Chapter VI: Vision and Strategies

Vision, Key Priorities & Sectoral Strategy Framework

Vision and Strategies

A vision statement was outlined for the Municipal Corporation of Vijayawada involving the various stakeholders consisting of Senior Citizens, Corporators, Mayor, Ex-Mayors, M.L.A.s, M.P.s, Industrialists, Environmentalists, N.G.O.s and officials in the visioning exercise.

Each stakeholder has suggested a key word that could represent his or her vision for the city. All the key words were listed and based on the common key words a few vision statements were proposed. After deliberating on all options, the stakeholders have selected one vision statement based on a consensus.

The following vision statement was adopted for the city of Vijayawada:

"A beautiful eco - friendly river city for all, providing high quality of civic services."

The vision statement outlines the cultural and historical past of the city of Vijayawada with Krishna River as the perennial source and a landmark of cultural heritage. The citizens of the city are committed to maintain the heritage and make the city eco friendly. They also foresee Vijayawada as a tourist attraction in the coming years.

The city of Vijayawada is also envisaged to be an inclusive city for all including the poor and the vulnerable. The poor and the destitute will be integrated into the main stream and disparity will be reduced. The city administration would be responsive to all and development will be given highest priority.

High quality civic services including continuous water supply to all, 100% sanitation, door-to-door collection of solid waste and good quality roads will be provided to all the citizens. This will not only enhance the productivity of the city but also contribute to the economic development of the city as a whole.

The Municipal Corporation of Vijayawada is committed to put the vision into practice.

6.1 Water Supply

6.1.1 Key Challenges

Based on the review of the current water supply scenario, the following key challenges are identified. The city including slum areas are in short of adequate water supply network and access to piped water supply. And moreover, there is a huge demand supply gap, which is likely to widen drastically in future. Lack of metering, age old and dilapidated transmission and distribution mains leading to high non-revenue water averaging to around 60%. O & M cost recovery of water supply is around 60%, which is very low. There is no comprehensive master plan in Water supply Scheme for Vijayawada for implementation of the scheme. The corporation has huge revenue due to insufficient number of connections and low tariff.

In the surrounding zones, water supply is around 6MLD as against the required 10 MLD. Even though these zones able to distribute 100 lpcd of drinking water as per norms, due to the absence of distribution mains in certain areas sufficient water is not being supplied to all parts of the city. The existing length of distributions mains is very low as against the requirement.

6.1.2 Goals and Service Outcomes

Taking the above challenges into consideration, the following goals for different horizon years have been identified. The water supply coverage and access to piped water supply in MCH area and surrounding municipalities needs to be enhanced to 100% by the year 2015. The per capita water supply should be maintained at 160 lpcd by increasing hours of supply to 12 hours a day by 2010, and subsequently achieve 24 hours a day by 2015. There is an urgent need to get down the Non revenue to 30% by the year 2010, 20% by the year 2015 and 15% by the year 2020 and 100% O&M cost recovery is achieved by the year 2010.

Table 6.1: Goals & Service Outcomes for Different Horizon Years

Sl. No.	Vision Outcomes		2005-06	2010	2015	2020
1	Coverage (%)	City	70	75	100	100
		Poor	20	60	100	100
2	Access (%)	City	27	75*	100	100
		Poor	NA	40	70	100
3	Hours of supply day	City	4	12	24	24
		Poor	4	12	18	24
4	Qty of Supply (lpcd)	City	157	160	160	160
		Poor	110	140	160	160

5	% NRW	60	30	20	15
6	Cost recovery** (% of O & M)	63	80	100	100
7	Water quality	Potable	Potable (WHO)	Potable (WHO)	Potable (WHO)

* The projections for the sharp growth is made on the assumption that since the distribution network is already available in most parts of the City, the issue is only one of mobilizing connections. The Government have recently come up with a policy on encouraging connections by lowering connection costs. The Policy is already having its impact, with nearly 10,000 connections mobilized in last three months.

** Vijayawada is fortunate to be situated on the banks of Krishna River, which ensures that water is abundantly available in the City itself. It was estimated that the total O & M cost of water supply in 2003-04 and 2004-05 was Rs 667 lakhs and Rs 705 lakhs respectively, while the revenue receipts were Rs 761.7 lakhs and Rs 837.7 lakhs respectively. This figure however excludes the investment done every year on remodeling or relaying old lines and other leakage reduction investments, apart from network expansion and other capital expenditures. A large extent of the City transmission and distribution network is very old and to that extent requires relaying in a phased manner, so as to reduce leakages and also ensure water delivery in the tail-end.

6.1.3 Strategies and Action Plan

Considering the current challenges and identified goals, a robust strategy for water supply is adopted to create a World class City. Detailed strategy is enclosed in the Annexure which covers policy level planning, reforms, institutional strengthening and service delivery aspects.

The following are brief outline of the projects taken up in the year I:

Comprehensive Water Sector Development Plan

To meet the future projected water demand for Visakhapatnam and surrounding municipalities, Corporation has to carry out studies and prepare a comprehensive water sector development plan.

Lowering the connection costs and simplifying the procedure

The connection costs are acting as an entry barriers, especially for the poor to enter into the water supply system. In addition to that, tedious documentation process further deteriorates the situation. To enhance the access to piped water supply system, Corporation proposed to reduce the connection costs and lessen the documentation procedures.

Unaccounted for water

The water supply pipelines laid in the city very old and need to replace them. But due to financial crunch, it has not been possible to fully replace all the old pipelines. The Corporation proposed to implement UFW reduction measures in all parts of the city as an immediate measure by conducting leak detection studies, rehabilitation of old pipe lines etc..

