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**Urban Indicators
and
Performance Measurement Program**

**A pilot of ten cities of Gujarat
(2000-2001)**

**Report
August 2001**

**City
Sectoral
Analysis &
Graphs**



**City Managers' Association Gujarat
Ahmedabad
India**

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and
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Final Report
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Program supported by
International City/County Management Association, Washington DC Under
the United States Agency for international Development Contract



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Mission statement

In order to nurture excellence in local governance and improve the quality of life of the citizens, CMAG will strive to build professional management capacity with in urban local bodies and will strengthen and promote them as centers of opportunity, leadership and governance.

City Managers' Association (Gujarat)

The City Managers' Association was formally registered on 2 September 1997 under the Societies Act 1860 and the Bombay Public Trust Act, 1950. It has been set up with the intention of providing support to the city governments in facing the complex problems of growth by building up the house capacity and expertise to tackle them. It also seeks to give recognition to the role of urban managers and need for their specialized training. As a forum, it seeks to articulate city governments' concerns to the higher levels of government.

The broad objectives are:

- 1 Information Exchange and dissemination on urban issues, best city management practices, technologies, cross country management experiences through publications (newsletters, manuals, books), workshops, seminars and audio-visual media.
- 2 Training Skill Upgradation for professional development through workshops, seminars, short training programs and overseas training
- 3 Advocacy, by raising the sensitivity of state and central governments to urban issues

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We are grateful for the support all the city commissioners, chief officers and all the staff for making the data available to us. It was a stupendous task for us as well as for them to help us put the data in a format comparable to each other, especially when we do not have a uniform method of keeping data. The account codes are dissimilar in all the corporations and so are the formats in the budget books.

However, despite all the difficulties, we are happy that the ten cities of Gujarat state have been analyzed and an attempt made to rate them on a scale. This has to be seen as a pilot project. I would like to state here that the thrust of the program has been on developing the methodology and approach for research. While making a presentation to the state level gathering of the findings, a sense of competition among the cities filled the air. City officials themselves compared technologies, the costs of providing the service, etc, and tried to understand their scores. Discrepancies in the data were an issue, which most of the participants agreed to. Significant fallout of this program is realization of an urgent need for uniform accounting codes and an information system for the services provided by the municipal bodies.

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The UIPM report, database and presentation is also published electronically as a CD, and is also made available on the website.

Ahmedabad
25th August 2001

Manvita Baradi
Director - Programs

Chapter 1

Introduction

1.1 Background

Our cities are growing at a tremendous rate. Urban local bodies are taking a number of policy measures to control and divert this development into a suitable and better living environment. But the information crisis and lack of systematic appraisal of urban problems is hampering their capacity. Moreover, there is little appreciation of what their own remedial programs and policies are achieving. The decision makers generally rely on disaggregated raw data that are of little value in taking decisions. Even though statistics may be based on data that have been verified, classified and adjusted, their relationship to policy outcomes may still be difficult to understand and apply.

Existing tools for urban policy are largely inadequate in providing an overall picture of the city and how it works. In order to devise effective policies, the decision makers need to rely on a set of measures that point to specific urban phenomena such as service levels, access to services (service coverage), efficiency in service provision, and financial performance with respect to revenue sources, efficiency in resource mobilization and utilization, etc. How we anticipate, recognize, measure and interpret urban problems and how we respond to them in policy will determine the overall sustainability of human development.

There was a felt need of some standards to provide an overall picture of the city and how it works. Such measures could be in the form of Urban Indicators, which are variables or functions of several variables that measure particular real world phenomena. Indicators assist in analyzing trends and impacts of policies. Indicators reflect the trend of development and also provide quantitative and qualitative information.

Few selected indicators from among the total list of indicators, termed as performance indicators, have been employed for performance measurement of a municipal body. Performance can be measured over a period of time (which is essentially **self assessment**) or it can be a comparative performance measurement among the municipal bodies. The indicators can be measured against **absolute** (comparison with standards) or it can be a **relative** measurement (comparing within the ULBs).

Hoping performance measurement across urban local bodies will help to set benchmarks among them in the sectors of service level, coverage and efficiency.

Concept of Benchmarking

Benchmarking, as a tool has been consistently used by the private sector to assess performance and how the organisation has performed against its goals. Most common application of this tool in the private sector is budgeting and resource allocation decisions. Public sector, on the other hand, does not have any commercial arrangement between the provider and the consumer of the services, and concept of benchmarking in urban local governments is relatively new. Benchmarking techniques enable performance measures and also the lacunae in the existing system. It is a well-established practice in the international arena and so the experience, as well as success stories are available in international scenario. In India, however, much work hasn't been done and the techniques are being explored. The techniques need to be adapted to the Indian context; system of ratings and weightages need to be developed for local conditions.

1.2 Context of the UIPM Program

Urbanisation

In the past decades, major developments as well as growth, has been primarily concentrated in the urban areas. The urban growth rate is about 1.5 times the average growth rate for the country. Population of Gujarat increased from 20.6 million in 1961 (when the state was formed) to 41.3 million in 1991. It accounts for 4.93% of the country's population. The state, which is the seventh largest in the country, has emerged as one of the most industrial and consequently urbanized states over the past three decades.

Over 34% of the population lives in urban areas. Urbanisation levels from 1961 to 1991 are shown in the following table.

Urbanisation Levels and Growth Trends

Year	Gujarat		India	
	Urban Pop. (in Millions)	% of Urban Population	Urban Pop. (in Millions)	% of Urban Population
1961	5.31	25.74	78.9	18.0
1971	1.49	28.06	109.1	19.91
1981	10.60	31.10	159.5	23.70
1991	14.24	34.47	217.2	25.71

Source: Census of India and study estimates.

Gujarat has 143 Municipalities and 6 Municipal Corporations

The increasing trend of urbanization has resulted in a sudden rise in the number of slums, as well as increased stress on the city infrastructure and resource base. The development needs to be complemented with provision of adequate, reliable and better basic infrastructure services for the existing as well as the incremental population. With urban areas becoming attractive centers of investment, the

demand for better services has increased manifold. And the first step towards solving the problems is 'self assessment'. The cities first need to understand their present situation; quantify the lags in the system; identify the benchmarks and plan to achieve them. In this context, a powerful tool for self-assessment can be Urban Indicators. A few indicators can be used for performance measurement. It would have twofold benefits - 1) Performance indicators can help to set the benchmarks and 2) The cities can examine themselves in comparison to the peer cities.

Urban Management has traditionally been more need based with short term objectives. The policy makers have come to rely on disaggregated raw data that is of little value, and usually leaves a host of problems unexposed and untouched. There has been no serious attempt at collecting the required data, much less processing and analyzing it. In order to devise effective policies and improve urban management, local governments need to build on a set of urban measures that point to specific sector of delivery and quality issues.

The Changing Scenario

Over the last decade, several major developments have enhanced the role and functions of local governments in urban development. The 74th Constitutional Amendment Act has both given a constitutional status to urban municipalities and enhanced their functions. At the same time the municipalities also have an increased access to institutional finance. Civic services such as water supply, sewerage and sanitation, solid waste management, roads, storm water drains, streetlights and slum development, etc., are obligatory services of the local body. With increasing emphasis on local level financial viability and the gradual entry of the private sector in providing local services, the issues of efficiency in service provision becomes crucial - more so with regards to costs of provision of services and efficiency in terms of utilization of manpower.

It is in this context of increasing independence, responsibilities as well as powers to the urban local bodies, and in a world where "information is power", that CMAG has started this program of ***Urban Indicators and Performance Measurement***. The project aims at providing urban local bodies, decision makers/implementation agencies with an analytical tool, which would enable effective planning and decision-making. The study seeks to analyze the situation of the urban local body with regards to financial situation and service delivery. The indicators have been developed to determine service levels, service coverage and its costs and efficiency. Rating of various services and a comparison of municipalities are done, based on indicator framework. The long-term objective of the study is to develop a management information system to collect and document the data in the required format, which would enable continuous monitoring of performance over time in a municipal body as well as comparison with other urban local bodies. The study would also heighten sensitivity and awareness of stakeholders towards urban management issues and create a healthy competition to improve performance. The program is supported by International City/County Management Association (ICMA), Washington DC under the USAID Contract.

1.3 Approach

CMAG has formed a Technical Advisory Committee (TAC) comprising experts from ICMA, USAID, FIRE (D), Academic Institutions, State Government bodies and Class I Municipal Officials. The first meeting was held on 27th April 2000, where the objectives and approach to the program was decided upon and also specific indicators were finalized from a comprehensive list of indicators (compiled from various national and international sources) circulated to the members.

Core infrastructure services and municipal finance were identified as thrust areas for the first phase of the program. Few health indicators were also listed. Six corporations and class I municipalities were selected for the first phase. A structured questionnaire (formed with the help of TAC committee) was mailed to all the sixteen urban local bodies. However, rigorous follow up had to be done with municipalities and municipal corporations to collect the required information. In many of the cases, personal visits were made for data collection. In cases where there were many data-gaps, municipalities were approached again for the details.

Process

Jan-March 2000	Literature review of similar exercises conducted in the country and abroad
April 2000	First Technical Advisory Committee (TAC) meeting,
May-June 2000	Discussion and finalisation of questionnaire
July 2000	Dispatch of English and Gujarati Questionnaire to respective ULBs
July-December 2000	Rigorous follow up on data collection, data entry, data analysis including orientation visits to smaller cities
Jan 2001	First Cut Analysis of the ten pilot cities
March 2001	Presentation of the first cut to the experts at the National conference on Urban Indicators organized by Tata Energy Research Institute (TERI) New Delhi
April-June 2001	Discussion with TAC members, Verification of the data, Finalisation of indicators, Assignment of weightages, Preparation of a software, "City Manageware" to graphically represent the ratings among ULBs and Preparation of a presentation.
30 th June 2001	Presentation of the UIPM program and the analysis to the Urban local bodies of Gujarat and the State Govt. and NGOs in the workshop organized by CMAG .

The process still continue.

The following urban local bodies were selected for the first phase of study.

Municipal Corporations

1. Ahmedabad Municipal Corporation
2. Bhavnagar Municipal Corporation
3. Jamnagar Municipal Corporation
4. Rajkot Municipal Corporation
5. Surat Municipal Corporation
6. Vadodara Municipal Corporation

Municipalities

1. Anand Municipality
2. Bharuch Municipality
3. Gandhidham Municipality
4. Navsari Municipality

Timely response from the following municipalities was not received

5. Nadiad Municipality
6. Surendranagar Municipality
7. Veraval Patan Municipality
8. Patan Siddhpur Municipality
9. Junagadh Municipality
10. Porbandar Municipality

The questionnaires were sent to all the above-mentioned municipal bodies, however, from among the nine municipalities, only four municipalities, namely Anand, Bharuch, Gandhidham and Navsari, gave the data in the scheduled time frame. Data was received from all the six municipal corporations. Thus, in this phase of the program, data compilation and analysis has been carried out for ten cities of the state.

In the present phase of the program, performance has been measured based on few indicators. It is a comparative performance among the cities.

Benchmarking will be attempted after a time series data is collected.

1.4 Objectives

UIPM program aims to address issues in urban governance, specifically in core infrastructure and municipal finance for achieving better understanding and control over it. Specific objectives of the program are;

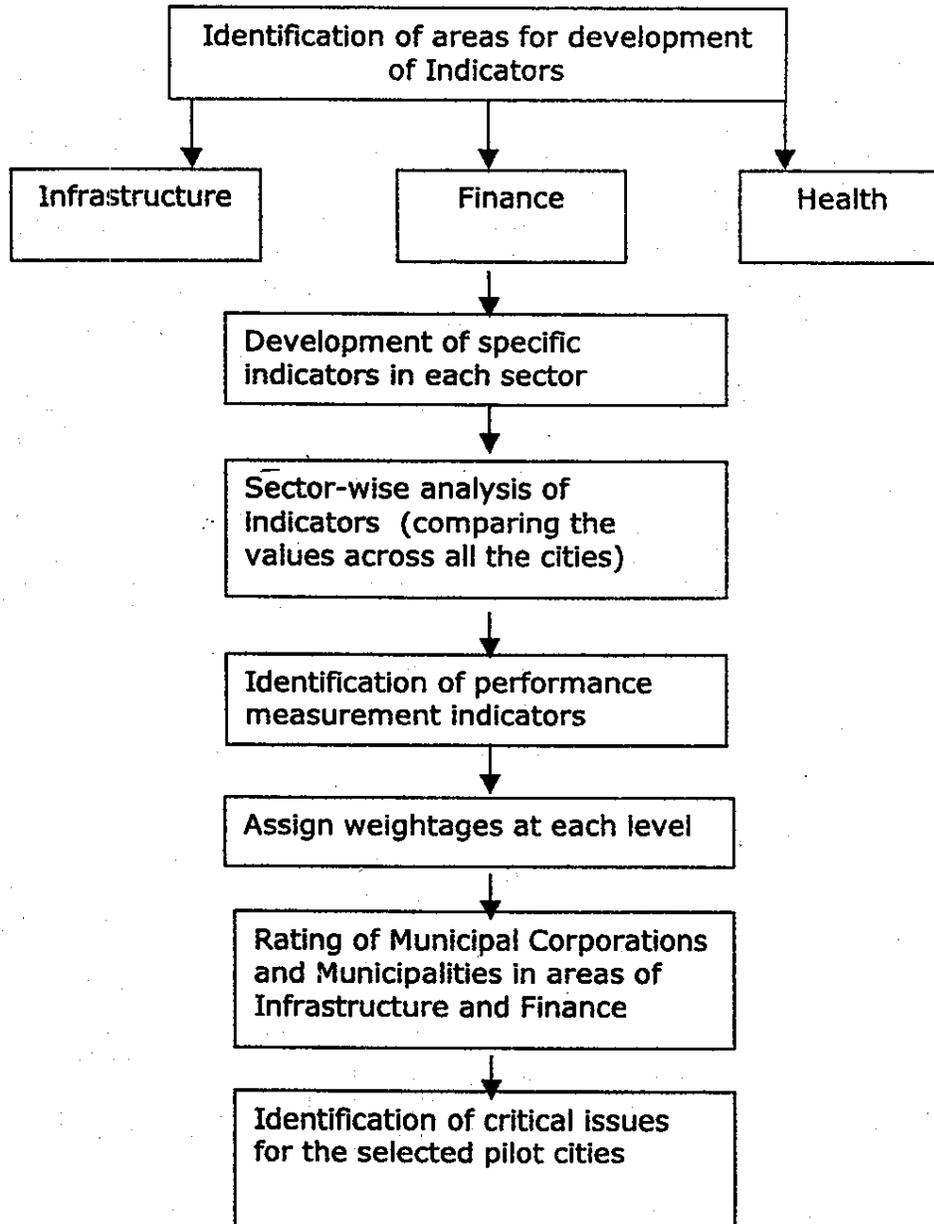
- ▶ Research and development of urban indicators and identification of performance indicators.
- ▶ To provide the urban local bodies with an analytical tool for self assessment which would also make them more transparent and accountable
- ▶ To identify the critical areas and assess the severity of the problems
- ▶ To aid civic bodies to prioritize actions
- ▶ Provide a tool for decision making to various stakeholders in urban development

