

6 DEVELOPMENT OF A PERSPECTIVE AND A VISION OF THE CITY

In order to achieve a consistent urban development approach towards effective urban reconstruction and development, it is essential that we share a common vision of the future development of our urban areas. This section discusses the urban vision with sector specific targets.

6.1 VADODARA AND ITS REQUIREMENT

Vadodara's immediate need is to '*Stop the deceleration process.*' Vadodara in its immediate past has witnessed a slowdown in the pace of industrial growth and development. The city has been struggling for its survival, which is quite evident from its low population growth in the past decades. Therefore, it becomes imperative to provide growth triggers for the revival of the city, to put it on the path of a healthy and economic growth trajectory. The middle phase is most crucial, wherein Vadodara needs to gather economic momentum, which would then lead it towards development vistas. Hence a focus agenda in the form of a vision needs to be followed.

6.2 VISION AND GOALS FOR THE CITY OF VADODARA

Vision: 'Making Vadodara a vibrant city through economic sustainability and highest standards of service delivery in the country'

The vision would ensure '*Balancing economic opportunity and quality of life*'. The drop in the population growth rate of the city from 40% in 1981-1991 to 26% in 1991-2001 has posed various uncertainties on the level of services and economic activities. While on one side, the investment for enhancing service quality and quantity has seen the same growth rate, on the other side, the population growth rate of the city has dropped. As a result, there has been an overall improvement in service delivery, which is reflected in the improved quality of life. But at the same time, economic activity in the city has witnessed a decline. If this phenomenon continues, the cost of living in the city will keep rising while economic activity will deteriorate further.

Today, the challenge for Vadodara lies in balancing both aspects, reversing the trend of economic slowdown, and further improving the quality of life through better service delivery.

The first phase would entail fighting for economic survival and bringing the city to a take-off stage by 2011. During the take-off stage, new industries will expand and yield profits, a proportion of which will be reinvested in new plants. These new industries, in turn, will stimulate -- through their rapidly expanding requirement for factory workers -- the growth of services to support them. Also, it will create a need for other manufactured goods; thus, further expansion would take place in the urban areas and in other industrial plants. Only on reaching this stage would the city be in a position to gear up for more focussed developmental activity.

While focussing on economic development, some other objectives also need to be met simultaneously.

Providing universal access to urban poor – This vision proposes to bridge the gap between the 'haves and the have nots' by ensuring that the urban poor have access to all basic infrastructure facilities like water, sewerage and waste collection in a space of seven years. The objective is to benefit each and every individual of the city in an economical and qualitative way.

Improving the standard of education – Quality and standard of education in any country, state or city is a determining factor in its development. Vadodara was considered to be a cultural and educational centre till the early 1960s and was synonymous with education.

The city has only one university, namely The Maharaja Sayajirao University which was a major high point in the social development of the city. But today, the University has not been able to expand its scope enough to keep pace with the high demand for quality, diversity and capacity.

The city has a high literacy rate --87.85% in 2001 -- indicating that education is given priority. But, due to restricted capacity of the existing educational centres, lack of institutions of international standing and deteriorating quality, people prefer going to neighbouring cities like Ahmedabad and Mumbai for higher studies. This phenomenon is resulting in out-migration of the educated class.

Vadodara should leverage on its legacy of being an educational centre, and position itself as a preferred location for educational and research institutes through appropriate interventions:

1. Upgrade the standard of MSU by benchmarking to international standards and influence the state government to expand its scope to accredit other colleges and institutions
2. Earmark land and induce entrepreneurs to set up self-contained knowledge and education parks
3. Allow the setting up of private universities and affiliations to international universities – this can play a vital role in rectifying capacity constraints and improving standards. Also, provision for training in marketing, financial management and the like is important to create competence in the competitive scenario ushered in by globalisation.
4. Integrate information and communication technology with the system in both academic and administrative tasks. This would involve high costs for training, hardware and content development. Collaboration with private organisations like NIIT, APTECH, and Microsoft, who have shown consistent results in IT, globally, would open new avenues.
5. Provide high quality specialised IT institutions. IT is the base for seeking a knowledge-based society and education is the basis for creating such a superstructure. In fact, the very success of the IT initiative in the Government, industry or at homes would largely depend upon the extent to which our educational system caters to the need for trained manpower as well as brings down the fear of technology.
6. Attend to the qualitative aspect of training institutions while considering the expansion of professional education

In order to boost economic activity, interventions would be required in various directions of growth. Some of them have been identified below and the details annexed. A five-pronged approach has been selected, focussing on the following areas.

7. **Information Technology:** With support from the state, Vadodara should look at IT as one of the growth drivers for the city and encourage it through the setting up of IT parks and Software Technology Parks. Initially, any building in a posh area can be converted into an IT Park as it might not be necessary to have a sprawling campus to begin with. The identified place should have the required infrastructure like state-of-the-art leased line connectivity, which BPO centers could then utilise. In order to promote IT development in the state, the state government has announced special IT incentives and appointed Gujarat Informatics Limited as a nodal agency for the same.
8. **Biotechnology and Pharm:** Vadodara has tremendous potential to develop itself as a *Biotechnology Hub*. Gujarat has established itself as a key state in the western region for its biotech capabilities, which in turn presents a huge opportunity to Vadodara. Under Gujarat State Biotech Mission (GSBTM) projects, Vadodara is entitled to the maximum number of biotech

projects. Vadodara is proposed to be a part of 19 of the 25 biotech projects announced by the state government. This is an indicator of the growth potential of biotech industries in Vadodara.

9. **Medical or Health Tourism:** This is a developing concept intended at attracting people from world over to visit India in the interests of their medical and relaxation needs. Vadodara has the comparative advantage of possessing a large NRI base which can be targeted for the sale of medical tourism packages. Vadodara should leverage its advantage by building up world class infrastructure and also, market its already existing medical institutions like the Baroda Heart Institute and Research Centre, Bhailalbai Amin General Hospital, Unity Hospital, Matrushree Parsanba Homeopathy and Neturopathy Centre etc. through tie-ups with the tourism industry.
10. **Diversified industries (Agro-based industry and ancillary industries):** The geographical location of Vadodara lends it a host of opportunities in the agro / food processing industry. Vadodara should try and get a food park sanctioned, which shall provide the required impetus for investments to flow into the sector in the city.
11. **High-end industry (chemical, petrochemical and fertilizer):** Large chemical and petrochemical industries have been present in Vadodara for many years. Around 30% of the medium and large industries (as classified by the Census of Industrial Units) in Vadodara are in the chemical industry. The presence of such large players has also helped develop a cluster of small and medium sized chemical industries in Vadodara.

To facilitate the growth of these industries, there is a need to develop and provide appropriate infrastructure facilities.

The details of each of these are provided in annexure V.

6.3 SECTOR SPECIFIC OBJECTIVES

VMC under JNNURM has planned to invest in a large number of projects, which would provide the impetus for achieving the development agenda for Vadodara. The analysis of the survey also prioritises the areas, which VMC should undertake as part of this program.

6.3.1 Prioritisation of services by citizens of Vadodara

A survey was carried out as part of the CDP process for a sample of 5000 residents covering different sections of society viz. NGOs, industrialists, builders, consultants, urban planners and architects, urban poor, and common citizens. 1825 samples were collected from all the wards and zones of Vadodara.

As a part of the survey exercise, the citizens were asked to prioritise services, which they felt the Municipal Corporation should develop in the near future. Nine options were given which had to be rated according to their importance in an ascending order from 1 to 9.

Citizens of Baroda

The graph below shows the prioritisation of services by the citizens of Vadodara. The Y-axis shows the percentage of surveyed people, while the X-axis shows the rating of the services. Some people have abstained from rating certain services, so those have been considered as a 'non-respondents (N.R)' for that particular service.

Water Supply: The survey result show that water hold the highest priority with majority of the people, with 21% giving it 1st rating, 10% giving it 2nd rating and 9% 3rd rating. The graph can be seen descending from 1 to 9, thus highlighting the importance of development of better facilities for water supply. The non-respondents for this category were 40%.

Traffic Management: Ten percent of the respondents ranked traffic management as the first priority followed by 9%, who ranked it 2nd and 10% who gave it the 3rd highest priority. Negligible percentage of people gave it the 8th and the 9th priority. Thus, it is evident that the city requires a more efficient traffic management system.

