

National Level Events on Urban Development

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The important events in the urban sector in India in first quarter of 2022 are (i) first ever focus on urban sector in the speech of Union Finance Minister, (ii) Meetings on Bilateral Collaboration on urban issues, (iii) Environment Promotion, (iv) PMSVANidhi, (v) Pradhan Mantri Awas Yojana, (vi) Swachh Bharat Mission 2.0, (vii) Metro rail, (viii) Municipal Bonds.

(i) First ever focus on urban sector in the Union Budget 2022

The first quarter of 2022 included the focus on urbanisation for the first time in the budget speech of Hon'ble Finance Minister with emphasis on role of urban India in economic development and structural transition towards urban majority society by 2047. While laying down the importance of Mega cities and their hinterland to harness the economic potential of the country (for livelihood and demographic dividend/surplus labour from farm sector), the budget also express need to recognize emerging role of tier II and tier III cities to accommodate future expansion of urban areas. Accordingly, a committee of experts is also proposed to seek feedback for policies, capacity building, urban planning, implementation and governance. The ongoing missions and schemes have been earmarked specific amount such as Swachh Bharat (Rs 2,000 crores to Rs 2,300 crores), Atal Mission for Rejuvenation and Urban Transformation (AMRUT)/Smart city (Rs 13,900 to 14,100 crores), Urban Metro (18,978 to 19,130 crores), NCR Transport Company (Rs. 4,472 to 4,710 crores. Further PMAY with target of eight million houses, which also includes urban housing, is allocated Rs 48,000 crores.

The budget indicate specific support to states to promote capacity building of urban local bodies for development of urban areas with appropriate Building Byelaws, Transit Oriented Development (TOD) and Town Planning Schemes (TPS). Further, Five Centres of Excellence are also proposed with endowment funds @ Rs. 250 crores each to promote India specific knowledge in urban planning.

(ii) Bilateral Collaboration

Bilateral collaboration covered initiatives/dialogue with Germany,

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Japan, and EU. The key events include:

- High level discussions were held with the EIB (European Investment Bank) and EU (European Union) delegation on March 11, 2022 on various ongoing urban development projects in India and the possibilities of EIB financing for the priority projects of the Government of India. (March 11, 2022)
- Two day meet was organised on Indo-Japan Joint working Group on Sustainable Urban Development. The meet deliberated on the cooperation for future projects and prioritized commitment, identified new areas of bilateral cooperation in urban development with Japan. The meet specially highlighted the opportunities for Japanese investors in India in the sectors of waste management and capacity building to strengthen future urban development. The meet also discussed collaboration of the Super City initiative of Japan with the Smart Cities Mission of India The meeting was Co-chaired by Secretary MoHUA and the Vice-Minister for Engineering Affairs, Japan (January 10-11, 2022).
- Government to Government (G2G) discussions were held with Germany (German Embassy, GIZ & KfW Country Director) on strengthening the Indo-German urban mobility through strategic partnership. The various bilateral projects & future avenues of cooperation were covered to lead towards sustainable urban development (February 28, 2022)
- Secretary MoHUA announcements for the housing sector the allotment of Rs 48,000 crore under PMAY - 80 lakh households to be identified for the affordable housing scheme in 2022-23. Identify eligible beneficiaries for 60,000 houses under PMAY in rural & urban areas (February 01, 2022).

(iii) Environment Promotion

- Electric vehicles to get a major boost: Centre to introduce a new policy for battery swapping to enable the use of EVs ; Promote a shift to the use of public transport in urban areas, special mobility zones with zero fossil fuel policy to be introduced (February 01, 2022).
- Nintey MLD STP in Nimora of Raipur, Chhattisgarh, likely to be completed in a couple of months will give boost to Circular Economy by promoting ‘waste to wealth’. Treatment of water for reuse by consumers.

- Swachh Bharat Urban provides an opportunity to serve nation under Swachhata Startup Challenge 2022 for startups with innovative scientific solutions to reform India's waste management system (March 09, 2022).
- The Eco Mitra Park, a unique environment-friendly intervention aimed at promoting the 3Rs, trash segregation, home composting, recycled items, and other environmental principles, was inaugurated in the South Delhi Municipal Corporation (March 10, 2022).

