

BACKGROUND NOTE

Parallel Session: **New Paradigms for Urban Service Delivery**

National Urban Conclave
24-25 October 2026

Table of Contents

Abbreviations/ Acronyms	4
Executive Summary	5
1. Introduction	6
2. Current Situation.....	6
2.1. Multi-agency institutional landscape	7
2.2. Municipal capacity and financial independence.....	7
2.3. Procurement and innovation pathways are evolving	8
2.4. Service outcome measurement.....	10
3. Challenges	10
3.1. Fragmented responsibilities and weak accountability.....	10
3.2. Gaps in municipal capacity and technical expertise	11
3.3. Procurement barriers and weak contract management.....	11
3.4. Financial sustainability and market risks	11
4. Pre-Conclave Deliberations and Outcomes	12
4.1. Institutional reforms and SPV governance	12
4.2. Procurement reforms – Tender and financial rules.....	13
4.3. Ecosystem Integration and Startups.....	14
5. Exploring New Paradigm.....	15
5.1. Service-ready urban assets.....	16
5.2. Integrated service systems with one point of accountability	17
5.3. Financially durable and investment-ready services	17
5.4. Public responsibility and specialised delivery partnerships	18
5.5. Service-focused procurement and contract management	18
5.6. Digital systems for managing urban services	18
5.7. Converged service delivery across urban, peri-urban and rural areas	19
5.8. Cities as platforms for adoption and scale-up of urban innovation.....	19
6. NUC 2026: Key Discussion Areas	20
6.1. Institutional Models and Governance for Integrated Urban Service Delivery	20
6.2. From Infrastructure Creation to Citizen-Centric Service Outcomes.....	20
6.3. Municipal Finance and Long-Term Service Sustainability.....	20

6.4. Procurement, Contracting and Scaling Innovation.....	21
6.5. Municipal Capacity and Digital Accountability	21
6.6. Regional Service Delivery, Circular Economy and Resource Recovery	22
6.7. Addressing the Missing Links in Urban Service Delivery	22
References.....	23

Abbreviations/ Acronyms

AI	Artificial Intelligence
BBMP	Bruhat Bengaluru Mahanagara Palike
BMC	Brihanmumbai Municipal Corporation
CPHEEO	Central Public Health and Environmental Engineering Organisation
CSR	Corporate Social Responsibility
DMA	District Metered Area
EPC	Engineering, Procurement and Construction
ERP	Enterprise Resource Planning
GEF	Global Environment Facility
GeM	Government e-Marketplace
GFR	General Financial Rules
GIS	Geographic Information System
ICCC	Integrated Command and Control Centre
iDEX	Innovations for Defence Excellence
IKM	Information Kerala Mission
KPI	Key Performance Indicator
LSGD	Local Self Government Department
MRF	Material Recovery Facility
MSME	Micro, Small and Medium Enterprise
NTRO	National Technical Research Organisation
NUIS	National Urban Innovation Stack
O&M	Operations and Maintenance
PBG	Performance Bank Guarantee
PPP	Public-Private Partnership
QCBS	Quality and Cost-Based Selection
RDF	Refuse-Derived Fuel
SCADA	Supervisory Control and Data Acquisition
SIIC	Startup Incubation and Innovation Centre
SLA	Service-Level Agreement
SPV	Special Purpose Vehicle

Executive Summary

India's urban population is projected to reach 40% of the country's population, by 2036, with cities contributing nearly 70% of GDP (Economic Survey 2025–26, drawing on World Bank estimates). This growth will intensify demand for reliable, inclusive and financially sustainable urban services, including water supply, sanitation, solid waste management, public transport and urban planning. However, as highlighted in NITI Aayog's Moving Towards Effective City Government: A Framework for Million-Plus Cities (2026)¹, fragmented institutional responsibilities, limited fiscal autonomy and incomplete devolution of functions constrain the capacity of Urban Local Bodies in delivering these services effectively. Responsibilities distributed across ULBs, State departments, utilities, development authorities and parastatal agencies further complicate accountability for urban service outcomes.

The central issue is how to align responsibility, authority, capacity and funding across the service chain. The Economic Survey 2025-26 notes that property tax generates around 0.15% of GDP, while own-source revenue covers only 30-40% of expenditure in most large cities and below 20% in some smaller cities.² Reforms require lifecycle costing, realistic user charges and sustainable O&M budgets. ULBs should remain accountable, supported by specialised agencies, utilities, SPVs and private operators through clear mandates and performance-based agreements. Urban service delivery requires an integrated systems approach built on five elements: clear accountability, skilled personnel, sustainable financing, performance-based contracts and data-driven oversight. Strengthening these elements calls for new paradigm(s) that streamline procedures, institutional efficiency, appropriate technology and better coordination.

The pre-conclave consultation of 7th October 2026 identified constraints across institutional accountability, municipal capacity, procurement, finance, operation and maintenance (O&M) and innovation. The consultation underscored the need for procurement frameworks that prioritise lifecycle value and service outcomes over upfront costs and rigid eligibility criteria. Startups and smaller firms face barriers including high turnover and experience thresholds, performance guarantees, working capital constraints, delayed payments and limited pathways to scale successful pilots. Procurement reforms must address these barriers while safeguarding competition, transparency, service quality and public accountability.

For smaller and geographically dispersed ULBs, shared technical teams, pooled resources and regional facilities can improve affordability and efficiency. Special Purpose Vehicles offer a potential model for aggregating specialised functions and linking infrastructure with markets, subject to municipal oversight, viable cost-sharing, market assessment and safeguards against parallel governance structures. The deliberations will focus on institutional roles, shared service models, staffing and financing needs, risk allocation, service continuity and scaling proven innovations while safeguarding public value.

¹ NITI Aayog (2026). Moving Towards Effective City Government: A Framework for Million-Plus Cities. Read the report

² Economic Survey 2025–26, Government of India, Ministry of Finance.