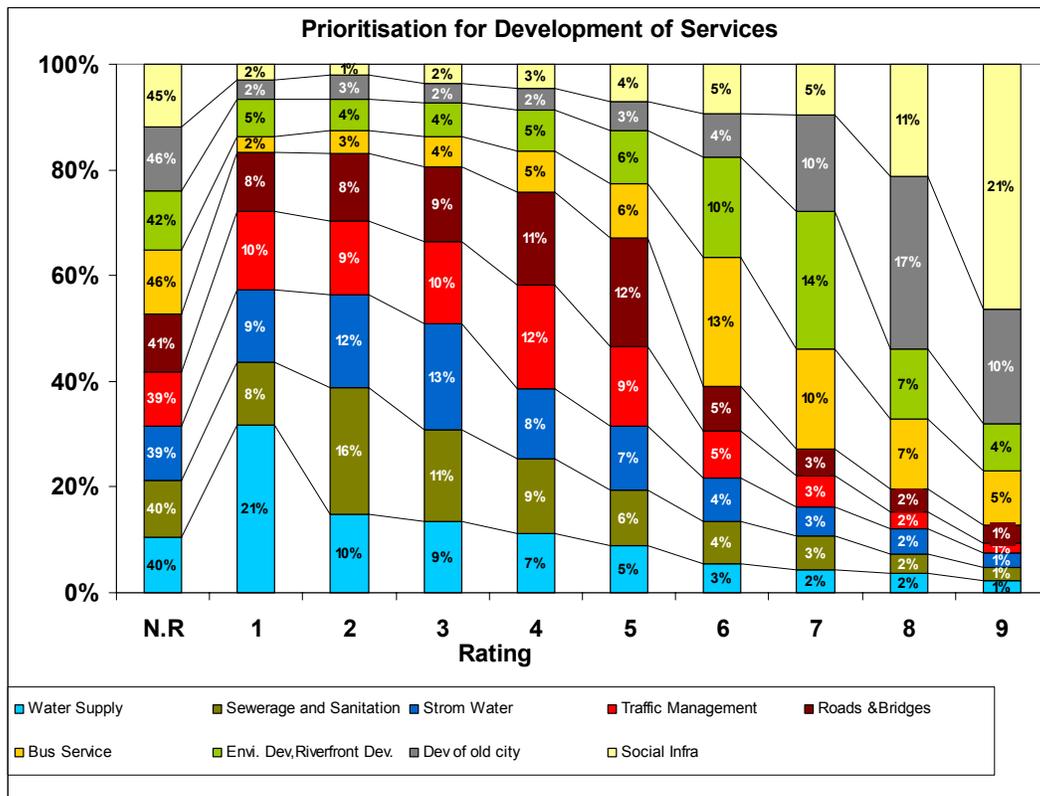
Storm Water Drain: As per the survey results, traffic management and storm water drains have more or less shown a similar type of trend and importance. Nine per cent of the surveyed people have given it first priority followed by 12% who have given it 2nd priority; 13% gave it 3rd and 8% gave it 4th priority. After the floods that took place due to heavy rains in 2005, the urgent need for a better network of storm water drainage has been felt by the majority of citizens. The number of non - respondents remained 39%.

Sewerage and Sanitation: Maximum number of surveyed people (equal to 16%) gave it 2nd priority, 8% giving it 1st, 11% giving it 3rd priority and 9% giving it 4th priority. Non-respondents amount to 40%; very few people ranked it as the least priority. Thus even though this sector does not hold the highest ranking, it definitely makes for one of the top three priorities.

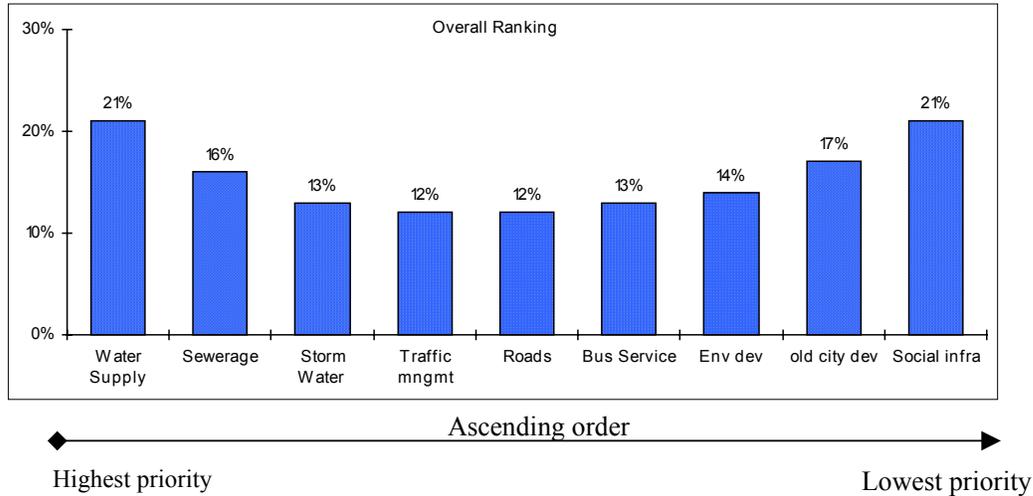
Roads and Bridges: Roads and bridges were given 5th priority by maximum number of people. Equal number of people gave it 1st and 2nd priority. Development of roads and bridges was one of the top five priorities of people.

Bus Service: Even though the bus system in the city has deteriorated over the years, it was surprising to find out that the bus system did not assume any priority. Maximum number of respondents gave it 7th, 8th and 9th priority and only 2% gave it the 1st priority.

Similarly, services like environmental development, development of the old city and social infrastructure all scored very low on priority.

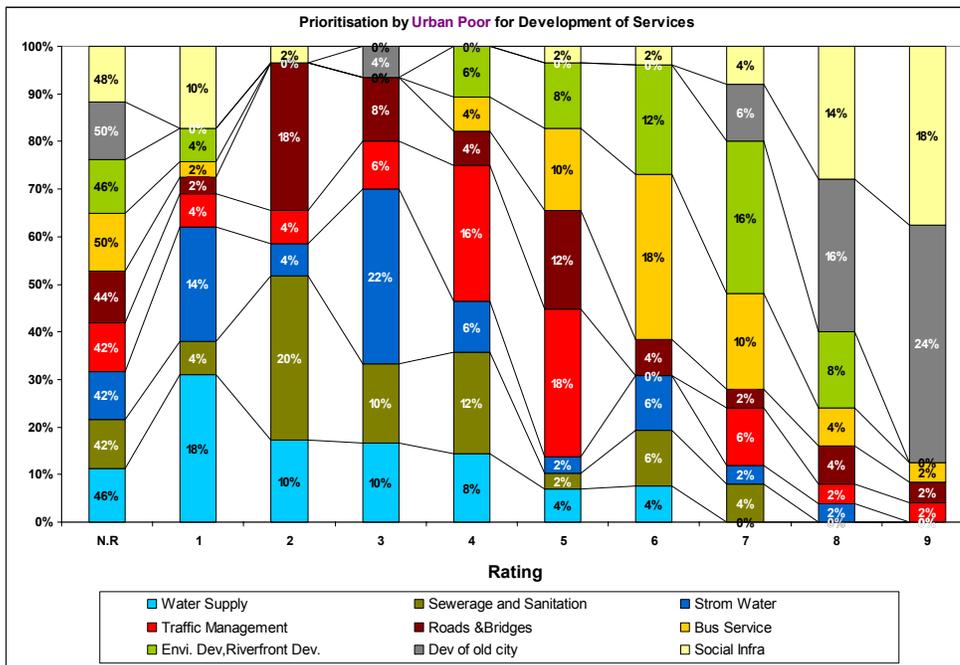


The chart below corresponds to the highest ranking received by the respective services in an ascending order of importance from left to right. Water supply gained the highest priority from 21% of the respondents, followed by sewerage and sanitation, which were ranked second by 16% respondents; storm water was ranked third by 13% of the respondents. Similarly, other services followed; it was seen that 21% of the respondents rated social infrastructure as the last priority.



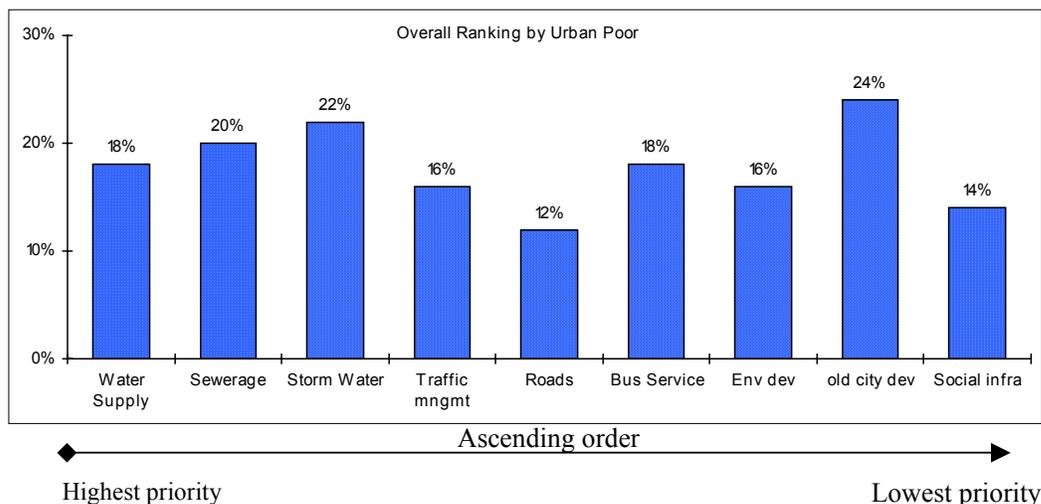
6.3.2 Prioritisation of services by Urban Poor

The graph below shows the prioritisation of services by the urban poor of Vadodara. The Y-axis shows the percentage of surveyed people, while the X-axis shows the rating of the services. Some people have abstained from rating certain services; so those have been considered as 'non-respondents' i.e. N.R. for that particular service. The sample not only involved NGOs working in slum areas, but also involved slum people who participated indirectly in a day-long symposium on JNNURM in the first week of January. This symposium was organised by an umbrella organisation called the United Way of Baroda.



