Indian Infrastructure □□□□ Vol. 15 □□ No. 8 □□□□ March□2013

Smart City Projects

Gujarat International Finance Tec-City and the Lavasa model

The development of smart cities is a natural outcome of rapid urbanisation. Population growth in existing cities has far exceeded capacity, and new cities have to be planned to meet the requirements of the growing population as well as to augment physical and social infrastructure.

The Lavasa smart city and the Gujarat International Finance Tec-City (GIFT) are two such cities which are currently being developed to incorporate the principles of "liveability" and sustainability.

Gujarat International Finance Tec-City

GIFT involves the development of a hub for financial services with a focus on activities ranging from back-office operations and information technology (IT) support to high-end jobs in evolved markets like trading and private banking. GIFT hopes to tap 6-8 per cent of the financial services potential in India.

The project envisages the creation of an international financial services centre (IFSC) and export-oriented services, which will be housed in a multi-service special economic zone (SEZ). The area outside the SEZ will house domestic financial services along with residential, entertainment, and social facilities. Besides, the development of GIFT is expected to create about 1 million jobs in and around the state.

The project is being undertaken by Gujarat International Finance Tec-City Company Limited (GIFTCL), incorporated by Gujarat Urban Development Company Limited and Infrastructure Leasing and Financial Services Limited. GIFTCL has been formed to plan, design, develop, finance, construct, operate, and maintain the GIFT area spread across 886 acres. The development will be located on the bank of the Sabarmati river in Gandhinagar, about 12 km from Ahmedabad airport.

GIFTCL would develop the infrastructure either by itself, or through special purpose vehicles (SPVs) such as GIFT ICT Services Limited, GIFT Waste Management Services Limited, and GIFT SEZ Limited. GIFT involves city development with core elements of social infrastructure, integrated residential development, smart business environment, technology, basic infrastructure, and retail-cum-entertainment hubs.

The project scope includes the development of two commercial buildings in the domestic tariff area, of 29 floors each. One of these two towers has recently been operationalised. GIFT will also house India's largest international exhibition complex with a built-up area of 140,000 square metres, which will be operational 240 days a year.

The project components include creation of a city command and control centre to monitor IT infrastructure, take live feeds, and respond to emergencies within a pre-specified time duration. It also involves the integration of the city-level system architecture with IT tools. For instance, the transportation system will be equipped with technologies such as interactive road maps, automatic vehicle location and tracking system, transit node management, road condition system, real-time

travel response, and parking management.

In order to maximise resource recovery from waste, an automated waste collection, transportation, and segregation system will be deployed. The system will facilitate monitoring of electronic, biomedical, and hazardous waste. GIFT will also have a smart district cooling system (DCS) to reduce energy and maintenance costs and improve air quality. A DCS control centre will be put in place to monitor the plant, analyse interface with distribution/usage for both supply and residual elements, and evaluation of extensive economic scenarios.

A key highlight of the project is the integrated building management system (IBMS). The buildings will have a modular structure and provide flexibility in design to cater to the evolving needs of tenants. The system will be implemented as an integrated open solution, which will enable the central command and control centre's connectivity through standard cloud or web interfaces. The IBMS will include the building management system, fire detection and alarm system, public address system, security surveillance system, and access control system.

Moreover, GIFT will make use of real-time geographic information system (GIS) applications in analytical modelling and simulations, design optimisation, resource consumption, conflict determination, project progress monitoring, compliance monitoring, infrastructure management, environmental monitoring, and emergency response.

The Lavasa model

Lavasa is a mid-sized city built to take the pressure off existing megacities around congested economic corridors. It is located along the Wasargaon Lake close to the Mumbai-Pune corridor. The city will have several townships, including Dasve, Mugaon, and Dhamanahole. The townships will witness development across residential spaces, commercial offices, educational institutions, recreational facilities, etc. Currently, the Dasve Town Centre is operational and most of the infrastructure in Mugaon is also nearing completion.

The smart city model has been planned in two phases. Phase I is currently under implementation and work on Phase II is expected to commence by 2015-16. The business model has four components, which are designed to be scaled up in terms of area covered and density, and to create and manage economic drivers and extensions in the form of linkages to other regions. The city has been planned over an area of 25,000 acres across multiple townships with a density of about 150 million square feet and a population of only 300,000 people. The city is expected to cater to an employment base of 97,000 people.

> The aim is to make life in smart cities easier for residents and businesses by master planning for land use and applying the concepts of new urbanism.

In order to develop a self-sustaining city, Lavasa has been equipped with infrastructural facilities such as access roads, internal roads, sewage and water treatment plants, dams, telecom towers, and a server room.

The city development has been divided into real estate, city management services, and the SPV segments. The real estate segment involves development of villas and apartments, assisted housing, institutional plots, and parking places. The city management services cover property management, public safety and security, enterprise utilities, administration, finance, common area maintenance, city management, and enabling support to the SPVs. The SPVs in turn will develop infrastructure in the areas of tourism, hospitality, leisure, education, sewage, e-governance, etc.

The model also includes deployment of various technologies such as smart metres, home automation devices, consolidated parking management technology, GIS mapping and global positioning system, radio frequency identification tags in buses, an integrated security command centre, automating messaging, power quality monitoring, consolidated billing, integrated environmental measurements, and IBMS supported by centralised fleet management system data reporting and standards. The business plan also envisages provision of e-governance facilities to citizens to facilitate payment of bills online.

Lavasa's My City initiative has been implemented in association with CISCO and Wipro. Under the initiative, information and communication technology (ICT) has acted as an enabler for effective city governance by way of centrally monitored electronic security and surveillance. Other value-added services include plug-n-play services in televisions, Wi-Fi connectivity to all citizens, and telemedicine and telepresence in a hospital. The Lavasa smart card enables convenient and cashless transactions for residents as well as tourists. Further, a centralised data centre will manage IT operations and services.

A key feature of Lavasa is the 24-hour citizen call centre for resolution of citizens' requests and complaints. The services provided by the call centre include non-emergency and emergency services, single-window redressal of citizens' queries, proactive information distribution, data collection and management services. The call centre will also conduct periodic surveys to keep a check on the quality of services being provided. Further, plans are under way to collaborate with key IT and telecom companies to plan, implement, and manage the city's information and communication systems.

Going forward, the aim is to make life in smart cities easier for residents and businesses by master planning for land use and application of the concepts of new urbanism. All components of a city life will be located within walking distance. Infrastructure needs to be built upfront and managed through the right performance outcomes. In addition, economic drivers must be identified in advance. For instance, the promotion of public-private partnerships can help leverage the economic benefits accruing from the development of these smart cities. The greater integration of ICT tools can also facilitate faster and efficient development of these cities.

Based on presentations by Satish Kamat, Deputy City Manager, Lavasa City, and Prakash Gaur, Vice-President, GIFT