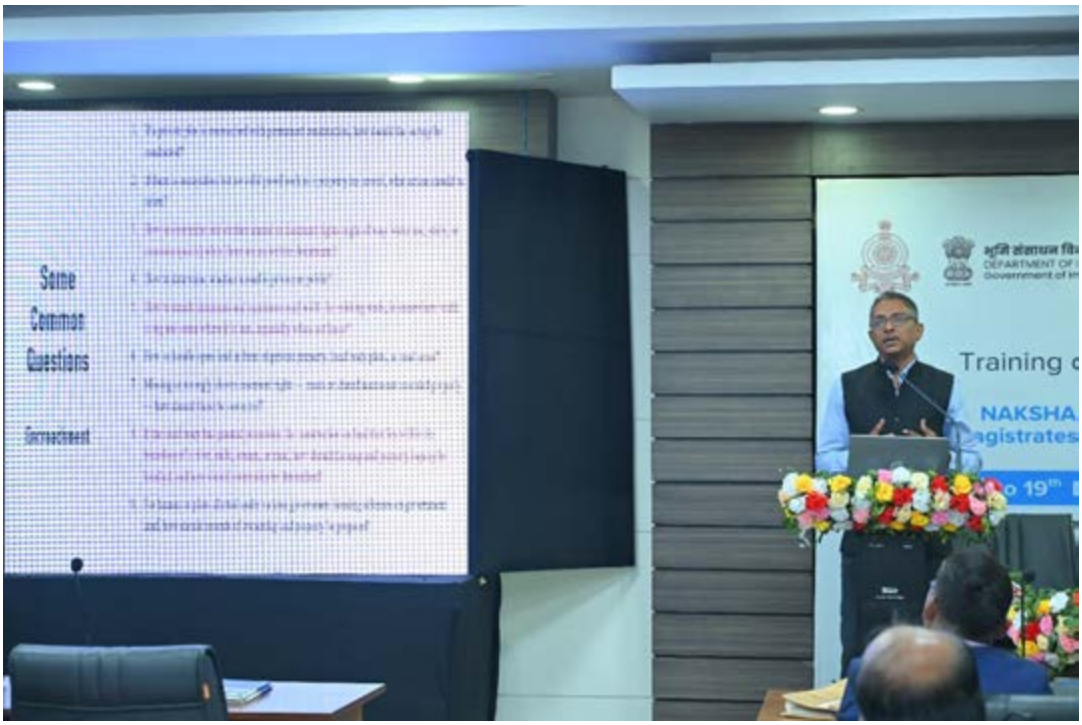
Shri N. K. Sudhansu, IAS, Director General, YASHADA, Pune

Shri N. K. Sudhansu provided an in-depth overview of the administrative and legal framework supporting NAKSHA implementation, addressing both procedural requirements and on-ground challenges. He discussed common concerns raised by citizens and survey teams, including ownership disputes, boundary conflicts, encroachments, possession issues and fears related to land acquisition or taxation.

The presentation explained the legal authority for city and town surveys, drawing upon provisions of Land Revenue Codes, survey rules, municipal laws and enquiry procedures. The end-to-end survey process—ranging from notification and aerial surveys to ground verification, ownership enquiry, draft publication, objection handling and final promulgation—was systematically outlined.

Special emphasis was placed on the role of Enquiry Officers, who are vested with quasi-judicial powers to summon parties, examine evidence, adjudicate claims and confirm possession, tenure and government land. The importance of conducting enquiries transparently, with due notice and opportunity of hearing, was highlighted as essential for legal defensibility.

The session also emphasized the use of digital systems for objections, hearings and final publication of maps and property cards, which enhances transparency and accessibility. The presentation concluded by stressing the need for trained personnel, inter-departmental coordination and strict adherence to legal procedures to ensure that NAKSHA outputs are credible, enforceable and trusted by citizens.



State experiences of Bihar under NAKSHA

Ms. Pallavi Mishra, ASO, Directorate of Land Records & Survey, Govt. of Bihar, Patna

Ms Pallavi Mishra presented Bihar's experience under NAKSHA through the lens of the state's long and complex land administration history and its ongoing Special Survey and Settlement programme. She traced the evolution of land records in Bihar from the Permanent Settlement era and cadastral surveys of the late nineteenth century to the present need for modern, technology-enabled resurvey, particularly in urban areas.