1. Introduction

Urban service delivery is undergoing a transition from the provision of infrastructure towards ensuring reliable, accessible and sustainable services throughout the asset lifecycle. The Economic Survey 2025–26 estimates that India will need US\$840 billion in urban infrastructure investment over the next 15 years, underscoring the need to ensure that investments translate into efficient, reliable and financially sustainable services, rather than isolated infrastructure assets.³ It calls for a re-examination of how urban services are planned, designed, financed, procured, operated and maintained, and how their performance is assessed against citizens' needs.

The approaches to service delivery like, water supply, sanitation, solid waste management, mobility and other urban services require coordination across institutions, infrastructure systems and stages of the service chain. New paradigms are therefore needed to move from project-centric approaches towards outcome-oriented service delivery, with greater emphasis on lifecycle performance, adaptability, resource efficiency and accountability for results.

Innovation is central to this transition. Technological solutions, digital systems, improved infrastructure design, alternative service-delivery models and new approaches to procurement and contract management can help cities improve service efficiency and responsiveness. Private-sector participation can complement municipal capabilities by bringing specialised expertise, technology, operational efficiency, investment and access to markets.

The emerging paradigm is therefore not a choice between public provision and private participation, but the development of fit-for-purpose arrangements that combine public accountability with the capabilities, resources and innovation required to deliver better services. The National Urban Conclave 2026 provides an opportunity to examine these approaches, draw lessons from implementation experiences and identify pathways for translating innovation into reliable and financially sustainable urban services.

2. Current Situation

Urban service delivery extends beyond asset creation. It requires an identified operator, operating budgets, maintenance, asset replacement, service monitoring and corrective action when performance falls short. For example, sanitation, solid waste and used-water services, the service chain includes collection, transport, treatment, quality testing, reuse or offtake, and safe management of residuals. Each stage needs a responsible entity, a funding source and a measurable service standard. The World Bank's review⁴ of urban service governance concludes that the appropriate delivery model depends on context,

³ Economic Survey 2025–26, Chapter 15

⁴ World Bank, Institutional Models for Governance of Urban Services, Volume 2: Synthesis Report, December 2021

capabilities and experience; a single model will not fit every city. City size, service geography, technical capacity, affordability, waste or wastewater characteristics and the scale required for reliable facility operation should therefore guide institutional design. This shifts the test of success from 'Was the asset built?' to 'Does the service work, for whom, at what cost, for how long and whether it is sustainable?' This approach becomes especially important where the service chain crosses institutional boundaries, as in solid waste, sanitation and used-water management.

The current urban service delivery landscape can be understood through four interrelated dimensions: institutional arrangements and accountability; municipal capacity and financial sustainability; procurement and innovation pathways; and measurement of service outcomes. These dimensions reflect the key factors that influence whether urban services can be effectively planned, financed, delivered and sustained.

2.1. Multi-agency institutional landscape

ULBs share responsibilities with State departments, utilities, development authorities, parastatals and SPVs in order to deliver its functions. Specialised agencies provide technical expertise and project-execution capacity, but unclear oversight can weaken municipal accountability. There is no single governance model suitable for all cities. Functions must be assigned according to the scale and geography of the service, the capacity required and the institution best placed to deliver it. SPVs may be appropriate for specialised, complex, time-bound or cross-boundary functions. They should not become parallel structures without a municipal oversight and a review or transition arrangement.

Institutionalising SPVs for Urban Service Delivery⁵

Special Purpose Vehicles (SPVs), established under the Smart Cities Mission, have demonstrated their ability to deliver complex, multi-sectoral urban infrastructure projects with agility and innovation. As of March 2025, over 93% of the Mission's 8,000+ projects had been completed. To institutionalise SPVs within the urban governance framework, the Ministry of Housing and Urban Affairs recommends repurposing them as multifunctional institutions supporting Urban Local Bodies (ULBs). Their roles could encompass technology and data management, project implementation, technical consultancy, research, and investment facilitation. State policies enabling service-linked revenues and implementation fees can strengthen their financial sustainability and operational autonomy, while integrating SPVs into long-term urban governance frameworks.

2.2. Municipal capacity and financial independence

ULBs require technical, operational and managerial capacity in engineering, environmental services, contract and performance management, municipal finance, data, project and asset management, and community mobilisation. Financial plans should show capital cost, recurring expenditure, O&M, asset replacement, revenue assumptions and the residual funding gap. User charges must be considered alongside affordability and service quality. Digital financial information, asset registers, metering, standardised data and regular reconciliation can strengthen planning and accountability, provided they inform

⁵ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2135474®=48&lang=2>

operational decisions rather than only reporting. The ADB–World Bank report⁶ on creative redevelopment similarly recommends starting with a clear city vision and a mapped inventory of public assets, including buildings, land parcels and ownership, before deciding how public assets can support service delivery and wider city priorities.

A project should not be treated as financially viable merely because a possible revenue stream has been identified. This is particularly important for resource-recovery projects, where income from compost, bio-CNG, recyclables, RDF or treated water may support the service but may not cover its full cost.

Shimla: Reforming the Water Utility via Corporatized SPV Governance⁷

The Shimla Water Supply and Sewerage Services Improvement Program is a World Bank-funded Program-for-Results initiative aimed at reforming urban water and sanitation in Shimla. Response to recurring water shortages and public health crises, it unified fragmented municipal services under a single corporatized utility: Shimla Jal Prabandhan Nigam Limited (SJPNL). Operationally, it employs Design-Build-Operate agreements for Sutlej River bulk water intake and performance-based management contracts for city distribution. Financially, it relies on automated annual tariff indexation, cost-recovery targets, and a state operational subsidy capped at ₹120 crore/year. Technologically, it integrates SCADA automation, District Metered Areas (DMAs), and GIS-linked billing. Key outcomes include expanding household metering from 20% to 100%, lowering bulk transmission losses to 3%, resolving 92% of complaints within 24 hours via online grievance systems, and maintaining zero jaundice cases since 2018. Long-term goals target 100% 24/7 continuous water coverage, a 20% energy efficiency boost, and 175% intra-city O&M cost recovery.

