

BACKGROUND NOTE

Parallel Session: **Integrated Urban Development and Infrastructure Delivery**

National Urban Conclave 2026
24-25 October 2026

I. Background

Cities are the engines of national growth, and India is urbanising rapidly, yet the way cities are planned and built often works against the very integration that makes a city function. Integrated urban development begins from a simple proposition: a city is a single, interconnected system; its land use, mobility, housing, economy, environment and social fabric are inseparable, and the infrastructure that serves them must be conceived as one. In practice, however, each of these dimensions is planned and delivered separately. Most often, spatial plans are prepared in isolation from investment plans; physical infrastructure is designed apart from the social, economic and ecological systems that give a place its life; and sectoral agencies, each with its own mandate and budget, build in parallel rather than in concert.

This produces a fundamental paradox: a chasm between the grand ambitions of city master plans and the fragmented reality of ground-level delivery. When water boards, power utilities, transport agencies and the departments responsible for housing, health, education and the environment operate with independent budgets and disconnected records, the city is managed as a collection of isolated engineering projects rather than as an integrated organism. This fragmentation erodes the municipal tax base, inflates capital expenditure, extends the “time-to-value” for citizens, and most critically, produces places that are neither liveable, inclusive, nor resilient.

Integration is therefore needed along two axes. Horizontally, across sectors, aligning land use with transport, water, energy, housing, livelihoods, blue-green systems and social services, so that each reinforces the other. And vertically, across tiers of government and across the hierarchy of plans, so that national missions, state priorities, the statutory Master or Development Plan, local area plans and the annual municipal budget all pull in the same spatial direction. Crucially, the “infrastructure” to be integrated is not only physical (roads, water, sewerage, power); it is equally social (schools, health facilities, public spaces), economic (markets, logistics, workspaces) and ecological (water bodies, drainage, green cover), the full fabric that determines whether development translates into quality of life.

Realising this vision requires both a shared spatial foundation and modern delivery tools. Dynamic Geographic Information Systems, satellite imagery and Digital Twin technology can establish a single, multi-layered repository for surface and subsurface infrastructure, eliminating spatial clashes and duplicated works. Transit-oriented and corridor-based development can concentrate growth and services where they are most efficiently served, calibrating density and land use against infrastructure capacity. Modular, incremental delivery can replace long-gestation mega-projects with interventions that are executed rapidly and scaled over time while remaining aligned to the overall plan. And by capturing the land-value

appreciation that upgraded corridors generate, Land Value Capture and asset monetisation can establish self-sustaining financing for development.

This agenda builds directly on the direction set by national policy and flagship missions. PM Gati-Shakti and its National Master Plan have shown how a shared, multi-layered geospatial platform can break institutional silos and coordinate infrastructure across agencies, a logic that now needs to be extended to the city and corridor scale. It also draws on the Digital India and the National Urban Digital Mission (NUDM)'s push for urban data standards and interoperability, the Transit-Oriented Development (TOD) Policy, the convergence and reform agenda of AMRUT 2.0 and the legacy of the Smart Cities Mission, and the outcome-linked, financing of the Fifteenth Finance Commission. The task before this session is to weave these instruments together into a single, deliverable framework at the level where development actually happens, the city.

Furthermore, translating this integrated vision into an operational framework also requires a clear understanding of current ground realities across States and UTs. This session draws upon state-level baselines regarding existing GIS capacities, baseline infrastructure data availability, and ongoing experience with corridor development and integrated interventions. These inputs will help ground the framework in practical delivery and inform a scalable national approach.

II. Problem Statement

Urban development in India is planned sector-by-sector and delivered by multiple disconnected agencies, resulting in overlapping investments, poor sequencing and infrastructure clashes, often leading to underutilisation of the development potential. This fragmentation stems from five structural gaps:

- a) **Lack of a shared information base:** agencies lack a single, reliable repository of existing surface and subsurface assets, so everyone plans without visibility of what others have built or intend to build;
- b) **Lack of a shared spatial vision:** land use, density and the full range of municipal services evolve without coordination along growth corridors, and without a common development framework to anchor them;
- c) **Disconnect between development planning and provision:** infrastructure is often provided without reference to an integrated development vision (economic, social and environmental), while plans are prepared without reference to deliverability, phasing or financing; social, economic and ecological infrastructure are frequently left out of the picture altogether;
- d) **Limited public participation in shaping provision:** infrastructure is largely planned and delivered 'for' communities rather than 'with' them, with little involvement of the local population in identifying

needs and setting priorities, weakening the relevance, ownership and long-term upkeep of the assets created;

- e) **Rigid and slow delivery mechanisms:** traditional approaches struggle to convert large-scale ambitions into fundable, executable interventions, and statutory plans remain disconnected from capital investment plans and annual budgets.