The presentation outlined the legal and institutional framework guiding Bihar's approach, including the Bihar Tenancy Act, the Bihar Special Survey and Settlement Act, 2011 (with subsequent rules, technical guidelines and amendments), which explicitly enable the use of modern technologies such as GNSS, CORS, rovers and drones. Emphasis was placed on maintaining Records of Rights (RoR) in digital form, integrating spatial and textual data as a foundation for effective land governance.

Ms Mishra explained Bihar's implementation approach, with the revenue village (mauja) adopted as the basic unit for urban survey. The survey process follows a structured sequence—pre-survey activities, detailed survey using hybrid methods (drone imagery combined with DGPS-based ground truthing), adjudication at multiple stages and final publication of RoRs. Particular attention was given to tri-junction validation, village boundary verification and parcel-level ground verification.

The session highlighted several best practices to address challenges such as deteriorated legacy records, boundary overlaps, missing documents and riverine land changes. Initiatives included large-scale digitization and geo-referencing of old maps, establishment of modern record rooms, public awareness campaigns and extensive citizen participation through self-declaration, Gram Sabha meetings and mobile/web applications. Innovative tools such as the MARBLE handbook (Map and Record Based Land Entitlement) were developed to guide field-level adjudication.

The presentation concluded by emphasizing Bihar's focus on inclusive adjudication, legal clarity, women's land rights and robust integration of Unique Parcel IDs with ULPIN, ensuring that NAKSHA outputs are accurate, transparent and socially equitable.

State experiences of Tripura under NAKSHA

Shri Santimoy Debbarma, Deputy Director, Directorate of Land Records & Settlement, Agartala, Tripura

Shri Santimoy Debbarma presented Tripura's experience in implementing the NAKSHA pilot in Agartala Municipal Corporation (AMC), situating it within the state's broader history of cadastral survey and resurvey operations. He outlined how Tripura, despite being one of India's smallest states, has undertaken extensive survey and resurvey efforts since the 1960s, culminating in near-complete digital availability of RoRs and cadastral maps.

The session detailed the objectives of the NAKSHA pilot, including creation of urban land records, development of high-resolution (1:500 scale) GIS maps, establishment of Web-GIS platforms and empowerment of urban citizens through improved accessibility to land information. The pilot involved close coordination among key stakeholders such as the Revenue Department, Urban Development Department, Survey of India, NIC and Centres of Excellence for GIS support.

Shri Debbarma explained the technology framework, wherein aerial data acquisition using high-resolution drone imagery and ortho-rectified images is undertaken by the Survey of India, followed by quality assurance and ground truthing using GNSS rovers, DGPS and ETS. Legal backing for the urban survey was ensured through notifications and proclamations under the Tripura Land Revenue and Land Reforms Act, 1960, with customization of the NAKSHA dashboard and proposed amendments for UrPRO card integration.

The presentation also covered institutional arrangements, including formation of survey units, establishment of a State Project Management Unit (SPMU), procurement of modern survey equipment and capacity building of revenue and municipal staff. IEC activities, such as ward-level meetings, pamphlets and engagement with elected representatives, were highlighted as critical for addressing public concerns.

Key challenges discussed included area, boundary and possession mismatches between legacy records and ground realities, unregistered deeds, encroachments on public land and disputes arising during enquiry. The state's approach emphasized physical verification, legal validation of documents and resolution strictly as per statutory provisions. The session concluded by highlighting the expected outcomes of NAKSHA in Tripura—improved land governance, better urban planning, streamlined property records and enhanced ease of living for urban citizens.