(iv) PMSVANidhi and Job Creation

- A milestone of 15 lakh scheme linkages has been crossed under SVANidhi Se Samriddhi. Profiling of Street vendors and their families help provide access to 8 Central Government welfare schemes assisting them lead a better life.
- This is a significant step to develop model for convergence and synergy in the urban sector missions and GoI schemes (January 10, 2022).
- GoI is visioning to support women entrepreneurs & professionals in real estate sector in terms of number of women professionals in the sector to make the sector more open and transparent (February 25, 2022).

(v) Pradhan Mantri Awas Yojana

- 'Enabling the Pune of Tomorrow' was organised by NAREDCO drawing attention towards the ongoing infrastructural progress and impending development needs in the city. Secretary MoHUA, inaugurated the seminar which deliberated a city model for wider awareness in the country (March 11, 2022).
- Hon'ble PM's visionary Light House Projects (LHP) has been conceptualized as part of the Global Housing Technology Challenge-India. It's been three years since the journey began on 2nd March 2019 with the inauguration of the Construction Technology India (CTI) Expo-cum-Conference. Light House Projects are being constructed by using cutting-edge new innovative technologies in Chennai, Rajkot, Lucknow, Indore, Agartala & Ranchi. Regular monitoring of progress is being done for the timely completion of the project (March 04, 2022).
- LHP Chennai, modern technology and creative procedures are being employed to build 1,152 disaster-resistant EWS

dwellings. The project is more than 90% complete (March 21, 2022).

- 59th CSMC (Central Sanctioning and Monitoring Committee) meeting of MoHUA on 23rd March 2022, sanctioned 2.02 lakh more houses under PMAY(U). A total of 117.9 lakh houses have been sanctioned so far by Ministry of Housing and Urban Affairs and four others.

(vi) Swachh Bharat Mission 2.0

- As part of Swachh Bharat Mission - Urban 2.0 'National Capacity Building Framework for Garbage Free Cities' was launched on March 02, 2022 at National Conclave on Social Enterprises for Garbage Free Cities, at Raipur, Chhattisgarh. The capacity building is based on three Key Pillars: (i) Capacity Strengthening of State and Municipal Cadres, (ii) Capacity Augmentation through specialized Human Resources, and (iii) Ecosystem Strengthening.
- National Conclave on Social Enterprises for Garbage Free Cities (Encouraging women-led business in waste management - A Swachh Bharat Mission-Urban 2.0 initiative) at Chattisgarh on March 03, 2022.
- Under the recently launched 'Swachh Technology Challenge' around 2,500 entries have been received by the States out of which 3-5 solutions per state will be felicitated. Selected startups from the Challenge will get direct entry into the Swachhata Startup Challenge (January 27, 2022).

(vii) Metro Rail

- The Central Government's financial support for mass transit projects under AMRUT scheme will be leveraged for the formulation of action plans and their implementation for facilitating Transit Oriented Development (TOD) and Town Planning Schemes (TPS), it will give a boost to effective use of Metro for productivity and city life (February 01, 2022).
- As part of Make in India initiative, the Pune Metro is equipped with world-class features for a new riding experience with most energy-efficient & lightest metro with an aluminium body manufactured in India. Ministry of Housing and Urban Affairs (March 28, 2022).
- Country's 1st state-of-art aluminium-body metro flagged off

in Pune on 26th March 2022. The technology-driven metro with new safety and comfort features emerged as an epitome to the model of people first, furthering the vision of Atma Nirbhar Bharat.

- ‘India Water Pitch-Pilot-Scale Startup Conclave’ launched by the Hon’ble Minister MoHUA, Shri Hardeep S. Puri. The first of its kind national conclave aims to revamp the country’s water management by inviting start-ups to solve the urban water problems. The Conclave furthers PM’s vision of Atma Nirbhar and water-secure Bharat. The conclave invites start-ups with breakthrough solutions for urban water problems (March 12, 2022).

(viii) Municipal Bonds

- Vadodara Municipal Corporation has issued Municipal Bond of Rs.100 crore, which has been oversubscribed 10 times and at a coupon rate of 7.15%, total 36 bids were received.
- This is the lowest rate in India in municipal bonds, so far. Rs.1007 crore subscription received in online bidding. MoHUA and team from US Treasury extended necessary support in Debt capacity assessment and bond structuring (March 24, 2022).