Benefits to the municipal body's management

- The program will enable performance evaluation over time as well as comparative performance – comparison within urban local bodies or comparison with benchmarks/ set targets.
- Provide decision makers and implementation agencies with a set of comparable data for effective planning and decision-making.
- UIPM can act as tool for identification and adoption of Best Practices.
- UIPM would help the municipalities to justify its demands for fund allocation in critical areas.
- A self-assessment tool for city management which would help identify gaps in the system and prioritise action plans.

Performance assessment will be useful for a number of different stakeholders in urban development. Such an exercise would be beneficial to municipalities as well as state level monitoring and regulatory agencies. In addition, other actors such as finance institutions, investors, credit rating agencies would also benefit from reliable comparative information on the performance of municipalities. Over time, such a system would help to develop sector norms or benchmarks, which at present, simply do not exist for urban development agencies and services.

1.5 Analytical Framework



1.6 Approach to Comparative Performance Measurement

An attempt is made to generate a format for performance measurement based on selected indicators. A hierarchy of weightages at each level has been assigned after discussing with the experts. Few performance indicators have been identified in Finance as well as Infrastructure.

Scoring

It is a comparative performance and hence scoring across all the municipal bodies has been done based on the average value of the indicator. All the indicators have been assigned scores on a seven-point scale, better the service better the score.

The average value is assigned the score of 4; on 10% deviation on higher and lower side, score of 3 or 5 is assigned respectively; on 20% deviation on either side, score of 2 or 6 is assigned; for values more or less than 1.3 times the average values, score of 7 or 1 is assigned.

Rating

Weighted scores were calculated multiplying the scores with the weightages. Weightages were assigned at each level after consultation with the experts. Among municipal corporations, water supply for the three Saurashtra cities – Rajkot, Jamnagar, Bhavnagar has been analysed and rated separately. A consolidated rating for infrastructure has been calculated in two ways, one with the water supply scores and the other without it. Weightages in case where water supply hasn't been considered, have been distributed proportionately over the other four services.

Infrastructure Indicators

S.No.	Main Indicator	Specific Indicators	Weightage
1.	Water Supply	10	24%
2.	Sewerage and Sanitation	8	24%
3.	Solid Waste Management	7	24%
4.	Roads and Storm Water Drains	4	17%
5.	Streetlights	3	11%
	Total	32	100%

Financial Indicators

S.No.	Main Indicator	Specific Indicator	Weightage
1.	Resource Mobilisation	9	55%
2.	Expenditure Management	4	35%
3.	Debt Management	2	10%
	Total	15	100%

1.7 Scope and Limitations

- ▶ Of the total nine class A municipalities proposed in this phase of the study, only four municipalities provided the required data. Rest of class A municipalities could not be included. Therefore, ten (six corporations and four municipalities) out of fifteen cities are considered in this pilot project. Few indicators could not be generated due to lack of data from the municipal bodies while a few indicators found relevant to the study were added to the list which was finalized in the first TAC committee meeting.
- ▶ In case of few indicators, the values for some municipal bodies seem unrealistic; this could be due to error in reporting the data.

- ▶ In Finance, values of two consecutive years have been analysed, which might not give a comprehensive picture of the financial situation of the ULB. Objective has been on developing the methodology and approach and research.
- ▶ The performance measurement is not against any benchmarks or standards, it is a comparative measurement among the municipal bodies.
- ▶ Performance measurement has been done based on Finance and Infrastructure indicators.
- ▶ Comparison has been done separately among Corporations and Municipalities.
- ▶ The final rating is not an end in itself, the aim of the program is to help the local bodies to improve their governance through analysing the indicators and identifying critical issues.

Chapter 2

Development of Indicators

2.1 General Demography

Indicators, giving an overall demographic profile of the city have been developed. Indicators have been developed on population statistics, slum population and municipal staff.

The idea was to present an overall picture of the city and the trend of population growth. The indicators are detailed in the following table.

Table 2.1 General Indicators

List of Indicators	Formula	Unit	Remarks
Population growth rate (compound) during 1991-2001	$\left(\frac{\text{Pop 2001}}{\text{Pop 1991}}\right)^{0.1} - 1$ *100	%	Indicates the decadal growth rate of Population
Population growth rate (compound) during 1981-1991	$\left(\frac{\text{Pop 1991}}{\text{Pop 1981}}\right)^{0.1} - 1$ *100	%	Indicates the decadal growth rate of Population
Population density (2001)	Population in 2001/Area	Pop./Sq Km.	
Population Density (1991)	Population in 1991 /Area	Pop/Sq Km	
Municipal Staff per 10000 Pop	$\frac{\text{Municipal Staff}}{\text{Total Population in '01}}$ *10000	No of persons	This indicator would help to compare the size of municipal staff across cities
% of Slum Population to Total Population	$\frac{\text{Slum population}}{\text{Total population of city}}$ *100	%	This has a direct bearing on environmental infrastructure provision in the city

2.2 Infrastructure

Five core physical infrastructure services have been considered. They are as follows:

- ▶ Water Supply
- ▶ Sewerage and Sanitation
- ▶ Solid Waste Management
- ▶ Roads and Storm Water Drains
- ▶ Streetlight

For each of these services, indicators have been developed to assess,
Service level
Service coverage and
Service costs & efficiency

The approach was to further detail out various components among these three major heads and develop specific indicators. A detailed summarized account of these indicators with their formulas and general remark has been presented in the table 2.2.

Service level and service coverage essentially correspond to service delivery while service costs and efficiency cover the operating cost, the cost recovery and the staff efficiency.

The cost per unit of service has been calculated taking in the operating cost. It includes the O&M costs as well as the establishment cost. In case of roads infrastructure, because it is a part of 'Building department', a separate figure for establishment exp on roads was not available and hence, the operating cost for roads include only the O&M costs.

2.3 Finance

Financial indicators have been developed with the objective to assess the financial health of the urban local body. Three sectors of municipal finance have been considered. They are as follows:

- ▶ Resource Mobilisation
- ▶ Expenditure Management
- ▶ Debt Management

2.3.1 Resource Mobilisation

Resource mobilisation essentially reflects the income status of the city. Actual figures for two financial years, '98-'99 and '99-'00 have been analysed. It will certainly not give a holistic picture of the financial situation of the urban local body but at this stage it is important to get the insights and the correct approach to analyse the financial health of the ULB.

Per capita income figures have been considered for analysis as Per capita revenue shows how revenue is changing relative to the changes in relation to population. As population increases, it might be expected that the need for services would increase proportionately and, therefore, the level of per capita revenue should remain at least constant in real terms. If per capita revenue were decreasing, it would be expected that the City would be unable to maintain existing service levels unless it is able to find new revenue sources or ways to save money.

Efficiency in the collection and administration of revenues provides local govts with an overview of the diversity and relative importance of revenue sources, indicates collection trend (growth/decline) of individual source.

Percentage of Octroi in total tax income and in total revenue income also needs to be calculated. This is important as it indicates the risk that the local govt is exposed to. Higher the percentage of Octroi in total rev income, higher is the risk.

Table 2.2: Infrastructure Indicators

Attributes	Component	Indicator	Formula	Unit	Remark
Water Supply					
<u>Service Level</u>	<u>Service Delivery</u>	Water Supply per Capita per Day	Total supply to the city per day / Total population of the city	Ltrs. per capita per day (lpcd)	Figures of water supply per day have been averaged over normal supply months and scarcity months. The indicator shows the availability of water.
		Avg. hrs of Supply per Day	Hrs of supply on supply day/number of day(s) between two supply days	Hrs.	The indicator helps to assess timely water supply to the citizens. It also indicates the requirement of storage at city level as well as the household level.
		Avg. no. of Supply Days in a Week		Days	-do-
	Treatment Plant Capacity	Treatment Plant Capacity as %of Surface Water Supply	(Capacity of treatment plant/ Water supplied from surface water resources)*100	%	Surface water is passed through the treatment plant while ground water is chlorinated before supply, and therefore Surface water supply instead of total water supply has been considered for this indicator. It implies present as well as future needs for treatment of water.
	<u>Storage Capacity</u>	Storage Capacity Adequacy	(Total Storage capacity (ML)/Total water supplied (MLD))*100	%	It is subjective to the system of water distribution but on the whole indicates the storage capacity against water supplied to the city.

Attributes	Component	Indicator	Formula	Unit	Remark
Service Coverage	Service coverage in Slums	Ratio of Slum Population to Public Stand Posts	Slum pop not covered by Piped network/Total public stand posts	Ratio	Indicates the service coverage in slums. Very high value of the ratio implies the possibility of unauthorized use of water, illegal connections, dependence on private ground water resources, dependence on neighbours' connections, etc. It is just an indication and the value should not be taken as absolute statistical figure.
	Population coverage	% of Households Covered by Water Connections	No. of water connections /Total no. of Households) *100	%	This indicator has been enlisted as an indication of population coverage of water supply service. Again, this is an indication. It might deviate from the true picture, which hints at loose ends in the system.
	Physical coverage	% of Water Supply Pipe Length to Total Road Length	(Length of water supply pipelines /Total Road Length) *100	%	This value gives an indication of physical coverage of the service. This indicator has been formed based on the observation that most of the water supply pipelines are laid along the roads. The values might deviate from the true situation if the value for length of pipes is very high. This might be due to addition of length of transmission pipelines or if the lines are laid on both sides of the road. Thus it needs to be verified with the ground realities.
Service Costs and Efficiency	Financial Management	Cost per 1000 lit of Water Supplied	(Total operating cost per year / Total water supplied-MLD *365) * 1000	Rs./1000 Ltrs.	Operation & Maintenance cost along with the establishment cost has been included in the operating cost. Indicates the cost of infrastructure provision.
		Establishment Cost per Capita	(Establishment Exp. / Total Population	Rs.	The indicator shows the expenditure borne by ULB on itself for its water supply. It is an important indicator for comparison among cities.
		Cost Recovery	(Total revenue generated from water supply /Total operating cost of water supply) * 100	%	The percentage of cost recovery shows the present status as well as the lag between the operating cost and the revenue generated.

Attributes	Component	Indicator	Formula	Unit	Remark
	System Efficiency	Unaccounted for water	(Amount of water lost thro' leakage, unauth use, etc./Total water supplied) *100	%	Indicates the % of unaccounted for water (water losses)
	Staff Efficiency	Staff per MLD supplied	Total Staff employed in water supply/Total water supplied (MLD)	Person(s)/ MLD	Implies staff efficiency and suggests if the municipal body is understaffed or overstaffed (comparatively). Figures are skewed for Saurashtra cities because of low supply
Sewerage and Sanitation					
Service Level	Treatment	% of Wastewater Treated	(Amount of waste water treated/ Amount of wastewater generated) * 100	%	An important indicator which has a direct Environmental impacts on – Physical resources (Land and Water) as well as on public health.
	Service delivery in slums	No. of Persons per Public Convenience	Slum Pop. dependent on public toilets/ Total Public Toilets Seats	%	It will reflects on the level and coverage of service for slums; also reflects the level of hygiene.
	Lvl of hygiene	% of Pay and Use Toilets to Total Public Toilets	No of pay and use toilets/ Total no of public toilets *100	Nos.	Assuming that Pay and Use toilets are maintained much more efficiently, the % of pay and use toilets to total public toilets shows a positive trend towards better hygiene level in the city.
Service Coverage	Population coverage	% of Pop Covered by Underground Drainage and Ind. Septic Tanks	Pop covered by UGD+ Ind. ST / Total Population *100	%	It reflects the status of infrastructure at city level and identifies the lag for setting the future targets.
		% HH covered by Sewerage Connection	No of Sewerage Connections * 100/ Number of Households	%	This indicator also gives the population coverage but exclusively of UGD. It implies percentage of population having relatively safer sanitation.
Service Cost and Efficiency	Financial Management –	Cost per Sewerage Connection	Total operating cost per year * 1000/Total number of sewerage connections	Rs./connection	Operation & Maintenance cost along with the establishment cost has been included in the operating cost. Cost per sewerage connection can be one of the guidelines for deciding on the user charges.
		Cost Recovery	Total revenue generated from sewerage /Total operating costs * 100	%	Indicates present status of recovery and the lag.