Practical demo of ground-truthing technologies under NAKSHA and visit to GIS Lab

Shri Indrajit Das, Joint Director of Surveys, Assam and Shri Bhrigu kumar Kalita, Naksha consultant

In the GIS Lab located in the Office of Joint Director of Surveys, Assam, a brief presentation was shared on Survey & Resurvey in Assam: Progress and Key Takeaways. The presentation outlined Assam's comprehensive approach to survey, resurvey and urban land mapping under SVAMITVA and NAKSHA. Significant progress has been made in digitization of legacy maps and notification of cadastral villages, alongside large-scale use of drone-based ORI and HRSI imagery. Ground truthing has been prioritized to reconcile legacy records with field realities, particularly in urban wards. Assam has deployed substantial technical resources including GNSS rovers, trained surveyors, GIS analysts and enterprise GIS platforms.

A structured workflow—from aerial survey to digital patta issuance—was highlighted. Under NAKSHA, 10 ULBs are covered as pilots with over 95% ground

truthing completed. Field experiences revealed the need for ward boundary corrections based on actual surveys. Integration of land and property data through digital platforms enhances accuracy and transparency. The initiative demonstrates Assam's readiness for large-scale, technology-enabled land governance reforms.

Shri Kishor B Kendre, Officer Surveyor and Mr Raju, Plane Tabler, A & N and TMMz Geospatial Directorate, Survey of India, Assam

After the GIS Lab visit, the participants are taken to the ASSTC Campus for the practical demo of ground truthing technologies. The Survey of India Team introduced participants to advanced surveying instruments and explained the core principles of satellite-based positioning in brief. During the briefing, the critical role of Network Real-Time Kinematic (NRTK)–enabled Global Navigation Satellite System (GNSS) technology was highlighted, particularly its ability to provide real-time, centimetre-level positional accuracy through network-based correction services.

It was explained that NRTK significantly enhances the precision, reliability and efficiency of land and cadastral surveys by enabling accurate control point

establishment, boundary demarcation and seamless integration of field data, thereby forming a robust foundation for technology-driven land record modernisation. The ETS demonstration illustrated its importance in detailed topographic surveys, verification of parcel boundaries and accurate measurement in areas with limited GNSS visibility, thereby complementing NRTK outputs. Together, the use of NRTK and ETS under the NAKSHA Programme ensures high-precision, reliable and legally robust spatial data for modernisation of land records. The field exercise offered hands-on familiarity with the equipment, improved participants' understanding of real-time data collection methods and demonstrated the precision and operational efficiency that contemporary surveying tools contribute to land administration and mapping efforts.

Vote of Thanks

Shri Prabir Kumar Dutta, ACS, Director, Centre of Excellence on Land Governance (CoE), Assam, and Principal, ASSTC

The Vote of Thanks was delivered by Shri Prabir Kumar Dutta, ACS, Director, Centre of Excellence on Land Governance (CoE), Assam and Principal, ASSTC.

He expressed his sincere gratitude to the Department of Land Resources (DoLR), Government of India and the B N Yugandhar Centre for Rural Studies, Lal Bahadur Shastri National Academy of Administration (LBSNAA) for their vision, guidance and academic support in successfully conducting the NAKSHA Programme.

He appreciated the dedicated efforts of the CoE team for their meticulous planning and efficient coordination and thanked the resource persons for their valuable technical insights and deliberations.

He also acknowledged the institutional support and hospitality of the Assam Administrative Staff College and thanked all participants for their active engagement.

He concluded by conveying his sincere thanks to all stakeholders who contributed to the successful conduct of the programme.

ANNEXURES

Annexure I	Sample Nomination Letter
Annexure II	Schedule of the "Training cum Workshop on NAKSHA Programme for District Magistrates/Municipal Commissioners" (18th-19th December, 2025)
Annexure III	List of Participants attending the Training cum Workshop on NAKSHA Programme for District Magistrates/ Municipal Commissioner

Annexure I

Dr. Bagadi Gautham, IAS
Professor (Public Administration) &
Centre Director, B N Yugandhar Centre for Rural Studies
Email: crs.lbsnaa@nic.in

No. T-31012/6/2025-CRS
Dated: 26th November, 2025

Subject: Nomination for the "Training cum Workshop on NAKSHA for Executive Officers/ Municipal Commissioners" at Assam Administrative Staff College (AASC), Guwahati (18-19 December, 2025) - Reg.

