Foreword

Infrastructure is a vital component of economic development and growth. As Indian cities currently contribute 63% to the national GDP, focused efforts by the Government towards shaping urban India will go a long way in fostering economic growth and ultimately achieve the anticipated figure of 75% contribution to GDP by 2030.

The High Powered Expert Committee, set up by the Ministry of Urban Development in May 2008 for estimating the investment requirement for urban infrastructure services, has valued the total infrastructure investment for the period 2012-2030 at INR 39.2 lakh crore. Investments planned for the period 2015-2020 under key Government initiatives aimed at urban infrastructure development, including Smart Cities Mission, AMRUT, Swachh Bharat Mission (Urban), Pradhan Mantri Awas Yojna (Urban) and HRIDAY, have increased almost four fold in comparison to the funds allocated for such initiatives during the last decade. Thus, developing competitive cities and improving living standards will foster entrepreneurship and attract new enterprises. The mammoth task of developing urban India is challenging and complex and requires private sector participation through PPP as well as robust municipal finances for sustainable development of infrastructure and provisioning of urban services. While the policies augur well for development, the focus should now shift to designing investable projects and project execution policies. The challenge of implementing urban infrastructure projects is exacerbated due to limited capacity and insufficient revenue generation at the local governance level.

Improvement in management effectiveness of ULBs through capacity building is vital to augment resources available for development through options such as municipal bonds to address the issue of underinvestment in municipal services and project execution capacity.

Further, addressing risks associated with project execution through careful structuring of PPP contracts is key to ensuring a conducive environment for private sector participation.

I am pleased to present this YES BANK – YES Global Institute Knowledge report ‘Financing Urban Infrastructure’, which provides a strategic roadmap for developing a holistic financing ecosystem to catalyze infrastructure creation for India’s smart cities.

I am confident this report will be a great value addition for all stakeholders and will foster meaningful dialogue towards developing robust infrastructure for urban India.

Thank You.

Sincerely,

Rana Kapoor
Managing Director & CEO
Chairman YES Global Institute
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India’s urban growth is mostly concentrated in large cities with a population of 100,000 or more. The number of cities with population exceeding 1 million has increased from 35 in 2001 to 53 in 2011, accounting for 43% of India’s urban population, and the number is expected to rise to 87 by 2030.
1.1 Urban Infrastructure: An Overview

It is estimated that nearly 31% of India’s current population lives in urban areas contributing to 63% of India’s GDP. With increasing migration, urban areas are expected to house 40% of India’s population and contribute to 75% of India’s GDP by 2030.

India’s urban growth is mostly concentrated in large cities with a population of 100,000 or more. The number of cities with a population exceeding 1 million has increased from 35 in 2001 to 53 in 2011, accounting for 43% of India’s urban population, and the number is expected to be 87 by 2030. Further, within Class-1 category of cities (population > 0.1 million), those in the 1–5 million population range cities are growing faster.

Source: Service Level Benchmarking, Water and Sanitation Program 2010, GoI; McKinsey 2011
1.1.1 Investment Gap

A gap of INR 1.45 Lakh Cr is estimated in the annual investment in infrastructure service delivery in Indian cities basis comparison between investments made in 2011-12 and 2012-13.

The High Power Expert Committee (HPEC) has estimated a total investment of INR 39.2 Lakh Cr - for Urban Infrastructure for the period 2012-31. The investment estimates are based on detailed analysis of 8 Sectors and also include O&M and Establishment Cost.

Figure 3: Investment in Urban Infrastructure (HPEC)

1.2 Urban Infrastructure: Financing Development

An investment of INR 5.5 Lakh Cr has been estimated by 2022 for Urban Infrastructure Sector in India. Considering the magnitude of investments, it is essential to create a comprehensive investment eco-system to foster implementation of projects in the sector.

Figure 4: Key Stakeholders in the sector include:

Source: HPEC
1.3 Investment Commitment by the Government

1.3.1 Commitment under 14th Finance Commission

Centre Finance Commissions over the years have augmented the resources made available to ULBs in order to support them in developing core urban infrastructure and improve service delivery.

Figure 5: Grants Under Central Finance Commission (INR in Crore)

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (INR in Crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14th CFC</td>
<td>87,144</td>
</tr>
<tr>
<td>13th CFC</td>
<td>23,472</td>
</tr>
<tr>
<td>12th CFC</td>
<td>4,500</td>
</tr>
<tr>
<td>11th CFC</td>
<td>2,000</td>
</tr>
<tr>
<td>10th CFC</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Source: 13th and 14th Finance Commission Reports

1.3.2 Investments under Key Government Programs

Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was the first flagship program launched by Central Government for providing funding support to Urban Infrastructure through various sub-missions. The program was launched with an investment outlay of INR 66,000 Cr. Since then the investment committed towards urban infrastructure has increased almost four folds in 2015 under Smart Cities, AMRUT, PMAY, HRIDAY. Government has committed approximately INR 2.24 Lakh Cr towards developing core and smart urban infrastructure.

Figure 6: Investments Under Urban Development Programs (INR Crore)

Source: Planning Commission Report, MoHUA, Mission Guidelines – Smart Cities, AMRUT, PMAY (U), Swachh Bharat Mission, HRIDAY, CRISIL, YES BANK Analysis
1.3.3 Smart Cities Mission

Coverage: The mission aims at covering 100 Smart Cities with a challenge-based two-tier selection system. At present, 90 Smart Cities (in 4 Rounds) have been selected.

Objective: To accelerate core infrastructure improvement in cities, provide a decent quality of life to citizens, offer clean and sustainable environment, and readily applicable smart solutions.

