7 STRATEGIES FOR BRIDGING THE GAP BETWEEN WHERE THE CITY IS AND WHERE IT WISHES TO GO

The city of Vadodara needs to pursue different strategies and programs for bridging the gap between where the city is and where it wishes to go in future. These strategies need to be carefully evaluated.

We shall now discuss the proposed strategies, which have been arrived at after taking into consideration the views expressed by the stakeholders.

7.1 ECONOMIC DEVELOPMENT OF THE CITY

To promote economic development in and around the city, VMC will act mainly as a facilitator to spur the development of infrastructure. Vadodara is mainly known for its petrochemical, chemical and ancillary industries. In order to promote and sustain economic development, the following strategies are required.

The development plan (DP) of Vadodara needs to make suitable space allocation for commercial and industrial development i.e. allocate land for industrial development or earmark areas for industrial uses. For simplifying the procedural delays, VMC needs to promote an advisory unit (institutional guidance) consisting of representatives of local bodies, trade, industry, and financial institutions; the unit would provide guidance and assistance to take building license or permits for competent authority, prepare project reports and obtain financial assistance from established banking institutions to start industrial and commercial units.

At the same time, VMC needs to upgrade existing infrastructure facilities, i.e. extend or provide new roads, water bodies, and drainage and power supply communication network on a priority basis in the declared areas. VMC also needs to give cost effective and consumer friendly service to entrepreneurs. This will help stimulate and promote economic activity and create employment in the city.

To promote sustainable development, VMC should emphasise on protecting the environment. Necessary initiatives need to be adopted by the corporation to save the living environment from the damage likely to be caused by industrial and commercial activities. Suitable and curative measures are a must to ensure sustainable development of the city.

VMC shall explore feasible areas of **public private partnership (PPP)** in industrial and commercial development. It shall also rope in related interest groups including NGOs and CBOs in the economic development of the city.

In addition to industrial development, the DP shall also indicate measures to promote tourism. This could be by way of development/preservation of spaces of historical importance in and around Vadodara.

7.2 WATER SUPPLY

To provide continuous, adequate, and potable water to its citizens, VMC needs to undertake several steps. It has to improve water supply through efficient operation of the system supported by regular but cost-effective maintenance. VMC shall also consider setting up a preventive maintenance unit. The units will supervise all activities related to the operation of the system and take pre-emptive and preventive measures to ensure its uninterrupted functioning.

VMC needs to prepare/update its distribution network plan including alignments, inventory of valves, flow meters, leak detection and repairs. It also needs to carry out the energy auditing of its pumping system by computerising data and sampling water for quality checks.

Besides, the corporation has to identify illegal water connections and discourage public stand posts. PCMC shall undertake a leak detection study of transmission and distribution mains and house service connections (HSC). Based on the study, it shall take effective steps to plug and minimise leakages at various points of the supply system. At the same time, it shall detect unauthorised connections made by property owners without valid permissions. This will make it possible for VMC to reduce the percentage of unaccounted-for water to minimum levels.

VMC has already initiated the use of GIS; all engineers and technicians of the water supply department should use this system. The VMC staff should be trained in project formulation, implementation, coordination, monitoring and evaluation. The staff of the preventive management unit shall be imparted training in specified fields relating to the creation of data base, preparation of digital maps, operation of GIS, etc.

To reduce system losses, VMC should carry out water supply auditing regularly. Also, it should conduct leak detection studies and install flow meters to improve the efficiency of pumps.

To augment the water source for future requirement, VMC should identify, design and plan the system accordingly. Finally, VMC should also ensure effective implementation of byelaws for ground water recharge and recycling of wastewater for reuse (industrial supply, gardening, landscaping of islands).

7.3 SEWERAGE SYSTEM

To ensure full coverage of sewerage network and effective disposal of the same in an environmentally friendly manner, VMC needs to adopt the following strategies.

- Treat sullage water before letting it into the river Vishwamitri and reuse the treated water for plants along riverbanks
- Regularise and enforce a proper mechanism for disposal of sullage into the river and other water bodies in the city
- Take corrective actions and organise routine checks
- Encourage community participation of NGOs in maintaining the community toilets
- Use GIS for effective maintenance and corrective actions
- Train sewerage staff to keep them abreast of the latest sewerage techniques and technology
- Conduct special campaigns to promote awareness among residents on the necessity to avail of house service connections

7.4 ROADS AND TRAFFIC MANAGEMENT

VMC should review the adequacy/deficiency of the existing road network in terms of its capacity vs. demand (existing and projected). It should focus on widening and strengthening important links and alternatives for major roads. To do so, VMC needs to adopt the following strategies.

VMC shall strive to improve the circulation network, add parking facilities and undertake improvement of junctions and road geometric to ensure the unhindered flow of traffic.

It should also upgrade all un-surfaced roads to surfaced roads. Further, resurfacing needs to be given immediate attention to ensure safe journeys for vehicles and passengers. Focus should also be given on the widening and strengthening of important links and alternative major roads.

VMC should ensure that good quality material is used for road construction. It can conduct the material testing by engaging a private laboratory or by setting up its own material testing laboratory.