Respected Madam,

The B N Yugandhar Centre for Rural Studies (BNYCRS) of the Lal Bahadur Shastri National Academy of Administration is a leading resource establishment for training, research and policy recommendations in respect of various issues of land administration and management.

BNYCRS is conducting Training-cum-Workshop on NAKSHA Programme for Executive Officers/ Municipal Commissioners of the pilot districts sponsored by the Department of Land Resources (DoLR), Ministry of Rural Development (MoRD), Government of India at Assam Administrative Staff College (AASC), Guwahati from 18th to 19th December, 2025.

In this regard, it is hereby kindly requested to nominate the Executive Officers/ Municipal Commissioners involved in the implementation of NAKSHA in your state (Annexure). The nominated officials are to register at www.lbsnaa.gov.in by **10th December, 2025.** TA/DA during the travel has to be borne by the State Government.

With regards.

Yours sincerely,

(Dr. Bagadi Gautham)

Encl.: As above

Smt. Kavitha Padmanabhan, IAS
Commissioner and Secretary
Department of Housing and Urban Affairs
Urban Local Bodies
Govt. of Assam

Copy to: District Collectors (As mentioned in the Annexure)

लाल बहादुर शास्त्री राष्ट्रीय प्रशासन अकादमी (भारत सरकार), मसूरी–248179
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https:// www.lbsnaa.gov.in

Assam

District	ULB / Town / City
Barpeta	Barpeta Road
Bongaigaon	Abhayapuri
Bongaigaon	Bongaigaon
Darrang	Mangaldoi MB
Golaghat	Golaghat MB
Hojai	Hojai MB
Nagaon	Nagaon MB
Nalbari	Nalbari MB
Sivsagar	Sivsagar MB
Sonitpur	Dhekiajuli MB

Annexure II

B N Yugandhar Centre for Rural Studies
Lal Bahadur Shastri National Academy of Administration, Mussoorie
Training cum Workshop on NAKSHA Programme for District Magistrates/ Municipal Commissioners *in collaboration with*
Centre of Excellence on Land Governance (CoELG) at AASC, Guwahati
(18th – 19th December, 2025)

Time (in Hrs.)	Session(s)	Guest Speaker(s)
	Day 1 (18-12-2025)	
09:00 – 09:30	**Registration of the Participants**	
09:30 – 10:00	Minute to Minute Programme will be issued separately	
10:00 – 10:30	**GROUP PHOTO and HIGH TEA**	
	TECHNICAL SESSIONS	
10:30 – 11:15	Overview of NAKSHA programme	Shri Shyam Kumar
11:15 – 11:45	State experiences of Karnataka under NAKSHA (Online)	Shri Rajender Kumar Kataria
11:45 – 12:30	Map-1: Workflow & deliverables under NAKSHA programme	Shri Uday Shanker Prasad
12:30 – 13:30	**LUNCH**	
13:30 – 14:30	Map-1: Aerial data acquisition & data processing	Shri Irzad Kareem
14:30 – 15:30	Demo of NAKSHA Web-GIS portal and its modules	Shri Sharad Kumar Alha
15:30 – 15:45	**TEA BREAK**	
15:45 – 16:45	State experiences: Implementation approaches and best practices under NAKSHA	Ms. Tanvi Ahmed
	DAY 2 (19-12-2025)	
09:30 – 10:15	Best practices on IEC and awareness plans for NAKSHA implementation	Shri Kailash Karthik
10:15 – 11:00	Administrative & legal framework for NAKSHA implementation	Shri N. K. Sudhansu
11:00– 11: 15	**TEA BREAK**	
11:15 – 12:00	State experiences of Bihar under NAKSHA	Ms. Pallavi Mishra
12:00 – 12:45	State experiences of Tripura under NAKSHA	Shri Santimoy Debbarna
12:45 – 12:50	Vote of Thanks	Shri Prabir Kumar Dutta
12:50 – 13:10	Distribution of Memento and Certificate	BNYCRS, LBSNAA, Mussoorie
13:10 – 14:10	**LUNCH**	
14:15 – 14:45	Travel to GIS Lab, Dakhingaon, Assam	