Role of Geospatial Technology in Urban Sector

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Lately the focus of the Ministry of Housing and Urban Affairs (MoHUA), Government of India, has increased towards use for Geospatial Technology in all aspects of urban planning and development in Urban Sector. Use of Geospatial Technologies in various urban sector missions since 2015 follows:

Smart City Mission (SCM): For evidence based Smart City Monitoring, Environmental Systems Research Institute (ESRI) India Private Limited prepared and submitted a User Manual for Geographical Management Information System (GMIS) to MoHUA, in December 2020. Smart Cities are using a Geospatial Mobile App for tagging every Smart City project and then the city fills up detail over the Geospatial Management Information System (GMIS) application. There are Geospatial dashboard at different levels - City level, State Level, Central Level and Executive level for handy data available with location and associated pictures. This is being treated as the only source of Truth. The Integrated Command and Control Centre (ICCC) of Smart Cities uses Geographic Information System (GIS) to visualise the locations of the Smart elements in the cities. Few cities like Varanasi, Indore and NDMC are also generating Geospatial analysis and dashboards using the Geospatial data. Smart City Mission has come up with an innovation in the form of Inter Urban Data Exchange (IUDX), which aims at providing Open Data of the Smart Cities to enable the solution providers to use the open data in creating the Application. Varanasi Smart City has gone a step ahead by creating a Kashi Geohub for data and knowledge exchange between different stakeholders like Academia, Research, NGOs, Citizens and Start Ups. Smart City Mission has also created an Urban Observatory to study different Urban Dynamics and problems. Geospatial Technology has been used in big way to experiment with different data sets to understand urban problems and to generate Use cases. A Geospatial Data story competition has been organised recently to encourage the Urban Ecosystem to think about the urban problems by using geospatial data and to come up with innovative solutions.

Swachh Bharat Mission (SBM) : has also used Geospatial technology to track all the SBM projects undertaken in the cities - Landfill Sites,

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Waste Processing Plants of different types, Toilets etc., over the Wards, and Zones of the cities. For this the recently introduced Mobile GIS app. Is to be used with specific Data model and symbols to capture waste management infrastructure created by the cities. All the cities have to upload their Wards and Zones Boundaries on the National Portal with approval of workflow for authentication of the geospatial data created. A GMIS system is under development for tracking the details of the projects.

AMRUT 2.0 Mission: of the MoHUA has vision to provide 100 per cent piped water supply to all the households in Urban India and to provide 100 per cent sanitation in 500 major AMRUT towns and also to provide 24x7 water supply. For this Ministry plans to use Geospatial Technology in a big way to develop a habit of Digitalization of the Water Networks in the City for improving Pipe Water Supply coverage. The Ministry has recently come up with the guidelines of Application of Geospatial Technology for Water and Sanitation Asset Management for 100 per cent Peyjal the Ministry has decided to create a GIS enabled National Portal and track the progress of the project. AMRUT 2.0 also focuses on Urban Reforms, under which it wants the municipalities in the country to become self reliant financially by adopting GIS based Property Tax survey and management.

One of the Sub-schemes in AMRUT 2.0 is GIS based Master Plan. Under AMRUT 1.0 mission 500 AMRUT towns were selected to create GIS based Master Plans, now this has been extended to all towns with population above 50,000. The plans also encourage use of Dynamic Remotely Operated Navigation Equipments (DRONES) for Master plan data creation, with objective to use the GIS based Master Plans as base for all development planning in the cities.

Pradhan Mantri Awas Yojana (PMAY-U): is also using Geo-tagging to capture the Near Real Time information about the housing projects undertaken in different cities.

Thus, geospatial Technology is adopted in a big way for evidence based planning of the missions and for monitoring of the projects for timely completion and maximization of the advantages.

India Smart Cities Awards 2020 Winners

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Getting recognition and appreciation for the efforts put in by the people has long been accepted as an effective motivational strategy. This strategy seems to be working effectively in the smart cities programme of the Government of India as well. Smart Cities Mission (SCM) is an ambitious program and necessary for developmental needs of the country and the concerned officials need to be engaged on a continuous basis.