The priorities of urban poor are similar to the priorities of the other citizens of Vadodara. 18% of the respondents have given development of water supply facilities the highest priority, followed by sewerage and sanitation at which were ranked second. Social infrastructure and development of the old city were given the least priority with a ranking of 8 and 9 respectively.

The chart below gives the summary of overall ranking by the urban poor for all the nine services in an ascending order of importance from left to right.



6.3.3 Water Supply

With an objective of providing reasonable water supply to the citizens of Vadodara, a long term Vision has been formulated. The goals and targets are set considering the growth of the City and the upgradation of the City's services to cover nearly 100% of its population. These targets, when achieved, will make Vadodara City more livable, and commuting more comfortable and convenient. Also, if slums were strengthened with basic infrastructure facilities, they would become more hygienic.

Slums occupy 25% (i.e. 2.57 lakhs) of the city's total population. Many slum dwellers have to queue up for hours to get water. The pipelines are extended as and when required from the nearest point. This has further reduced the water pressure in almost all the areas in the city. Upgrading the network and storage reservoirs within the City would provide the required quantity of water to all the water deficit pockets including the 25% slum dwellers. Hence a vision would achieve the same with yearly targets.

Vision: Provide water supply to all i.e. 100% with adequate pressure and equity

Area of targets	2008	2011	2015	2025
Augmentation water supply source (240 MLD)	Additional 62 MLD (Priority Works)	Additional 69 MLD from 2008 level	Additional 67 MLD from 2011 level	Additional 23 MLD from 2015 level
Increase the water supply coverage from present 80%	Increase to 90% (Priority Works)	Increase to near 100%		
Increase the area coverage	Increase to 80% (Priority Works)	Increase to 90%		

Area of targets	2008	2011	2015	2025
from 70%	Works)	area coverage		
		Providing system pressure at kitchen platform level		
Increase the water supply hours from present 45 to 55 min per day	Increase to 120 min/day (Priority Works)	Increase to 4 hrs/day		
To reduce the present unaccounted water (losses) from 30 to 35 % to about 20 to 25 %	Replacement of pipes in slums and walled City area, to reduce the contamination and leakages - 30% replacement.	Reduce UfW to 20% by 2011		
Replacement of old pumps		100 % replacement of old pumps (age > 10 years)		
		Providing 100 % metering at source and OHT		

Other areas to be covered towards achieving the targets are:

- ◆ Regularizing of the illegal water connection by suitable policy making
- ◆ Repairing of Civil Structures such as tanks and support bridges
- ◆ Introducing SCADA concept for monitoring supply at source and OHTs
- ◆ Taking up a pilot project for providing 24 x7 water supply for a industrial area on a full cost recovery basis
- ◆ Capacity building in the water supply division in all categories

6.3.4 Sewerage and Sanitation

Based on the assessment of the present situation, a vision with yearly targets has been formulated as under:

Vision: Ensure sewerage coverage to all and to improve quality of life of the urban poor

2006 – 2011

- ◆ Increase the present sewerage system, geographically (coverage area) from present 60% to 80 %
- ◆ Provide sewerage service to 90 % of the population
- ◆ 100 % stoppage of raw sewage overflow from manholes, pipes, etc. in open
- ◆ Replacement of all old trunk mains
- ◆ Procurement of De-silting machinery for the APS
- ◆ Modernisation of APS
- ◆ 100 % interception of raw sewage discharge into river Vishwamitri
- ◆ Treated sewage reuse from present 10 MLD to 50 MLD
- ◆ Power generation of about 400 KVA from the Biogas

- ◆ Capacity building and training

6.3.5 Solid Waste Management

Solid waste management is one of the obligatory functions of VMC. The Municipal Solid Waste (Management and Handling) Rules 2000, notified by the Ministry of Environment and Forests, Government of India, directs all ULBs to upgrade their existing waste management practices with appropriate mechanisms for waste segregation, collection, recycling, storage, transportation, treatment and disposal. In line with these requirements, VMC is developing an Integrated Solid Waste Management Plan (ISWMP) for the city of Vadodara.

Vision: Provide safe and scientific disposal of solid waste

Area of targets	2007	2008	2011
Collection	<ul style="list-style-type: none"> • Door to door collection will cover 100% city area • Segregation of waste at source will be operational • System for separate garden waste collection will be operational 	<ul style="list-style-type: none"> • 100% city area will be covered under regular sweeping by the end of 2008. 	
Processing	<ul style="list-style-type: none"> • Planning to set up additional 250 Mt/day compost plant • Planning to start Vermi-composting in gardens on small scale 		
Waste To Energy	<ul style="list-style-type: none"> • VMC is planning to set up waste to energy plant to convert plastic waste into hydro-carbon fuel with the association of GSFC; the plant is likely to be operational soon. 		
Disposal	<ul style="list-style-type: none"> • Developing New Sanitary Landfill Site as per the MSW Rules-2000 by the end of the current financial year • Setting up the incinerator for ultimate disposal of small dead animals and carcasses • Closure of existing disposal site 		
Public Awareness Program	<ul style="list-style-type: none"> • Awareness program to educate public in general regarding waste management • Work shops and training program to educate staff 		

6.3.6 Drainage/Storm water drains

The review of the existing storm water drainage system reveals major concerns for the existing storm water drainage system. This can be grouped in three viz. disturbed kaans, coverage, and seasonal flooding. It is thus essential to overcome these concerns to improve the living conditions of the citizens of Vadodara. Thus the vision statement for the storm water drainage system is formulated to overcome the above concerns.

Vision: Strengthen the SWD to take care of run-off water, local flooding and to rejuvenate water bodies

Targets	2006-2011	2015
Improving the main canal	<ul style="list-style-type: none"> ◆ Rehabilitate and provide lining for main kaans before 2011 ◆ Increase the present storm water drainage coverage from present 25 % to 50 % by year 2011 ◆ Implement projects to make Vadodara a flood-free city ◆ Improve the living standards of the urban poor by protecting them from future flooding 	<ul style="list-style-type: none"> ◆ 100 % coverage in the Old VMC limit area (VMC limit before 2002, 108.26 Sq. Km) by year 2015.

6.3.7 Urban Transport (Road, Bridges and Flyovers)

The vision has been arrived, based on an exhaustive analysis of other appurtenant services like water supply, sewerage and storm water.

As per the plan, in the initial years, concentration would be on completing sewerage services/utilities, land acquisition and shifting of slums, etc. On completion of these, the actual construction of roads would commence.

Vision: Develop quality roads with full right-of-way to ensure smooth traffic flow

In order to achieve the vision, yearly targets are formulated. Planning of roads in view of the implementation of a public transport system like BRTS is also being considered.

6.3.8 Rejuvenating water bodies and flood management

Bhukhi River, though small, affects the developed area of west city and is of high priority. This project on interlinking of water bodies is required to be taken up first, along with diversions of part flow of Vishwamitri. Resectioning of Vishwamitri is necessary for protection of the city on both the banks and needs to be taken up on a priority basis. Improvement in existing structures could be deferred.

Vision: Ensure safe living conditions by preventing floods

It is possible to achieve the set goals of development by adopting an appropriate strategy, development plans and priorities in investment.

6.3.9 Slums -- Basic Services to Urban Poor

VMC has identified 190 slums for providing “onsite services”. The basic infrastructure availability varies with the location of slums; 88% already have water supply whereas 96% have streetlights. Supplementing the basic infrastructure requirements is likely to provide much faster relief to the slum dwellers. Further, re-location always causes some physical and mental hardships. Hence the vision is to develop on-site services by 2011-12.

Vision: Provide universal access to all services and safe living conditions

6.4 STATUS OF MANDATORY REFORMS UNDER JNNURM

6.4.1 Adoption of modern accrual based double entry accounting system

Prior to 1991, VMC was following a cash-based single entry accounting system. The introduction and adoption of the modern accounting system started in 1992-93. The World Bank insisted on financial and accounting reforms in six municipal corporations of Gujarat and granted funds for the same. Consultants were appointed to design, develop and implement the accrual-based double entry system of accounting. The consultants had developed the modular base accounting system and training was imparted for actual implementation. However, the project could not succeed at that time.