Attributes	Component	Indicator	Formula	Unit	Remark
	Staff efficiency	Staff per 1000 Sewerage Connections	(Total Staff for sewerage/Total number of sewerage connections) * 1000	Person(s)	Reflects on staff efficiency, suggests if the municipal body is overstaffed or understaffed (comparatively).
Solid Waste Management					
Service Level and Coverage	Waste collection	% Waste Collection	Amount of Solid Waste collected/ Amount of Solid waste generated *100	%	Generation of solid waste has been calculated @400 gm per capita per day. % Waste collection indicates the level of cleanliness and hygiene in the city.
		% Vehicle capacity to Waste Generated	Total Vehicle capacity (Tonnes)/ Total Solid waste generated *100	%	It will imply time and energy costs on transportation of waste.
		Average Spacing of Waste Collection Bins	Total length of roads/ Number of Storage bins	Kms/bins	The average spacing between storage bins reflects the easy accessibility of the service to the citizens.
	Capacity of bins	% Capacity of Waste Collection Bins	Capacity of bins / Total waste generated*100	%	Capacity of bins is directly linked with the general level of cleanliness in the city.
	Coverage	Average Road Length covered per Sweeper	Total road length/No of sweepers	mts	A useful indicator to compare across cities and with the standard norms accepted in the cities.
Service Cost and Efficiency	Financial Management	Cost per Tonne of Waste Collected	Operating cost/amount of waste collected (MT)	Rs. In lacs	Operation & Maintenance cost along with the establishment cost has been included in the operating cost.
		Cost Recovery	Total Revenue generated from SW /Total Operating cost of SW* 100	%	Shows the present status and identifies the lag.
	Staff Efficiency	Manpower per Tonne	Total Manpower employed for SWM/Total solid waste collected in tons	Person(s)	Shows staff efficiency
Roads and Storm Water Drains					
Service Level	Surfaced roads	% Roads surfaced	Length of Surface Roads/Total Road length *100	%	Shows the level of road infrastructure at city level.
	Storm water drains	%Road length having storm water drains	Length of Roads having storm water drains/Total Road Length	%	-do-

Attributes	Component	Indicator	Formula	Unit	Remark
Service Coverage	Physical Coverage	Road density	Length of roads/Area of city		It can be a useful indicator for comparison among cities and can be employed for physical planning.
		% of City Area Covered by Storm Water Drains	Value as provided by ULB	%	Shows the infrastructure status at city level and identifies the lag
Service Cost and Efficiency	Financial Management	Cost per Km of Road Length	Operating Costs/Length of Pucca Roads	Rs./Km	Only O&M cost is taken as the operating cost. Separate figure for establishment cost could not be obtained for some cities. It will reflect upon the cost of labour, construction or technology used which might be the deviation factor from average.
		Staff efficiency	Staff per 10 km of Road Length	No. of Staff *10 /Road Length in Kms	Nos
Street light					
Service Level and Coverage	Streetlight Coverage	Number of Street Lights per Km of Road Length	No. of Street Lights/Total Road Length in Kms	Number	It is quasi indicator for the average distance between streetlights. Shows a general level of service in the city.
Service Cost and Efficiency	Cost	Cost per Street Light	Total Operating Cost/ Total no of streetlights	Rs.	
	Staff efficiency	Staff per 1000 Street Lights	Total No. of Staff/ Total No. of Streetlights * 1000	Person(s)	Shows staff efficiency

Property Tax is an important revenue to consider individually because it comprises a potential own revenue source.

2.3.2 Expenditure Management

The first issue to consider is the ratio of revenue expenditure to its revenue income (operating ratio) to determine whether the City is living within its resources.

Personnel costs (establishment costs) are a major portion of the City's operating budget. An increase in the employees to population ratio may indicate that the city is more labor intensive or that the productivity is declining.

Sectoral analysis compares the per capita expenditure as well as % exp in various sectors to total revenue expenditure.

After discussions with the municipal authorities, indicators on expenditure on capital works and expenses on non obligatory functions rendered by the ULB were added.

2.3.3 Debt Management

Share of loan repayment in revenue income as well as revenue expenditure has been calculated. Debt Service Ratio of 12% is considered as healthy while value above it should be seen as a caution. As the % of debt service increases, the flexibility to make spending decisions decreases. Values below 12% indicate that still the local body has the scope for borrowing more loans.

Table 2.3: Finance Indicators

Attributes	Component	Indicator	Formula	Unit	Remark
Finance					
Resource Mobilisation	Per Capita Income Generation	Per Capita Revenue Income	Total revenue income/Total population	Rs.	Compares the income generation of the municipal bodies.
		Per Capita Tax Income	Total Tax Income/Total Population	%	
		Per Capita Non Tax Income	Total Non tax income/ Total Pop of city	Rs.	
	Sustainability	% of Own Resources in Total Revenue Income	Income from own resources (Tax and Non tax) / Total revenue income * 100	%	Own resources include Tax and Non Tax income. It shows the status of urban local body to mobilize money from own resources
		% of Own Resources in Total Capital Income	Income from own resources (Tax and Non tax) / Total Capital income * 100	%	This indicator is directly related to the revenue surplus. More the surplus more the amount of own contribution in capital works.
	Growth in Income	% Growth in per Capita Tax Income	PCTax income ('99-'00) - Tax income ('98-'99)/Tax income ('98-'99) * 100	%	Per capita growth has been taken rather than growth in absolute figures.
		% Growth in per Capita Non Tax Income	NonTax income ('99-'00) - NonTax income ('98-'99)/Tax income ('98-'99) * 100	%	-do-
		% Growth of Own Resources in Revenue Income	Own Resources % in Revenue Income(99-00)-(98-99/ (98-99) * 100	%	It is important for a ULB that the contribution of own resources in revenue income should increase.
	Risk	% of Octroi in Revenue Income	Income from Octroi / Total Revenue Income * 100	%	The indicator has been
		% of Total Grants in Total Income	Revenue Grants+Capital Grants*100/Revenue+Capital Income	%	
	Property Tax Collection	Per capita property tax Income	Property tax Income / Total pop of city	Rs.	For comparison among cities
		Property tax collection performance	Current property tax Collection (99-00)/ Current property tax demand ('99-'00)* 100	%	
	Staff Efficiency	Properties assessed per staff	Total number of properties assessed/No of staff	Nos	Will reflect on staff productivity
		Property tax collection per staff	Property tax collected/Total staff * 100	Rs. In Lakhs	Will reflect staff efficiency
	Tax Base	Properties Assessed per Sq. Km of City Area	No. of Properties Assessed(99-00)*100/Total Area of City in Sq Km	Nos	

Attributes	Component	Indicator	Formula	Unit	Remark
	Past Efficiency	% of Arrears in Total Demand	Arrear as on 1-4-1999/Current +Arrears Demand in 99-00	%	Reflects on the past efficiency
Expenditure Management	Overall Expenditure	Per capita revenue expenditure	Revenue expenditure/Total Population	Rs.	For comparison among cities
	Sectoral Expenditure	Per Capita Exp. on Water supply and Sanitation	Total Exp. on Water Supply & Sanitation/Total Population	%	For comparison among cities
		Per Capita Exp. on Public Health	Total Exp. on Public Health/Total Population	%	For comparison among cities
		Per Capita Exp. on Public Safety	Total Exp. on Public Safety/Total Population	%	For comparison among cities
		Per Capita Exp. on Public works	Total Exp. on Public Works/Total Population	%	For comparison among cities
		Per Capita Exp. on General & Administration	Total Exp. on Gen.& Adm./Total Population	%	For comparison among cities
	Establishment Expenditure	% of Establishment Exp. to Total Revenue Exp.	Exp on establishment/Total Revenue Exp * 100	%	Shows on the expenditure over itself
	Efficiency	Operating ratio	Revenue Expenditure/ Revenue Income	%	Shows financial efficiency
	Expenditure on Capital works	Per Capita Exp. on Capital Works	Total Capital exp./Population	Rs.	Indicates the expenditure on developmental activities
	Expenditure on Non Obligatory functions	% of Expenditure on Discretionary Services	Exp on Discretionary Services/Revenue exp. * 100	%	Indicates the exp by municipal body on the services for societal development
Debt Management	Debt Service Ratio	Debt service ratio (Income)	Total Loan Repayment (principle +interest)/ Revenue Income	No	
		Debt service ratio (Expenditure)	Total Loan repayment (principle +interest) / Revenue Exp.	No	Indicates the Debt component in total Expenditure.
	Outstanding Liabilities	Per Capita Outstanding Liabilities	Outstanding liabilities /Population	Rs.	For comparison among cities

2.4 Health

A few indicators on health have been developed. Health indicators are essentially impact indicators. They can be correlated with the environmental infrastructure.

There is a wide scope of developing health indicators. The full range of health indicators could not be materialized due to lack of data with the ULBs. However, indicators on mortality rates, water and air borne diseases and immunization have been developed. The details have been summarized in the table below.

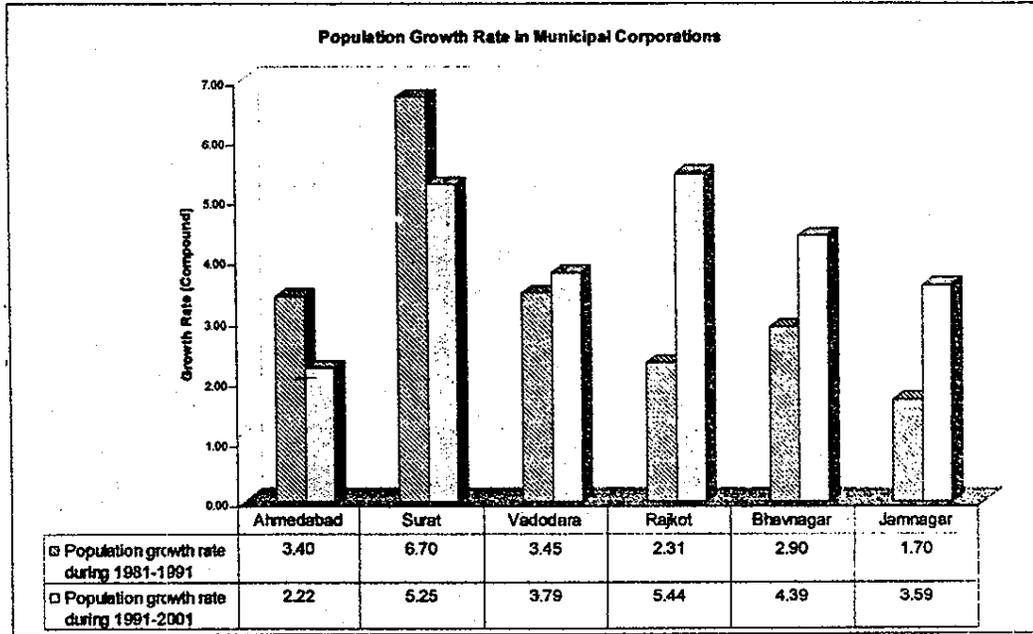
Table 2.4 Health Indicators

Indicator	Formula	Unit
Health		
Infant Mortality Rate	Value provided by ULB	No.
Maternal Mortality Rate	Value provided by ULB	No.
Number of Gastroenteritis cases per 10000 pop	No of cases of Gastroenteritis/Total Population * 10000	Person(s)
Number of Cholera cases per 10000 pop	No of cases of Cholera/Total Population * 10000	Person(s)
Number of Typhoid cases per 10000 pop	No of cases of Typhoid/Total Population * 10000	Person(s)
Number of Infective Hepatitis cases per 10000 pop	No of cases of Infective Hepatitis/Total Population * 10000	Person(s)
Number of Malaria cases per 10000 pop	No of cases of Malaria/Total Population * 10000	Person(s)
% Full immunization Coverage	Value given	%