SCM was launched in June, 2015. It aims at urban rejuvenation and has been designed as part of a multi-layer strategy to bring about a paradigm shift in the practice of urban development in the country. Projects developed or in the developmental stage under the Smart Cities Mission are multi-sectoral and mirror the aspirations of the local population.

SCM envisages total investment of more than Rs. 2,00,000/- crore, of which the Central and State Governments proposed to develop projects worth nearly Rs. 93,500/- crore, which is little less than 50 per cent. The work orders have been issued for all such projects. The rest of the investment is proposed to come from the private sector. Totally, by March 2022, a little less than 8,000 projects worth nearly Rs. 2,00,000/- crore have been tendered. More significantly, nearly 3800 projects worth more than Rs. 60,000/- crore have been fully completed and are operational.

In this context, awards through India Smart Cities Awards Contest (ISAC) have been instituted by the government under the Smart Cities Mission, Ministry of Housing and Urban Affairs, Government of India. The idea is to recognize pioneering city strategies, projects and ideas, based on innovation, impact and replicability/scalability; and reward cities, projects and innovative ideas that are promoting sustainable development in urban areas in India, as well as stimulating inclusive, equitable, safe, healthy and collaborative cities, thus enhancing quality of life for all.

The process to select winners is very rigorous, time-bound and transparent. The verifiable indicators along with the framework of

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evaluation are known beforehand to all the eligible entities. There are 6 award categories:

- (i) Project Awards;
- (ii) City Leadership Award;
- (iii) State / UT Award;
- (iv) Innovation award;
- (v) COVID innovation award; and
- (vi) City award.

Evaluation framework contains evaluation in 2 stages along with innovation. Any applicant needs at least 60% score in the first stage to proceed to the second stage. There are 10 themes for project awards along with Innovation awards for projects and COVID-19:

- (i) Governance;
- (ii) Built Environment;
- (iii) Social Aspects;
- (iv) Culture;
- (v) Economy;
- (vi) Urban Environment;
- (vii) Mobility;
- (viii) Sanitation;
- (ix) Water; and
- (x) Sustainable Business Model for ICCC.

The awards for the year 2020 are likely to be given in April, 2022. Though the winners had already been announced in 2021 through virtual conference, the award distribution ceremony had been deferred due to prevailing COVID-19 conditions.

Surat and Indore have been nominated for the best city awards, while Uttar Pradesh has been nominated for the best state award. Indore has been nominated for awards in six categories, while Surat has been nominated for five awards.

Indore got 1st position for projects on Chhappan Dukan, Municipal Waste Management System, Conservation of Heritage and Carbon Credit Financing Mechanism, under the themes of Built Environment, Sanitation, Culture and Economy respectively. Carbon Credit Financing Mechanism has also been identified for Innovative project. Indore has

been a forerunner among the smart cities in the past years and has consistently featured among the top ranked cities in the country. The city is implementing projects worth more than Rs. 5,000/- crores under the Smart Cities Mission.

Surat got 2nd position for projects for Canal Corridor and Dynamic Scheduling Buses; and 3rd position for Conservation through Treated Wastewater and Integrated and Sustainable Water Supply System under the themes of Environment, Urban Mobility, Sanitation and Water respectively.

Uttar Pradesh emerged as the top performer among all Indian states in rankings, followed by Madhya Pradesh and Tamil Nadu. UP has been nominated for the best state award for short listing seven more cities apart from the existing 10 to transform them into smart cities: Ayodhya, Mathura, Meerut, Shahjahanpur, Firozabad, Gorakhpur and Ghaziabad. At the same time, it has shown good physical and financial progress in some cities like Agra, Varanasi, Lucknow and Prayagraj. UP was also able to complete the transfer of state supporting funds to cities. Lucknow and Ghaziabad also issued municipal bonds in 2020.

Similarly, Chandigarh has been identified for UT award. Ahmedabad has been nominated for 1st rank in Smart Cities Leadership Award and Varanasi and Kalyan-dombivali have been nominated as joint winners for COVID Innovation award.

Waste-to-Wealth Initiative in India

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Urbanization, a global phenomenon, has several ramifications. The uncontrolled generation of waste by city population coupled with unscientific waste handling by municipalities is causing severe health hazards and urban environment degradation. At present our municipal waste mostly ends up in illegal dumps on streets, in peri-urban areas, open spaces within the cities, wastelands, drains or rivers. As per Ahluwalia and Patel (2018), approximately 80% to 90% of the municipal solid waste in India is dumped in landfills without proper management practices and open burning, leading to air, water, soil pollution.