Figure 7: Components of Smart Cities Proposal

Redevelopment
Green-field Development
Retrofitting

The improvement of existing areas
City extension to outgrowth areas
City renewal, including replacing existing built-up areas and the recreation of new layout areas with improved infrastructure

Figure 8: Public Funding for selected 90 Smart Cities

GoI Contribution: 50%
State Govt. Contribution: 25%
ULB Contribution: 25%
INR 90,000 Cr.

Investment: A total investment of INR 189,256 Cr has been estimated for the selected 90 Smart Cities covering a population of 9.59 Cr. Almost 25% of the total funding i.e. INR 24,400 Cr has to be arranged by ULBs which has emerged as a key challenge considering their strained financial resources.

Figure 9: Smart Cities - Project Cost for Area Based Development and PAN City Proposal

Source: Smart Cities website, YES BANK ANALYSIS

Funding: Under Smart Cities Mission for 100 Cities, the Central Government has committed a funding of INR 48,800 Cr with an equal contribution from respective State Governments/ULBs making total fund committed towards the scheme to INR 97,600 Cr. Through 46% of this investment is through committed Government funding, a significant portion has to be funded by dovetailing other Government Schemes and efficiently using PPP at various stages of the project.

Source: Smart Cities website, YES BANK analysis
1.3.3.1 MoHUA – World Bank India Smart Cites Program

With an objective to develop capacities and make the Smart Cities SPVs’ operations more effective, Ministry of Housing and Urban Affairs (MoHUA) and World Bank have recently partnered to design a performance based program for smart cities, i.e. The MoHUA – World Bank India Smart Cites Program. The total outlay of the project is USD 500 Million (approx. ~ INR 3200 Cr6), of which USD 480 Mn. is earmarked for performance grants and remaining USD 20 Mn. is reserved for Capacity Building.

Presently, the grant has been opened for first 60 SPVs under the SCM. Basis the aggregate performance of SPVs in the respective states, 3-4 States shall be shortlisted. Selection of SPVs for performance based grant from the above shortlisted States will be done basis individual performance of the SPV against defined parameters. A maximum of 12 out of 60 SPVs would be eligible for the grant depending on the ranking.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Performance Indicators for Screening of SPVs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Progress in Smart City</td>
</tr>
<tr>
<td>2</td>
<td>Functioning SPV – Board of Directors/Functioning of Powers</td>
</tr>
<tr>
<td></td>
<td>• SPV Share Capital</td>
</tr>
<tr>
<td></td>
<td>• Independent Directors</td>
</tr>
<tr>
<td>3</td>
<td>SPV staffing (core dedicated full-time staff already in place)</td>
</tr>
<tr>
<td>4</td>
<td>Capital investment financing (except GoI/State Government grants) is made available to the SPV</td>
</tr>
<tr>
<td>5</td>
<td>Financial management systems</td>
</tr>
<tr>
<td>6</td>
<td>Environmental and social risk management systems</td>
</tr>
<tr>
<td>7</td>
<td>Convergence and co ordination</td>
</tr>
<tr>
<td>8</td>
<td>Proportion of smart city projects executed by the SPV</td>
</tr>
<tr>
<td>9</td>
<td>O&amp;M Sustainability</td>
</tr>
<tr>
<td>10</td>
<td>Monitoring and reporting systems</td>
</tr>
<tr>
<td>11</td>
<td>Grievance Redressal mechanism</td>
</tr>
</tbody>
</table>

The performance incentive grant to be transferred to shortlisted SPVs shall be based on detailed assessment carried out by World Bank. The overall annual allocation of the grant amount will be predetermined. However, the share going to each SPV would depend on the relative performance of the SPV against predetermined measures.

1.3.4 AMRUT- Core Infrastructure and Urban Reforms

Coverage: 500 cities

Objectives: Ensure that every household has access to a tap with assured supply of water and a sewerage connection; increase the amenity value of cities by developing greenery and well maintained open spaces (e.g. parks); reduce pollution by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).

The Mission funds will consist of the following four parts:

- Project fund - 80% of the annual budgetary allocation.
- Incentive for Reforms - 10% of the annual budgetary allocation.
- State funds for Administrative & Office Expenses (A&OE) - 8% of the annual budgetary allocation.
- MoUD funds for Administrative & Office Expenses (A&OE) - 2% of the annual budgetary allocation.
Funding: Central allocation towards AMRUT is INR 50,000 Cr. The allocation is proportionate to the cities in accordance to the population.

- **Population of up to 10 lakh**: 50: 25: 25 – Centre, State and ULB respectively;
- **Population of above 10 lakh**: 33:33:34 - Centre, State and ULB respectively;

Investment: The total investment of INR 77,640 Cr is estimated basis the approved State Annual Action Plan (SAAP), out of which 64% shall be funded through committed funding by Central Government. State Government along with ULBs shall fund the balance project cost. Though the investments from ULB would be limited to (25-33%) of the project cost, smaller ULBs face inherent risks including large project implementation and operations risk. Water Supply and Sewerage projects constitute 92% of the total project cost approved under AMRUT.

**Figure 11: Share of funds**

| Source: AMRUT, MoHUPA, 2017, YES BANK Analysis |

The below figure provides details of projects approved so far under SAAP – I, II and III.

**Figure 12: Project Status- AMRUT (INR Cr)**

| Source: 18th Apex Committee under AMRUT, 2017 |
1.3.5 HRIDAY- Tourist Destination Infrastructure

**Coverage:** 12 cities: Ajmer, Amritsar, Amravati, Badami, Dwarka, Gaya, Kanchipuram, Mathura, Puri, Varanasi, Velankanni and Warangal

**Figure 13: HRIDAY (INR in Crore)**

A total outlay of INR 453.91 Cr has been committed under HRIDAY towards development of planned tourist infrastructure for 12 cities. Projects worth INR 420 Cr. has been approved under the scheme.