VMC was determined to introduce and implement the modern accrual-based double entry accounting system. Strengthened by analysis of reasons for failures at the initial stage and knowledge of the background of the earlier exercise, VMC initiated the project for the introduction of the new accounting system. It developed a five-digit chart of accounts both for account code and budget code. The introduction of the new system was on a fund base as against the modular base suggested by the previous consultant. VMC started recording the transactions on the double entry accounting system right from 1995-96, directly on a computerized system; it utilized the readymade software accounting package “TALLY” which is in fact meant purely for commercial organizations. VMC has fine-tuned the software to make it simpler and user-friendlier for recording the transactions of the entire Corporation.

VMC was the first ULB to adopt and utilize the readymade TALLY package at a nominal cost of below Rs.50,000; otherwise, this tailor-made software would have cost between Rs. 5 lakhs to 10 lakhs.

Thus, the process of reformation and adoption of the modern accrual-based double entry system was started in 1995-96. Through a learning process, VMC developed its own accounting system, which is the Fund-Based Accounting System

Under this system, five different funds are created for recording entries:

- a. Municipal Main Fund
- b. Capital Fund (Own source & Loans)
- c. Capital Grants Fund
- d. Public Deposits Fund
- e. Advances (Tasalmat) Revolving Fund

The combined effects for changes in the above-mentioned funds i.e. (b) to (e) are given in the Municipal Main Fund Account at the year-end, and a consolidated Balance Sheet is prepared.

The Municipal Main Fund Balance Sheet covers each item as per the Accounting Standards issued by the Institute of Chartered Accountants of India, except the following:

Fixed Assets & Depreciation

Stock-in-hand

Rates & Taxes Recoverable / Due

Employee Related Liabilities

Payments to be made to contractors for W-I-P

Besides the recording of entries as per accounting heads, all the expenditure and income entries are recorded as per budget code also. For this, VMC has developed a matrix structure of account (subject) heads / items and of budget (object / cost) heads.

There is at least one budget code for each account code. There can be several budget codes for a single account code and there shall not be more than one account code for a single budget code.

Detailed method of entering transactions in each fund: On adopting the above system, VMC has been able to maintain all its accounts on a modified accrual basis of double entry accounting system by incorporating the budget code as cost centers for each transaction. The system is able to generate account code wise output as well as cost center wise output. At the year end, the balance sheet of each fund is drawn. Consolidating the balance sheet of each fund, VMC is in a position to draw its final balance sheet.

However, the incorporation of fixed assets inventory into accounts is under process and therefore, implementation of certain accounting standards like depreciation will be introduced on the completion of the fixed assets inventory module.

The charts of accounts, which have five-digit code, are more or less similar to the national accounting code. For adoption of the national accounting code, the system would require minor changes. The system can be introduced over the next two years i.e. by 2008.

At present, the complete accounting is computerized on the TALLY package with 25 nodes networking and a high-speed processor server. VMC envisages expanding the scope of computerization in related accounting functions like payment of retirement benefits and budget monitoring and controlling.

Detailed Method of Accounting in Different Funds

Revenue Fund (Main Municipal Fund): This fund is the main municipal fund for all purposes. It comprises all types of revenue receipts accruing from VMC's own sources (tax, non-tax) and revenue grants. It also comprises all types of revenue (operating) expenses such as establishment, administrative, operation and maintenance, interest payments and loan repayment. This fund reveals the real financial (operative) strength of VMC. It clearly shows the operational profit / loss for the given period, which even municipal bodies with improved accounting systems find hard to show. Since VMC has an on-line computerized accounting system, the accounting statement of the revenue fund clearly shows operational profit/loss of the VMC at any given moment of time or period. In this fund, most of the day-to-day accounting operations are carried out on double entry cash basis especially in the cases of receipts. The expenditure transactions are carried out on both accrual and cash basis. To sum up, it can be said that this fund forms the operative (profit & loss) account of the consolidated balance sheet of VMC.

Capital Fund (Own Sources): This fund does not exist in the municipal bodies even if they have adopted double-entry accounting. The capital receipts and expenditure from own sources either form a part of the consolidated fund or of a capital fund account along with the new borrowings and capital grants in other municipal bodies. In VMC, the receipt side of this fund comprises all receipts of capital nature from its own sources; on the expenditure side, it comprises expenditure of capital nature and matching share to be transferred against loans & borrowings or capital grants in other funds. This fund is maintained fully on an accrual basis. The operative results of this fund provide valuable information about VMC's capacity to finance the development of the city from its own funds. This information is a very important measurement/indicator of the capacity of a municipal body to finance and to sustain development of its city. Putting together the results of its revenue and revenue capital fund, VMC is able to ascertain its real financial position.

Capital Fund (Loans & Borrowings): This is the third fund created by VMC. It accounts for new loan receipts and capital expenditure from it. In purely technical terms, it may not be called a separate fund as at the end of the year, its balance sheet depicts unspent loans and borrowings. The capital expenditure form may be sub-divided into individual development works decided to be undertaken and matched equally by cash, bank and investments. It is a kind of a subsidiary ledger as carrying out

of capital expenditure leads to reduction in outstanding liability and assets of this fund. Similarly, when new contribution is received from the main municipal fund to carry out certain works, liability of this fund goes up; correspondingly, assets in the form of cash and bank balances goes up.

Capital Fund (Grants): The fourth fund entitled ‘capital grants fund’ also operates in a similar way as the capital fund (loan). The only difference is that the capital grants received are credited in the capital grant fund at the first instance with sub ledgers regarding the works to be undertaken as per government order under the grant received. Like capital fund (loans and borrowings), this fund can also be called a mere subsidiary ledger of capital expenditure as at the end of the year, capital grants received and capital expenditure incurred get merged in the consolidated balance sheet and the fund stands reduced to unspent grant amount.

Public Deposits Fund: The fund pertaining to the public deposits is a truly concrete fund as succeeding balance sheets of this fund show cumulative position. The public deposits fund comprises all the receipts received on account of Earnest Money Deposit / Security Deposit from contractors, or from the general public for availing of municipal services or from any person as a commitment deposit to observe certain rules, stipulations etc. It also includes all other receipts of a liability nature (other than loans and borrowings). In VMC, all such receipts are strictly credited to this fund and are refunded as and when they become due to the public. VMC is probably the only municipal corporation, which has segregated receipts and payments pertaining to public deposits and other liabilities into a separate fund. Again, this separation is not merely on paper; VMC has created a fund in which adequate current assets exist in the form of cash, bank balance & fixed deposits to mitigate any payment towards the public deposit liability.

Advances (Revolving) Fund: Advances Fund is a unique innovation of VMC’s accounting reforms. The adjustment and the reconciliation of the advances given to the departments or to the employees are a perennial problem in all municipal bodies. Outstanding advances go on increasing with the completion of one more year in municipal bodies. VMC created a separate fund for giving advances by setting aside Rs.1200 lakhs as equity of VMC in the Advances (Revolving) Fund for the following purposes:

1.	General Purchase Fund	Rs.500 Lakhs
2.	Food Grain Advance	Rs.250 Lakhs
3.	Festival Advance	Rs.150 Lakhs
4.	Vehicle Advance	Rs.100 Lakhs
5.	Cast Iron Pipes Purchase Fund	Rs.100 Lakhs
6.	RCC Pipes Purchase Fund	Rs. 50 Lakhs
7.	Misc. Stock Items Purchase Fund	Rs. 50 Lakhs
	Total	Rs. 1200Lakhs

All types of advances are given only from this fund. When advance taken is adjusted, the expenditure gets booked in respective funds (revenue, capital) and the amount is paid to Advances Fund. As a result of the creation of this fund, in the last four years, the total outstanding advances of VMC have remained much less than Rs.1200 lakhs, i.e. less than the maximum limit of this revolving fund. The most important advantage is that the outstanding advances’ amount is not increasing year after year as in the case with other municipal bodies or as was the case with VMC.

The accounts of each of these funds are maintained separately with separate banks and books of account, investments, trial balance & balance sheet etc. This is achieved with the help of the TALLY accounting software/package by opening separate companies under this software. Over and above these six fund-related balance sheets, VMC has developed the system of preparing a consolidated

balance sheet of VMC by clubbing together the above six balance sheets. To facilitate this, VMC has thus structured the relationship of a holding subsidiary company between the main fund and other five funds.

The capital receipts like sale of land, assets, scrap, development charge on time revenue etc. are directly credited to capital Fund (From own sources) as far as possible. In some cases capital receipts are received in main fund i.e. in the revenue fund, as people pay such amounts along with revenue payments (taxes etc.) to VMC. Such amounts are segregated and transferred to the capital fund (own sources) from the revenue fund. If the capital expenditure duly sanctioned happens to be more than capital receipts (from own sources), the necessary amount from the revenue (operating) surplus of the main fund is transferred to the capital fund as an equity or as a contribution to the capital fund. At the end of the year, total capital receipts received in this fund are added to the equity of VMC or reserves/fund on the liability side of the consolidated balance sheet. Similarly, the capital expenditure of this fund is added to capital work-in-progress (if work is not completed) or to fixed assets (if it was capitalised) on the assets side of the consolidated balance sheet by passing Journal Voucher (J.V) simultaneously. The revenue surplus transferred to the capital fund is zeroed up through this Journal Voucher entry only.