Consequently, cities continue to plan and build in silos, without a unified picture of physical reality, a shared spatial vision for growth, or a practical framework to execute complex programmes. The result is severe capital inefficiency, repeated road excavations, prolonged timelines, and development that too rarely advances inclusion, affordability or resilience. Addressing these failures requires confronting the real-world operational barriers faced by municipal and state agencies and a decisive shift towards an integrated, spatial-first governance framework, one that establishes full digital visibility of assets, aligns spatial planning with sectoral investment and scheme convergence, embeds social, economic and ecological infrastructure within the plan, and adopts modular delivery to bridge institutional silos.

III. Objective

This discussion aims to address the challenges of fragmented urban development and execution, and to evaluate how an integrated, deliverable framework, anchored in a shared spatial vision and geospatial data, can produce liveable, inclusive and resilient cities. It seeks to deliver actionable recommendations for urban local bodies, state urban development departments and financial institutions on the planning approaches, governance structures, technical tools and financing mechanisms required. The session objectives are structured to directly leverage state-level experiences and concrete inputs across the following:

- a) Examine how the statutory Master or Development Plan can more fully integrate land use, transport, housing, economy, environment and social infrastructure within a single spatial framework, rather than treating these as separate sectoral exercises; how such plans can be linked directly to capital investment plans and municipal budgets so that they become deliverable rather than aspirational; and how both plans and projects can be shaped through meaningful public participation, enabling communities to help identify needs, set priorities and shape delivery, so that development reflects the people it serves and secures their ownership of it;
- b) Explore strategies for establishing a shared geospatial database and Digital Twin platform across municipal utilities and departments, a single source of spatial truth that consolidates fragmented legacy records, eliminates duplication, and provides complete cross-agency visibility of existing surface and sub-surface assets before any project is executed, thereby avoiding clashes, repeated excavations and wasted expenditure;

- c) Analyse frameworks for operationalising corridor-based and transit-oriented development across a defined influence zone, calibrating density, land use and street design against the available utility and transport capacity, while integrating social, economic and blue-green infrastructure, so that corridors develop as liveable, mixed-use places and not merely as movement conduits;
- d) Evaluate the governance and financial mechanisms, including budget pooling, “invest-once” policies (coordinating works so that a stretch is opened up and built once, rather than repeatedly by different agencies), the convergence of central and state scheme funds, and Land Value Capture, that can consolidate investment along common spatial priorities, eliminate redundant and overlapping expenditure, and improve the utilisation of municipal assets and land;
- e) Formulate approaches to break large and complex infrastructure programmes into modular, “bite-sized” interventions, termed “Urban Gigs”, i.e. small, discrete, rapidly deliverable projects that aggregate into a larger corridor or city outcome. Such a format lowers financial risk, accelerates execution and broadens the pool of participating contractors, while ensuring these smaller interventions remain aligned with, and aggregate back into, the long-term city plan through digital tracking and sequencing;
- f) Identify the institutional and governance arrangements, such as metropolitan or unified planning bodies, empowered and adequately capacitated ULBs, and effective cross-agency coordination mechanisms, needed to sustain integration across sectors and across the three tiers of government, well beyond the life of any single project.

Expected Outcomes: Drawing on these objectives and the state and city experiences shared, the session will work towards (i) a set of actionable recommendations for urban local bodies, state urban development departments and financial institutions; (ii) the contours of a scalable national framework for integrated, data-driven and participatory infrastructure delivery; and (iii) a clear way forward for cities to adopt spatial-first and convergent approaches to building liveable, inclusive and resilient cities.

IV. Guiding Questions

a) Geospatial Database Integration of Existing Infrastructure

- i. How can legacy departmental records be integrated into a unified spatial platform, and what spatial-data rules, system structures, and inter-agency agreements are needed to map municipal utility and departmental assets for integrated land-use planning?
- ii. How can data-governance policies maintain information security and privacy while allowing regular updates and shared access for local authorities and the public?
- iii. How can emerging technologies, such as Digital Twins, real-time data integration, APIs, satellite imagery, and drone mapping, be standardised across cities to support integrated infrastructure planning?
- iv. What is the potential and need for establishing Urban Observatories as institutional platforms for data integration and interoperability, to consolidate data across departments, maintain and curate it over time, and enable evidence-based, integrated planning and decision-making?