1.3.6 PMAY - Housing for All

**Coverage:** Total housing shortage envisaged to be addressed through the Mission is 20 million by 2022. 4041 statutory towns in 3 phases for the period 2015-2022:

- Phase-I (April 2015 – March 2017): 100 Cities
- Phase – II (April 2017–March 2019): additional 200 Cities
- Phase-III (April 2019–March 2022) other remaining cities

**Objective:** PMAY (Urban) Mission aims to assist the States / UTs in providing housing for all eligible families / beneficiaries among the urban poor.

Central assistance under the mission is provided for the following components:

- **In-Situ Slum Redevelopment (ISSR):** Central grant of INR 1 lakh per house
- **Affordable Housing through Credit-Linked Subsidy:** interest subsidy of 6.5% on housing loan amount upto INR. 6 lakhs for a tenure of 20 years will be provided to economically weaker sections (EWS) and low income groups (LIG).
- **Affordable Housing in Partnership (AHP):** 1.5 lakh per EWS house under the AHP
- **Beneficiary-Led individual house construction (BLC):** INR 1.5 lakh per EWS house under the AHP
Central Assistance under PMAY (U) (except CLSS) is released to the States/UTs in 3 installments of 40%, 40% and 20% each. The interest subsidy under CLSS component is credited upfront to the housing loan account of the beneficiary.

Funding: The central share in the PMAY (U) mission is being met through the annual central budgetary allocation. The lump sum outlay has been estimated at INR 27,776 Cr\textsuperscript{10}.

1.3.7 Swachh Bharat Mission (Urban) - Sanitation and Waste Management

**Coverage:** 4041 statutory towns

**Objective:** The mission aims at making 4041 statutory towns open defecation free and 100% scientific management of Municipal Solid Waste

**Funding:** The committed funding from Central Government basis various approved funding patterns is INR 14,623 Cr with an amount of INR 4,874 Cr (25% of GoI Funding) to be contributed by respective State Governments. The financial assistance available under the scheme is distributed amongst following components:

- Construction of Individual Household Latrines (IHHL)
- Community Toilets (CT)
- Public Toilets (PT)
- Urinals
- Solid Waste Management (SWM) projects
- Information, Education, Communication (IEC), Public Awareness and Capacity Building

**Investment:** The total project cost for SBM Urban is estimated at INR 62,009 Cr\textsuperscript{11}, of which the committed funding by State and Central Government is approx. 32%. Balance fund has to be arranged through private sector participation, dovetailing other Schemes and Municipal Borrowings.

The overall allocation in last three years has seen a shift to Solid Waste Management. GoI has allocated 49% of the total committed grants amounting to INR 7291 Cr to the states for till date.\textsuperscript{12}.

**Figure 14: Swachh Bharat Mission**

Source: *India Expenditure Budget Volume II 2016-17, PIB*
1.3.8 Urban Transport

With growing urbanization it is essential to develop long term sustainable public transport systems. At present 326 Km of metro lines are operational in different cities and around 500 Km are under construction in 12 cities. Additionally, 550 km of metro lines are under planning stage and a huge investment is required to support and implement this mega scale infrastructure.

The Central Assistance would be under following format:
- Public Private Partnership (PPP) - Viability Gap Funding as per Government Scheme;
- State Government Implementation - Grant of 10% of project cost, excluding private investment, cost of land, rehabilitation & resettlement and tax;
- Equity Sharing Model: Equal ownership of Central and State Government concerned through equal sharing of equity of a SPV, financial support to metro rail projects in the form of equity and subordinate debt (for part of taxes), subject to an overall ceiling of 20% of the project cost excluding private investment, cost of land, rehabilitation and resettlement.

Under all these options, private participation is mandatory. The policy envisages private sector participation in O&M of metro services through cost plus fee, gross cost and net cost contract.

UKTI estimates investment of over INR 2.8 Lakh Cr for 30 Metro Projects in India by 2021.

1.3.9 Other Schemes and Incentives for attracting Investments in Urban Infrastructure

- 100% FDI is allowed under the automatic route for urban infrastructure areas like urban transport, water supply, sewerage
- 100% deductions for profits for undertaking housing project:
  - 4 Metro Cities upto 30 sq.m
  - Other Cities upto 60 sq.m.
- Excise Duty Exemption for Ready Mix Concrete

In order to develop required Urban Infrastructure and meet the investment targets, private sector participation and empowerment of ULBs both in terms of financial resources and implementation capacities becomes key.

Source: New Metro Policy, MoHUA
AUGMENTING MUNICIPAL RESOURCES - INTERNAL RESOURCE MOBILIZATION

The Total Revenue of the municipal sector in India accounts for only 0.75% of the GDP as compared to 4.5% in Poland and 5% in Brazil. In order to sustain the infrastructure expenditure in line with urbanization and economic growth, it is important the ULBs in India enhance their own revenue sources.
2.1 Planning and Management of Public Investment in Urban Infrastructure

Various frameworks to access the urban infrastructure requirement have been worked out in the past, including the recommendation of the Zakaria committee and HPEC - Per Capita Investment Cost and Per Capita O&M cost, which could be analyzed to re-evaluate the present day needs of the municipalities.
2.2 ULBs: Investment and Management of Infrastructure Assets

Infrastructure financing needs of ULBs in India have traditionally been met from grants and transfers from Central and State Government. Although the 74th Constitutional Amendment lays emphasis on fiscal independence and devolution of functions, it is only with the advent of new schemes that the role of ULBs has increased to arrange financial resources and effectively implement projects.

![Figure 17: Per Capita O&M cost (PCOM)](image)

Although, the grants from FC and SFC have increased significantly, the rationale for distribution could incorporate a more formula based approach which includes urban infrastructure and service delivery needs of cities and municipal capacity etc. for disbursement of funds to ULBs.