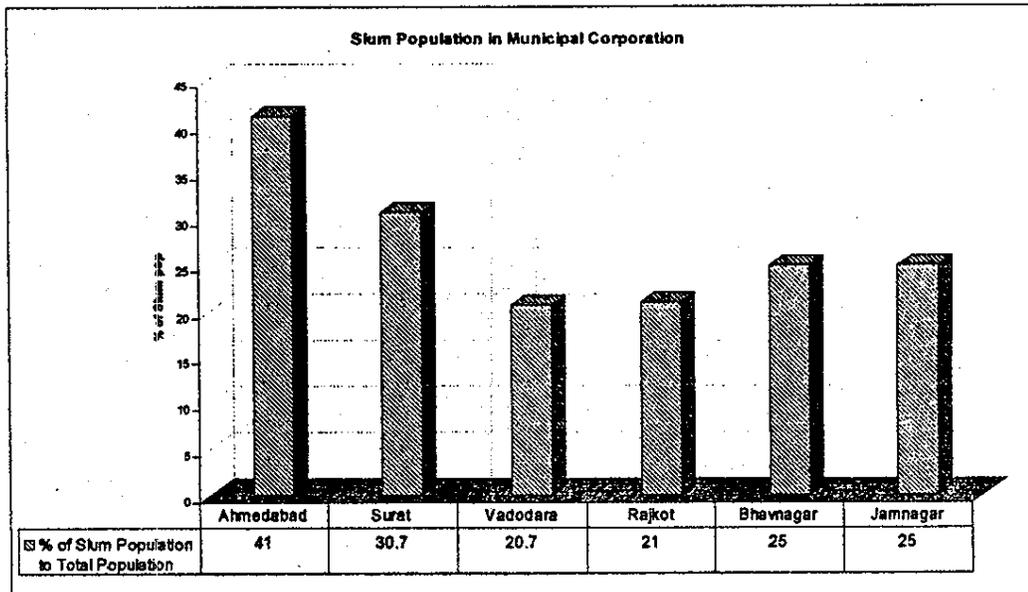
Chapter 3

Analysis – Municipal Corporations

3.1 General Indicators

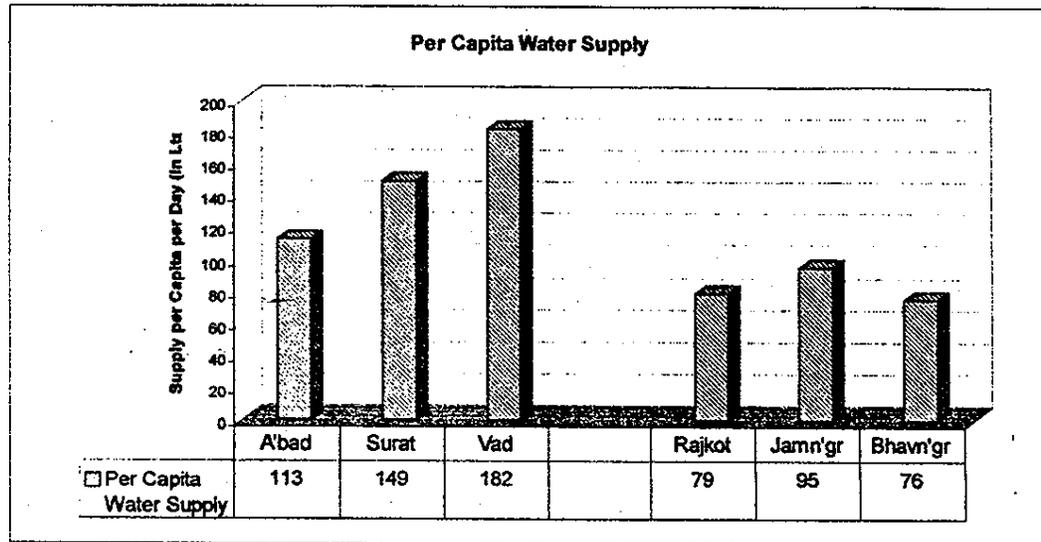


- Population growth is highest in Surat though the decadal growth in '01-'91 has decreased compared to '91-'81.
- It is notable that pop growth in Saurashtra cities in '01-'91 has shot up as compared to '91-'81.
- % of slum pop is higher in A'bad and Surat. In other corporations it varies between 20-25%.

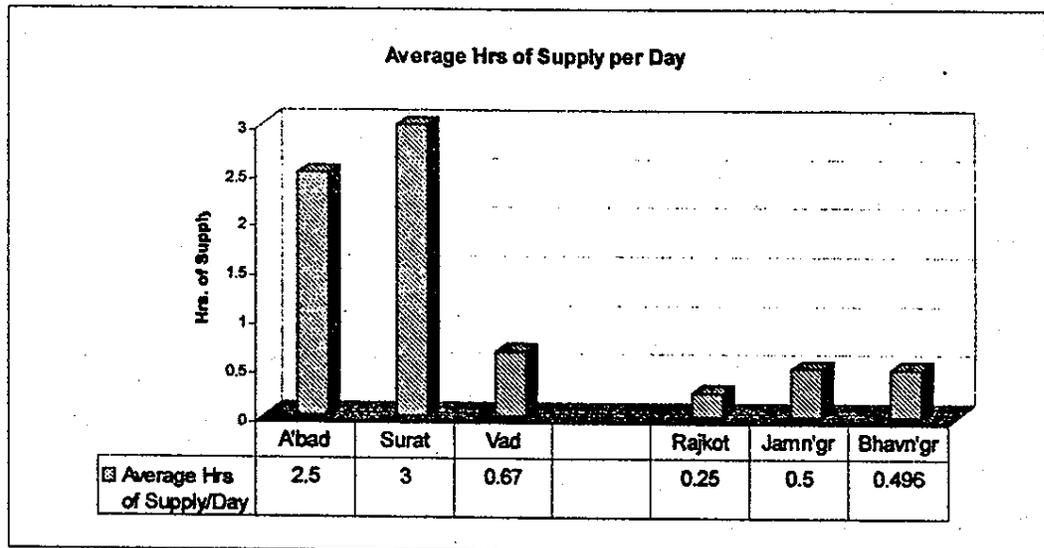


3.2 Infrastructure Indicators
3.2.1 Water Supply

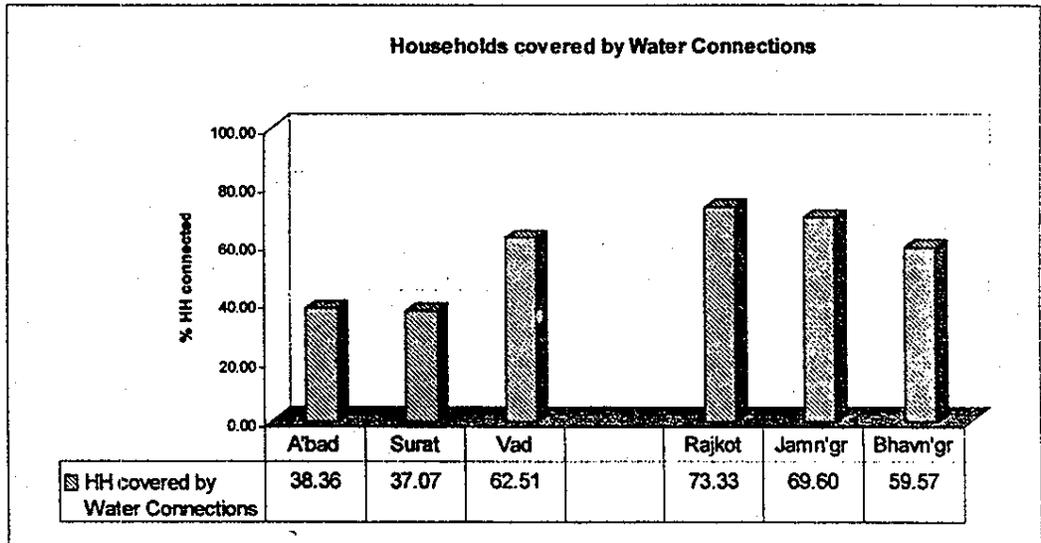
- Water availability is a critical issue in Rajkot, Bhavn'gr and Jamn'gr. Therefore, these three cities are grouped separately for analysis and rating.



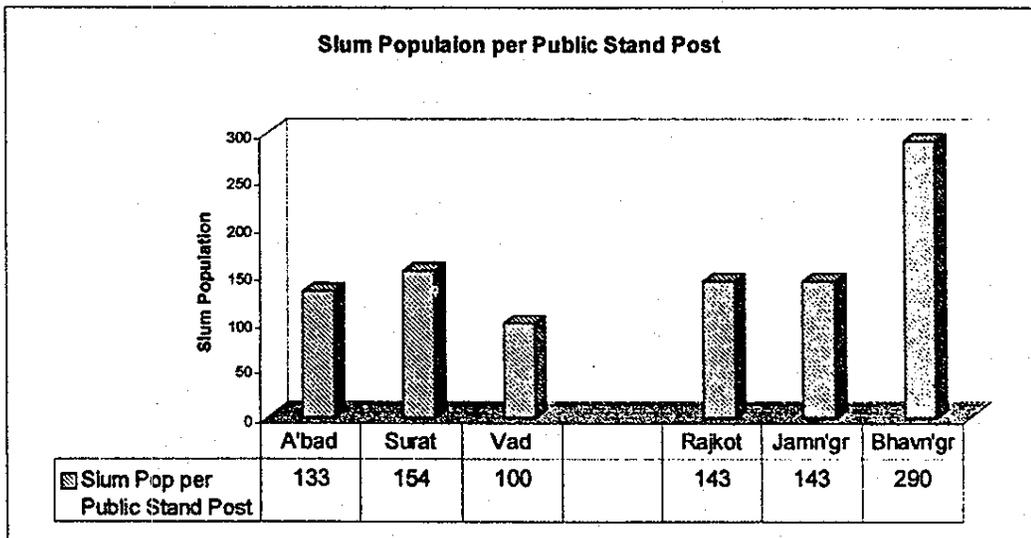
- Among Group 1 cities, Vad has higher per capita supply of water.
- Group 1 cities have a regular daily supply of water while Group 2 cities have it alternate days or once in three days in scarcity months.



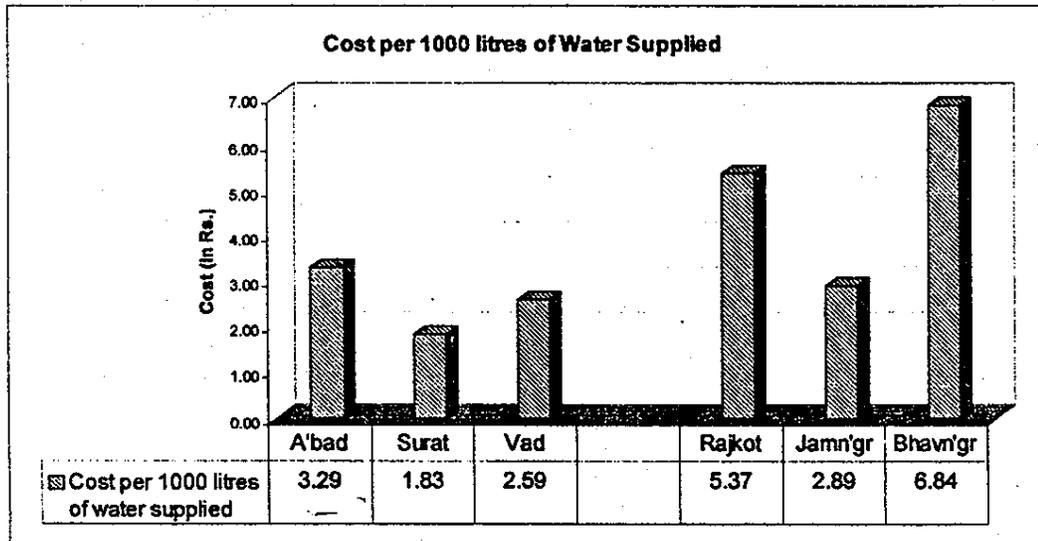
- Vad has low treatment plant capacity as % of surface water supply.



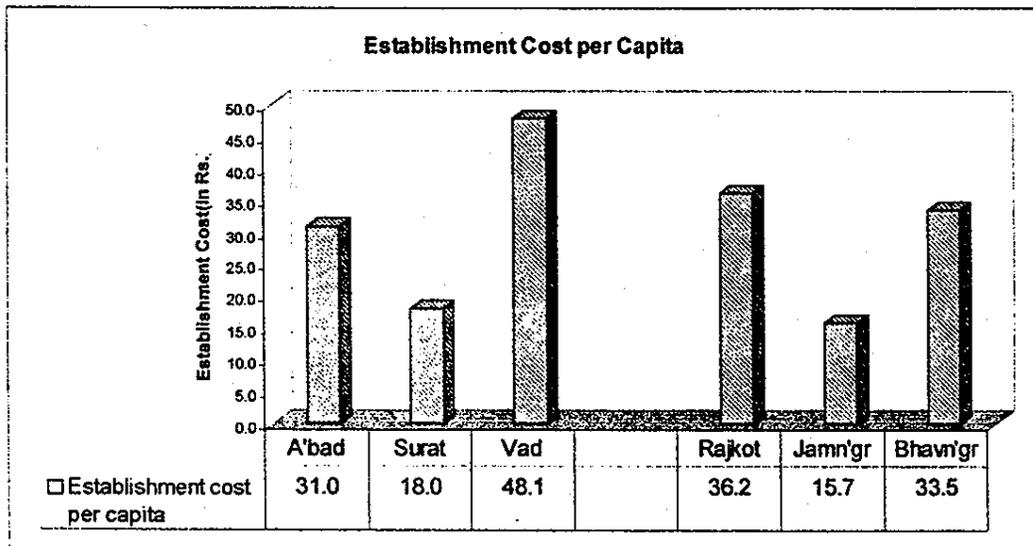
- % of HHs covered by water connections is low in A'bad and Surat. For the rest of the cities it is above 60%.
- Pop. Coverage and physical coverage are not in tandem. The relation is highly skewed in A'bad, Surat and Jamn'gr.



- Surat among Group 1 cities and Bhavn'gr among Group 2 cities have higher no. of slum pop served per PSP
- Higher no of persons per PSP implies possibility of illegal connections, thefts, etc.