Removal of public taps and legitimizing illegal connections

By removing public stand posts and legitimizing illegal connections, corporation can achieve a

reduction in revenue loss to the extent of 5 – 10 percent in a short tem. This can be achieved within a period of 2 – 5 years.

Energy Audit Studies

VMC is operating high head pumping to provide water supply to the city leading to high power costs. The Corporation proposed to carry out a detailed energy audit of all the water supply pumping and distribution system to address the problems associated with energy.

Water Quality Studies and Monitoring

The existing water analysis can be upgraded in phases. The latest equipments may be purchased to upgrade the existing laboratories for analysis of chemicals and heavy metals. In further phase, water quality equipment may be installed online at storage reservoirs.

Design and Implementation of Communication Strategy

For successful implementation of any change management process, effective communication strategy among key stakeholders is proposed. The strategy will draw upon a range of communication channels, from interpersonal and group communication to mass media and electronic forms.

Human Resources Development

Widespread investments in the water supply sector without sufficient attention to human resource development results in poor sustainability of system. Recognizing the urgent need for capacity building at different levels in water supply sector, corporation proposed to develop human resources in their organization.

Establishment of Regulatory Authority

Currently VMC is responsible for policy, service provision and regulation of water supply, sewerage, solid waste management, drainage and transportataion which makes it difficult to regulate the quality of service provision. The corporation proposed to establish a regulatory authority to enable to facilitate, monitor and thus be able to deliver the benefits of universal household water service to the urban poor.

Modernizing Financial Management and MIS

The corporation proposed to modernize financial management by developing key performance indicators and identifying best practices to improve finances, organizations, and human capital practices. It is also proposed to take efforts on revising accounting, auditing, and internal control standards and computerizing customer databases.

Infiltration Galleries:

An infiltration scheme is being designed for capacity of 10 MGD at Ramalingeswara Nagar to serve the population of around 3.00 lakhs, major source for eastern part of the city. In this system water collected in infiltration galleries is supplying to the public by means of reservoirs and pumping directly after adding of chlorine without any further treatment. At present 3 MGD out of 10 MGD is drawing from infiltration galleries and supplying to the public with standards specified by CPHEEO manual.

On Going Water Supply Scheme (10 MGD)

The Corporation proposed to augment the regional storage reservoirs to satisfy the water supply needs of the public, covering the population of about 2 lakhs in Eastern, South Eastern parts of the city @ 140 LPCD. To feed the water to these proposed reservoirs source has been selected at Krishna riverbed in Ramalingeswara Nagar about 5 Kms. down stream of Prakasam barrage. An infiltration well of 8Mts. dia has been provided in the Krishna river bed to bring the ground water.

Proposal For 24 X 7 Water Supply:

Vijayawada Municipal Corporation proposed to feed the water to some identified areas round the clock on pilot scale basis to augment the revenue. The Corporation is also encouraging the consumers to take meter connections. Water supply connection for the below poverty line people has been given on spot for Rs.1200/- only. This amount can also be paid in instalments. French water club is associating with VMC for augmentation of water supply scheme in Vijayawada.

Other Water Supply Schemes:

At present Vijayawada Municipal Corporation is aiming to provide water supply facilities to the un-served areas on priority basis to have 100% water supply coverage. It is also proposed to replace the existing pumping mains, pump sets and other units to improve the operational efficiency of the system. In addition to that it is proposed to improve the quality of water by providing necessary quality monitoring units at various stages. It is also decided to convert the entire system of operations at Head water works with SCADA Networking system. Extension of lines, construction of distribution reservoirs, replacement of pumps etc., are considered in this project report to lift the services as financial sustainable and satisfying the customer by supplying qualitative water round the clock. In this connection, proposals to the tune of Rs.70.00 crores have been prepared for augmenting the water supply schemes in Vijayawada Municipal Corporation areas.

In addition to the above the Vijayawada Municipal Corporation has invited tenders for consultancy services for preparation of Master detailed document for Water Supply Scheme in Vijayawada. Bids are received and finalization of tenders is in progress.

6.2 Sewerage

6.2.1 Key Challenges

Analysis from the sewerage sector reveals that access to sewerage connections is very low in the corporation area and the neighbouring municipality, averaging to less than 10%. The percentage is much lower in slum areas leading to health related diseases. An enormous shortfall is noticed in the treatment of sewerage resulting in discharge of untreated sewage into water bodies thus polluting water bodies. Only 13% of the discharged sewage is treated and disposed. In addition to that, wastewater recycling and reuse is absolutely not existing. Majority of the households in the surrounding zones do not have sufficient space for the construction of toilets, which could possibly be resolved by providing underground drainage facilities.

6.2.2 Goals and Service Outcomes

Taking the above challenges into consideration, the following goals for different horizon years have been identified. The sewerage coverage and access in corporation area and surrounding municipality needs to be enhanced to 60% by the year 2010, 90% by the year 2015 and 95% by the year 2020. In slums areas, 80% of access should be achieved by the year 2015. By the year 2020, 95% of the wastewater should be treated and disposed and 50% of the wastewater should be recycled and reused. In addition to that, 100% O&M cost recovery is achieved by the year 2010.

"To enhance the coverage of safe sanitation facilities, following goals have been identified for different horizon years".

Table 6.2: Goals, Service Outcomes for Different Horizon Years

Sl. No.	Vision Outcomes		2005 - 06	2010	2015	2020
1	Network Coverage		30	80	100	100
2	Access (%)	City	10	60	90	100
		Poor	2	40	80	100
3	Treatment & Disposal (%)		10	50	100	100
4	Recycling/ reuse of waste water (%)		0	15	35	50
5	Cost recovery (% of O & M)		60	80	100	100

6.2.3 Strategies and Action plan

Considering the current challenges and identified goals, a robust strategy for sewerage is adopted to achieve 100% sewerage system. Detailed strategy is enclosed in the Annexure, which covers design and implementation of communication strategy and service delivery aspects.