Annual data pertaining to ULB finances remains unavailable due to limited financial management capacity hence, consolidating data on municipal revenue and expense, and therefore, estimating existing performance and investment gap on an annual basis remains a challenge. Further, there is an urgent need to develop appropriate market instrument and capacity to raise long-term debt to address this investment gap. A stringent approach to financial discipline of ULBs is required as a starting point for municipal reforms, estimation of grant-in-aid and financing shortfalls.

2.2.1 Revenue Streams

ULBs are constrained to fund urban infrastructure projects due to limited revenue streams. Property Taxes and User Charges are the main sources of...
revenues for ULBs which are narrow, inflexible and lack buoyancy. Limited collection efficiency with low/no charges for municipal services has made ULBs dependent on State Governments even more for operating expenses in some cases.

2.2.2 Capacity to Execute Projects

ULBs in India are mostly managed by generalists, who lack subject level expertise in urban infrastructure and financial management. Lack of trained human resource results in huge dependency on private sector agencies. However, most ULBs even lack resources to manage these private sector experts.

The lack of capacity coupled with limited financial resources has resulted in a vicious circle of poor service delivery and cost overruns in project implementation, adversely impacting ULB financials. Poor financials result in poor credit ratings, making it difficult for ULBs to borrow independently.

It is important that ULBs become self-sustainable. Both State and Central Government are working towards self-sustainability of ULBs. The institutional capacity building program under AMRUT provides ULBs an excellent opportunity to improve service delivery and resource mobilization. Further State Governments are also coming out with project wherein (Information, Communication & Technology projects (ICT) modules have been put in place to improve collection efficiency and service delivery of ULBs.

Some of the major reforms being undertaken are as below:
- Trust and Verify-Online Application and Approval for Major Services
- Online Collection of Property Tax and GIS Based Assessment
- Land Titling and GIS Mapping
- Value Capture Financing
- Professionalization of Municipal Cadre
- Credit Rating

Most of these reforms are under advance stage of implementation, descriptive results for the same depend on the implementation and further action of ULBs. Government of India has proposed to increase the Reform Incentive Fund from INR 500 Cr during 2016-17 to over INR 3000 Cr per year for the next three years for reform implementation17.
2.3 Augmenting Municipal Resources and Operational Performance of ULBs

2.3.1 Revenue Enhancements

ULBs have two main sources of revenue,
- Revenue from tax and non-tax sources
- Grants from Central and State Government

Figure 19: ULB: Revenue Enhancement

Yardstick

<table>
<thead>
<tr>
<th>Dependency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Local Bodies (ULBs) in India are largely dependent on funds from State/Central Finance Commission and various schemes to execute infrastructure projects and even to meet their core obligations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Improve Revenue Income through Own Sources:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Revenue:</td>
</tr>
<tr>
<td>Increase revenue through Property Tax.</td>
</tr>
<tr>
<td>• Tax Survey and Online Notice Generation and Collection System</td>
</tr>
<tr>
<td>• GIS Mapping of Property and Integration with PT Collection</td>
</tr>
<tr>
<td>Non-Tax Revenue:</td>
</tr>
<tr>
<td>• Efficient collection of User Fees including Solid Waste Management Charges Collection with Revised Property Survey</td>
</tr>
<tr>
<td>• Online Building Permissions, Collection of User Charges-Lease Management, Trade License</td>
</tr>
<tr>
<td>• User charges to be so structured as to meet O&amp;M cost, debt servicing and depreciation towards the cost of the project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recovery of Cost</th>
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<tbody>
<tr>
<td>Poor recovery of Cost incurred on provision of services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identification of New of Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under recent MoUD initiatives many ULBs are working with consultants to identify alternate sources of revenue such as betterment levy, TDR, FSI etc. and framework to harness the same. Many ULBs have recently appointed consultants to identify ad spaces and develop a comprehensive policy to realize full potential of advertisement tax.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Assets and Value capture:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS data for PT and user charge collection can also be leverages to identify to zones for infrastructure investment and value capture/ land conversion/ betterment levy / TDR /vacant land tax.</td>
</tr>
</tbody>
</table>

In order to make ULBs self-sustainable initiatives on improving municipal finance need to focus on improving receipts from own sources.
2.3.2 Optimizing Operational Performance:

ULBs/SPVs need to be equipped with contract management skills to bolster capacity to oversee arrangements over the life of the contract/PPP projects:

- ULB need to analyze gaps in infrastructure and service provision and willingness to pay;
- scope of project, involvement of key stakeholders and commercial viability including risk assessment, efficient utilization of funds and provision of services;
- understand legal framework, choice of business models and financial pre-feasibility of projects, capital investment plans;
- Financial resources that can be tapped under key Government programs, and other factors influencing PPP projects.
- Environmental and Social impact and strategies to minimize negative externalities

Figure 20: ULB: Optimizing Operational Performance

Yardstick

**Expenditure Performance Ratio**

This ratio is skewed for most Indian Cities towards revenue expenditure.

**Quality of Expenditure**

- ULBs have high proportion of expenditure on est. and administration
- Low Capital Expenditure

The Finance function of ULB is not able to meet the basic duties of liquidity management financial reporting, financial forecasting and budgeting. Training of Existing ULB staff to improve:

- **Finance Function of ULB** for better Accounts and Finance Management to improve revenue income and hence, increase expenditure on creation of assets.
- **Asset Management**: Rationalize Staffing Municipal Asset Management HRM, Billing and Collection, Solid Waste Management Collection and System etc. can significantly enhance the existing revenue sources for ULBS
- Tapping in best talent from market to improve financial management function (additional posts/contractual/consultant).