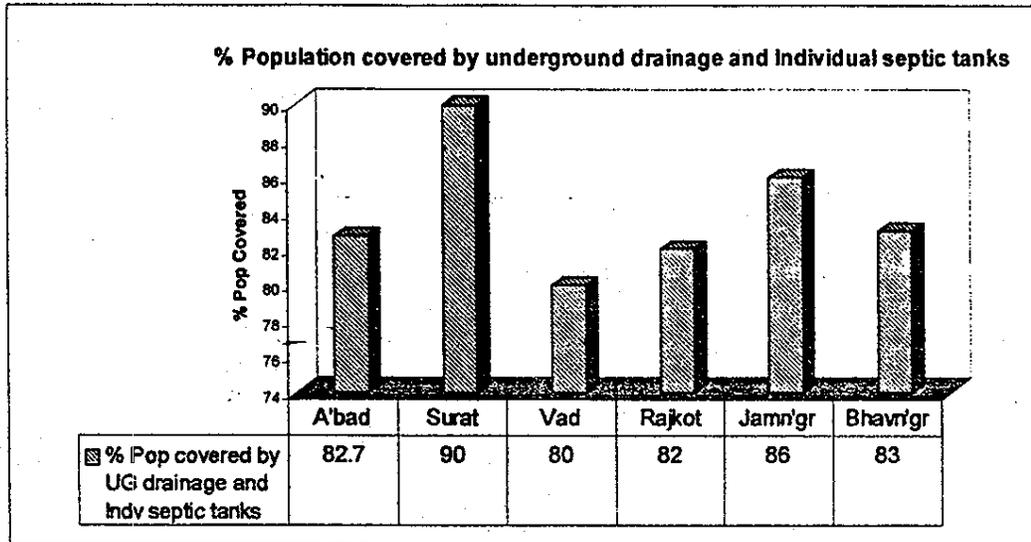


- Operating cost of water supply is quite high in Saurashtra cities as compared to other three cities
- In the Group 2 cities, Rajkot and Bhavn'gr have higher establishment expenditure while Jamnagar is managing at lower cost.

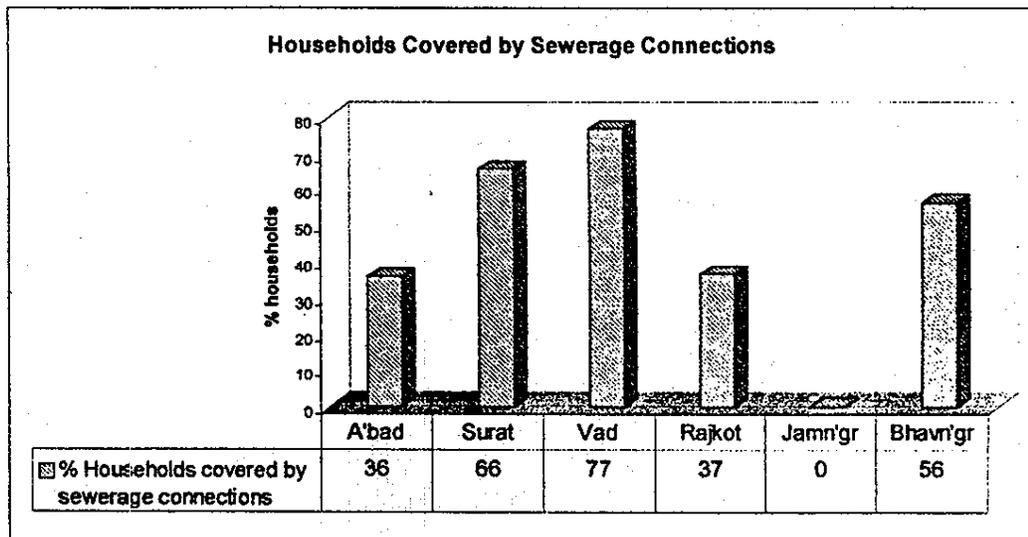


3.2.2 Sewerage And Sanitation

- Under ground drainage and individual septic tanks have been considered as relatively safer sanitation options, hence are clubbed together.

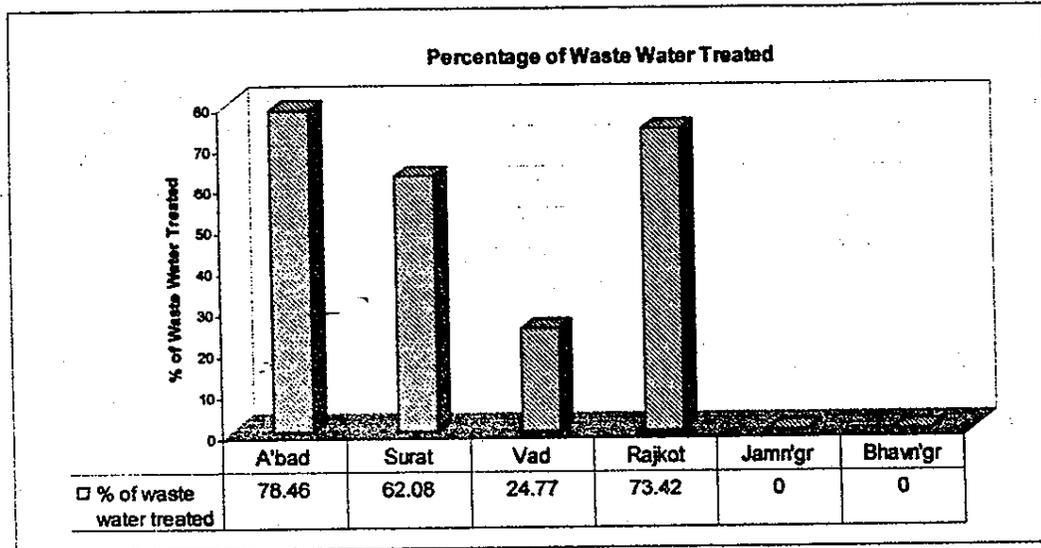


- It is notable that all the cities have high % of pop covered by under ground drainage and individual septic tanks, ranging between 80% and 90%.

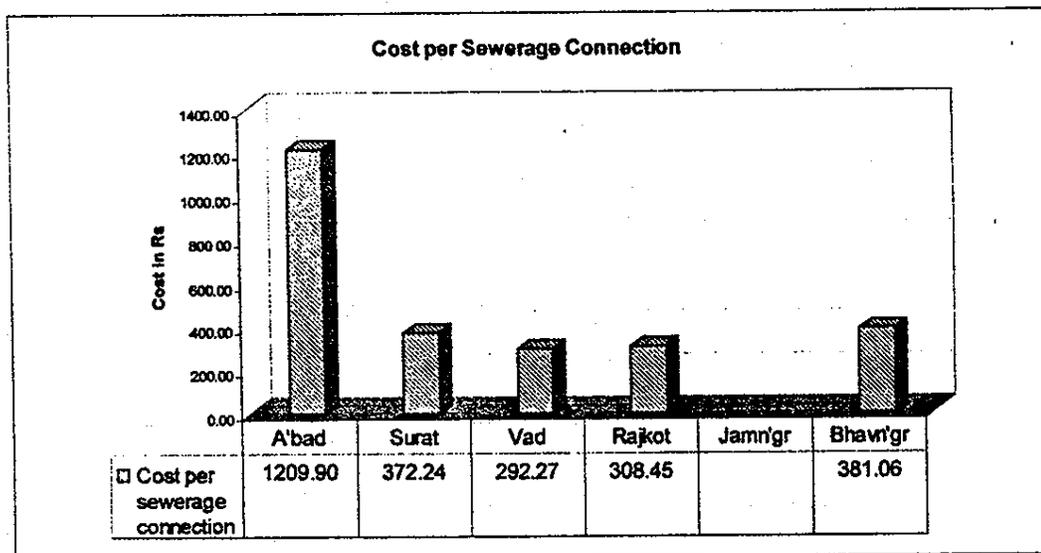


- Looking at both the graphs (graph above and the graph on the next page) it is seen that on one hand, Vad has highest HH coverage while on the other hand, it has max no of slum pop per public convenience. This indicates discrepancy in service delivery to the poor.

- Surat and Vad have higher no of persons per public convenience. This suggests poor hygienic conditions in slum pockets.
- Surat has highest % of pay and use toilets, which is manifold above other cities. It shows a positive trend towards improved hygienic conditions.



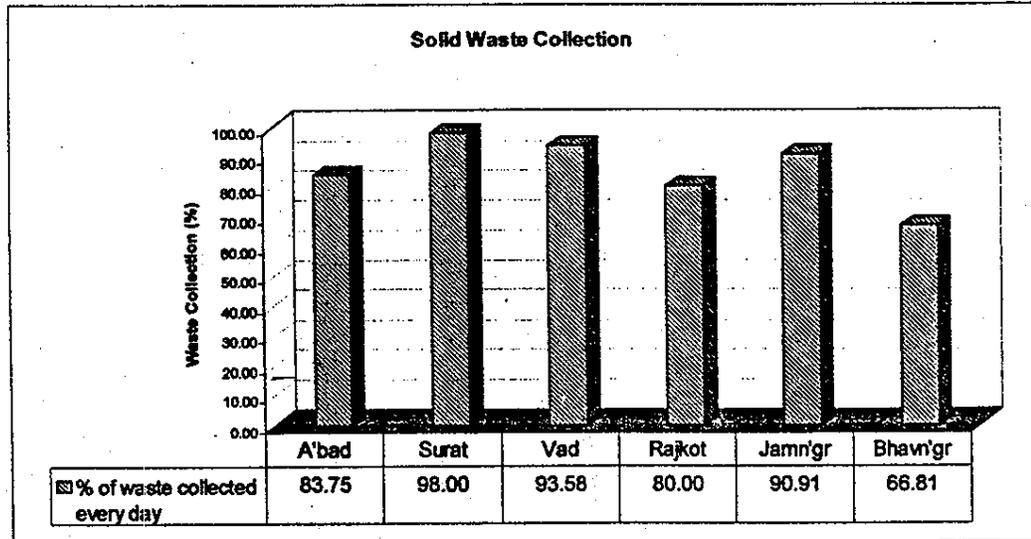
- A'bad, Surat and Rajkot treat > 60% of its wastewater. Jamnagar and Bhavnagar do not treat their wastewater.
- Cities need to guard against environmental and health impacts of untreated wastewater.



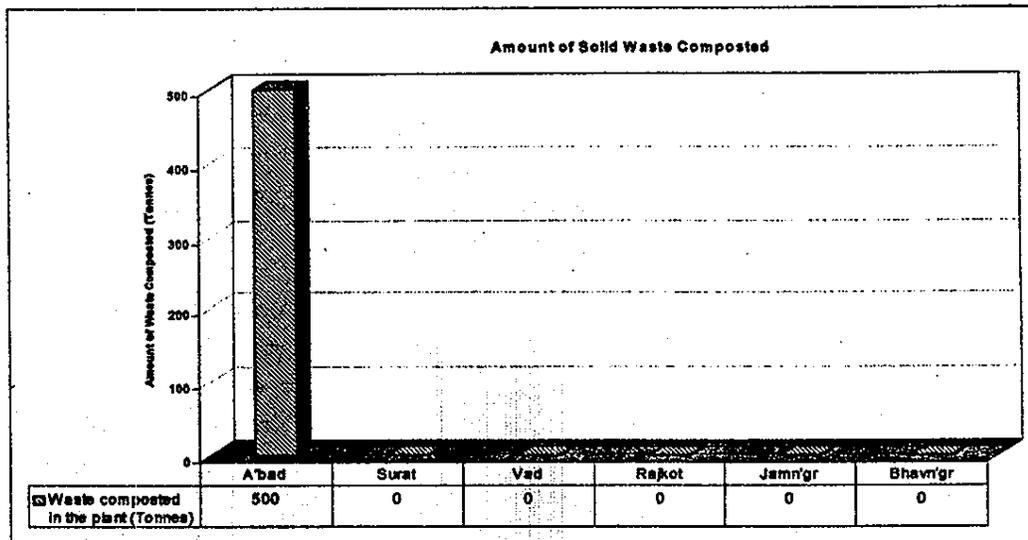
- Operating cost per sewerage connection in A'bad is extremely high in spite of other indicator values being comparable with other cities.

3.2.3 Solid Waste Management

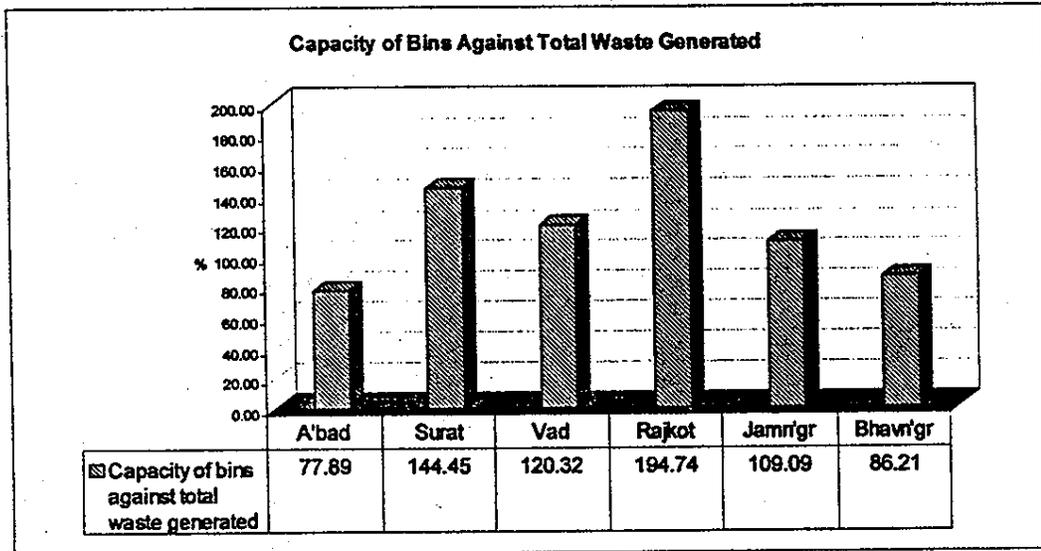
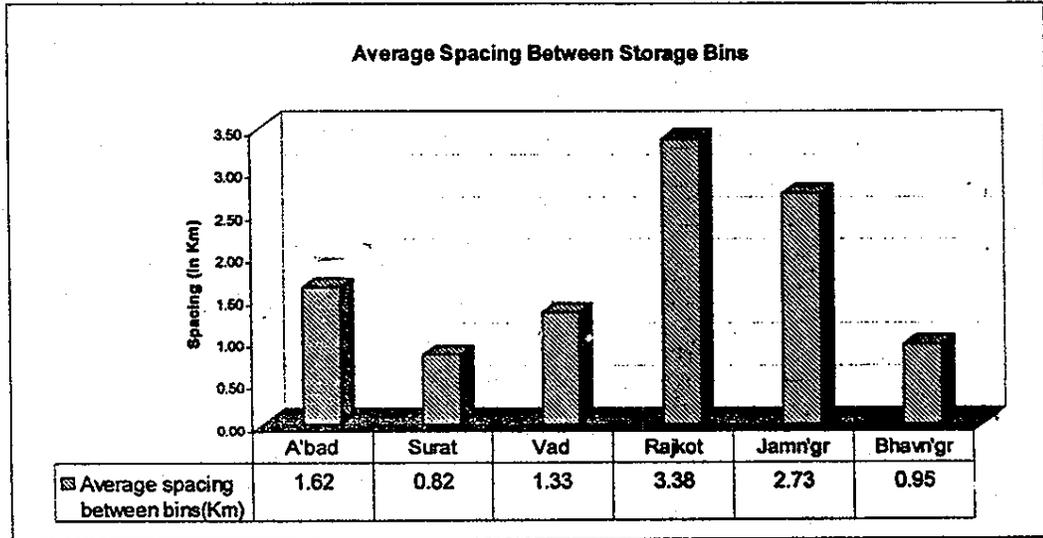
- Except for Bhavnagar, all other cities collect >80% of waste generated.