The new loans & borrowings taken by the VMC are first recorded in the main municipal fund as liability and are then passed on to the capital fund (loan & borrowings). Sometimes, a new loan receipt is directly credited to capital (loan) fund account; in such circumstances, necessary journal voucher (J.V.) entry debiting contribution to capital (loan) fund account and crediting respective loan account is passed in the municipal main fund account. In capital (loan) fund a/c, contribution (equity) received from the municipal main fund accounts to be liability (in the form of ledgers) pertaining to works to be undertaken. The liability remains matched by cash and bank balance received from the municipal main fund. Whenever any payment is made, the liability of this capital (loans) funds goes down as well as its assets (in the form of reduction in cash or bank balance). Thus, this fund always remains reconciled or tallied. At the end of the year contribution to capital (loan) fund is credited and capital work in progress or fixed assets account is debited to the extent capital expenditure is carried out from this during the year. The balance sheet of this fund at any point of time depicts loans received but not spent on the liability side and equivalent cash, bank and investment balances on the assets side.

Similarly, in the case of capital (grants) fund also, whenever any payment is made for any work, the liability of the fund goes down; simultaneously, assets also go down in the form of reduction in cash or bank balances. Thus, a fund's balance sheet always remains balanced. At the end of the year, the capital expenditure amount of capital (grants) fund is taken into 'capital works in progress' or 'fixed assets' account and same amount is added to VMC equity or reserves & surplus account in order to prepare the consolidated balance sheet of VMC. Thus, at the end of the year, the balance sheet of capital (grants) funds shows amount of the capital grants received but yet not spent on the liability side and cash, bank and investment balance on the assets side.

At the end of the year, effect regarding the net increase or decrease in liability under public deposits fund is given in the consolidated balance sheet. This is done by passing the necessary JV entry, and increasing or decreasing assets and liabilities simultaneously pertaining to the public deposit fund in the consolidated fund balance sheet. The balance sheet of public deposit fund at any point of time reveals deposits received from the public under different heads as a liability and matching assets in the form of cash, bank and time deposits.

In case of the advances fund, as it is a revolving fund, not many journal voucher (pertaining to finalization) entries are required to be passed at the end of the year to give necessary effect in the consolidated balance sheet. Such a need arises only if equity for this fund from VMC is enhanced or reduced. The fund remains static and hence no entries are finalised for preparation of a consolidated fund balance sheet. The balance sheet of the advances fund at any point of time shows the

contribution or equity received from the municipal main fund for different purposes and revolving advances funds on its liability side. Similarly, advances given but yet to be recovered under current debtors head and cash, bank and time deposit balances form the assets side of its balance sheet.

6.4.2 Introduction of a system of e-governance using IT applications

VMC has planned to implement an e-governance project to make the civic services and administration tasks easy, speedy and transparent. On implementation of this project, services of the different modules (systems) would be accessible for the convenient use of citizens from different parts of the city, i.e. by way of Civic Centers and Ward & Zonal offices. Certain modules based on the type of usage would be planned as web based modules i.e. these modules would be accessible through the Internet.

Policies for the reform: VMC has decided to design, develop and implement 21 modules in two phases.

Phase – I	Phase – II
Property Tax and other dues	Activities of Legal Department
Water Charges	Stores Inventory Monitoring
Birth & Death Registration & Issue of Certificates	HRD System
Complaints Registering and Monitoring	Employees Pay-Roll and Personal Information System
Public Health & Sanitation	Employees Attendance and Presence Monitoring
Octroi	Solid Waste Management
Business Registration & Licenses	Gas Project Management
Project Planning & Monitoring	Central Workshop and Vehicle Pool activities
Tenders, Leases, etc.	Tenders Invitation and its Processing
Building Plan Permission	Municipal Secretary Office System
	Audit Office System

The outcome of the implementation of the above modules is elucidated below:

Internal Efficiency	<ul style="list-style-type: none"> ◆ Real Time Complaint Monitoring through a nearby location or Internet ◆ Real time Building Plan Permission monitoring through a nearby location or Internet ◆ Transparency in transactions with VMC ◆ Reduction in search time for information like: ◆ Birth & Death Records ◆ Digitised formats of Building Plan Permission ◆ Revenue Collection and Outstanding Dues ◆ Effective Planning through online MIS Reports
Cost Savings	<ul style="list-style-type: none"> ◆ Through avoidance of paperwork ◆ Time saved in transactions (e.g. issue of birth/death certificates) ◆ Avoidance of higher cost alternatives (e.g. newspaper advertisements for tenders, saving of Rs. 42 lakhs per year)

- ◆ Better recovery of taxes, octroi, etc.
- ◆ Optimal use of financial and other resources for project implementation

Estimates of expenditure of the project: The total estimated expenditure of the project is Rs. 505 lakhs, of which Rs. 199 lakhs has already been spent. VMC is trying to meet its financial requirements through its internal budget in a phased manner. It is also expected to seek the assistance of external funding/aid for speedy completion and implementation of the project.

Present Status: The project has been assigned to the Electronics Corporation of India Ltd. (ECIL, a Central Government Undertaking company) under their MOU with a local company named Internet Services. They would design, develop and implement the Application Software of different modules (systems) along with the VMC website. The modules would be assigned to them at different stages. The website of VMC (viz. www.vadodaracity.org) has been launched and is operational. All tender notices and tender forms are regularly uploaded on a weekly basis on this website and can be downloaded by bidders. Modules numbered 1 to 7, 9, 10, 11, 14, 20 have been assigned to ECIL. The status of the same is stated below.

Components	Estimated cost (Rs. lakhs)	Completed
Application development for 21 Modules	125	13.78
Readymade Software procurement	65	52.51
Server Computers & Networking Components	240	93.73
Node/Terminal Computers for users in different locations	75	38.99
Total	505	199.01

Name of Module	Status as on January 2006
Phase – I	
1. Property Tax and other dues	Under testing for implementing it online
2. Water Charges	Under testing for implementing it online
3. Birth & Death Registration & Issue of Certificates	Being used off-line at Civic Centers and is ready for implementation online
4. Complaints Registering and its Monitoring	Being used off-line at Civic Centers and is ready for implementation online
5. Public Health & Sanitation	User Require Specifications(URS) submitted by ECIL is under study by the User Dept.
6. Octroi	Under testing for implementing it online
7. Business Registration & Licenses	System Master is under preparation from present manual registers
8. Tenders, Leases, etc.	Tenders are available online on VMC website
9. Building Plan Permission	Ready for implementation online
Phase – II	
10. Activities of Legal Department	URS approved. Module under development
11. Employees Pay-Roll and Personal Information System	URS is under study by the User Dept.
12. Municipal Secretary Office System	URS approved. Module under development

Implementation Plan

- ◆ Server computers and WAN equipment have been installed at Central Server Farm and tested.
- ◆ Node/Terminal Computers and LAN/WAN equipments at Civic Centers, Ward & Zonal Offices and Octroi H.O. & selected Nakas have been installed and tested.
- ◆ Lease lines for online data communications are at near-completion stage.
- ◆ Modules/Systems from sr. nos. 1 to 4, 6 and 10 have been planned to be made operational online by the end of January 2006.

Future Plans and Stages to complete the reform: Modules under development are expected to be completed by the next three months. VMC is expecting to assign a few other modules to ECIL. However, the rest would be assigned by June 2006 considering their priority. All modules identified under this plan are expected to get completed by the end of the next financial year.

6.4.3 Property Tax with GIS

For the purpose of property tax to be levied prior to 2003, VMC had adopted a system of assessment based on the rent the property can fetch or would already be fetching. Whenever the rent could not be derived, the method of assessment was 6% of the cost of land and building at the time of construction. The system had certain deficiencies, which are mentioned below:

- ◆ There was a large difference in the assessment of old and new properties, though both avail of similar municipal services.
- ◆ Old large-sized properties enjoy exemption from the payment of general tax while new properties have to pay large amounts of tax.
- ◆ 73% of the residential properties and about 29% of non-residential properties are exempted from the payment of general tax on account of very low assessment, with less than Rs. 600 of ARV.
- ◆ There is a wide gap in the assessment of self-occupied and tenanted properties. The differences are found to be to the extent of 1:15.

The Government of Gujarat had enacted the Gujarat Act-3/99 to introduce property tax on Carpet Area Base. The option given by the Government of Gujarat was to opt for Area Base System or Rental Base System. VMC had accepted the Carpet Area Base System vide General Board Resolution No. 82/25-5-1999. This system had the following advantages:

- i. Property tax will be de-linked from the Rent Control Act.
- ii. All property holders, big and small, will have to pay tax according to the area of the property they hold (except hutment and small chawls houses).
- iii. The exemptions will come down and more properties will come under the tax net.
- iv. The large gap in tax between self-occupied and tenanted properties will reduce.
- v. The large gap between old and new properties will be reduced, bringing equity in assessment.
- vi. Properties in posh areas will pay more as compared to properties in poor areas.
- vii. Religious, charitable and educational institutions will pay less as compared to areas with high commercial potential.
- viii. There will be flexibility in increasing the tax rate every year.