**Project Structuring**: Capacity building to execute PPP contracts and large scale infrastructure projects. The PMC/Consultants play an important role to recommend sustainability of operations by suggesting the appropriate implementation structure for the project. Focus here should be on leveraging private sector resources wherein possible and also improve ULBs capacity to execute such projects in the long run.
While there are consultants filling in this role under most of the current Govt. projects, focus must shift on incorporating these skills within the ULB.

Government initiatives under Smart Cities Mission and AMRUT prompt State Governments and ULBs to undertake financial discipline to ensure urban development.

- Transaction Advisory to ULBs for issuance of Municipal Bonds: Improve ULBs creditworthiness and provide implementation framework to improve investor confidence.
- Value Capture Framework
- Improvement in Revenue from Advertisement Tax

2.4 External Sources of Finance for ULBs

Development of urban infrastructure by ULBs in India has evolved from grant-based programs to soft-loan based asset creation and further to market based mechanism including municipal bonds.

Initiatives to improve revenues and credit worthiness can help ULBs tap the markets for financing infrastructure projects:

2.4.1 Municipal Bonds

Municipal Bond is a debt obligation issued by a local authority with the promise to pay the bond interest on a specified payment schedule and the principal at maturity. Either they can be general obligation bonds, where the principal and interest are guaranteed by the issuer’s overall tax revenues or they can be revenue bonds, where the principal and interest are secured by revenues from a particular project of the ULBs or Hybrid Bonds which are a combination of both.
In a bid to revive Municipal Bond Market, market regulator SEBI has issued Issue and Listing of Debt Securities by Municipalities Regulations, 2015. Further MoHUA has undertaken credit ratings of AMRUT cities and has also empanelled transaction advisors to provide technical assistance to ULBs for issuance of Municipal Bonds. Many cities are now exploring borrowing through Municipal Bonds. Pune Municipal Corporation has recently completed the first tranche of its bond issuance of INR 200 Cr for 24x7 water supply project. PMC plans to mobilize INR 2,264 Cr for the project in next five years.

Table 1: Bond Instruments

<table>
<thead>
<tr>
<th>#</th>
<th>Type of Instrument</th>
<th>Amount Raised (INR Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Taxable Bonds</td>
<td>4,450</td>
</tr>
<tr>
<td>2</td>
<td>Tax Free Bonds</td>
<td>6,795</td>
</tr>
<tr>
<td>3</td>
<td>Pooled Finance</td>
<td>2,586</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>13,831</td>
</tr>
</tbody>
</table>


The first municipal bond (MB) was issued in 1997 by Bangalore Municipal Corporation but Ahmedabad Municipal Corporation was the first ULB to access the Capital Market by issuing municipal bonds worth INR 100 Cr without State Government Guarantee in 1998. The Municipal Bond Market in India has shown considerable growth since the first issuance. Since then, many cities including Madurai, Nashik, Nagpur and Ludhiana have issued municipal bonds without State Guarantee. Tamil Nadu created the Water and Sanitation Pool Fund (WSPF) which was the first entity in the country to mobilize resources on the Pooled Finance Framework. Following this Pooled Finance Development Fund was approved by GoI in 2006.

The bond proceeds have been mostly used for funding water, sewerage and road projects. So far ULBs in India have been able to mobilize over INR 13,831 million through taxable and tax-free bonds, and pooled finance.

Figure 22: Bond Instruments

<table>
<thead>
<tr>
<th>Issuer</th>
<th>Pune Municipal Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Name</td>
<td>7.59% Pune Muni Bond 2027 Series 1</td>
</tr>
<tr>
<td>Issue Size</td>
<td>INR 200 Cr (INR 10 Lakh per Bond with minimum application of 5 Cr Bonds)</td>
</tr>
<tr>
<td>Type of Instrument</td>
<td>Unsecured, Listed, Taxable, Non-convertible, Redeemable Bonds in nature of debentures</td>
</tr>
<tr>
<td>Mode of issue</td>
<td>Private placement</td>
</tr>
<tr>
<td>Credit Rating</td>
<td>CARE AA+; Stable by CARE rating agency ‘Provisional IND AA+/Stable’ by IRRPL</td>
</tr>
<tr>
<td>Tenor</td>
<td>10 years Redemption date (20th June 2027)</td>
</tr>
</tbody>
</table>

Under the structured payment mechanism, property tax collected by and due to PMC will be deposited every month in a separate no-lien escrow account for debt servicing. The salient features of the payment mechanism is summarized below: • At the beginning of every month, the funds lying in the escrow account (all property tax payments) may be used in the following priority o Firstly, transfer to Debt Service Reserve Account (DSRA) which has to be maintained at all times at an amount equivalent to 2 interest payments o Secondly, transfer to Interest Payment Account on monthly basis as per a detailed schedule o Thirdly, transfer to the Sinking Fund Account as per a detailed schedule • Any excess funds may be transferred to the PMC’s account for meeting O&M or other requirements.
2.4.1.1 Challenges in Accessing Municipal Bond Markets

Key Challenges faced by ULBs in accessing Municipal Bond Market:

- **Revenue Generation**: Narrow Revenue Generation through own sources and overdependence on grants from Central and State Government

- **Dependency on Grants for Capital Expenditure**: ULBs are caught in a vicious circle of generating less revenue and spending even less on services and infrastructure. Further, low user charges and low collections exacerbate the poor financial condition of ULBs.

- **Capacity**: There is a need for function-finance mapping to ensure that each function performed by the ULBs is backed by a corresponding financing source.

- **Credit Rating of ULBs**

  As of May 2017, 94 cities have been rated:
  - 55 of these cities have “investment grade” ratings,
  - 39 received credit ratings below the investment grade (BBB-)

  Though majority of the ULBs are rated above BBB (investor grade as prescribed by SEBI), but for marketability and subscription, Bond Issuance rating of AA and above is a benchmark. Therefore, without appropriate credit enhancement in form of Partial Guarantee, accessing municipal bond markets seems distant.