Bhopal: Integrating New Partnerships (NGO, SHG, Community) into Formal Systems⁸

Plastic made up about 14 percent of Bhopal's solid waste, and roughly 2,000 waste pickers, about 85 percent of them women, sorted it by hand at the Bhanpur Kanti dumpsite under hazardous, unrecognised conditions. The NGO Sarthak began working with them in 2008. In 2010 a GEF Small Grants Programme grant, implemented by UNDP, let it start focused work in five wards with the Bhopal Municipal Corporation (BMC). The model was a community-led partnership. Sarthak organised about 1,665 pickers into 23 self-help groups, who collected plastic door to door and sold it at collection centres. BMC allocated land for the centres, and the groups helped pickers access insurance, pension cards and savings. The baled plastic was sold to cement manufacturers as fuel, and the centres were later upgraded into recovery centres. The work shaped a 2011 state plastic waste policy and was replicated in Indore, where about 3,500 pickers were organised into groups. It was later cited in national guidance on urban plastic waste. Five Bhopal centres now handle about 10 tonnes a day, but coverage stayed partial. A 2014 grant targeted over 2,000 pickers in all 70 wards, yet by 2016 only 646 were in 42 groups.

2.3. Procurement and innovation pathways are evolving

Conventional procurement practices often prioritise initial cost and established vendor credentials, with limited consideration of lifecycle costs, resource efficiency, service outcomes and innovative design approaches. A paradigm shift is needed towards

⁶ ADB and World Bank. 2025. Creative Redevelopment of Cities in India: A Catalyst for Inclusive, Resilient, and Sustainable Growth.

⁷ Asian Development Bank, & Shimla Jal Prabandhan Nigam Limited. (2021). Shimla urban water supply infrastructure modernization reports and technical disclosures. Asian Development Bank.

World Bank. (2018). Shimla water supply and sewerage performance-based program (Project Appraisal Document No. PAD2937 / P174732) [PDF]. World Bank

⁸ GEF Small Grants Programme. (n.d.). Plastic management system improves livelihoods of Bhopal women and helps the environment.

UNDP Small Grants Programme. (2019). No longer going to waste: Improved plastic waste management builds roads and livelihoods for women in India.

procurement that evaluates projects across their lifecycle, integrates infrastructure design with operational requirements, and rewards measurable service performance. This includes exploring Public-Private Partnership (PPP) models where private-sector expertise, investment and operational capabilities can support improved service delivery.

Startups and smaller firms may face barriers such as high turnover requirements, limited operating history, collateral requirements and lack of prior government contracts. Effective implementation requires clearly defined performance standards, appropriate risk allocation and payments linked to verified outcomes. Urban service delivery is also an infrastructure planning and urban design challenge. The design of streets, utility networks and service facilities directly influence service efficiency, resource use and its maintenance. Addressing these interdependencies requires a shift towards integrated planning, design, procurement and operational approaches.

Karnataka: Moving Towards Continuous (24x7) Water Supply⁹

The Karnataka Urban Water Sector Improvement Project (KUWASIP) demonstrated continuous, pressurised 24x7 supply in five zones across Belgaum, Hubli-Dharwad and Gulbarga. It followed a 2003 national question on whether 24-hour supply was achievable at all. No Indian urban local body delivered it, and 28 benchmarked cities averaged 3.3 hours of supply a day with 44% non-revenue water. It was a World Bank-financed (about USD 40 million) performance-based management contract, described as a PPP. A Veolia-led operator-consultant rebuilt the network and ran it under a 183-week contract, with 60% of pay fixed and the rest tied to targets on continuous pressure, full metering, leakage and complaint resolution, verified by a technical auditor. In the zones, supply rose from about 10 hours a week to 24x7, household coverage reached 100%, and billed revenue rose fivefold while collected revenue rose nearly sevenfold. An independent study found E. coli in under 1% of taps versus about 32% under intermittent supply. It also found no overall child-health gain, higher bills and closed standpipes, and the zones covered only about 10% of Hubli-Dharwad.

Indore: City-Scale Bio-CNG Plant through a Public-Private Partnership (PPP)¹⁰

The Indore Gobardhan Bio-CNG Plant at Devguradia was developed to integrate municipal wet-waste management with renewable fuel production and reduce dependence on landfilling. Commissioned in February 2022, the facility has a processing capacity of 550 tonnes per day (TPD) of segregated wet organic waste. The project was implemented through Indore Clean Energy Pvt. Ltd., a special purpose vehicle established by Indore Municipal Corporation (IMC) and Indo Enviro Integrated Solutions Ltd. under a PPP model. The private partner financed the ₹150 crore capital investment, while the municipal corporation provided land and committed to purchasing at least 50% of the plant's CNG output. The project was structured for a 20-year period, with the remaining fuel intended for sale in the open market. The case demonstrates how PPPs can mobilise private capital and technical capabilities while linking waste treatment to identifiable fuel users and markets.

Bengaluru: Tender S.U.R.E. Streets¹¹

Bruhat Bengaluru Mahanagara Palike (BBMP) initiated Tender S.U.R.E. (Specifications for Urban Road Execution) to fix the cycle of uncoordinated street digging, poor pedestrian infrastructure, and frequent asphalt failure across municipal corridors. Designed by Jana Urban Space Foundation, the project was inspired by global complete-street design standards that prioritize non-motorized transport. Execution involved

⁹ Franceys, R., & Jalakam, A. (2010). The Karnataka Urban Water Sector Improvement Project: 24x7 water supply is achievable (WSP Field Note). Water and Sanitation Program, World Bank

Ray, I., Billava, N., Burt, Z., Colford, J. M., Jr., Ercümen, A., Jayaramu, K. P., Kumpel, E., Nayak, N., Nelson, K., & Woelfle-Erskine, C. (2018). From intermittent to continuous water supply: A household-level evaluation of water system reforms in Hubli-Dharwad. *Economic & Political Weekly*, 53(49), 39–48

¹⁰ Department of Economic Affairs, Ministry of Finance, Government of India. Gobardhan Bio CNG Plant: Best Practices by States. Public Private Partnerships in India.

¹¹ Bruhat Bengaluru Mahanagara Palike (BBMP): Tender S.U.R.E. Project Implementation and Network Expansion Reports.