The following are brief outline of the projects taken up in the year I:

Comprehensive Sewerage Master Plan

To meet the current gap and future requirements for Vijayawada and the neighbouring municipality, corporation has to carry out studies and prepare a comprehensive Sewerage Master Plan.

Energy Audit Studies

The corporation proposed to carry out a detailed energy audit of all the sewerage system to address the problems associated with energy.

Sewerage Quality Studies and Monitoring

The existing sewerage quality analysis needs to be upgraded. The latest equipments may be purchased to upgrade the existing laboratories for analysis of chemicals and heavy metals.

Design and Implementation of Communication strategy

For successful implementation of any change management process, effective communication strategy among key stakeholders is proposed. The strategy will draw upon a range of communication channels, from interpersonal and group communication to mass media and electronic forms.

Human Resources Development

Widespread investments in the sewerage sector without sufficient attention to human resource development results in poor sustainability of system. Recognizing the urgent need for capacity building at different levels in sewerage sector, corporation proposed to develop human resources in their organization.

On-Going Under Ground Drainage Sewage Schemes

Vijayawada Municipal Corporation has taken up sewage scheme in Eastern, SouthEastern parts of the city with 33.08 crores covering population of 2.00 lakhs within a vicinity of 900 Hectors of area. The whole scheme is divided in to 9 Sectors, out of 9 sectors 6 sectors has been taken up in phase-1 and 3 sectors are proposed to be taken up in phase-2. In this scheme two treatment plants has been completed and connected activities are completed and they are put in operation. In this scheme about 10000 house service connections are in process.

Proposed Schemes In Under Ground Drainage:

At present Western part of the city is not having Under Ground Drainage facilities. In this connection Vijayawada Municipal Corporation has entrusted the work of preparation of project report to the

private consultancy. The consultants have prepared documents duly covering 16 Wards of One Town area for 3 lakh present population with all connected components including sewerage treatment plants. The entire project cost is worked out for Rs.76.00 Crores.

To off set the various gaps mentioned above Vijayawada Municipal Corporation has proposed sewage schemes in unserved areas and re-modeling of the existing scheme. In this connection project proposals has been raised to the tune of Rs.134.00 Crores for providing 100% sewerage facilities to the city with sophisticated scientific treatment process.

Sewage Treatment Plant

Sewage treatment plants are proposed for the treatment of the remaining 128 MLD of sewage before disposal. The existing STP has utilizable capacity of 27 MLD. Two STPs of 10 MLD and 10 MLD at Auto Nagar and Ramalinganagar are put in to operational. All these STPs sum up for a capacity of 47 MLD of sewage. By 2011 and 2021, the quantity of sewage generated is estimated to be 94 MLD and 131 MLD respectively.

6.3 Storm Water Drains

6.3.1 Key Challenges

Analysis from the drainage sector reveals that 30% of the city lacks proper drainage system. The current network is inefficient and inadequate and majority of the drains are kutcha and narrow. Few areas in the city are frequently prone to flooding during heavy rains, encroachments, silting and solid waste dumping on the drainage channels. The drains empty themselves into the canals polluting the canals and also the environment along the canals. There are around 1120 km of drains in the entire city and 896 drain cleaners work for the operation and maintenance, which is in adequate resulting in poor quality of maintenance of drains. The surrounding zones doesn't have a comprehensive storm water drains system. The zones do not have proper drainage facilities and also the cleaning and maintenance of the open drains needs to be regularized.

6.3.2 Goals and Service Outcomes

Taking the above challenges into consideration, the following goals for different horizon years have been identified. The storm water network coverage in corporation area and the neighbouring municipality needs to be enhanced to 80% by the year 2010 and 100% by the year 2015. In slums areas, 60% of access should be achieved by the year 2010 and 100% by 2015. By the year 2015, 100% of the area should have pucca Storm water drainage network and 75% canal reclamation should be achieved by 2010 and 100% by 2015.

"To enhance the coverage drainage facilities, following goals have been identified for different horizon years"

Table 6.3: Goals, Service Outcomes for Different Horizon Years

Sl. No.	Vision indicators		2005-06	2010	2015	2020
1	Storm water drainage network – coverage (%)	City	60	80	100	100
		Poor	35	60	100	100
2	% Pucca network area total network (as per standards)	City	20	50	100	100
		Poor	10	40	75	100
3	Canal Reclamation (%)		5	75	100	100

6.3.3 Strategies and Action plan

Considering the current challenges and identified goals, a robust strategy is adopted to achieve 100% drainage system. Detailed strategy is enclosed in the Annexure, which covers design and implementation of communication strategy and service delivery aspects.

The following are brief outline of the projects taken up in the year I:

Primary Drain Rehabilitation and Improvement Program

The primary drains are inadequate to handle the flash floods as they are not systematically designed and are not fully constructed in some sections. A significant reduction in depth and width are noticed due to siltation and encroachment of drain bunds. To alleviate these, a rehabilitation and improvement program is recommended. The program would aim at the following:

- Improvement measures such as widening and deepening and construction of Sidewalls
- Construction of side walls to confirm to uniform cross-section in built up areas
- Diversion of drains at critical sections
- Construction of cross- drainage works

Drainage Rehabilitation Program

The flood prone areas identified are to be relieved of the problem in future by undertaking a drainage rehabilitation program. As a part of this program, the leading/connections between secondary and tertiary drains to primary drains have to be improved and strengthened. In addition, control of weed growth, limiting the dumping of solid and construction waste and controlling the growth of encroachments would be given top priority.