- **Meeting Minimum SEBI Regulations on Issuing and Listing of Debt Securities**: ULBs face difficulties in meeting basic SEBI requirement for issuance of Municipal Bonds such as timely closure and audit of accounts, amongst others.

- **Remunerative Project for Issuance of Revenue Bonds**

  Most of the project undertaken by ULBs provide basic civic infrastructure and are generally non-remunerative. Further, some projects with promising revenue potential have longer gestation period, making them un-suitable for project based revenue bonds.

- **Municipal Legislations**: ULBs are empowered by local Municipal Legislation which vary from state to state. Mostly these legislations lack proper provisions for Debt Borrowing for ULBs such as power to securitize assets/receivables, power to raise loans (type of loans), administrative process for approval of borrowing, investor protection provisions etc.

2.4.1.2 Leveraging Potential Credit Enhancement Mechanisms

To deepen the bonds market, it is imperative that ULBs work towards improving credit rating and creating credit enhancement structure to attract private capital for development. While improving credit rating can be addressed through the measures elucidated in the previous section, the following credit enhancement mechanism can be used to tap the municipal bond market

- **Credit Enhancement mechanism for Municipal Bonds**

  - **Effective Escrow Mechanisms** can ring fence the project specific revenues / municipal revenues/ proceeds from SFC through creation of debt service accounts under the mechanism;

For issuance of municipal bonds, credit enhancement structure can be created with escrow cash flows: that are more predictable in nature, for instance property tax incremental financing / or Intercept Grant such as those received from Central Government.
Figure 23: Illustrative Structure: Credit Enhancement for Issuance of Municipal Bonds through Escrow Mechanism

To ensure stability of cash flow ULB can setup a Collection Account and transfer the requisite amounts from identified proceeds such as property tax, on a timely basis into the account, or structure the transaction such that the primary revenues as in user charges are deposited directly into the Escrow Account by the consumers.

Balance Amount

(B) General Account of ULB
Towards General Expense Account upon creation of DSFA

Ensure Stability of the fund flow

Grants/ Budgetary Support (on account of shortage)

ULB (Issuer)

ULB issues Bonds

Subscription to Bond

Bond Holders

Debt Service Reserve Account

an additional layer of comfort (for investors) in case the primary revenue stream is inadequate to meet the debt obligation.

Debenture Trustee

(A) Sinking
Towards creation of Desired Sinking Fund Amount (DSFA)

Invested either as fixed deposits with scheduled commercial bank with a credit rating of AA or shall be permitted to be invested in liquid mutual funds rated AAA/A1+

Escrow Account

Amounts equivalent to the next repayment amount.

Identified revenue Stream i.e. Property Tax (PT) Collection

Cash Collateral

Guarantee

Towards creation of Desired Sinking Fund Amount (DSFA)
The proceeds from the escrow account can first be utilized towards the creation of desired sinking fund account and the balance can be utilized towards general expenses of the ULB.

- **Debt service reserve funds**: An additional account with funds from Centre/State/Multilaterals can be created as an added layer of security to primary revenue streams to cover for shortfalls in interest, principal or incidental expense.

- **State/Centre Intervention**
  - Central/State Governments can establish guarantee funds which may completely/partially securitize bond repayment and hence provide credit enhancement.
  - Provide interest subvention to deepen the municipal bond market and facilitate investments in infrastructure.
  - Devolution/Grant intercept for repayment: Allow grants from Finance Commission (FC) / State Finance Commission (SFC) to be intercepted for debt servicing
  - Special Grants towards meeting Cash credit, Debt Service Reserve Fund (DSRF): A special grant can be provided by Centre/State to provide improve credit rating.

- **Others**
  A partial credit guarantee by financial institution such as International Finance Corporation (IFC), India Infrastructure Finance Company Ltd. (IIFCL), ADB etc. can ensure timely debt servicing and significantly enhance credit rating of the structure. These guarantees for municipal bonds can reduce bondholder’s risk exposure and garner wider interest of investors. This can be provided against a fee.

### 2.4.1.3 Other Financing Options for ULBs

- **Lending on State Guarantee by GoI owned Agencies**: Loans undertaken by the local authorities for capital works, etc., mainly from – LIC / HUDCO, are generally guaranteed by State Government directly or through State agencies. However, in recent past borrowing through this route has declined due to limited guarantees by States.

- **Commercial Borrowing**: ULBs may raise finance through term loan from Banks/FIs for specific projects.

- **Multi-lateral Funding Agencies**: Multi-lateral lending agencies such as ADB, World Bank, KfW, JICA extend long term soft finance for urban infrastructure projects. Additionally these agencies provide grants for capacity building and reform implementation.

Further, MoHUA has issued an advisory to Smart City SPVs, wherein a SPV can directly approach National Financial Institution such as SBI and IIFCL for on-lending of World Bank/ADB. Additionally, SPVs can submit project proposals to MoHUA for lending through newly formed Asian Infrastructure Investment Bank (AIIB).

- **Pooled Finance**

Pooled Finance is an effective tool for ULBs with weak ratings to raise funds from capital market. Tamil Nadu and Karnataka are two such successful examples. Tamil Nadu Urban Development Fund issued a bond in 2003.
by pooling 14 municipalities for water and sewerage infrastructure projects. Subsequently, Government of Karnataka raised debt through pooled financing in 2005 from investors for Greater Bangalore Water Supply and Sewerage Project. Tamil Nadu’s Water and Sanitation Pooled Fund has cumulatively raised INR 222.30 Cr across five tranches from December 2002 to May 2013. These funds are generally created by tapping line of credit from multilateral agencies like World Bank and KfW by means of State Guarantee.