14:45 – 16:00	Practical demo of ground-truthing technologies under NAKSHA & visit to GIS Lab	Shri Kishor B. Kendre and Shri Deo Bahadur Chettri

Guest Speakers and Session Moderators

Shri Shyam Kumar, Director, Department of Land Resources, Ministry of Rural Development, Government of India
Session Moderator: Shri Subrata Banik

Shri Rajender Kumar Kataria, IAS, Principal Secretary, Revenue Department, Bengaluru, Karnataka
Session Moderator: Shri Vimal Kumar

Shri Uday Shanker Prasad, Director, A&N and TMMz Geospatial Directorate, Survey of India, Assam
Session Moderator: Shri Arvind Tirkey

Shri Irzad Kareem, AGM, Aerial Services, GarudaUAV, Noida
Session Moderator: Ms. Anuradha Pradhan

Shri Sharad Kumar Alha, GIS Data Specialist, M.P. State Electronics Development Corporation Ltd., Bhopal, Madhya Pradesh
Session Moderator: Shri Sumitra Nandan

Ms. Tanvi Ahmed, Additional Director of Surveys, Govt. of Assam
Session Moderator: Ms. Jutikana Mishra

Shri Kailash Karthik, Director, Land Records & Surveys, Govt. of Assam
Session Moderator: Shri Sidhartha Dev Sarma

Shri N. K. Sudhansu, Director General, YASHADA, Pune
Session Moderator: Shri Chandrakant Mallick

Ms. Pallavi Mishra, ASO, Directorate of Land Records & Survey, Govt. of Bihar, Patna
Session Moderator: Ms. Sonali Priya

Shri Santimoy Debbarna, Deputy Director, Directorate of Land Records & Settlement, Agartala, Tripura
Session Moderator: Shri Ajeet Kumar

Shri Kishor B. Kendre, Officer Surveyor A&N and TMMz Geospatial Directorate, Survey of India, Assam Shri Deo Bahadur Chettri, A&N and TMMz Geospatial Directorate, Survey of India, Assam
Session Moderator: Shri Debabrata Sharma

Sd/-
(**Rajesh Meena**)
Course Coordinator

Date : 17.12.2025

Annexure III

Training cum Workshop on NAKSHA Programme for District Magistrates/ Municipal Commissioners

(18th – 19th December, 2025)

Venue: Assam Administrative Staff College, Guwahati, Assam

List of Participants

S No	Name and Address (Shri/Ms./Dr.)	Gender	Phone Number and Email
1	Siyang Rebe, Town Planner, Itanagar, Arunachal Pradesh	Male	8837484019, siyangr@gmail.com
2	Sonali Priya, Municipal Executive Officer, Tarapur Nagar Panchayat, Tarapur, Bihar	Female	6205635448, spsonalipriya5@gmail.com
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8	Amritesh Kumar, Assistant Town Planning Supervisor, Nagar Parishad Banka, Bihar	Male	7677322156, amritesh1997@gmail.com
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23	Bipin Bihari Pradhan, Assistant Engineer (Municipal), Khordha Municipality, Odisha	Male	9437089421, pbipin09@gmail.com
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25	Debiprasad Rout, Executive Officer, Baripada Municipality, Odisha	Male	9438847380, debiprasad93@gmail.com
26	Chandrakant Mallick, Officer on Special Duty, Directorate of Town Planning, Bhubaneswar, Odisha	Male	9437326445, chandrakant.mallick@gmail.com
27	Jaypal Singh, Executive Officer, Municipal Council Bishrampur, Palamu, Jharkhand	Male	7488617977, jaypalsingh3013@gmail.com

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31	Subrata Banik, Assistant Municipal Commissioner, Agartala, Tripura	Male	7005484861, baniksubrata64@gmail.com
32	Niyati Patwardhan, Legal Advisor, Kartavya Bhawan-3, New Delhi	Female	9999217330, niyati.patwardhan@govcontractor.in
33	Dr. Mandvi Misra, GIS Technical Expert, DoLR, Kartavya Bhawan-3, New Delhi	Female	9560860887, misra.mandvi@govcontractor.in

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