b) Corridor-Based Development (including 1 km Influence Zone, integrating Water, Roads, Sewerage, Footpaths & Density)

- i. How should planning authorities define the boundary of a corridor influence zone (e.g., ~1 km) across different spines, and how can density, land use, and public utilities (water, roads, sewerage, footpaths) be aligned within it through statutory tools?
- ii. What are the key lessons and successful practices from past state experiences in planning infrastructure along major corridors, and how can multi-agency coordination mechanisms be established for coordinated development?
- iii. How can the statutory Master or Development Plan be transformed from a static document into a living framework linked directly to capital investment plans, municipal budgets, equity, and climate resilience?

c) Breaking Large Infrastructure Requirements into Smaller Interventions, Identifying “Urban Gigs” and Consolidating Investment

- i. How can small, targeted infrastructure interventions (“Urban Gigs”) be identified within a corridor, and how can digital spatial platforms or dashboards track, sequence, and aggregate them into a consolidated city plan?
- ii. How can communities be meaningfully involved in prioritising infrastructure investment, for instance through participatory budgeting or structured public consultation, so that the consolidation of funds reflects local needs and secures public ownership?

d) Better Utilisation and Consolidation of Infrastructure Investment

- i. How can municipal capital investment plans and central/ state scheme funds (AMRUT 2.0, PMAY, SBM-U, 15th FC Grants) be converged towards common spatial priorities rather than spent in silos?
- ii. Which financing models, such as Land Value Capture, municipal bonds, land pooling, or public-private partnerships, are best suited to funding integrated corridor development?
- iii. What institutional, governance, or regulatory reforms (e.g., unified planning bodies, empowered ULBs) are required to overcome bottlenecks in implementation?
- iv. What specific components, policies, and supporting roles should the Government of India establish to roll out a scalable national framework?

V. Key Inputs from the Pre-Conclave Session

The aforementioned topics were also deliberated in the pre-conclave session held in the second week of October. The highlights from the discussion are summarised below. The deliberations at NUC-2026 intend to deep-dive further into these discussions and put together guidance and a way forward for other cities to take up the required actions towards building cities that are data-driven, sustainable, inclusive and resilient.

- a) Several States/ Cities have already advanced in the creation of GIS-based databases and their use in the preparation of Master Plans/ Development Plans (e.g., Haryana - Gurugram, Karnal; Assam - Guwahati);
- b) States are also taking initiatives in setting up Urban Observatories and geospatial data hubs for maintaining the GIS database, enabling interoperability, and linking approvals to geo-tagged progress (e.g., Assam - Guwahati; Haryana - Gurugram);
- c) Authorities are already seeking support from expert agencies/institutions in the field of GIS/ Remote Sensing for planning large-scale public events (e.g., the Ujjain Simhastha Kumbh Mela 2028, being planned with support from BiSAG-N);
- d) There is a recognised need to shift focus from basic road-widening to strategic corridor-based and transit-oriented development (TOD), including capacity-based zoning and dynamic betterment levies tied to land appreciation, and to transition from scheme-based to place-based development (e.g., several roads in Gurugram; the Gorakhpur-Kushinagar Link Road / Airport Road corridor in Gorakhpur; the Kunjpura Road arterial corridor in Karnal);
- e) Cities are also undertaking “urban gigs” and micro-level projects leading to sustainable and resilient outcomes, for example:
 - Guwahati is deploying low-cost tactical-urbanism trials to test traffic-decongestion measures before committing capital expenditure at identified junctions and stretches, such as the Ganeshguri junction;

- Ghaziabad is establishing a comprehensive Road Directory mapping road conditions, footpaths, drains, and vacant government land across the city;
 - Ghaziabad has also won the Bloomberg Philanthropies Mayors Challenge by converting dairy cow dung into heat-reflecting “Prakritik Paint” for white roof-topping;
 - Ghaziabad has taken up the Ghaziabad City Square - Coworking and Commercial Hub as a transit-oriented, mixed-use urban precinct, unlocking places and opportunities for people;
 - Karnal has taken the initiative to design pedestrian infrastructure that adheres to IRC guidelines and universal-accessibility norms;
 - Bhopal has transformed residual spaces under the flyover at Lalghati into pedestrian green plazas using Urban Heat Action Plan funds;
- f) States/Cities are also converging funds from central and state governments and private institutions (e.g., the Ghaziabad City Square, where modular project components are developed through various funding sources; and Ghaziabad tying state-grant eligibility under the CM Grid Scheme to local revenue performance, achieving over 25% growth in non-tax/tax revenue).