- **Pooled Municipal Debt Obligation (PMDO)**
  To garner commercial debt for urban infrastructure projects both for ULBs and SPVs under PPP arrangement, IL&FS along with other sponsors viz. IDBI, IIFC, Canara Bank and other lenders have pooled together a line of credit facility called Pooled Municipal Debt Improving Access to Finance through External Sources

### 2.4.1.4 Other Challenges Impacting ULBs ability to Borrow

As per World Bank study, there is an inherent reluctance in ULBs to borrow, due to the following reasons:

- Easy access to grants from Centre and State under various urban development initiatives, which discourage ULBs from improving efficiency to maximize their revenues to pay back loans and improve municipal services.
- Poor Disclosure standards, accountability and revenue management, limited own revenues & low collection efficiency.
- Absence of timely Audit compliance
- Limited exposure to large scale project execution – track record of project delays and cost overruns

**We suggest following measures to overcome above challenges:**

- Timely implementation of reforms under AMRUT as elaborated in section 2.2.3.
- Financial Discipline and Disclosure:
  - Timely completion of Audit
  - Incorporating accrual accounting system
- Training to execute PPP/Infra Projects
- Shelf of projects with identified revenue streams for servicing debt

### 2.4.1.5 Other mechanisms to Improve ULBs’ ability to borrow

- Tax Incremental Financing can be leveraged to channelize funds for infrastructure development. Through this mechanism, ULBs can divert future enhanced property tax proceeds to finance urban infrastructure development projects. This has been applied by Greater Hyderabad Municipal Corporation. The mechanism made provision for bank loan against annual tax increment which is paid by the citizens directly benefiting from the proposed infrastructure development.
- De-risking of balance sheet of the SPVs by forming project level sub-SPVs which could include private players as stakeholders and subsequently off-load funding risk to them through revenue/savings sharing models.
- Milestone based guarantee support which need not be perpetual and could fall off after achievement of certain project level and serviceability related milestones.
- Setting up Payment Security Mechanisms like LCs/BGs by the State/financial intermediaries for the borrower equivalent to 2 - 3 months of revenue which would cover the eventuality of short term mismatches in revenue generation/collection.
- Provision of Viability Gap Funding for identified projects which can be performance linked, thereby incentivizing high project performance standards.
- Fixed annuity based models especially for projects like water distribution, sanitation, and solid waste management.
HPEC estimated a total investment of INR 39.2 Lakh Cr for Urban Infrastructure for the period 2012-31.
3.1 Infrastructure Financing Ecosystem

Urban infrastructure development entails long gestation periods, procedural and execution issues. Various factors including financial and non-financial, ranging from project structuring to clearances, execution capacity and financing, dictate the execution of urban infrastructure projects.

Traditionally, urban infrastructure finance has been driven by the public sector. However, given the growing demand for infrastructure and urban services to support economic development and increasing living standards, public sector’s capacity to fuel infrastructure development is constrained. The private sector has emerged as a significant provider of urban services. Mounting need to facilitate these investments calls for the following reforms to foster urban infrastructure development. The urban infrastructure sector in India provides an investment opportunity of ~ INR 2 Lakh Cr for the private sector by 2022.

3.2 Public Private Partnership

PPP (3Ps) in urban infrastructure projects have had mixed results. All recent urban infrastructure schemes encourage effective use of 3Ps for better service delivery and cost effectiveness. Following are the key issues which restrict best firms from entering the market over many years, ultimately affecting service delivery and project returns. This makes it extremely important to structure projects to make them commercially viable;

- Slow Ramp up of Revenues Streams: Inefficiencies at project planning and management level leading to disproportionate tariffs which leads to inadequate revenue & cost recovery;
- Lack of visible sustained generation of cash flows which are the primary drivers of debt serviceability;
- Challenges in enforcement/monetizing of physical asset based securities.

3.3 Facilitating Private Sector Participation

Provision of core infrastructure, particularly water supply, sewerage and roads, are capital intensive and need to be financed, in addition to budgetary provisions, through private sector and borrowings. Public Private Partnership (PPP) is an effective tool for bringing in private sector efficiencies while supplementing public sector resources for creation of infrastructure assets and delivery of services.

Managing project risk rather than merely transferring them to the private sector is the key to successful execution of PPP projects. Moreover, it is important to note that the end objective for PPP projects is not
profit generation, rather provision of services. The public sector agency is ultimately accountable for the provision of service:

- **Designing PPP projects**: Infrastructure projects require in-depth study and credit enhancements, and the process may be more time consuming and costlier at the initial stage than traditionally structured EPC contracts, but the long term benefits are far greater.

- **A shelf of bankable PPP projects**: Successful PPP projects hinge on bankability to ensure development of ‘commercially sustainable infrastructure’ and timely completion of infrastructure projects.

- **Protecting the public’s interest**: Developing benchmarks impacting the quality and performance of infrastructure assets along with monitoring and management system is essential to ensure social and environmental interest are addressed.

- **Selection of the most suitable PPP type**: PPP projects must be carefully evaluated on various parameters including appropriateness, cost, and the ability to implement and effectively manage to best address the infrastructure needs.

- **Correct Assessment of Project Viability**: Assessment of project viability is essential to gauge project risks:
  - Technical designs need to be based on market demand for services.
  - Realistic estimation of willingness to pay tariff.
  - Tariffs need to be revised over time to reflect actual cost, service quality and expansion, O&M, depreciation etc. It may be necessary to augment revenues through funding commitment, ULB revenues, grants etc. which should be taken into consideration.
  - Land Values and possibility of reaping spillover of infrastructure investment through value capture.
  - Importantly, the complexity of design and implementation must take into account long-term O&M relative to ULB’s management capacity.

- **Risk Sharing**: Infrastructure projects entail risks at various stages - preparation, bidding, construction and development phases which must be fully analyzed. Flexibility in risk sharing and long term consequences on contractual agreements, VGF/ other funds and constraints must be evaluated to ensure delivery of services as envisaged under a project as well as create a healthy environment for private sector participants.