ULBs would desilt the primary drains and tertiary drains on a regular basis before the onset of the monsoon. The construction of new drains and connecting links would be taken up as a priority, along with strengthening of the existing drains with lining and sidewalls.

Improvement Works and Construction of Tertiary Drains

Construction of tertiary drains would be taken up on a priority basis. It is proposed to construct tertiary drains to all the major arterials and important roads to increase the coverage and also to convert the kutcha drains to pucca drains to facilitate proper draining of storm water into natural drains.

Protection of Environmental Resources

The first and foremost intervention is the protection of environmental resources. Protection of water bodies, waterways and open spaces from further encroachments would be carried out in a co-ordinated way.

Monitoring and Quality Control

Monitoring of water quality parameters would be conducted on a regular basis. ULBs would take up the responsibility of monitoring the parameters in the water bodies within its jurisdiction and would take preventive measures, if the results were above the permissible limits. The horticulture and urban forestry division of ULBs would devise pro-active strategies to limit pollution to water bodies within its limits and would co-ordinate with other agencies for monitoring the parameters in the other water bodies.

Regulatory Framework

Efforts would be directed at enforcing appropriate water pollution- related laws, ordinances, regulations, and corresponding enforcement responsibilities and procedures at the local level. This would be in accordance with the framework laid down by the 74th CAA. In addition the conservation measures would include

- Dredging and desilting
- Widening & strengthening of lake bunds
- Setting up sewage treatment plants
- Bund formation
- Regulation of inlet and outlet channels

6.4 Sanitation

6.4.1 Key Challenges

More often, the slums lack sanitary facilities particularly like the individual toilets. In addition to that, most of the public places and activity centers like markets, bus stands, railway stations, public offices and recreational places also lack adequate toilet facilities. The existing public toilets are not maintained properly and most of the toilets are provided in slum area and public pleases for movement population coverage. Inadequate public toilets in surrounding zones led to even more worst situation.

6.4.2 Goals and Service Outcomes

Taking the above challenges into consideration, the following goals for different horizon years have been identified. The public toilet coverage in corporation area needs to be enhanced to 80% by the year 2015 and 100% by the year 2020. In surrounding zones, 50% of coverage to public toilets should be achieved by the year 2015 and 75% by 2015.

Table 6.4: Goals, Service Outcomes for Different Horizon Years

Sl. No.	Vision Outcomes		2005 - 06	2010	2015	2020
1	Access to individual toilets	City	90	100	100	100
		Poor	50	75	100	100
2	Access to Community toilets	City	100	100	100	100
		Poor	75	90	100	100
3	Cost recovery/ User fee (% of O & M)		25	60	100	100

6.4.3 Strategies and Action plan

Considering the current challenges and identified goals, a robust strategy is adopted to achieve 100% sanitation system. Detailed strategy is enclosed in the Annexure which covers design and implementation of communication strategy and service delivery aspects.

6.5 Solid Waste Management

6.5.1 Vision

Vision

To protect the public health in providing solid waste management service to the citizens that are sustainable, environmental friendly with safe collection, transfer, treatment and disposal mechanism in place

6.5.2 Goals and Service Outcomes

Table 6.5 : Goals, Service Outcomes for Different Horizon Years

Sl. No.	Vision Outcomes		2005-06	2010	2015	2020
1	Door to door collection (%)	City	90	100	100	100
		Poor	80	100	100	100
2	Source segregation (%)	City	5	30	75	100
		Poor	0	10	30	75
3	Treatment & disposal (%)		70	85	100	100
4	Cost recovery (% of O & M)		5	50	80	100
5	Private sector participation		3 Projects	2 More	3 More	5 More

In order to achieve above outcomes, issues and deficiencies in each of the solid waste management component have been identified and the strategies for improvement both in physical and financial terms are elaborated in the following sections.

6.5.3 Strategies and Action Plans

Integrated Solid Waste Management

The local governments should effectively involve the private sector in delivering the solid waste management service. The rationale for private sector participation includes attracting project funding, new technology, cost savings and service delivery improvements.

Vermi-composting Plant by the VMC

Another alternative and effective solid waste treatment method suitable for the present situations is vermi-composting. The manure which is rich in Nitrogen, Phosphorous, and Potassium contents can be

used for the agricultural purposes. Vermi-composting is the best possible solution in the city as 70% of the solid waste is organic. As a remunerative venture, the local body can make 'wealth out of waste.

Bio-Methanation Plant by the VMC

Ministry of Non-conventional Energy (MNES) has proposed to set up 20 MT capacity Bio-methanation plant for power generation at Vijayawada with UNDP/GEF financial assistance. Accordingly, VMC has taken up a Biomethation plant for generation of power using 16 MT of vegetable market waste, 4 MT of abattoir waste and sweage sludge available from the existing sewage treatment plant.

320kVA capacity dual fuel Gas Engine will run for 20 hours per day and will generate 3255 kW of power a day. Out of this, 500 kW will be utilized for captive consumption and surplus power of 2700 kW per day is proposed for sale to the APTRANSCO.

Total project cost is tendered for Rs 3.04 crores. The above capital cost is being shared by MNES, GOI, New Delhi at 75% and Vijayawada Municipal Corporation with 25%. The project is being sponsored and monitored by MNES. Central Leather Research Institute, Chennai, has been appointed as technical consultant for this project. M/S Mailhem Engineers Private Ltd, Pune are contractors for this project.