Looking at the exponential growth in urban population, India is expecting for higher volume of waste generation in future. Hence, there is a dire need for our municipalities and urban managers to rethink, reduce, recycle, refuse and reuse solid waste. In fact improving solid waste management is one of the most effective ways to make cities and human settlements inclusive, safe, resilient and sustainable. But, will a sustainable waste management practice ever be possible in India? Yes it is possible, if we prepare a proper plan of Recycle and Reuse for the disposal of each waste.

Believing in this basic mantra, the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC), virtually launched the 'Waste to Wealth Mission: Swachh Bharat Unnat Bharat' on 17th August 2020. Waste to Wealth Mission, one of its nine missions of PM-STIAC. The basic purpose of this mission is to identify, develop, and deploy technologies to treat waste to generate energy, recycle materials, and extract resources of value. The mission will also work to identify and support the development of modern technologies that promise to create a clean and green environment. The mission will assist and augment the Swachh Bharat and Smart Cities projects by leveraging science, technology, and innovation to create circular economic models that are financially viable for waste management to streamline waste handling in the country.

In recent years, the Central Government, State Governments and various Municipalities have taken several steps in this direction. Two such recent steps have been discussed in this article.

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- i) Gobar-Dhan Bio CNG Plant at Indore)
- ii) Decentralised Waste Management Technology Park at New Delhi

Gobar-Dhan Bio CNG Plant at Indore: On February 19, 2022 Prime Minister Narendra Modi inaugurated a state-of-the-art bio-CNG plant in Indore. It is Asia's largest Gobar-Dhan Bio-CNG Plant and also one of the biggest plants for processing wet municipal waste in the country. This plant will give new strength to India's Swachhta Abhiyan 2.0, under which the country will be made green zone by freeing them from the mountains of garbage. This plant will produce 100 tonnes of organic manure as well as 17 to 18 metric ton per day (MTD) of CNG gas which will run 400 busses every day in Indore city. The Bio CNG Plant is being developed on the PPP model. While inaugurating the plant PM said that "this Plant will prove to be a seminal step in not only reducing the threat of global warming, but also in providing 'green jobs,' to hundreds of youths in the state. It will also increase the income of agriculture and livestock because the plant will be mainly operated from wet waste and cow dung."

Most importantly the Municipal Corporation, Indore does not have to bear any financial burden on the establishment of this plant. The plant will use organic fraction of solid waste as feedstock (wet waste) and in return, the Indore Municipal Corporation (IMC), will get Rs 2.5 crore per annum as premium by Indo Enviro Integrated Solutions Limited (IEISL), New Delhi which is setting up the plant for IMC. IEISL has made 100% capital investment for the project and will also bear the operation and maintenance cost for the entire concession period of 20 years. The state-of-the-art plant is based on zero landfill model, generating zero rejects.

Decentralised Waste Management Technology (DWMT) Park at New Delhi: Under the Waste to Wealth Mission of the Office of the Principal Scientific Adviser to the Government of India, the East Delhi Municipal Corporation (EDMC) has inaugurated the Decentralised Waste Management Technology Park in New Jaffrabad, East Delhi in March, 2022 for onsite processing of fresh Municipal solid waste. The purpose of this project is to make a scalable onsite processing Technology Park with aim of zero waste and zero energy which can be replicated in other parts of the country. This DWMT Park will provide end-to-end solutions for waste management, from semi-automated segregation of municipal solid waste to on-site compaction and treatment of the waste to demonstrate conversion of open dumpsites (dhalaos) to decentralized waste processing sites.

The Decentralised Waste Management technology park covers

around 1000 sqm of area (area currently utilized for open dumping or secondary collection site) with 10 MTD capacity. The other advantages of this park would be: (i) Onsite waste treatment, processing, compaction, and the possibility of conversion to energy, (ii) Reducing secondary waste transportation cost, (iii) Moving towards zero landfill, and (iv) Scaled up/replicated across various cities in India. Government believes that the successful demonstration of this pilot will allow the model to be replicated in cities, towns and villages across India.

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