- **Fiscal Incentives**: Incentives such as additional Floor Area Ratio (FAR) / Floor Space Index (FSI) / Transfer of Development Rights (TDR), tax incentives and Single Window Clearance, can be provided to the private sector to encourage participation and improve commercial viability.
### Table: Public Private Participation: Urban Infrastructure Experience

**Sector:** Solid Waste Management

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Model</th>
<th>Issues</th>
<th>Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated city wide Projects</td>
<td>20 year + Concessions with Tipping Fee/JNNURM funding</td>
<td>Protests from existing employee base, Financial stress faced by ULBs in paying tipping fees</td>
<td>Hyderabad, Kanpur, Guwahati</td>
</tr>
<tr>
<td>Processing/Landfill</td>
<td>15 year + Concessions with Tipping fee/ton;</td>
<td>Grants crowded out several projects, Strong State Government support necessary given bankability concerns and counterparty credit risk</td>
<td>Rajkot, Bangalore</td>
</tr>
<tr>
<td>Collection and Transport only</td>
<td>7-10 year concessions with tipping fee</td>
<td>Weak definition/enforcement of door-to-door collection and source segregation obligations</td>
<td>Chennai</td>
</tr>
</tbody>
</table>

Source: Guidance on use of Municipal Bond Financing for Infrastructure Projects, 2017
### Figure 25: Public Private Participation: Urban Infrastructure Experience

**Sector: Water Supply**

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Model</th>
<th>Issues</th>
<th>Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>City wide concessions</td>
<td>20 + years. Capital Grants + investment by Operator</td>
<td>Tariff spikes, protests, weak communication, delays in financial closure</td>
<td>Khandwa, Shivpuri, Aurangabad</td>
</tr>
<tr>
<td>with capital grants</td>
<td>Demand/Revenue risk on operator</td>
<td></td>
<td></td>
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<tr>
<td>Concessions – Bulk Treatment</td>
<td>10 year + contracts with assured off-take commitment</td>
<td>Grants crowded out several projects</td>
<td>Chennai Desalination, Kolhapur STP, Nagpur WTPs</td>
</tr>
<tr>
<td>Management Contracts –</td>
<td>3-5 Years, Investment by Public Authority</td>
<td>Demonstrated proof of concept for 24x7 supply</td>
<td>Nagpur and KUWASIP (Belgaum, HubliDharwad, Gulbarga)</td>
</tr>
<tr>
<td>Distribution Pilots</td>
<td>Performance linked fees model</td>
<td>Challenges in scaling up city-wide</td>
<td></td>
</tr>
<tr>
<td>Management Contracts – City</td>
<td>5+ years. Performance linked O&amp;M Fee</td>
<td>Unrealistic performance target setting</td>
<td>Mysore</td>
</tr>
<tr>
<td>Water Supply</td>
<td></td>
<td>Improved collections/willingness to pay</td>
<td></td>
</tr>
</tbody>
</table>

Source: Guidance on use of Municipal Bond Financing for Infrastructure Projects, 2017
Figure 26: Public Private Participation: Urban Infrastructure Experience

Sector: Urban Transportation

<table>
<thead>
<tr>
<th>Urban Transport</th>
<th>Model</th>
<th>Issues</th>
<th>Cities</th>
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<tbody>
<tr>
<td>Facilities</td>
<td>BOT with Revenue share or minimum annuity grant</td>
<td>Revenues: Parking, Advertising, Commercial development</td>
<td>Weak Parking policy/enforcement and unclear land titles</td>
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<tr>
<td>Bus Transit – Rolling stock (Buses)</td>
<td>JNNURM funding for buses. O&amp;M Contracts</td>
<td>Revenue from fare box collections or fixed fee per km</td>
<td>Pre-designated routes; Limited route optimization</td>
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<tr>
<td>Bus Transit – Full city bus services</td>
<td>JNNURM funding under an SPV Although successful in Indore, hasn’t seen replication elsewhere</td>
<td>Subsidized public services through State Transport Corporations (STCs) a dampener for PPPs</td>
<td>Indore city bus services</td>
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<tr>
<td>Rail Transit</td>
<td>Viability Gap Funding model Hyderabad ~45% revenue from property dev., 5% from advertising</td>
<td>Delhi Airport link - ridership was only 11,000 vs. 40,000 projected</td>
<td>Mumbai, Hyderabad, Delhi (Airport express)</td>
</tr>
</tbody>
</table>

Source: Guidance on use of Municipal Bond Financing for Infrastructure Projects, 2017
1. Smart Cities Mission Guidelines
2. Census 2011
3. HPEC, 2011
4. CRISIL Infrastructure Year Book, 2017
5. NIUA
6. Conversion – 1 USD = INR 64.55
7. AMRUT
8. 18th Apex Committee under AMRUT
9. HRIDAY, MoHUA, Dec, 2017
10. PIB
11. Swachh Bharat Urban Mission
12. Indian Expenditure Budget Vol II
13. MoHUA Annual Report 2016-17
15. Make In India Website
16. RBI
17. PIB
19. Excludes investment in Metro, Affordable Housing

<table>
<thead>
<tr>
<th>Class</th>
<th>Class 1A</th>
<th>&gt;5 million</th>
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<td>1 million – 5 million</td>
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<td>Class 1C</td>
<td>1000000-1 million</td>
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</tr>
<tr>
<td>Class II</td>
<td>Class II</td>
<td>500000-1000000</td>
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<tr>
<td>Class III</td>
<td>Class III</td>
<td>200000-500000</td>
</tr>
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<td>Class IV+</td>
<td>&lt;200000</td>
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<tr>
<td>Class V</td>
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