6.6 Traffic and Transportation

6.6.1 Vision

Vision

To have efficient transport system in place by improving the public transport that is sustainable, safe, reliable, environmental friendly, cost effective and accessible to all including the poor

6.6.2 Goals and Service Outcomes

Table6.6: Goals, Service Outcomes for Different Horizon Years

Sl. No.	Vision indicators	2005-06	2010	2015	2020
1	Road network area/ total area (%)	13	18	21	25
2	% reduction average travel time	5	25	25	25
3	Share of Public transport (%)	17	25	34	40
4	Road / rail transport safety (%)	60	80	100	100
5	Pedestrian length to total road length (%)	0	5	10	10
6	Riding comfort (%)	40	60	100	100
7	Environmental pollution				
	1. SO_2	3.20 to 4.39	Normal	Normal	Normal
	2. NOX	35.50 to 59.20	Normal	Normal	Normal
	3. TSPM	179 to 335.04	200	200	200
8	Usage of Alternate fuels	CNG Pilot	CNG in all autos & buses	CNG in all autos & buses	CNG in all autos & buses

6.6.3 Strategies and Action Plans

Strategies for Planning, Reforms and Institutional Strengthening

Constitution and Operationalisation of Unified Vijayawada Traffic and Transport Authority (UVTA)

Formation of a Unified/ Integrated Vijayawada Traffic and Transport Authority (UVTAs) for Vijayawada Urban Agglomeration is the most essential step in promoting integrated land-use, transport development and achieve a balanced urban structure. UVTA will act as a singular authority in decision making and allocation of budget regarding all aspects relating to traffic and transport, thus resulting in greater co-ordination between different departments, efficient use of resources and greater quality of transport system in the city. This authority should be armed with overriding powers on subjects relating to transportation and have budgetary control. This authority will be responsible for development of guidelines for sustained development of Vijayawada urban region.

Comprehensive Traffic and Transport Study for the entire Vijayawada urban agglomeration

This strategy is aimed to come out with sustained solutions for the entire Vijayawada urban region as a unit that has financial and environmental viability. This also includes the current institutional analysis, policy, financial and service delivery issues.

Ring fencing of APSRTC / Railways

The agencies provide public transport for the region viz. APSRTC and Railways (in future providing MRTS/ Light rail) shall be ring fenced for effective financial and service delivery outcomes.

Strategies for Improved share of public transport

Dedicated bus lines with bus bays, increased fleet, frequency and improved signage

The National Urban Transport Policy (NUTP) emphasises on improving the public transport, as it is the sustainable solution for chronic traffic and transportation problems. Adequate bus fleet is one of the basic parameters for improving the public transport through roadways. The present fleet is far below the requirement (356), as per the GoI standards; which says that a city should have at least 100 buses per lakh of population. It is also mentioned that by 2020, this should go up to 250 buses per lakh population. Hence, increasing the bus fleet is considered as important strategy. This shall be followed by proper arrangements in place. Dedicated bus corridors with bus bays and terminals are other important strategies that will be taken up for improving the share of public transport as envisaged in the vision parameters. Signage improvement to streamline bus and pedestrian movements that improves safety is among short-term strategies.

Introducing light rail system

To address the increasing transportation demand, traffic issues and forecasting the future requirements and learning from other metropolitan cities in India and abroad, the VMC would like to take up Light Rail System (LRS)/ elevated MRTS project. The time frame to take up this will be based on the feasibility studies that would be taken up as part of JNNURM.

Strategies for Infrastructure improvement

Improving the existing roads

All the arterial, sub arterial roads and collector streets along with some stretches of highways will be widened as the traffic volume has surpassed the capacity even for the existing traffic. The priority list of the roads to be improved / widened and the improvement proposals are - Executive club – Auto Nagar (Gurunanak Colony Road), Pinnamaneni Road, Kummaripalem Jn. to Kanaka Durga Temple (NH-9), On Bandar Road (Hotel Manorama- Raghavaiah Park), Pushpa Hotel – Madhu Kala Mantapam, Vijaya Talkies – Nakkala Road, Chuttugunta – Ramavarappadu, KBN College Road (Kothapeta – Chittinagar), Temple to KR Market

Traffic signalling, signage and junction improvements

These are the areas of immediate intervention that can be implemented with marginal investments and where improvement in the performance can be felt.

Grade Separators

There are situations where even signalized intersections fail because of excessive queue lengths building up on all arms. In this situation choice of solution is limited to bypassing the traffic on one or more directions by grade separation. Typically this situation occurs when the total traffic volume of all the arms of the intersection is in excess of 10,000 vehicles per hour.

Parallel roads, Link roads

There are situations when alternative roads have to be developed to reduce the load on overburdened links. Finding space for such development is difficult in densely built up areas of the Urban Area. Only possible open areas for such purpose can be created from the vacant lands. Such a plan will have dual benefits of providing alternate routes and also help in non-encroachment of important lands. Link roads are proposed at the following:

- At the Government printing press one more parallel bridge is required to cater to the heavy traffic.
- The existing Gollapudi – Chittinagar road should be improved to reduce the traffic load on NH-9 to by-pass the city roads. The removed railway network of Satyanarayanapuram station may be used for this purpose.
- The proposed Flyover at milk project is prioritised for the development of the area towards Mailavaram.

Road widening

The widening of the roads where V/C (traffic volume/ carrying capacity of the road) ratio is more than one has been proposed on priority basis. However, in the long run the roads with 40 feet and above will experience increasing traffic loads, which would attract inevitably large volumes of traffic of all modes. It is therefore proposed to widen the important roads with heavy traffic, currently and envisaged in future.

Parking of vehicles

Considerable demand for parking of vehicles opposite to the areas of business is found. In order to ease the traffic flow, the parking operations are to be regulated. The open space in front of the shops should be paved and on street parking lot, facility to be provided and parking lots are to may be duly painted. A nominal parking fee will be collected in order to ensure orderly parking and also to discourage idle parking at the busy locations.