VMC should take up junction improvement including improvement of road geometric to ensure the smooth and safe flow of traffic at select junctions. Flyovers and underpasses across the railway crossings and rivers should form a part of this exercise.

In order to decongest and improve parking facilities, a new bus stand is required to be constructed on the outskirts of the city. VUDA has already earmarked an area for transport nagar, which could be used to develop a bus terminus. Shifting of public buildings like Court to the low-density area would also help decongest the city centre.

Due to lack of space, innovative ideas like multi-level parking and zero margin-parking could be implemented. Strict parking laws are equally important to ensure sufficient parking facilities on all the major roads with heavy traffic loads. VMC shall consider parking zones and multi-level parking facilities.

To decongest traffic, VMC along with VUDA can plan and develop small townships around Padra, Vasad, Sevasi, Waghodia, Halol, and Por with adequate infrastructure.

VMC can explore avenues like using roadside hoardings to mobilise revenue. Standardised size could be encouraged, which would glorify the beauty of these roads.

To protect the environment, GSRTC shall use CNG for its buses. VMC shall also regulate the use of CNG for all the IPTs plying in the city area. Other cities in Gujarat have already initiated the use of CNG. As Vadodara is near to the gas field (GAIL's regional headquarters), VMC can promote natural gas awareness.

VMC should also install streetlights on newly added roads to comply with the norms of 30-metre spacing between streetlights.

7.5 STORM WATER DRAINS

In order to strengthen the existing storm water drainage system, VMC needs to implement the master plan to facilitate rainwater harvesting and control floods. The drainage service area has to be expanded and the existing system has to be strengthened by adopting advanced techniques. A time-bound action program for augmentation and capacity revision of existing and new drains (due to increase in run-off from urban extensions) is also vital.

Check dams and depression/ lakes may be designed for increasing ground water table and storm water holding points wherever needed. The design shall preserve the natural drainage pattern after the development of an area.

Drainage should be linked with ecology and green networks through adoption of the concept of "bio-drainage". Regular desilting of drains and control of dumping of solid waste into the drains should be taken up through public private partnership programs.

Local topography varies depending upon the location of the river and kaans. The advantages of involving several kaans is that each caters to a particular area independent of the other. VMC could further develop these kaans.

VMC should undertake rehabilitation work, including desilting, removal of garbage and clearance of weeds, to ensure free flow of storm water. Repair works such as construction of damaged sidewalls and lining of beds need to be prioritised.

VMC should also ensure that the roads, which do not have drains at present, are facilitated with proper drainage network.

7.6 SOLID WASTE MANAGEMENT

In order to improve disposal of solid waste, VMC plans to adopt a number of strategies. VMC shall endeavour to conduct campaigns to propagate the concept of waste minimisation at the household level and advocate the method of home compost and dispensation of waste generation habits.

VMC has already initiated the modernisation of the collection system by using containers. The system shall be extended to cover all parts of the city including the newly added areas. Mechanisation of other activities would also be considered and implemented using modern vehicles and equipment.

Door-to-door collection and source segregation have already been initiated by VMC. Complete implementation needs to be carried out in close association with local resident groups, NGOs and private agencies. VMC shall also involve the private sector in door-to-door collection and development of waste disposal sites.

VMC shall organise and conduct awareness campaign programs in close consultation with neighbourhood associations and local interest groups to propagate the necessity for a clean environment. The campaigns would also focus on the practices that need to be adopted by the residents in respect of waste minimisation, source segregation and recycling.

7.7 STRATEGIES FOR BEAUTIFICATION OF LAKES AND ITS INTERLINKING

VMC intends to preserve and revive all water bodies and ensure safe living conditions to the citizens of Vadodara. To achieve these, VMC needs to adopt several strategies.

VMC has drawn up an action plan for the desilting and reclamation of tanks and waterways. The plan shall restore all cross-sectional areas of the water channel and the holding capacities of the tanks, leading to reduction in stagnation of water in the city.

VMC also needs to prepare a river front development plan; it has initiated the process for Bhuki and Vishwamitri rivers. The plan shall regulate and manage the extraction of surface water and ground water and reduce river pollution. A monitoring station shall be established to test and monitor the quality of water and pollution levels in both the rivers and the water tanks. The installation of monitoring stations would form a part of the river front development plan. In addition, VMC shall

- De-slit, excavate, restore and increase the river capacities
- Rehabilitate banks with material from excavated material for safety
- Clear storm water drains for feeding lakes and divert inflow of sewerage
- Provide supplemental arrangement for filling the lakes and arrange for letting of surplus water
- Provide ground water recharge structures within the lakes to recharge ground water
- Provide alternative sites for garbage dumping and slums rehabilitation
- Develop Ganpati immersion places
- Identify a beautification programme including the development of gardens, children parks, jogging tracks, amphitheatres, food courts, water sports facilities, health clubs, hawker stands, amusement parks etc.