After having adopted this new method, it was observed that the number of objection applications and number of tax appeals have reduced remarkably. Moreover, the percentage of recovery has also increased. Taxpayers can easily understand and calculate their own property tax.

Presently, taxpayers have to go to a specified ward office for payment of their Property Tax, Water Charges, etc. On implementation of ON LINE Application Module for property tax and water charge, taxpayers will be facilitated to pay their property tax, water charges etc., in any of the ward offices. The module would be implemented by 2008. Further, the facility would also be extended to City Civic Centres. The Web-enablement feature of this module of E-Governance Project will provide a facility for a taxpayer to view assessment structure, payment details, outstanding dues, etc. through the Internet.

ON LINE Application Module for property tax and water charge will be linked with the GIS system over the next five years i.e. by 2011, which would facilitate quick reference of related information. This will enhance the facility of planning for solving different complaints and promptly meet other needs of taxpayers. Collection of property tax, water charge, etc. will be through, once the confidence in payment system by E-Commerce is accepted widely in the country

6.4.4 Levy of reasonable user charges towards recovery of O&M over the next seven years

Water Charges: VMC incurs a huge amount of O&M expenses for water supply, storm water drains, roads and bridges etc. The cost recovery has been implemented only in respect of water supply and sewerage. The recovery on account of water charge and conservancy was much lower than the actual O&M resulting in cash deficit every year. In case of water supply, the cash deficit on account of O&M was Rs.12.52 crores. To reduce this deficit, VMC increased the water tariff from Rs.72 p.a. to Rs.90 p.a. This increase was not enough to get even 50% of the cash deficit. Moreover, year by year, there was an increase in the cash deficit. In the year 1996-97, VMC further revised the water charges by 100% from Rs.90 p.a. to Rs.180 p.a. VMC revised the water tariff again in 2003-04 from Rs.180 to Rs.360 p.a. Even then, in the year 2004-05, the total O&M expenditure was Rs.55.78 crores as against the recovery of Rs.19.48 crores, i.e. only 35%.

VMC has planned to revise this tariff from Rs.360 p.a. to Rs.600 p.a. i.e. achieve 60% increase in the present rate. The proposal for this revision will be included along with the budget proposal 2006-07. VMC also undertakes to revise the water tariff year by year gradually to meet 100% of the recurring O&M expenditure.

Sewerage Charges: VMC incurred a huge amount of O&M expenditure on account of sewerage. It was recovering the partial amount by way of conservancy tax up to the year 2002-03. The recovery was almost 75% to 80% of the total O&M expenditure up to 2002-03. Following the Corporation's introduction of Area Based Property Tax System in the year 2003-04, there was no room for separate levy of conservancy tax. At the same time, VMC has to incur a huge amount of O&M and capital expenditure on account of solid waste management.

The total estimated expenditure on account of conservancy and SWM are Rs.25 crores and Rs.30 crores respectively in the year 2006-07. The Corporation has planned to recover the cost gradually through door-to-door collection of charges from every person assessed. The levy of this new charge has been proposed in the budget proposal for 2006-07 and is estimated to recover at least 10% of the total O&M cost.

Street Lights: VMC is incurring huge amounts on providing street light service in the city. The estimated expenditure in the year 2006-07 is around Rs.12 crores. VMC is planning to introduce a new tax i.e. street light tax to gradually recover 100% of the O&M cost. It has already proposed the same in the budget proposal of 2006-07. VMC is expecting to generate about Rs.3 crores, which would meet at least 25% of the O&M cost. Gradually, revisions will be made so as to recover 100% of the O&M cost within the next five to six years.

Resource Augmentation by way of other charges

- a. VMC has a good number of open plots of its own. VMC plans to develop a party plot with a nominal capital expenditure, which could generate a good amount of revenue income.
- b. The kabadi market located at Fatehpura location known as 'Shukravari Bazar' is also the traditional market of Vadodara city. At present, hawkers are allowed to trade without any fees. VMC plans to track this by charging a token amount of fees for the entire day.

Similarly, VMC also plans to identify different areas of the city for week day and night bazaar in the notified hawking zones in order to increase revenues by way of hawking fees.

6.4.5 Internal earmarking within Local body's Budget, for basic services to urban poor

As per guidelines from the State Government, VMC intends to take up the work of basic services and infrastructure for the 'Urban Poor' area and allocate funds in each annual budget under each head of services.

As a pre-condition for funding under JNNURM, VMC needs to adopt the mandatory reform for urban basic service -- special internal earmarking of fund in the budget. To this effect, VMC has planned a total outlay of Rs.155.44 crores in the year 2006-07. The JNNURM Project requires VMC to make a provision of 30% in the 2006-07 budget as ULB'S contribution.

In the capital Budget 2006-07 (item 9), VMC has earmarked Rs.10 crores for basic services to the urban poor; the detailed work to be undertaken will be identified. This amount will be thus divided among the sectors: road & storm water drainage - Rs.4 crore; water supply works - Rs.3 crore; drainage - Rs. 2 crore and street lighting - Rs. 1 crore.

VMC has also made a provision of Rs.55.00 crores (under budget code D 0106605) in the proposed budget 2006-07. This is VMC's 30% contribution under JNNURM project works proposed for the year 2006-07.

6.4.6 Provision of Basic services to Urban Poor: Slums and Housing Activities

Industrial development and slums go hand in hand. These industrial areas further face problems regarding slums. Majority of the people working in the industries reside within the city limits, especially on government land, semi-government land, reservation areas, garden and open spaces marked in Town Planning schemes (T.P) and ULC land area on private property. The above areas thus lack access to basic infrastructure facilities, which is a cause of health hazards. These can be substantiated with the number of health problems arising from waterborne diseases and other types of diseases, which are caused due to lack of hygienic conditions. Priority therefore needs to be given to providing safe water while preparing for urban projects, as water is crucial to the health of its people and the environment.

VMC has a vast experience of more than three decades in rendering basic services to the urban poor; it has come out with different schemes for slums, namely low cost housing, EWS, LIG, MIG houses. VMC has already successfully commissioned 10995 houses before 2000.

Also, under the Central Government schemes, VMC has successfully completed 3492 EWS houses as against its target of 3500 houses, between 2002 and 2005, in different areas of the city in T.P reserve plots, ULC plots etc. The houses have been built well and appreciated. Each unit is priced at Rs 62,500 and has an area of 21.86 sq.m. These houses have access to all infrastructure facilities like water connections, sewerage connection, roads, streetlights, etc.

VMC has taken up more of such projects for 392 houses in T.P areas this year. The tenders for these projects have already been floated.

As per the National Government's agenda, VAMBAY targeted 3000 housing units, out of which work orders have been issued for 1054 units; these units are currently under planning. In this scheme, the criteria for EWS is Rs 50,000 per unit with a subsidy of Rs 25,000 from the government.

VMC intends to construct more than 5000 houses in the coming years for which 12,500 sq.m of land will be required; these will have access to all the basic services. The cost of constructing the houses would be only Rs 50 crores (excluding land cost). The plot requirement can be achieved through the following method.

1. VMC has finalised T.P schemes within the city limits; there are 16 plots with an area of 53584 sq.m of land, available for slums. This land can be used for the construction of approximately 2000 units.
2. VMC has proposed/drafted T.P schemes on which houses can be constructed. This can be useful only after the scheme is financed.
3. VMC needs assistance from the Government of Gujarat for the remaining houses; it needs an area of 7200 sq.m of land on which 3000 units can be constructed.

Slums development

With help and guidelines from of the regional and state government, VMC is undertaking and planning many activities for the slums. A separate department under VMC called the Urban and Community Development (UCD) department coordinates the slum activities.

The slum survey done in the year 2000 indicates that there are 337 slum pockets, of which 146 are on government land, 67 on municipal land and 124 on private land.

6.5 OPTIONAL REFORMS AT THE LEVEL OF VMC

6.5.1 Revision of bye laws to streamline the approval process for construction of buildings, development of site etc.

Any premise in the City of Vadodara is developed with reference to rules and regulations formatted as Gujarat Development Control Regulation - 1994 (GDCR-94) which are sanctioned under Government notification in Urban Development and Urban Housing Department No.GH/V/L71/OF 1996/DVP/1294/4036/L. Vadodara Urban Development Authority (VUDA), formed in 1996, publishes these regulations.

As the regulations were framed in 1996, the development process was planned as per that scenario and vision. After the passage of a decade and in view of the development in the interim period, the Development Control Regulation (DCR) requires modification. Some of the areas that need reforms are outlined below.