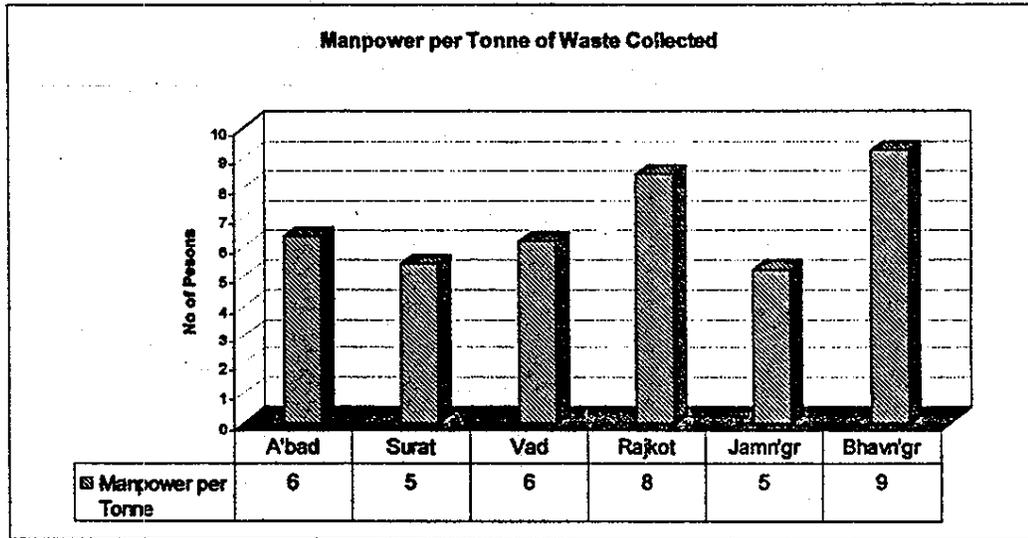
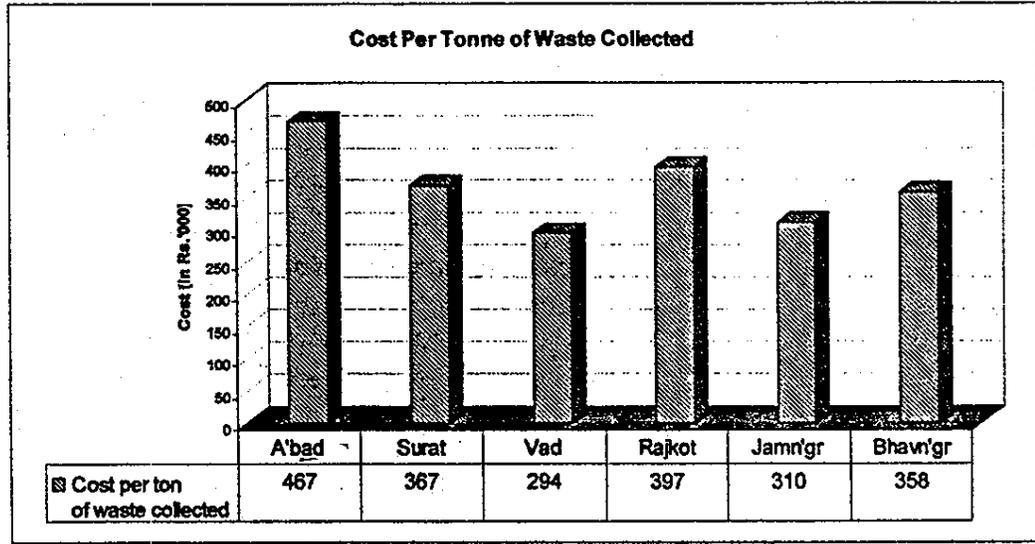


- Only Ahmedabad treats its solid waste. 500 Tonnes of solid waste is composted daily.

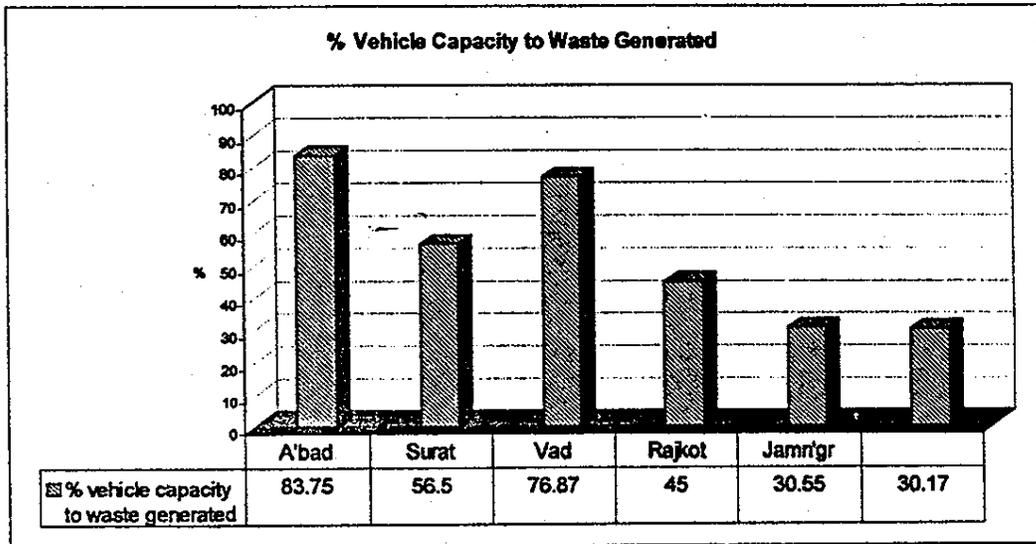


- Surat manages the service efficiently.
 - 98% of waste is collected
 - less spacing between bins
 - high capacity of bins (>100%)
 - Low staff per Tonne
 - Lower Cost

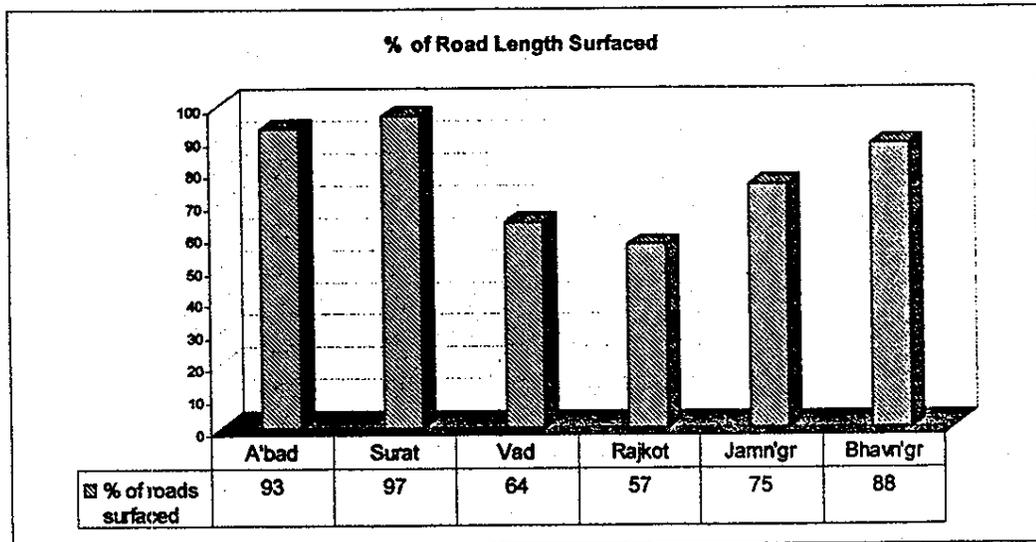




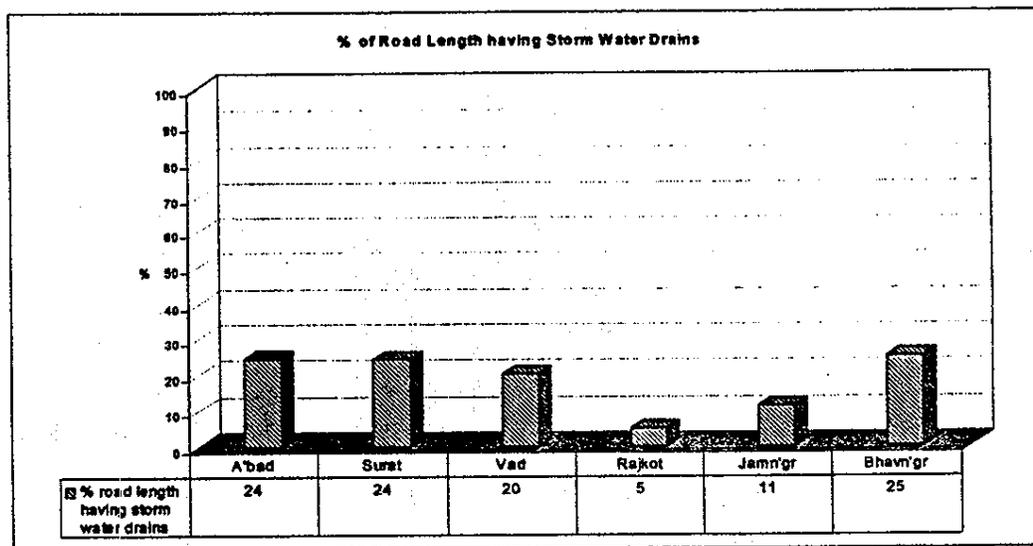
- In Bhavnagar, % of waste collected and disposed is low even though capacity of bins is high
spacing between bins is less and
has adequate manpower
Less capacity of vehicles might be the reason for lower waste collection

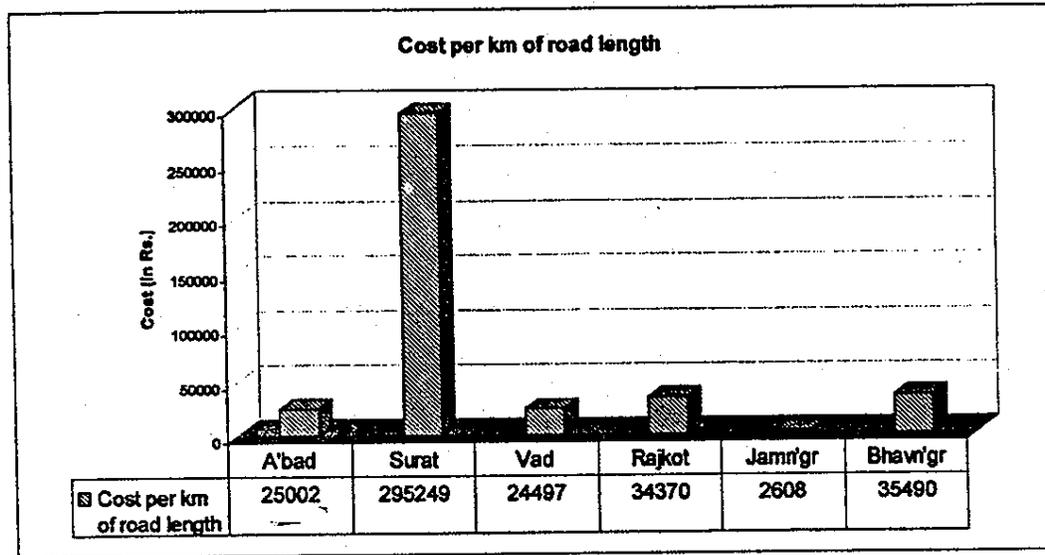


3.2.4 Roads and Storm Water Drains

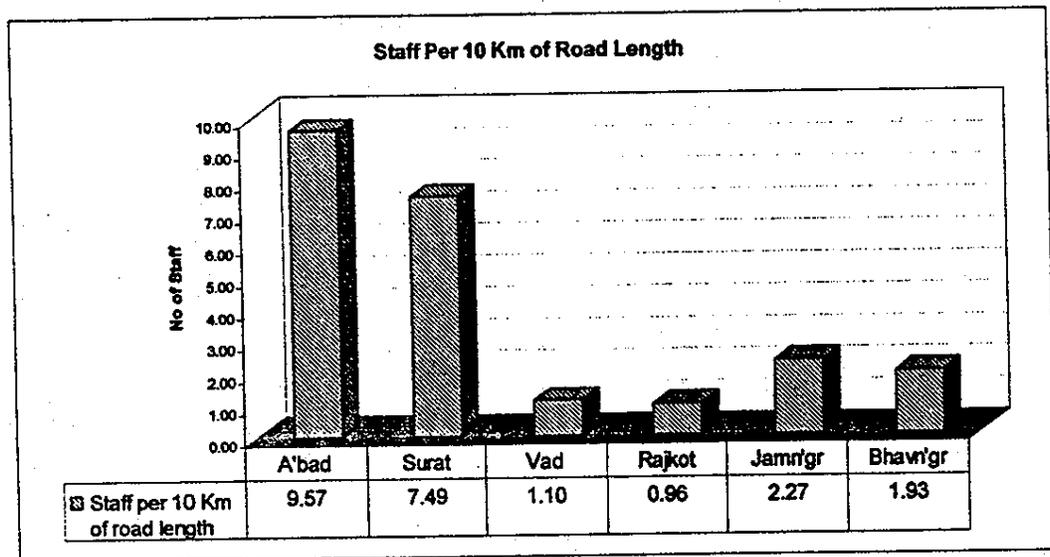


Rajkot and Vadodara – lower % of surfaced roads while A'bad and Surat have more than 90% of their roads surfaced.