Jana Urban Space Foundation: Tender S.U.R.E. Street Design Guidelines & Execution Standards

redesigning street cross-sections to allocate equitable rights-of-way, integrating underground utility ducts for fiber, water, and power lines within wide footpaths, and standardizing concrete curb designs to prevent repeated road digging. The initiative transformed urban mobility by creating continuous footpaths and organized utility corridors, reducing long-term maintenance costs and setting street design standards nationwide. However, the model faced challenges, including high initial capital costs per kilometer and prolonged construction timelines that caused temporary traffic disruption during execution.

2.4. Service outcome measurement

Urban service performance is monitored through operational and financial indicators, alongside citizen feedback. These include service frequency and quality, downtime, unit costs, grievance resolution, payment delays, worker safety, resource recovery and asset condition. However, monitoring requires defined baselines, clear responsibility for data management and regular performance reviews. Digital dashboards are available as monitoring tools, but their effectiveness depends on whether the data informs operational decisions, corrective action and public accountability.

Andhra Pradesh: Digitising Municipal Services and Revenue Collection¹²

Andhra Pradesh built a statewide municipal digital stack linking drone and GIS property mapping, a cloud-based ERP, online building permission, the MeeSeva portal and the PuraSeva grievance app. The eGov Foundation's DIGIT platform standardized processes across all 110 urban local bodies (ULBs). The trigger was weak municipal finance: piped water coverage fell over 10 percent between 1991 and 2001, sewerage served under 20 percent of residents, and outdated maps and discretionary paper permits blocked tax assessment. It is a state-led reform financed by the World Bank's Andhra Pradesh and Telangana Municipal Development Project with a total cost of USD 350 million. It combined AI-assisted drone mapping, which proved cheaper than satellite imagery, with the DIGIT applications. Process re-engineering and legally backed service level agreements (SLAs) supported both, and over 1,000 ULB staff were trained. Property tax and water charge revenue more than doubled between 2015 and 2019, which the Bank attributes to more accurate data curbing evasion. Over 350 services went online and piped water reached over 200,000 households. Of 125,000+ complaints in FY2019, only 367 stayed unresolved, though almost half met SLA timelines.

Kerala: Information Kerala Mission (IKM) & K-SMART¹³

The Information Kerala Mission (IKM), an autonomous technology body under Kerala's Local Self Government Department (LSGD), standardized e-governance software across all 93 Urban Local Bodies (ULBs) and 940+ Grama Panchayats. Grounded in decentralization powers under the 74th Constitutional Amendment Act and aligned with national e-governance guidelines, IKM engineered modular software systems (Sanchaya, Sevana, and Sanketham). In 2024, IKM launched K-SMART, a unified cloud-native platform integrating GIS spatial mapping, automated rule-checking engines, and Aadhaar authentication. The platform processed over 22 lakh municipal files digitally in its first year, generating over ₹1,700 Crore in online revenue and enabling instant civil certificate delivery and rapid building plan approvals. Minor operational friction included managing system integration during the legacy-to-cloud transition and training field staff across regional municipalities.

3. Challenges

3.1. Fragmented responsibilities and weak accountability

Urban services involve multiple institutions, including ULBs, State departments, utilities, parastatals and SPVs. Overlapping mandates and unclear responsibilities for planning, financing, regulation and operations weaken accountability for end-to-end service delivery. Unclear service agreements, performance obligations, payment responsibilities, information-sharing arrangements and dispute-resolution mechanisms further

¹² World Bank. (2020). Digital transformation in Andhra Pradesh, India (Case Study 17). In Enhancing government effectiveness and transparency: The fight against corruption, pp. 214–218

¹³ Local Self Government Department (LSGD), Kerala: Annual e-Governance Audit & Financial Integration Reviews.

complicate coordination. Tensions between elected representatives and officials, weak ward-level mechanisms, and uncertainty over the accountability of specialised agencies to elected local governments compound these challenges. Frontline workers, waste pickers, worker enterprises and self-help groups may also face irregular payments, inadequate training and weak occupational safeguards. Flooding, water scarcity and power interruptions further threaten service continuity.

3.2. Gaps in municipal capacity and technical expertise

Many ULBs, particularly smaller ones, face shortages of specialised personnel in engineering, project preparation, municipal finance, procurement, contract management, performance monitoring, asset management and regulatory compliance. Vacancies and skills gaps affect project quality, service-provider oversight and long-term O&M, while State-level support may not meet day-to-day municipal requirements. Individual ULBs may also lack sufficient service volumes, land or financial capacity to operate infrastructure efficiently. Regional arrangements face their own constraints, including transport distances, costs and differences in local operating conditions.

3.3. Procurement barriers and weak contract management

Procurement often prioritises initial bid price and conventional eligibility criteria over lifecycle costs, service quality, innovation and O&M performance. Rigid procurement rules, fear of audit objections and risk-averse decision-making can discourage adoption of innovative procurement approaches, even where these may improve service delivery. Weak baseline data, inadequate tender documentation, unclear specifications and limited evaluation capacity can delay procurement, restrict competition and increase disputes. Quality-and-Cost Based Selection (QCBS) may be difficult to apply where measurable performance criteria and standard documents are lacking. High turnover and prior-experience requirements, performance guarantees, brand-specific specifications, limited working capital and delayed payments can exclude startups and specialised firms. Unclear risk allocation, land availability, input quality and quantity, performance standards, offtake arrangements, rectification periods, O&M cost adjustments and consequences for service failure create further uncertainty. Delayed approvals and bill certification, combine with limited mechanism to scale successful pilots, and high upfront cost, further undermines contract execution and innovation. Service assessments may also overlook residents' experiences, including access in low-income settlements, the needs of women and persons with disabilities, and accessible grievance mechanisms.

3.4. Financial sustainability and market risks

Low own-source revenue (tax and non-tax), limited fiscal autonomy, incomplete asset and financial data, inadequate property-tax coverage and valuation, and inconsistencies between reported and actual performance constrain municipal financial planning. Project appraisal may overlook recurring expenditure, preventive maintenance and asset replacement. User charges may not reflect service costs, while affordability concerns

complicate revenue mobilisation. Resource-recovery projects face additional risks from uncertain feedstock, product quality, market demand, offtake and payment reliability. Dependence on time-bound grants or external funding creates further continuity risks, particularly when projected revenues are insufficient to cover operating costs and responsibility for funding shortfalls remains unclear.