- I. GDCR Reforms
 - a. In nucleus area of the city
 - i. With the increase in congestion in the city areas, the minimum width required is 7.5 metres instead of 6 metres; the setback should be as per that i.e. minimum 3.75 metres instead of 3 metres.
 - ii. FSI in the city should be reduced from 3 to 2.
 - iii. No celler should be provided in the city.
 - iv. Within 500 metres radius of any building, a common parking plot should be acquired whereas individual shops must be allowed to construct without

providing parking facility; but at the same time, they must be charged for developing a common parking facility.

- v. Multilevel parking should be given weightage in city area.

Any complex or high rise building should not be allowed to be developed without parking facilities.

- vi. No high-rise building should be allowed in the nucleus of the city.
- vii. Any kind of parking area access must be provided with a width of minimum six metres.
- viii. If the building is abutting more than one road, whether setback relaxation to minor roads can be given or not would need to be reviewed.

b. Other areas (except nucleus-node) of the city

- ix. There is no clarity on the common plot provision in GDCR-94, with the exclusion of margin; thus it should be remitted.
- x. For road width restriction, on 12 metres and less than 12 metres width of roads, there should be only residential development.
- xi. Within road width restriction of 12 metres and 18 metres, only restricted commercial, non residential use should be allowed.
- xii. Beyond 18 metres width of road, all commercial and non-residential use should be allowed without restriction of height.
- xiii. Education use should be given importance on specified road width with specific reservations
- xiv. FSI terminology is fixed for node, nucleus and other areas; on wider road of 24 metres and above, higher FSI should be allowed for non-residential use.
- xv. For land compensation against road line, no monetary compensation should be allowed. Whether acquired or not, it should be open as a road line. Compensation may be given in terms of common plot with proper proportion e.g. 25% of road cutting area should be made available as exception from common plots provision, while a minimum requirement of common plot (i.e. 150 sq. mts) must be maintained.
- xvi. Projection in margin >3 metres is restricted to 1.2 metres; if that margin is >3 metres, it should be allowed for extra width with FSI consideration.
- xvii. Lift provision for high-rise building should be reviewed and a fire lift should be considered accordingly.
- xviii. In general, plinth height is fixed, but regarding high flood levels, as some areas of ground level are too low, plinth height would be much higher than the ground level. This point needs to be reviewed and finalised after proper consultation.
- xix. Regulations regarding height of floor must be mentioned in GDCR, as it is confusing at some stages, and therefore needs correction.
- xx. Sanitary accommodation in case of commercial buildings is to be specifically mentioned for general use. Also, there needs to be a special arrangement for physically handicapped persons.
- xxi. Parking provision must be reviewed, especially for commercial purposes wherein the owner's use and consumer's use must be specified. The percentage of car

parking provision has to be reviewed. Approach to parking should be a minimum of 6 metres.

- xxii. Even for health facilities, parking must be provided as per a commercial approach.
- xxiii. Nowadays, commercial shopping centres have centralised A.C. markets; therefore height relaxation for A.C. duct should be made with reference to high rise consideration.
- xxiv. Penalty for unintentional and unauthorised construction must be increased.
- xxv. In the residential zone, there must be limited educational institutions and hospitals. A party plot-community hall in the case of public function creates noise pollution in the surrounding residential areas, and must be restricted. Light industries that are allowed in residential areas need to be reviewed.
- xxvi. In non-obnoxious non hazardous industrial zones, 25% residential use must be reviewed or restricted in some other way. In that area, commercial use needs to be reviewed.
- xxvii. Built-up area for religious buildings needs to be reviewed.

6.5.2 Earmarking of Developed Land in Housing Projects For EWS/LIG category with a System of Cross-Subsidation

Overall, the land use pattern of residential and commercial development is considerable. However, industrial development has been on a decline for the past decade and a half. Some patches of the city that need urgent attention are Jambuva, Danteshwar, and Vadsar along with the low lying areas, where the ground level is significantly lower than the high flood level. It is therefore imperative for the authority to restrict the usage of residential and commercial zoning in these areas. However, specific purpose of land uses can be allowed, viz, recreational or community type development where permanent-building structures.

Regarding road network in the city, TP and non-TP areas must be interlinked. Where TP schemes are not proposed for any other road network, land acquisition should not be a problem and should be kept open throughout. The reservation for educational plots, recreational plots, IT industry, and agriculture zone should also be taken care of. Fire brigade station and public health centres must also be considered.

EWS Housing

At present, around 3,35,651 sq.m of reservation is provided in the final TP scheme, draft TP schemes and preliminary TP schemes. Around 7,00,000 sq.m of more land is to be reserved for making 25,000 houses for EWS; these would be taken up over the next few years.

6.5.3 Revision of byelaws to make rainwater harvesting mandatory in all buildings and adoption of water conservation measures

Storm water drainage has two major aspects -- flood protection and storm water discharge. Both these are closely interrelated. Storm water and flood protection in Vadodara have both a local and regional bearing. The main drainage system of the city collects water through natural Kaans, main drains and small rivulets, and discharges into river Vishwamitri.

The concept of recharging ground water through storm water is not popular in Vadodara. Action on this aspect could improve the ground water quality and increase the water table. The prime reforms required are the construction of percolating well, possible check dams and depression/lake design.

River Vishwamitri has uneven cross sections along its path through the city area, which often obstructs the storm water flow. Depending upon the design, an optimum uniform section along the full length of the river may be planned. This would ensure smooth and turbulent flow during flood. This would not only allow the flow of large quantity of storm water drainage, but would also reduce the retention time during the floods.

The storm water master plan proposes construction of various kaans, which disposes the wastewater into the river Vishwamitri. Also, in order to avoid accumulation of rainwater, the natural kaans also need to be levelled properly. Construction of the open channel is preferred over closed pipe drains.

At present, most of the kaans have insufficient section and slope, and some of them are even silted. Often it is found that these kaans are connected to the sewerage system. Illegal encroachment is also one of the big problems for the natural watercourses and removal of encroachment is one of the points on the pending agenda of VMC. Accumulation of storm water in kaans and sewage discharge is undesirable.

Presently, 25% of the city limit area is covered by storm water drainage network, which runs along a length of around 146 km. Therefore, there is an immediate need to provide storm water drains to the remaining 75% area of the city. Since this would require enormous financial and physical resources, it would be done in phases; the coverage would be increased to 50% by 2011 and to 100% by 2015.

6.5.4 Reuse of Sewerage and Waste Water

Vadodara city has five STPs with a capacity of 215 MLD, which are just capable of treating the present generation of sewage by the city. In the last few years, the sewage collection, conveyance and treatment system has been strengthened, which was not done for a long time. Also, plans and programs to cater the needs of 2021 are also ready.

The drainage system of Fatehgunj, Pratapgunj, MS University, University hostel and the area upto Shastri bridge, collects and delivers sewage to an auxiliary sewage pumping station (APS) at Narahari Hospital. Further from there, it is pumped to the Kalagodha APS, where sewage gets collected from the whole area of Sayajigunj, ST depot to Kalagodha circle, Fatehgunj road to Kalagodha and then conveyed to Ataladara STP. The conveyance system is very old and has insufficient capacity. Also, the Ataladara STP receives more sewage than its treatment capacity. As a result, the sewage of this area gets directly discharged into the river Vishwamitri without any treatment, thus polluting heart of the city, where the river Vishwamitri flows. It is therefore desirable to treat this sewage before disposing it into the natural watercourse. Hence, the setting up of STPs in Sayajigunj and Fatehgunj area has been proposed.

As proposed in the drainage master plan, a 6 MLD STP in Fatehgunj- Narahari Hospital area will solve the problem of insufficient sewage system capacity, and direct discharge of untreated sewage into river Vishwamitri on the one hand; on the other, it will provide reuse of the treated waste water.

The whole idea and concept behind the above scheme is that the wastewater after necessary treatment can be reused for gardening in Sayaji Garden. This garden requires around 1.5 to 2.0 MLD of water which can be met through the supply from STP. As a result, an equal amount of potable drinking water would be saved, which in turn could be supplied to citizens.

Design Parameter and Expected Output: The case was studied properly and the STP of 7.5 MLD is proposed in the backside area of Sayaji garden. The design parameters for the Sewage Treatment Plant are given below:

Above are the 90 percentile values. (Other parameters shall be as per GPCB norm)

Reused water shall be treated and chlorinated: The estimated project cost for the construction of 7.5 MLD STP, with Primary, Secondary and Tertiary (chlorination) treatment, is Rs 230 lakhs and for pressure line is of Rs 70 lakhs¹¹. The land required for the construction of the plant is around 3000 sq.mt.

Tenders for the treatment plant have already been floated; these are in the approval stage. On approval of the same, work shall commence on site and within one year, the STP would be ready to operate.