Strategies for improved pedestrian safety

Pedestrian crossings, FoBs/Subways

When mid block volumes are high across a high-speed corridor, a situation having potential to cause accidents to the pedestrians is created. As a significant proportion of the trips of up to 2 km in length are performed on foot and since pedestrians are more vulnerable for involvement in accidents, it is necessary to protect them through provision of Guard Rails, Zebra Crossings, and Pelican signals or through Grade separations.

Pedestrian guardrails

Considering the pedestrian safety at the intersections, and to ensure that the pedestrians do not spill over into the carriageway, pedestrian guard rails are proposed at the corners for a length of 50 metres on the arms of the intersection, and for some parallel flows along the road. By observing the pedestrian analysis data, it is desirable to have separate phase for pedestrian crossings at important junctions in the city for instance, at Alankar Theatre Junction and at some stretches in the Besant road.

The pedestrian load on the Besant road is very high; it becomes heavy at the time of festival season. Hence pedestrianisation of Gopala Reddy Road cross and other such busy shopping areas will be taken up.

Footpaths

At present, there are very less number of raised and paved footpaths to protect the pedestrian from vehicular traffic. Even on the busy roads, only earthen shoulders are provided. This not only creates traffic congestion but also exposes pedestrian to accidents. Hence, 1.5 to 2.0 metres wide raised and paved footpaths on either side will be provided at all the important road stretches.

Strategies for Environmental Upgradation

Strengthening the air quality and noise level monitoring, development of the green belts at all feasible locations, phasing out of the old vehicles, etc. are some of the important strategies considered for environmental Upgradation of the city w.r.t. traffic issues.

6.7 Poverty Reduction Strategic Plan

6.7.1 Vision

Vision

'To be a city without slums by 2021'

With about one fourth of the population in VMC and Mangalagiri municipality living in slums, urban poverty is a major issue confronting the VUA area. "***The vision of Vijayawada is to become a city without slums by 2021".***

Table 6.7: Vision and road map for basic services to urban poor

Sl. No.	Vision Outcomes	2005-06	2010	2015	2020
1	BPL Population (%)	40	30	15	0
2	Access to Schools (%)	55	80	100	100
3	Access to Primary Health Care (%)	40	80	100	100
4	Housing access (%)	20	60	80	100
5	Slums (% reduction)	112	65	20	0
6	Literacy (%)	69	75	85	100

6.7.2 Goals and Service Outcomes

- The goals formulated to achieve the vision are:
- All poor will have access to qualitative and affordable basic services;
- 100 % literacy;
- Universal access to primary health care and no one should die of preventable diseases;
- Livelihood to all urban poor.
- Tenurial security and Affordable Housing
- The strategy formulated for reducing poverty includes:
- Provision of land tenure security
- Community empowerment
- Linking livelihoods to city's economy
- Development of housing through partnerships - PPP
- Formulation of Notification and Denotification Policy
- Relocation of slums located in hazardous and vulnerable Areas
- Provision of basic infrastructure - both physical (water, roads, sanitation and sewerage) and social infrastructure (clinics, schools, training facilities, etc).

6.7.3 Strategies and Action Plans

Development of a comprehensive database

Having a comprehensive and authentic database is the first step to take up any developmental action. Hence a database covering all aspects of slums and the will be initiated.

Land tenure

This is an important decision that is key for any slum improvement that is sustainable. The state government is keen on providing housing on a large scale to the poor under different tenure and housing related welfare schemes like Rajiv Gruhakalpa, etc. the VMC shall negotiate with the state government and the concerned departments to take up housing and tenure issues in a big way.

Provision of infrastructure for providing basic services

Infrastructure deficiency is one of the major concerns of slums for which the poor are more vulnerable. Extreme poverty is experienced by the poor in accessing safe and reliable basic amenities. The VMC is committed to establish the required infrastructure for the provision of basic services to the poor.

Institutional arrangements for convergence of programs

VMC shall negotiate with the state government and related agencies in bringing effective convergence in the poverty related developmental programs.

Water Supply Sector -Strategy (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Planning, Reforms and Institutional Strengthening	Comprehensive Water Sector Development Master Plan	√	√	√				
	Lowering the connection costs	√	√					
	Lessening the documentation process	√	√					
	Energy Audit Studies	√	√	√				
	Water Quality Studies and Monitoring	√	√	√	√	√	√	√
	Design and Implementation of Communication Strategy	√	√	√	√	√	√	√
	Baseline Survey		√					
	Human Resources Development	√	√	√	√	√	√	√
	Establishment of Regulatory Authority*	√	√	√	√	√	√	
	GIS Mapping of Water and Sewerage Utility Mapping		√	√	√	√	√	
	Community Initiatives Support		√	√	√	√		
	Modernising Financial Management and MIS	√	√	√	√			
	E-Governance		√	√	√	√	√	√
	Introduction of civic representatives in the corporation		√	√				
	Private Sector Participation		√	√	√	√	√	√
	Ring fencing the accounts / finances				√	√		
	Tariff transition plan to recover the O&M costs		√	√	√	√	√	√
	Improved bill collection efficiency	√	√	√	√	√	√	√
Service Delivery	1. Covering all households with taps	√	√	√	√	√	√	√
	2. Continuous water supply (24X7)							
	a) Pilot area	√	√	√	√	√	√	√
	b) One OHSR	√	√	√	√	√	√	√
	c) Remaining Areas	√	√	√	√	√	√	√
Water Resource Management	1.Non Revenue Water							
	a) Leakages in trunk and distribution mains	√	√	√	√	√	√	√