7.8 SOCIAL DEVELOPMENT (URBAN POOR)

To create better environmental conditions for the citizens of Vadodara, VMC should take up projects related to social development. VMC shall elicit the views and suggestions of the vulnerable communities and integrate these in the preparation of a development plan of the city. It shall conceive

several community development schemes in order to bring the whole cross section of the urban poor within the coverage of urban poverty alleviation program. Suitable linkages between the community and VMC officials shall be established through NGOs and CBOs for effective implementation of a poverty alleviation programme. The community structure would help linkage between the community and lead bankers and facilitate beneficiaries to avail of assistance for their economic development.

VMC shall assist the communities by identifying suitable institutions for imparting specialised training. This will enable them to upgrade their skills and talents and improve their opportunities for employment/self-employment.

VMC has already carried out a slum survey on both government and private land, and has identified the service level in each of these slums. This survey result shall help VMC in facilitating the process of slum rehabilitation and settlement. At the same time, it shall strive to improve environmental conditions and to reduce the source of health hazards in these slums.

VMC will prepare a plan to provide increased medicare facilities with improved quality of physical and mental health, emergency and trauma care, and retrieval services from addiction with special focus on the urban poor.

7.9 PHYSICAL PLANNING

To ensure proper development of the city, VMC should effectively implement the development plan (DP) proposals within the stipulated time period. VMC proposes to use the following strategies for the planned development of the city.

VMC intends to facilitate availability of planned and serviced land with all required infrastructure for development of residential, commercial and industrial activities in the newly developed parts of the city. It shall regulate the development in the vacant pockets to infill areas and densify low-density areas within the city (where investments have been made in infrastructure provision) by strict enforcement of development control rules (DCR).

VMC shall regularise unauthorised layouts, subject to possible compliance to planning parameters and infrastructure levies (for investment in provision of off-site infrastructure) and commercially exploit vacant lands to augment municipal revenue.

Both the planning authorities in Vadodara (VMC and VUDA) shall provide service roads for major and arterial roads, in order to ensure the smooth and free flow of traffic. It shall also speed up the process of completion of town planning schemes (TP) to promote the planned development of incidental uses.

Also, VMC needs to prepare a detailed development plan at zonal levels, indicating detailed land use pattern and preventive measures against formation of slums or squatters' settlement in vulnerable areas -- riverbanks, tank bunds, channel and other water courses, road margin, alignment of new/proposed roads, areas earmarked for open spaces (parks and fields), development projects. All these initiatives and interventions related to the planning and implementation of development plan schemes shall involve partnerships with the communities living in slums.

VMC shall also involve the private sector in the implementation of the development plan and provide subsidies for implementation of energy saving measures -- rain water harvesting, usage of the solar energy system, etc.

Some of the specific strategies identified by VMC for effective and holistic development of the city are listed below:

The Akota Dandia Bazaar road planned is within the area of TP scheme no. 67 & 68, which is currently in the agricultural zone (in palace area). A residential zone is proposed and on conversion, the proposed scheme can be taken up.

Some of the areas between finalized TP schemes no. 18 & 19 are proposed under the developed TP scheme no. 32 & 69. Development of road network between these schemes can thus be given priority.

The road network within VUDA's limits needs to be developed for connecting the western part of the city with the national highway near Maneja.

Areas below the high flood level should be given due weightage with a certain type of reservation.

The cantonment area, airport area, industrial area, Gujarat housing board, University camps area, and the city area are not considered in the TP scheme. In certain areas, closed mills/industries should be considered for mixed development.

Piecemeal zone charges are required to be restricted; at the same time, incentives for investment in I.T. industries should be extended. To support this, a self-sufficient township -- more than 50 hectares in size -- should be developed.

VUDA, being the other major planning agency in the city, needs to revise the development control regulation (DCR), taking into account the ground realities so that application and enforcement would help create a better living environment.

7.10 ENVIRONMENT

In order to improve the living environment of Vadodara city, VMC needs to adopt the following strategies:

VMC shall evolve an action plan to identify sources of emission, quantify the concentration of the pollutants and devise a mechanism to mitigate the levels of concentration.

The citizens of Vadodara need to put pressure on the city administration to plant appropriate tree species, and/or to ensure that biodiversity conservation is an important consideration in urban development plans. A regular tree census should be undertaken, which would capture facts of tree diversity, the number of trees, and changes in these parameters over a period of time. Public participation and awareness are extremely important for the city's environmental security. VMC shsll involve NGOs, Community based organisations (CBO), and resident welfare associations (RWA) for this activity.

In addition, VMC shall:

- Identify sites and develop procedures and methods for the disposal of hazardous wastes
- Maximize re-use and re-cycle sewage and trade effluent on land for irrigation and industrial purpose
- Stop pollution of water through reduction in discharges of waste into water bodies
- Minimise the adverse effects of pollution by selecting suitable locations for the establishment of new industrial projects
- Co-ordinate with other agencies to encourage CETP and treatment stabilization disposal facilities
- Co-ordinate with allied institutions to create environmental awareness
- Lay down disposal standards as well as gaseous emission standards to control pollution

These strategies would help the city achieve its vision. To implement the strategies, an action programme in the form of an investment plan has been framed, as detailed in the next section.