4. Pre-Conclave Deliberations and Outcomes

The pre-conclave consultation convened by the Ministry of Housing and Urban Affairs (MoHUA) on 7 October 2026 examined three connected themes: (i) institutional reforms and SPV governance; (ii) procurement reforms, tenders and financial rules; and (iii) ecosystem integration and startups. Suggestions from the India Sanitation Coalition, Assam's Swachh Bharat Mission-Urban team, and other contributors added implementation perspectives on sanitation, solid waste, used-water management and startup procurement.

4.1. Institutional reforms and SPV governance

Urban governance arrangements vary across cities and States, necessitating institutional structures suited to city size, functions, capacity and local context. The principle of subsidiarity should guide the assignment of responsibilities, including locality-level sweeping and garbage collection. The 74th Constitutional Amendment Act, 1992, provides the constitutional framework for urban local governments and identifies 18 functions under the Twelfth Schedule, but functional devolution varies across States.

Locally elected governments are the principal institutions for urban service delivery. Effective governance requires clear separation of policy-making, service provision and regulation, supported by four foundations: clear mandate, capability, financial capacity and accountability. Challenges include fragmented responsibilities, limited fiscal autonomy, diffused accountability, tensions between elected representatives and officials, weak ward-level mechanisms, staffing shortages, skills mismatches, weak own-source revenue, limited use of digital data for field-level decisions, and unclear responsibility for user-fee collection, service payments and service quality. NITI Aayog's Moving Towards Effective City Government: A Framework for Million-Plus Cities¹⁴ (2026) was cited in relation to fragmented responsibilities, limited fiscal autonomy and diffused accountability.

Infrastructure creation must be followed by effective O&M and adaptation, with clear ownership of each service. SPVs and parastatals can support specialised, complex, episodic, time-bound, cross-boundary and mission-mode functions, particularly where municipal capacity is insufficient. However, their role in recurring municipal services and accountability to elected governments requires clarity. The discussion emphasised aligning city-level authority, responsibilities and resources, strengthening municipal

¹⁴ As per India's Census of India, million-plus cities have a population of 1 million or more, while Class I cities have a population of 100,000 or more; cities below 100,000 fall under Classes II to VI.

oversight of SPVs, and retaining their execution advantages where they address service-delivery bottlenecks. A function–geography–capacity matrix, State–city MoUs and service agreements, stronger municipal cadres, specialised expertise, improved SOPs and digital monitoring were identified as relevant reform measures.

Good Practices Discussed

- Urban governance models: Bombay’s Commissioner-led model; Kolkata’s Mayor-in-Council model; the North Indian parastatal model; strong mayoral arrangements in Lucknow, Jaipur, Visakhapatnam and Coimbatore; the ADM-led model in Telangana; and the Joint Director model in Gujarat.
- Smart Cities Mission: SPVs enabled cities of different sizes, including smaller cities, to mobilise funds and accelerate project implementation. Their accountability to elected representatives and relationship with municipal governments remained concerns.
- Other practices: Reverse-logistics approaches involving startups in Hyderabad’s waste management; integrated waste and biomedical waste management contracts; Smart City command centres for field monitoring; and city–State-owned SPV arrangements in China and South Africa.
- Power sector: The unbundling of policy-making, regulation and service provision was discussed as a possible reference for urban services.

4.2. Procurement reforms – Tender and financial rules

Effective urban service delivery depends on procurement and financing mechanisms, institutional capacity, financial management, accountability, inter-departmental coordination, contractor management and lifecycle planning. Conventional Engineering, Procurement and Construction (EPC) contracts remain prevalent, while limited institutional capacity, risk aversion and inadequate standardised documentation constrain innovative procurement and financing. PPPs offer an alternative for service delivery where private-sector capabilities, appropriate risk allocation and viable revenue or payment mechanisms can improve service performance. However, their suitability depends on sectoral and local conditions. PPP contracts should place clear, measurable service outcomes and performance, supported by mandatory monitoring and review, verified performance-linked payments, and recurring budgets alongside user charges for O&M.

Approval delays, inadequate post-completion support and fragmented vendor arrangements affect project timelines, service continuity and accountability. Fair procurement also depends on institutional willingness to use existing systems, accommodate external expertise and distribute responsibilities. Measures discussed included standardised procurement documents, digital repositories and AI for vendor accountability against service-level benchmarks, complete baseline documentation, and proactive, parallel approval processes.

Municipal finance needs to shift towards stronger own-source revenue, including property tax, user charges and other revenues, supported by asset management and market-based financing. Constraints include the absence of dedicated municipal finance cadres, incomplete asset information and valuation, inadequate property-tax coverage, political sensitivity around revenue reforms, user charges that do not reflect service costs, outdated PDF-based financial data, and inconsistencies between reported and actual

performance. Reforms driven primarily by incentives rather than municipal requirements were also questioned.

Financial management improvements include digital financial data, monthly reconciliation with annual audited statements, better property-tax coverage and collection, service-cost assessment, stronger user-charge collection, and asset mapping covering value, utilisation and monetisation potential. The discussion also called for performance-based grants linked to measurable outputs and outcomes, greater access to market-based finance, and a common revenue ID for non-tax revenues and service charges.

Departmental silos can lead to repeated infrastructure works, while weak coordination between ULBs, SPVs and parastatals creates accountability and legacy issues. Clear institutional responsibilities and integrated planning are particularly important where transport and urban development cross municipal boundaries. Lifecycle-based planning, long-term O&M arrangements, clear SOPs and accountability mechanisms were emphasised, alongside recognition that municipal infrastructure provides wider public-good and economic benefits beyond direct revenue generation.