Water Supply Sector -Strategy (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
	b) Leakages in distribution network	√	√	√	√	√	√	√
	c) Valves at open ended connections	√	√	√	√	√	√	√
	2. Metering							
	a) Individual houses	√	√	√	√	√	√	√
	b) Bulk metering	√	√	√	√	√	√	√
	3. Mechanization and Modernization	√	√	√	√	√	√	√
	4. System Expansion							
	a) Existing Network Rationalisation and expansion (corp. & Zones)	√	√	√	√	√	√	√
	b) Source augmentation and netwrok laying (corp. & Zones)	√	√	√	√	√	√	√
	c) Additional Storage with inlet and outlet mains (corp. & Zones)	√	√	√	√	√	√	√
	c) Refurbishments in the corporation	√	√	√	√	√	√	√
	c) Refurbishments in the surrounding zones	√	√	√	√	√	√	√
	d) Energy Conservation measures (corp. & Zones)	√	√	√	√	√	√	√
Governance	1. O & M of Water Supply system							
	a) Motor & Electrical repairs and upgradation	√	√	√	√	√	√	√
	b) Distribution network reforms rationalization	√	√	√	√	√	√	√
Citizens Relations Management	Citizen feedback mechanisms to be established	√	√	√	√			
	Complaint redressal made robust	√	√	√				

* The water regulatory body is not of immediate necessity in smaller cities like Vijayawada, unlike Hyderabad, though it would become necessary as the City expands.

Sewerage Sector - Strategy (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Design & Implementation of Communication Strategy	Comprehensive Sewerage Master Plan	√	√	√				
	Energy Audit	√	√					
	Sewerage Quality Studies and Monitoring	√	√	√	√	√	√	√
	Design & Communication Strategy	√	√	√	√	√	√	√
	Human Resources Development	√	√	√	√	√	√	√
	Community Initiative Support	√	√	√	√	√	√	√
	Private Sector Participation		√	√	√	√	√	√
	Ring fencing the accounts / Finances				√	√		
	Tariff transition plan to recover the O&M costs		√	√	√	√	√	√
Service Delivery	1. Household Coverage	√	√	√	√	√	√	√
Sewarage Treatment & Management	1. Distribution network expansion	√	√	√	√	√	√	√
	2. New pump-cum-sump houses (PCSH) & Network	√	√	√	√	√	√	√
	3. New Sewage Treatment Plants (STP)	√	√	√	√	√	√	√
	4. Remodeling of old sewer lines							
	a. Trunk mains	√	√	√	√	√	√	√
	b. Distribution mains	√	√	√	√	√	√	√
	5. Repairs & upgradation of motors in STPs & PCSHs	√	√	√	√	√	√	√
	6. Upgradation of Sewage Treatment Plants	√	√	√	√	√	√	√
	7. Augmentation of existing transmission mains	√	√	√	√	√	√	√
	8. Mechanization and Modernization	√	√	√	√	√	√	√
	9. Canal Reclaimation	√	√	√	√	√	√	√
	10. Storm Water Drains	√	√	√	√	√	√	√
	11. Recycling Plant & Reuse		√	√	√	√	√	√
	12. Energy Conservation Measures		√	√	√	√		

Storm Water Drainage System - Strategy to achieve Vision and Goal (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Capacity Building	Identification of Problem Areas	√	√	√				
	R& R Planning	√	√	√	√	√	√	√
	Desilting action plan	√	√					
	Comprehensive Drainage Master Plan	√	√	√				
Primary Drains Rehabilitation	Desilting & Removal of Weeds	√	√	√	√	√		
	Removal of encroachments	√	√	√				
	Widening & Deepening	√	√	√	√			
	Construction of side walls & Lining	√	√	√	√	√	√	√
	Diversion of drains		√	√	√	√	√	√
	Construction of cross-drainage works	√	√	√	√	√	√	√
Construction of Secondary & Tertiary Drains	Desilting & Removal of Weeds	√	√	√	√	√		
	Drains on major arterial roads	√	√	√	√	√	√	√
	Drains on interior roads	√	√	√	√	√	√	√
	Removal of encroachments	√	√	√				
	Conversion from kutcha to Pucca	√	√	√	√	√	√	√
	Rehabilitation of flood prone areas		√	√	√	√	√	√
	Rehabilitation of Nallas & Musi Riverbed Improvement	√	√	√	√	√	√	√
	Conservation of Lakes	√	√	√	√	√	√	√

SANITATION - Strategy (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Planning, Reforms and Institutional Strengthening	Design and Implementation of Communication Strategy	√	√	√	√	√	√	√
	Baseline Survey		√					
	Human Resources Development	√	√	√	√	√	√	√
	Community Initiatives Support		√	√	√	√		
	E-Governance		√	√	√	√	√	√
	Private Sector Participation		√	√	√	√	√	√
Service Delivery	Providing Community Toilets	√	√	√	√	√	√	√
Citizens Relations Management	Citizen fedback mechanisms to be established	√	√	√	√			
	Complaint redressal made robust	√	√	√				