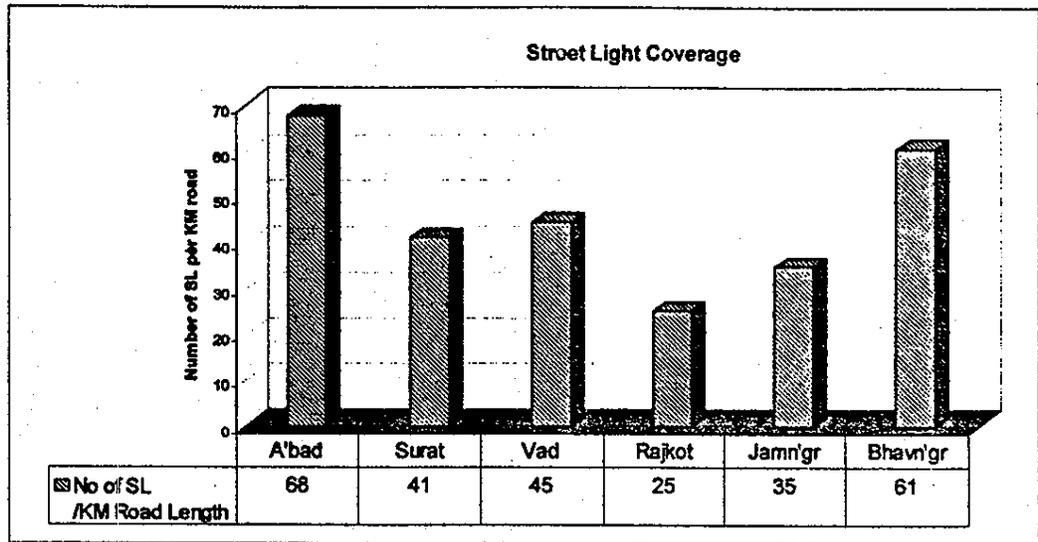




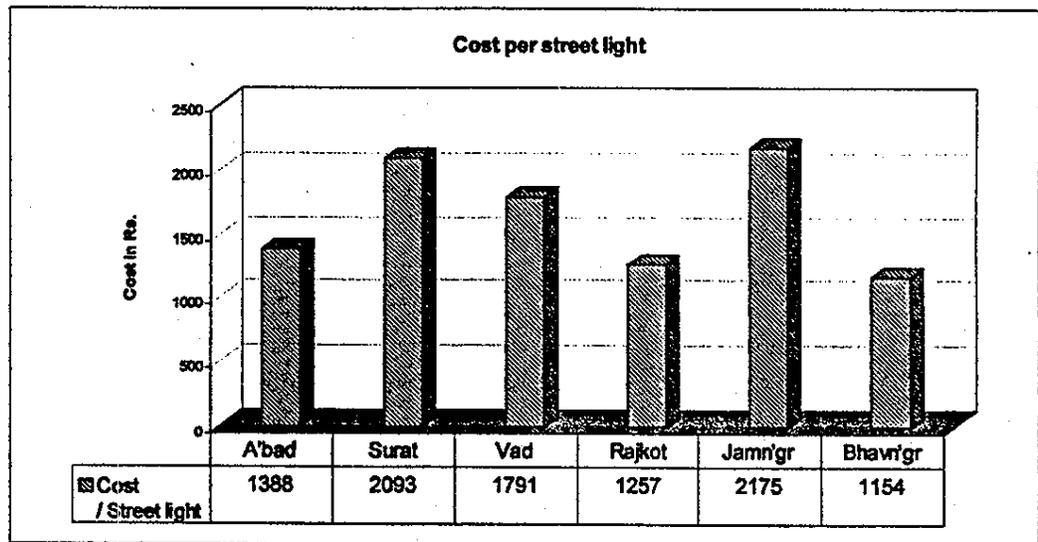
- It is notable that O&M cost is exceptionally high in Surat while exp very low in Jamn'gr.
- A'bad and Surat both have >90% of roads surfaced. The O&M cost of A'bad is much lower than Surat even though A'bad has more staff than Surat.



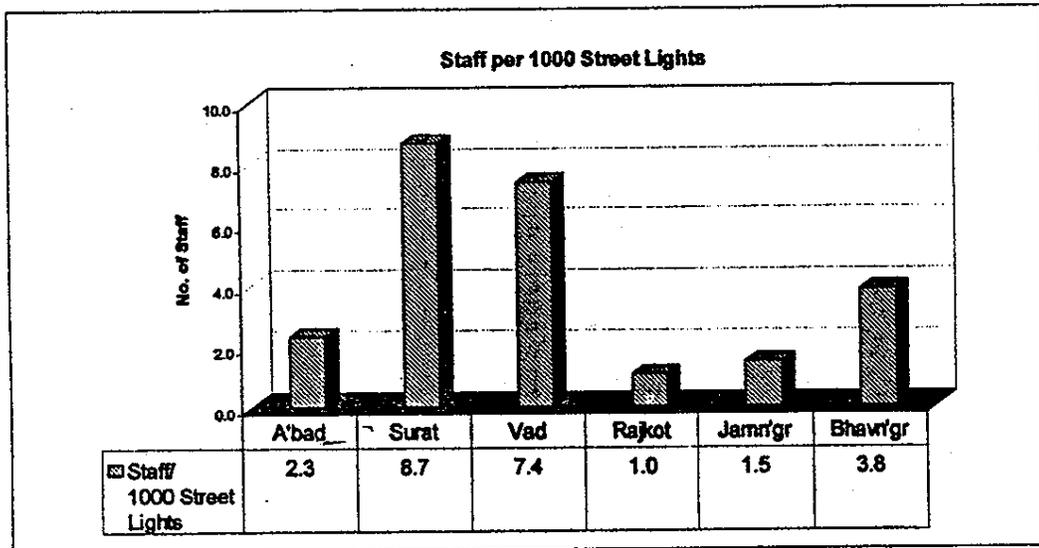
3.2.5 Streetlights



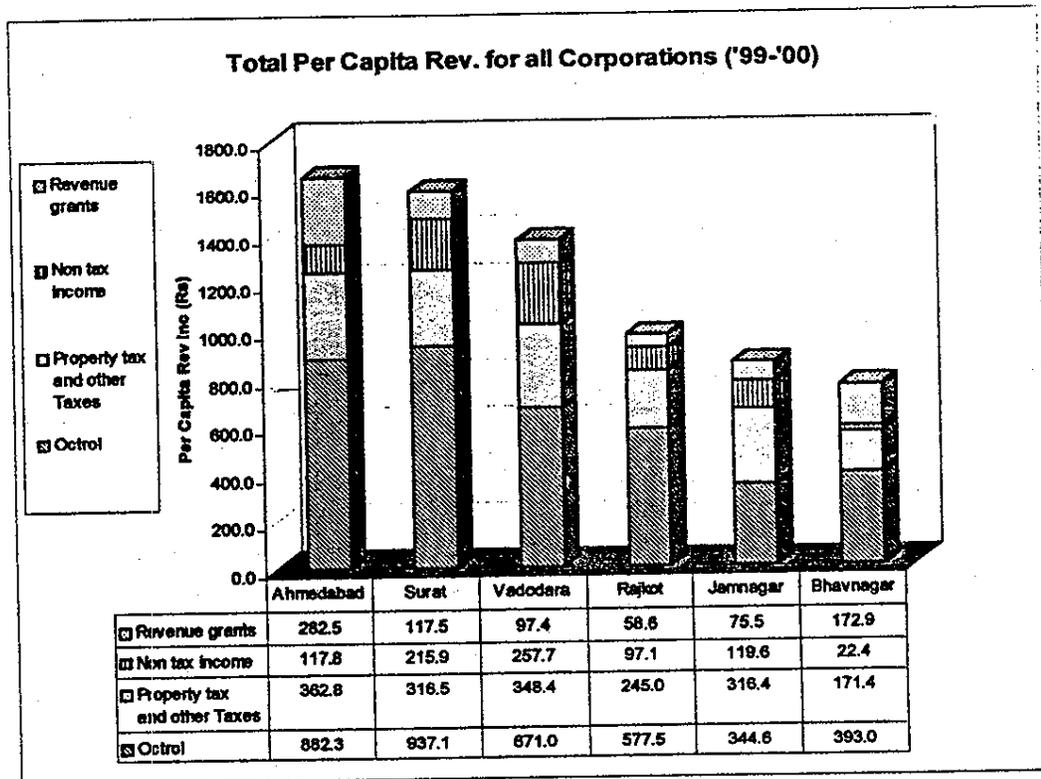
- A'bad and Bhavn'gr have higher no of street lights per Km of road length (>60) while Rajkot has the lowest.



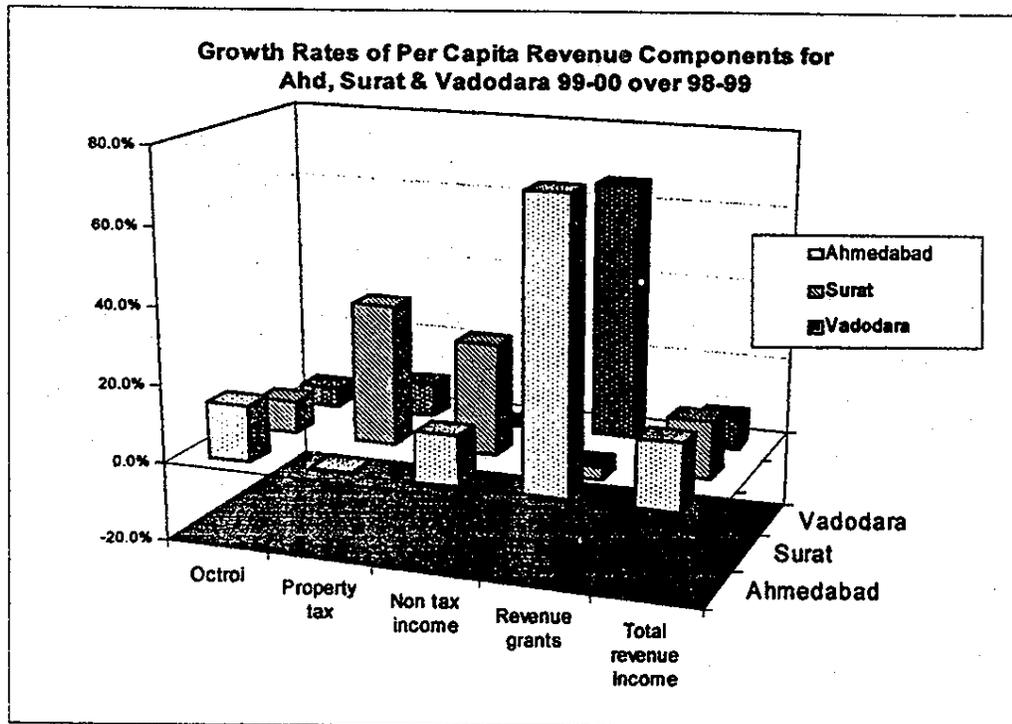
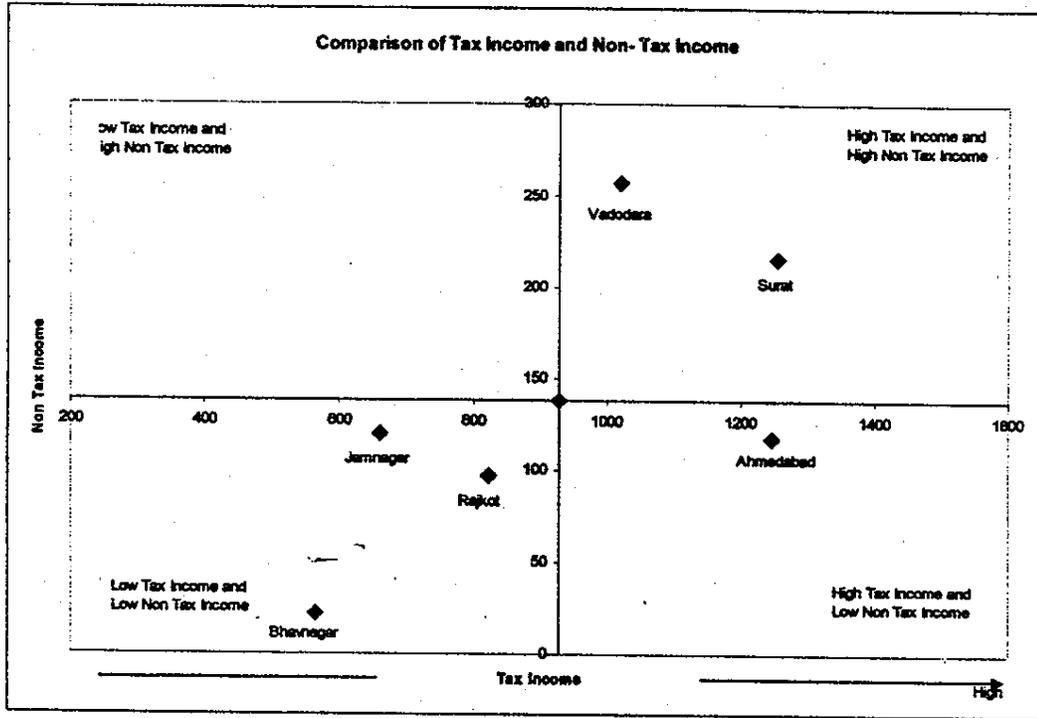
- A'bad is brightly lit up at with less staff and lower cost compared to Vad and Surat.
- Cost per streetlight is almost same for Jamnagar and Surat but staff in Jamn'gr is 1/8 of Surat.