Good Practices Discussed

- MoHUA's City Finance Portal; graded and hybrid approaches to digital financial data; customisation of the Government Land Information System (GLIS) for municipal asset mapping; and a community of municipal finance experts. Around 500 ULBs were reported to have mapped their assets.
- GeM: Provides access to goods and services, procurement visibility across ULBs, and AI-based examination of bidding patterns and anomalies.
- Punjab: Uses its own procurement Act and portal alongside GeM and the CPWD portal.
- CPWD: Is developing a digital contractor database and tendering platform, with contractor performance rating and grading envisaged.
- NBCC: Maintains digital contractor records and undertakes eligibility, quality and financial assessments. Practices include proactive approval processes, additional requirements for bids below 15%, and engaging the same agency for five years of O&M.
- Maharashtra: Its finance cadre was cited as supporting municipal finance capacity.
- Navi Mumbai's Municipal revenue systems: Digital payment options, property-data integration with tax systems and metered water-supply connections support revenue collection and monitoring.

4.3. Ecosystem Integration and Startups

The discussion emphasised strengthening ULBs partnership with NGOs, SHGs, startups, service providers, and public institutions to move innovation from pilot to scale-up. The primary constraint was not the availability of solutions but limited connections with municipal demand, opportunities to demonstrate credibility and feasibility, and institutional pathways for city-level adoption. Private-sector engagement with government was considered tedious, while startups and other smaller organizations face trust, credibility, financial-risk and procurement barriers, including limited capacity to finance tender participation.

Material recovery was cited as a potential waste-management performance indicator. Decentralised upcycling of recyclable waste streams offers a resource-recovery approach within highly centralised municipal systems; incentives may be needed to scale it, with models contributing to own-source revenue and reduced O&M costs.

Limited access to bank lending and the perception of ULBs as a lower-priority sector were noted. Partnership and collaborations with institutions of eminence (universities/research institution), technology providers can support and strengthen urban innovation. Such collaborations can help ULBs assess solutions, adapt designs to local requirements and bridge gaps in technical capacity. Government can also enable startup adoption through demand creation, demonstration opportunities, appropriate intellectual property protection, incubator linkages and procurement reforms. Measures discussed included sharing successful State procurement practices, targeted changes to State procurement policies, applicable General Financial Rules (GFR) flexibilities, GeM startup empanelment and challenge-based procurement.

Good Practices Discussed

- BMC implementation and incubation centre: Selects five to six startups to implement products or ideas with municipal sponsorship, supporting infrastructure development, testing and ground-level feedback.
- SIIC, IIT Kanpur: Has a network of over 560 startups, including those working in sanitation, cleaning, water and related service areas.
- Decentralised upcycling: A startup approach to recovering recyclable materials within a highly centralised municipal solid waste management system.
- Hyderabad: Collaboration with IIT Hyderabad and the local IT department uses a data-based sandbox to identify and test solutions for disaster-linked vulnerabilities and revenue collection. PPPs were considered effective in selected service areas where institutional and financial conditions are appropriate.
- Smart Cities Mission and iDEX: The Smart Cities Mission's city-startup platform was reported to have achieved relatively limited traction compared with the iDEX model.
- Challenge-based procurement: 9 NTRO and NIA hackathons were cited as examples linking defined problem statements with limited-tender procurement.
- Startup funding: Figures cited included 4,400 startups receiving approximately ₹1,000 crore in seed funding, returns of around ₹21,000 crore, a further ₹1,300 crore infusion, and reported non-performing assets of approximately ₹4 crore, or less than 0.5%.
- Existing procurement mechanisms: GFR provisions provide flexibility and exemptions relating to turnover criteria, security deposits and mobilisation advances. GeM startup-empanelment mechanisms were also discussed.

5. Exploring New Paradigm

The good practices show that infrastructure investment alone does not improve urban service delivery. Results improve where accountability, operating standards, finance, professional management and citizen redress are aligned. In the absence of these conditions, assets and contracts do not deliver the intended service. The policy framework for urban service delivery is therefore not to replicate individual city models, but to embed proven operating principles across sectors and city types. The following paradigms set out how urban services can be redesigned around daily citizen needs, institutional accountability and long-term sustainability.

The central proposition

The next generation of urban service delivery should be designed as a set of public service guarantees, not as a portfolio of capital works. An asset becomes useful only when an identified institution operates it, pays for its maintenance and renewal, observes its performance, corrects failure and remains answerable to citizens. The relevant unit of reform is therefore the end-to-end service chain: from the source of a service or problem, through the infrastructure and people that make it work, to the experience of the resident and the action that follows a complaint or failure.

This does not prescribe a single delivery model. A dense metropolitan region, a rapidly urbanising peripheral municipality and a small town need different technologies, institutions and financing arrangements. The common principle is that the public authority must be able to answer five questions for every essential service: who is accountable; what standard is promised; how is it financed across its life; what data shows whether it works; and how can a resident secure correction when it does not?

New paradigms for urban service delivery

The next phase of urban reform must focus on the quality and reliability of services that residents receive every day. This requires changes in the way cities prepare projects, assign responsibility, mobilise finance, engage delivery partners, use technology and plan beyond their municipal limits. The following paradigms provide a common frame for applying these changes across water, sanitation, waste management, mobility, public spaces, environmental services and other facilities that shape daily urban life.

5.1. Service-ready urban assets

The paradigm: The preparation and approval of urban assets should be linked to the service that the asset is intended to provide. A used water treatment plant requires a functioning collection network, reliable power, trained operators and an identified use or disposal arrangement for treated used water. A public park requires safe access, lighting, maintenance and supervision. Similar requirements apply to bus stops, public toilets, drinking-water points, footpaths, cycle tracks, storm water drains, solid-waste facilities and other services in urban centres. The project is complete only when the conditions that ensure sustained and efficient delivery of services are in place and the intended service can be accessed by the public.

What it requires in practice: The DPR and its appraisal should identify the service area, coverage standard, supporting works, operating agency, staff and inputs, annual O&M and renewal requirement, safety provisions and grievance arrangements. Allocation of land, power supply, access, drainage, universal design and maintenance responsibility should be resolved before construction is sanctioned. Before commissioning, the ULB or utility should verify that the asset can be operated and that the related service systems are functioning for the design life cycle of the asset. At high-footfall locations, toilets, drinking water, public information, first-aid support, urban mobility and safe access should be planned together, with clear arrangements for frequent access, upkeep and public safety.