Solid Waste Management Sector - Strategy to achieve Vision and Goal (2005-2012)									
Component	**Activity**	**Institution**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
Service Improvement	Communication Campaigns	ULBs	√	√					
	Training of functionaries		√	√	√	√	√	√	√
	Source Segregation		√	√	√	√	√	√	√
	Door to Door Collection		√	√	√	√	√	√	√
Solid Waste Management	**1. Development of Disposal Facilities**								
	a. Development of scientific sanitary land fill		√	√	√	√	√	√	√
	b. Bio-Methanization plants for organic waste		√	√	√	√	√	√	√
	c. Vermi compost plants		√	√	√	√	√	√	√
	2. Transportation								
	a. Closed dumper bins		√	√	√	√	√	√	√
	b. Conversion of vehicles to CNG		√	√	√	√	√	√	√
	c. Procurement of refuse compactors		√	√	√	√	√	√	√
	3. Setting up of transfer stations and Vehicle Depot		√	√	√	√	√	√	√
	a. GPS system in vehicles		√	√	√	√	√	√	√
	b. RFID Tags		√	√	√	√	√	√	√
	c. Bio-Metric encryption in attendance		√	√	√	√	√	√	√
	d. Mechanization of Vehicle Depot		√	√	√	√	√	√	√
	e. Road cleaning Machines		√	√	√	√	√	√	√
Governance	**1. O&M for SWM**								
	a. Repairs to Vehicles		√	√	√	√	√	√	√
	b. Providing Weigh Bridges for quantity assessment		√	√	√	√	√	√	√

Traffic and Transportation Sector - Strategic Action Plan (2005-2012)									
Component	Institution	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Planning, Reforms and Institutional Strengthening	State Government	**Constitution and Operationalisation of Unified Vijayawada Transport Management Authority (UVTA)**	√	√	√	√	√	√	√
	ULB	**Comprehensive Traffic & Transportation Study for entire Vijayawada region**	√	√					
	State Government	Ring fencing APSRTC Vijayawada region		√	√	√	√	√	√
	ULB	Transport Assets and utilities mapping using G.I.S. Technology		√	√	√	√	√	
	ULB, Police dept.	Design and Implementation of IEC campaign for improved traffic awareness		√	√	√	√	√	√
	ULB	Capacity building initiatives for better traffic management		√	√	√	√	√	√
		Introduce congestion pricing for private sector during peak hours		√	√	√	√	√	√
		Differential parking fee		√	√	√	√	√	√
		Auto restricted zones/ pedestrianisation		√	√	√	√	√	√
		Surcharge for other state/ city vehicles imposed		√	√	√	√	√	√
		Enforced cellar parking regulations	√	√	√	√	√	√	√
	APSRTC	Increasing the bus fleet	√	√	√				

Traffic and Transportation Sector - Strategic Action Plan (2005-2012)									
Component	Institution	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
through improved share of Public Transport (Bus, MMTS & MRTS)	ULB, APSRTC	Provision of bus bays in all feasible locations including signage	√	√					
		Signage improvement at bus bays to streamline bus and passenger mobility	25%	75%	90%	95%	95%	95%	
		Development of bus terminals at CBDs and growth centres		√	√	√	√	√	√
		Dedicated line for bus carriage way (arterial and sub arterial roads)							
		Land acquisitions for providing dedicated lines		√	√				
		Development of required infrastructure (signage, signal system, separators, etc.)	√	√	√	√			
		Formulation and Operationalisation of the dedicated lines (% completed of the total corridor planned)			25%	50%	75%	100%	
	Railways/ ULBs	Introducing Light Rail System				√			
		Introducing elevated MRTS						√	
Improved Safety, Service delivery and Customer Satisfaction by providing better infrastructure	VGTM UDA & ULB	Strengthening existing roads	Initiated	25%	50%	100%			
		Road widening (number of roads)	5	5	5	5	5	5	5
		Junction Improvements	√						
		Traffic Signals	√	√					

Traffic and Transportation Sector - Strategic Action Plan (2005-2012)									
Component	Institution	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		Flyovers (number)	1	2	2	2	3	5	5
		Signage and markings	√						
		Street Lighting		√	√	√	√	√	√
		Parallel Roads, slip roads, new links - 42km		√	√	√			
		Truck Terminals - 5 nos.		√	√				
		Provision of valet parking in shopping areas	√						
Improved Pedestrian Facilities, comfort and safety	ULB	Improved accessibility to the disadvantaged & physically challenged	Mountable kerbs and footpaths	Zebra crossings at al junctions					
		Pedestrianisation	4 roads	Shopping districts					
		Subways/ FoBs	√	√	√				
		Pedestrian crossings	√	√	√				
Environmental upgradation	APPCB	Reduction of air & noise pollution	Campaign to use CNG	Shifting of wholesale market to outskirts					
	ULB/ VGTM UDA	Development of green belts	Main roads	Side roads	Lanes				
	ULB/ APPCB/ RTA, GoAP	Strengthened vehicular monitoring for environmental improvement	√	√	√	√	√	√	√

Traffic and Transportation Sector - Strategic Action Plan (2005-2012)									
Component	Institution	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		Phasing out old vehicles causing pollution	√	√	√	√	√	√	√
Finance	ULB, state government	Constitution of Urban Transport Development Fund		√					
		Loans/Bonds	√	√	√	√	√	√	√
		Annuity Based arrangements		√	√	√	√	√	√

Poverty Sector - Strategy (2005-2012)								
Component	**Activity**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
	1. Development of database	√	√	√				
	2. Reforms related to land tenure	√	√	√	√	√	√	√
Governance	3. Institutional arrangement for better convergence of poverty related developmental programs		√	√				
Service Delivery	1. Existing Slums							
	a) Water supply provision	√	√	√	√	√	√	√
	b) UGD	√	√	√	√	√	√	√
	c) Storm water drains	√	√	√	√	√	√	√
	d) Internal roads	√	√	√	√	√	√	√
	e) Street lights		√	√	√			
	f) Community toilets	√	√	√	√	√	√	
	g) Civic amenities	√	√	√	√	√	√	√
	2. Construction of flood banks for river and budameru.	√	√	√	√	√	√	
	3. Improving the infrastructure in the existing slums.	√	√	√	√	√	√	
	4. Acquisition of land for housing		√	√	√	√	√	
	5. Development of integrated housing colonies	√	√	√	√	√	√	√