	Inlet characteristics	Desired characteristics of sewage after treatment
PH	6.5- 8	6.5- 8
S.S, less than	360 mg/lit	20 mg/lit
BOD, less than	260mg/lit	20mg/lit
COD, less than	550 mg/lit	100 mg/lit
Oil and Greece, less than	10 mg/lit	10 mg/lit

6.5.5 Administrative and Structural Reforms

VMC has a total strength of 11,195 personnel. The ratio of civic servant to the total population is around 100:1 i.e. one employee per 100 population. The details of employees as per the state government sanctioned posts are given in the table

Recruitment: With the object of cost cutting, VMC had adopted the Government policy for new recruitment; for the last five years, VMC did not carry out any major recruitment exercise. The recruitment details for the last four years are given below.

Class	Sanctioned	Total Employees
Class-I	45	27
Class-II	289	176
Class-III	3933	2858
Class-IV	9118	8334
Total		11195
Technical		2216
Non-Technical		8979
Total	13385	11195

Year	I	II	III	IV	Total
2002	4	7	20	225	256
2003	3	6	28	94	131
2004	2	2	19	168	191
2005	-	21	34	89	144
Total	9	36	101	576	722

Moreover, VMC had adopted the policy of recruiting the heirs of deceased employees and of those employees opting for voluntary

retirement schemes (VRS) on medical ground.

Heirs of deceased employees: In case an employee dies during the service tenure and he/she belongs to Class III or IV level of VMC, a job is offered to the heirs of the deceased employee by fulfilling necessary procedures. If the heirs are graduates, they are recruited at Class III level i.e. clerical level with a monthly adhoc remuneration of Rs.2500 for five years (probation). If the heirs are undergraduates, they would be recruited at Class IV level i.e. peon level with a monthly adhoc remuneration of Rs.1500 for five years (probation).

Heirs of employees taking VRS on medical grounds: The organisation had specified several diseases; if the employees suffering from such specified diseases took VRS on medical grounds, VMC offered job opportunities to their heirs as per the above clause.

¹¹ The plot is available with VMC and the cost of land is not considered in the costing.

Voluntary Retirement Scheme (VRS): So far, VMC had not adopted VRS as adopted by banks and insurance companies. However, employees are free to avail of this scheme without any extra benefits. VMC had not been recruiting for the last five years and several employees would get retired due to the age limit. As a result of their retirement, the establishment cost would reduce.

E-Governance: VMC had decided to carry out on-line computerisation of all procedures, which is expected to reduce several posts and cost of establishment; at the same time, it would increase value-added services to its citizens.

Structural Reforms: In the past, VMC has not made any major changes in its structural form; however, some minor changes such as the system of medical reimbursement has been changed after 20 years.

6.5.6 Water Supply Reform

VMC distributes around 250-270 MLD of water supply. This quantity is measured based on pumping capacity, as there is no direct measurement of flow anywhere on the source network. Today, it is very important to assess the quantity of actual water drawn from the source and distributed to the users. This is the first and the basic reform required for the water supply system.

With reference to this, VMC has planned to install measurement devices at source i.e., all French well namely Vasad, Raika, Dodka and Poicha. The installation of flow meters will help us in assessing the quantity of water pumped and thus the efficiency of pumps. Also, at the same time, it would be possible to know what modifications would be required in the pumping installations or trunk water supply lines. This would further reduce the cost of water production and also the operational costs to a great extent. The second and the most important advantage that can evolve from this reform is the utilisation of water that otherwise goes waste. The flow measurement can make it possible to quantify the loss of water. The assessment of loss can also lead to a refinement in the system.

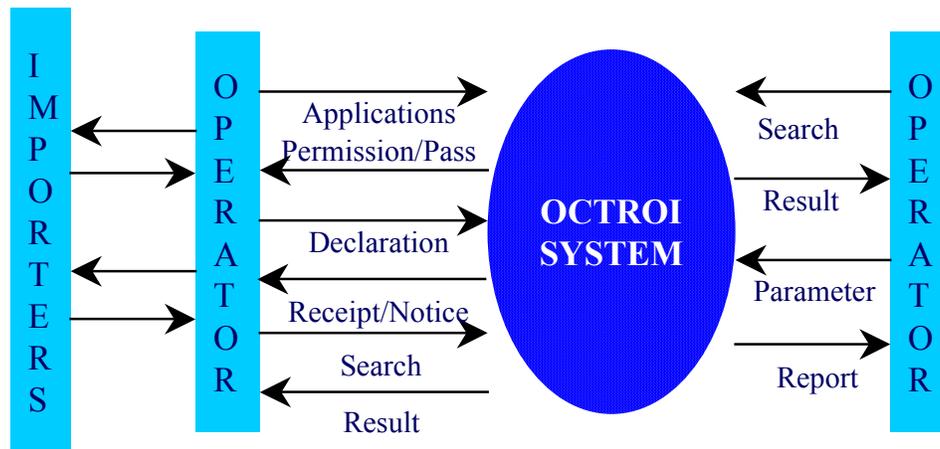
The cost of flow measuring devices can be controlled if proper rectification measures are taken. At present, VMC has invited tenders to install flow meters at source. There is also a plan to install flow meters at each distribution station in a phased manner with at least one flow meter in each distribution zone of OHT/booster station. The reform would be carried out by the end of 2006.

6.5.7 Taxation of Octroi

Octroi is levied when the importer conveys or introduces any articles, goods or things into the octroi limits of VMC. Octroi is levied under section 127 of the BPMC Act, 1949. Octroi rules are governed as per section 457 (7), 457 (17), 149 and 466 (1) of the said Act.

Presently, there are 22 nakas at the entry of Vadodara city limits for the collection of octroi. Four major octroi nakas have an offline-computerised system; the central office too is computerised. The computerised naka and the central office naka prepare receipts, no bill clearance, commodity wise collection report and other primary MIS reports.

The present system of collection of octroi is depicted below:



Administrative Reforms: Many importers and transporters are habituated to declare under invoicing or importing of goods, which they pack in closed vehicles and car dickeys and the like. The octroi department has introduced vigilance flying squads, which are well equipped with wireless systems and jeeps for transport. These squads are working round the clock and are empowered to check and detain any vehicle entering within the city limits. Transporters are compelled to go to the vehicle pool open delivery department in daytime. Open delivery verifies each and every octroi receipt and also counts articles declared by the transporters at the Octroi naka.

As per Octroi rule no 26 and 27, the octroi department is issuing notice to suspected parties and importers. Under this provision, different octroi vigilance teams are verifying books of accounts of firms or companies and recover octroi including penalty.

When the Mughal Bazaar Registered Transport scheme was operative, importers had the facility to pay octroi within 45 days from the import of goods inside the city. The importers were however getting the benefit and the VMC was at loss; as a result, this scheme was discontinued.

Technical Reforms: The octroi central office and Mangal Bazaar transport office were computerised in 1994. These two offices were able to print computerised octroi receipts and limited MIS reports like daily cash book and commodity wise reports. Subsequent to this, Chhani Naka was computerised in 1997, which was followed by Harni, Makarpura and Yammuna Mill nakas in 2002. Presently, all these computerised nakas are preparing octroi receipts and the necessary MIS reports.

Current Reforms: VMC has handed over online computerisation under the e-governance project of Octroi department along with various other departments, to a Hyderabad-based, software-developing, government undertaking company ECIL.

Under this e-governance project, 100% computerisation of octroi works is envisaged. Item-wise municipal minimum average values would be fed into the system. This would leave no scope for assessing the value of goods below the average value and would certainly lead to an increase in octroi revenue.

Presently, as per Octroi rule 28 and 29, the goods are exported out of Vadodara for repairing and job work purpose. The octroi naka operator can issue feria-pass to such export of goods and can help the exporter in evading the octroi. With the introduction of online computerisation, there will be better control of Rule 28 and 29. Every time a naka inspector has to feed data of goods exported and imported under this rule, the central office can monitor the specification of goods exported and imported in due time limit, which will stop the chance of octroi evasion at nakas.

Online computerisation will help monitoring transit goods. The naka operator would be required to feed entry time and exit time of vehicles carrying the goods. The Central office would monitor the time limit for this transaction.

Online software cannot be changed at naka level. Any deviation made by the naka clerk in the valuation will be displayed on the monitor of higher authorities. This will help to control the misuse of powers by the inspector.

The e-governance operation is expected to be completed by March 2006. Online computerisation of four major octroi nakas and the central office is likely to be completed by the end of January 2006.

Cost of octroi online e-governance is a part of a municipal e-governance project.

Expected Output: Presently, when goods are imported within the city through the octroi naka, the inspector has discretionary power to assess the value of goods. The Corporation has set a minimum average valuation value for many items. Sometimes the inspectors misuse their powers by assessing the value below the average. Online computerisation will restrict the discretionary power of the assessment officers. All the items would be assessed at average value or above average value as fed in the computer. This would definitely help to boost up octroi revenue. Higher authorities will be equipped with the necessary MIS reports to take corrective decision or action.

Management can view updated octroi receipt round the clock on the computer screen due to the online computerisation. On commissioning of e-governance, it shall provide the state-of-art facility to the importers and citizens at large.