5.2. Integrated service systems with one point of accountability

The paradigm: Urban services should be delivered by several agencies, while the resident deals with one city entity. A designated public entity should therefore be responsible for bringing together the institutions, plans, budgets and operating arrangements needed for each urban service. In water supply, the entity should ensure that source security, treatment, distribution, billing, wastewater collection and reuse are planned and managed as one service chain. In solid waste management, it should connect segregation at source with collection, transport, processing, resource recovery and safe disposal. For clean air and traffic decongestion, it should coordinate public transport, traffic management, road design, construction controls, waste-burning prevention and enforcement, since the outcome cannot be delivered by a single department alone.

What it requires in practice: States and cities should notify a responsibility framework for priority services. It should identify the institution responsible for planning, asset ownership, operations, finance, data, citizen response and escalation, and specify how these functions will work together. The coordinating entity may be a municipal unit, a utility or another city-level institution, according to local circumstances; its mandate and authority should be clear. The same arrangement should provide a unified service interface. A resident should be able to report a leaking pipe, blocked drain, unsafe park, missed waste collection, faulty streetlight, open dumping/burning of solid waste or transport problem once, while the city assigns the case to the concerned agency, tracks the response and remains answerable for closure.

5.3. Financially durable and investment-ready services

The paradigm: Financial planning for each urban service should provide for operation, routine maintenance, asset replacement and other recurring costs in addition to initial capital expenditure. The source of financing should be identified at the time of investment approval. User charges may support services such as water, sewerage, parking, mobility and treated-water reuse. Property tax, other own-source revenues and public transfers are central to services such as drainage, parks, footpaths, clean-air action and street safety. This distinction is necessary for realistic budgeting and for protecting the quality of services after the asset is created.

What it requires in practice: Cities should maintain service-wise financial statements covering the asset base, operating and renewal cost, billing, collection, grants, subsidy and funding gap. These statements should inform budgets, tariff decisions and investment proposals. Support for low-income households should be provided through transparent and targeted arrangements. Before seeking debt, financing or entering a PPP agreement, the city should establish the demand, land and statutory position, operating responsibility, revenue or payment source, public contribution and risk allocation. Depending on the service and its revenue profile, the arrangement may be an operating or management contract, concession, viability-gap support, annuity or hybrid-annuity structure, or another appropriate model. No single PPP structure should be treated as universally suitable or applicable throughout all urban areas.

5.4. Public responsibility and specialised delivery partnerships

The paradigm: Responsibility for urban service delivery continues to rest with the ULB or other public authority even where specific functions are performed by external entities. The public authority must retain responsibility for service standards, inclusion, tariff and subsidy policy, regulatory functions, long-term planning, public funds, citizen grievances and public data. Private firms, social enterprises, community organisations, non-profits and technical agencies can undertake defined non-regulatory functions where they bring operating capability, technology or local reach that the city does not possess. Such arrangements should strengthen service delivery without weakening public accountability.

What it requires in practice: Cities should identify the functions that can be delivered through specialised partners, including operation of public toilets and parks, waste treatment facilities, waste collection systems, fleet maintenance, call-centre support, asset surveys and passenger-information systems. The municipality should invest in the capacities required to design services, prepare procurements, manage finance, monitor contracts, inspect quality, interpret data and address citizen grievances. Each agreement should define the required service, performance standard, measurement method, data to be shared, payment arrangement, public safeguards and the action to be taken in the event of failure. This allows external capability to be used while the city remains responsible for the result.

5.5. Service-focused procurement and contract management

The paradigm: Procurement documents should define the service that the city expects to receive and the standard against which delivery will be assessed. For example, a bus-service contract should address scheduled operations, reliability, safety and passenger information; a public-toilet contract should address cleanliness, availability and maintenance; a wastewater contract should address treatment quality and reuse; and a solid waste management contract should address collection coverage, segregation, processing and safe disposal. The completion of civil works or submission of invoices is not sufficient evidence that the service has been delivered.

What it requires in practice: For services that can be measured, the tender should specify the baseline, expected service standard, source of data, verification arrangement, response time, payment basis and consequence of non-performance. Routine works may continue through standard procurement process. Longer-term O&M, performance-based or PPP arrangements should be used where the city can define and monitor the service requirement. The city must conduct periodic inspection of service delivery, assess performance data, certify payments, issue directions and address default conditions. More complex PPPs should be considered only where the city has credible baseline information, sustainable payment commitment and capacity to manage the contract over its full term.

5.6. Digital systems for managing urban services

The paradigm: Digital systems should be adopted to support day-to-day management of urban services. Their first purpose is to provide a current and reliable record of public assets, service operations and citizen requests. This record should cover priority assets such as water and drainage networks, bus stops and vehicles, parks, public toilets, drinking-water points, footpaths, cycle tracks, streetlights and other facilities used daily by residents. A common digital record allows the city to identify failures, assign responsibility and use maintenance and investment resources more effectively.

What it requires in practice: Each priority asset should have a common identity, location, responsible agency, operating status and maintenance history. New urban infrastructure works should be entered into the digital record before final payment, and operating agencies should update the record as maintenance and service activities are carried out. On this foundation, cities can provide a common digital and physical access facility, such as an app and/or interoperable card, for public transport information and payment, selected city facilities, high-footfall locations and visitor support. The facility should work with the unified service interface under the responsible city entity, protect personal data, offer multilingual and assisted access, and retain non-digital options for residents and visitors who require them.

5.7. Converged service delivery across urban, peri-urban and rural areas

The paradigm: Urban service delivery should take account of the wider area from which the city draws water, labour, waste flows, commuters and land for infrastructure. Peri-urban settlements, census towns and neighbouring rural areas are often already connected to the city through water sources, wastewater reuse, drainage, solid waste movement, employment, travel and markets. The inclusion of these areas in service planning is therefore necessary for managing growth and for preventing avoidable gaps in basic services as urban expansion proceeds.

What it requires in practice: States and cities should prepare growth and service maps that identify areas requiring common infrastructure or coordinated delivery. Where a water source, treatment plant, landfill, transport corridor, drainage outfall or air-quality measure serves more than one local body, the concerned ULBs and rural local bodies should agree on land, investment, operating cost, service standards, data sharing, local grievance handling and accountability. Such arrangements should strengthen coordination across the urban region without diluting the responsibility of each local body to its own residents. They should also provide for phased extension of services to settlements likely to be absorbed into the urban area.

5.8. Cities as platforms for adoption and scale-up of urban innovation

The paradigm: Cities require a clear route for adopting useful ideas that improve the delivery of urban services. Startups, entrepreneurs, researchers and civic organisations can contribute solutions for operational problems, including leakage, air quality, waste recovery, traffic management, accessibility, maintenance and emergency response. Their engagement should be linked to an identified service need and to the systems through which the city will eventually operate and maintain a successful solution. The objective is

to move suitable innovations from limited trials into regular urban service delivery.

What it requires in practice: A city should begin with a defined problem, baseline, test area, responsible agency, applicable data and safety conditions, duration and measure of success. The trial should be assessed for service benefit, lifecycle cost, interoperability, maintenance requirements, data ownership and accountability before it is adopted or scaled. Cities should retain access to the data generated and avoid arrangements that lock them into a single provider without adequate safeguards. States and institutions of eminence can support common challenge platforms, standard trial agreements and technical evaluation. This will give promising solutions a credible pathway into public service delivery while allowing pilots that do not meet the agreed standard to be closed in an orderly manner.

6. NUC 2026: Key Discussion Areas

The focus of the deliberations needs to extend beyond individual projects and infrastructure assets towards the systems that enable services to be planned, financed, delivered, monitored and sustained over time. Against this backdrop, the following discussion areas capture the key institutional, financial, operational and technological considerations emerging from the pre-conclave consultations.

6.1. Institutional Models and Governance for Integrated Urban Service Delivery

Discussion on the suitability of corporatised utilities, municipal delivery models and SPVs for different urban services, drawing on Shimla Jal Prabandhan Nigam Ltd. (SJPNL) and the Smart Cities Mission SPV experience. The focus is on identifying specific municipal functions that can be professionally managed, competitively procured and held accountable for measurable outcomes, rather than outsourcing entire municipal functions.

- Which urban services can be delivered more effectively through outsourcing or alternative service-delivery models, while retaining government responsibility for oversight, accountability and equitable access?
- How do these institutional models compare in terms of accountability to elected governments and ULBs?

6.2. From Infrastructure Creation to Citizen-Centric Service Outcomes

Deliberation on performance-linked service delivery models, drawing learnings from the Karnataka's 24x7 water-supply project, where operator performance was assessed against service standards through independent verification.

- How should limitations, including higher bills and limited geographical coverage, inform assessment of the model's wider applicability?
- How can infrastructure-design approaches such as Complete Streets Programme be assessed in terms of pedestrian access, utility coordination, maintenance requirements and everyday citizen experience?

6.3. Municipal Finance and Long-Term Service Sustainability

Strengthening municipal revenue, assessing the financial viability of Public–Private Partnerships (PPPs), and ensuring sustainable financing for urban services throughout their lifecycle. The deliberation can draw inspiration from Andhra Pradesh’s municipal digitisation experience and the financial challenges associated with long-term service contracts.

- How can digital financial systems strengthen municipal revenue mobilisation and expenditure planning?
- What financing models and mechanisms can ULBs use to mobilise private capital for urban infrastructure and services while ensuring financial viability and managing fiscal risks?
- How can ULBs balance revenue-generating services with essential non-revenue-generating functions within their overall budgets to ensure continuous and reliable service delivery?
- How can ULBs ensure adequate funding for operations, maintenance and asset replacement, particularly where service revenues are insufficient to cover costs?

6.4. Procurement, Contracting and Scaling Innovation

Aligning procurement and contracting approaches with service outcomes, fair competition and the wider adoption of successful innovations. The discussion can draw on Karnataka’s water-supply management contract, the Brihanmumbai Municipal Corporation’s implementation and incubation initiatives, Hyderabad’s collaboration with IIT Hyderabad, and GeM startup empanelment.

- How can ULBs adopt performance-based contracts and lifecycle costing in procurement? What contracting models can support this transition?
- What procurement mechanisms can help successful pilots move to wider implementation, including proof-of-concept contracts, First Buyer arrangements and framework contracts?
- What are the relative advantages of centralised, state-level and department-specific procurement portals, such as those operated by NBCC and CPWD? Can demand aggregation streamline procurement, improve economies of scale and reduce transaction costs? If so, how can aggregation be structured while retaining flexibility to address local needs?

6.5. Municipal Capacity and Digital Accountability

Strengthening municipal expertise and administrative systems for project preparation, procurement, contract management and performance monitoring. Drawing on Maharashtra’s municipal finance cadre, Andhra Pradesh’s municipal digitisation, Kerala’s K-SMART and SCM’s Integrated Command and Control Centres.

- What institutional models can enable ULBs to access and retain specialised expertise, and why is strengthening in-house capacity important alongside shared technical resources and external support?
- What role should integrate digital platforms (linking financial, asset and service-

performance data) play in urban service delivery? What are the key limitations and scope for expanding existing Integrated Command and Control Centres (ICCCs) and other municipal digital systems?

6.6. Regional Service Delivery, Circular Economy and Resource Recovery

Exploring regional and inter-municipal service delivery models that enable economies of scale, improve resource recovery and strengthen the financial and operational viability of urban services. The discussion can draw on the proposed State Waste Management and Circular Economy SPV, ULB-led and shared infrastructure models, and Bhopal's experience in waste-picker integration and decentralised upcycling.

- What institutional, contractual and financial arrangements are needed to operationalise shared infrastructure while preserving local accountability?

6.7. Addressing the Missing Links in Urban Service Delivery

Examining service-delivery gaps that remain overlooked in conventional urban planning, including clean air, wastewater circularity, safe public spaces, last-mile pedestrian connectivity, integrated traffic management, and adequate sanitation and drinking-water facilities at high-footfall locations.

- How can cities identify and institutionalise services that fall between departmental mandates despite their impact on public health, safety and liveability?
- How can accountability be established for cross-cutting urban outcomes such as clean air, wastewater reuse, pedestrian safety and access to public amenities, where responsibility is distributed across multiple agencies?

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