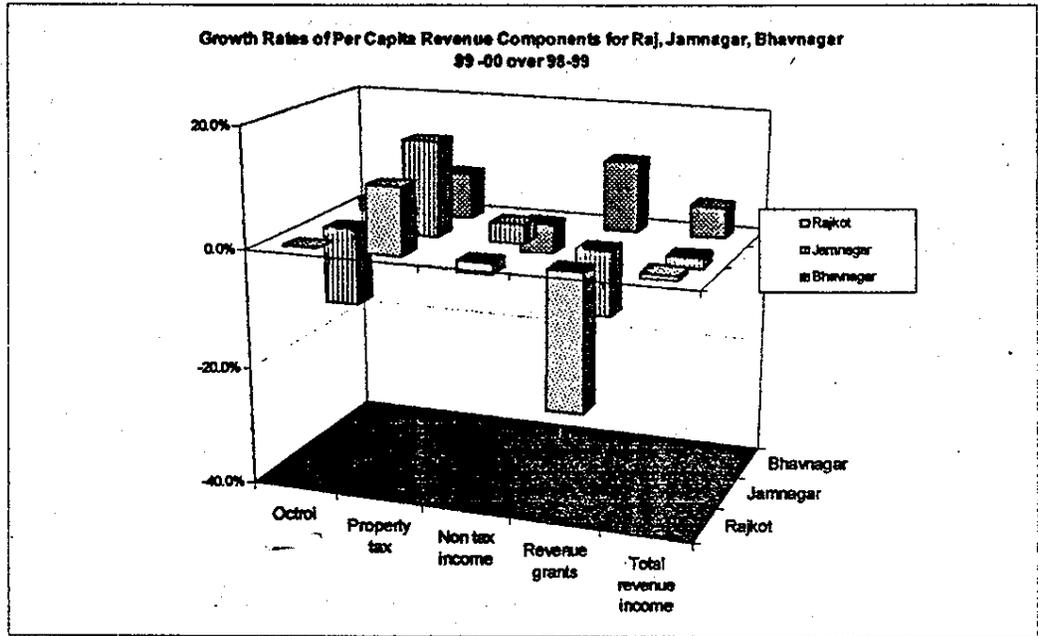
3.3 Finance Indicators
3.3.1 Resource Mobilisation



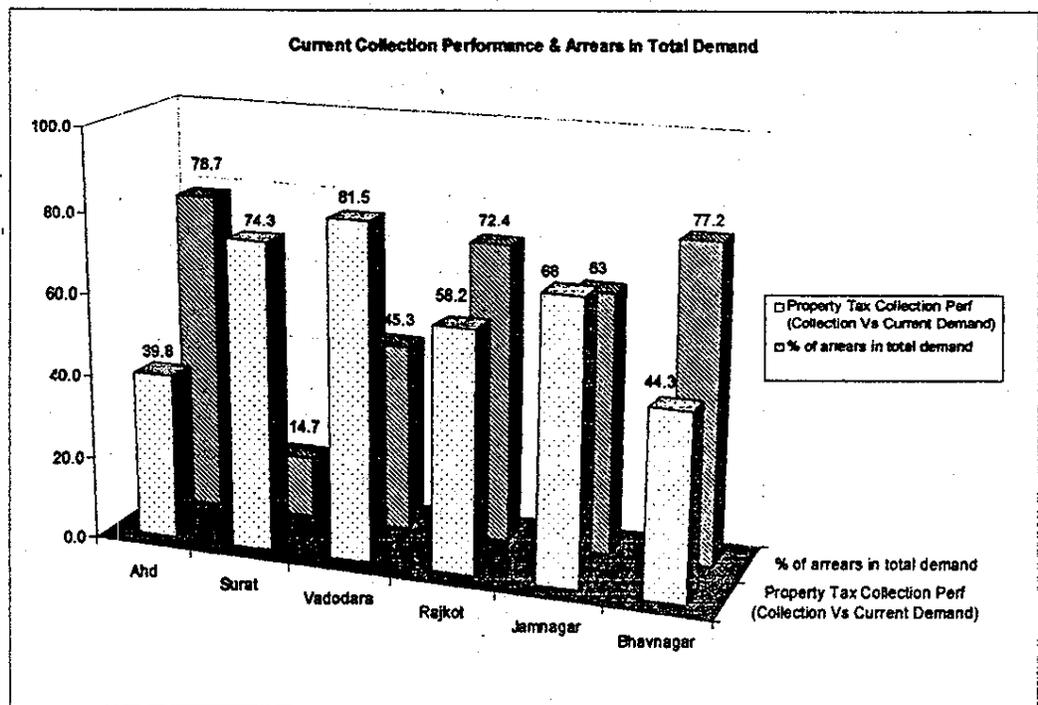
- Among six corporations, the three cities – A'bad, Surat, Vad (Group1) stand out as compared to Rajkot, Jamn'gr, Bhavn'gr (Group 2). Per capita income generation is high in Group 1 cities
- Per capita tax income (Octroi, Property and Other taxes) is very high for A'bad and Surat
- In A'bad, Grant income is high which contributes to higher per capita
- Vad -non tax income high, while for Bhavn'gr, it is extremely low



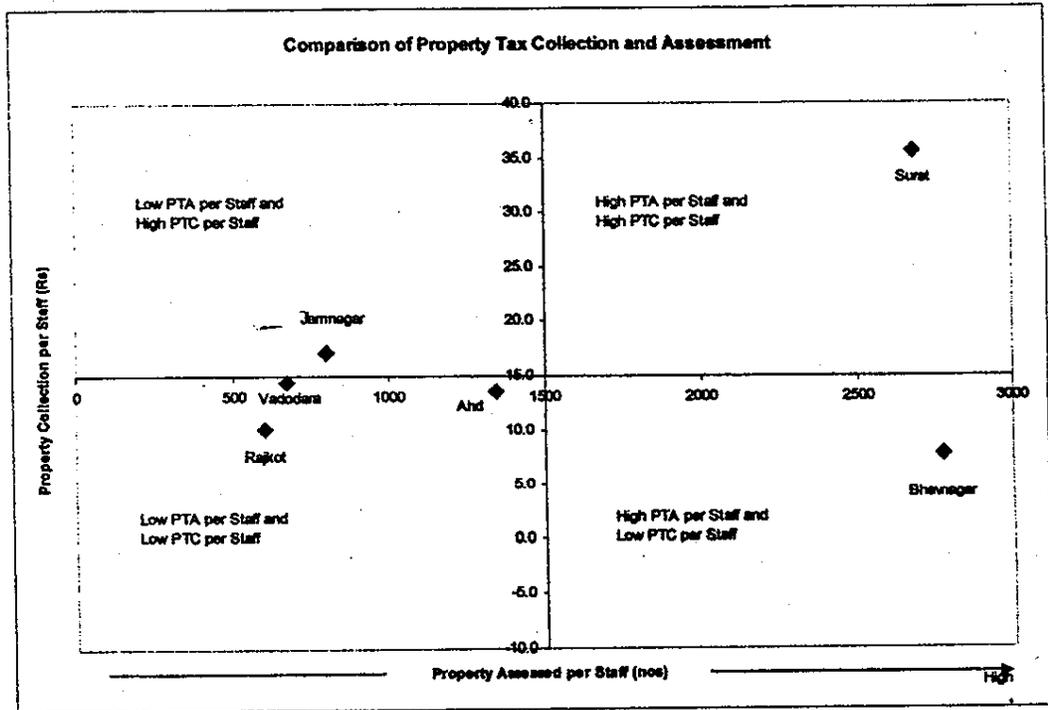
- In A'bad and Vad, growth in revenue grant income is very high which is contributing to higher revenue income while, in Surat, increase in own sources (Tax and Non Tax) contributes to higher revenue income.
- In A'bad, growth in property tax revenue is negligible



- In Jamn'gr, Property tax income increased by 15% (second to Surat). Similar increase observed in Rajkot.
- Group 2 cities should try to increase their non tax income
- Rajkot shows considerable dip in revenue grants while Bhavn'gr shows sizeable growth in revenue grants.

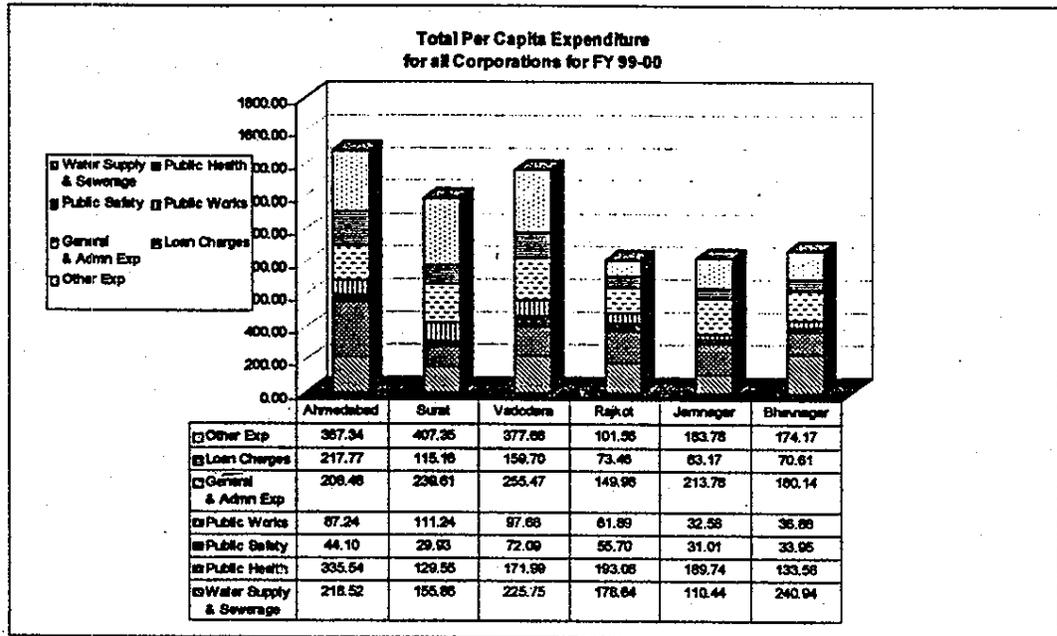


- Surat and Vad show high performance in current property tax collection and also have low arrear burden.
- Ahmedabad and Bhavn'gr have very high % of arrear demand and also their current collection performance is low
- Vad has highest per capita prop. tax collection

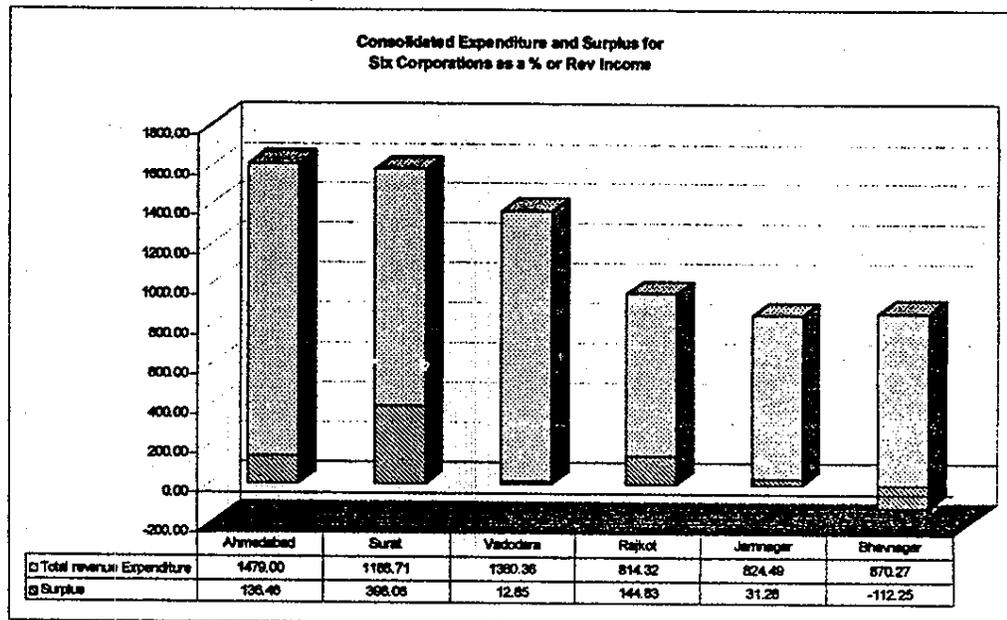


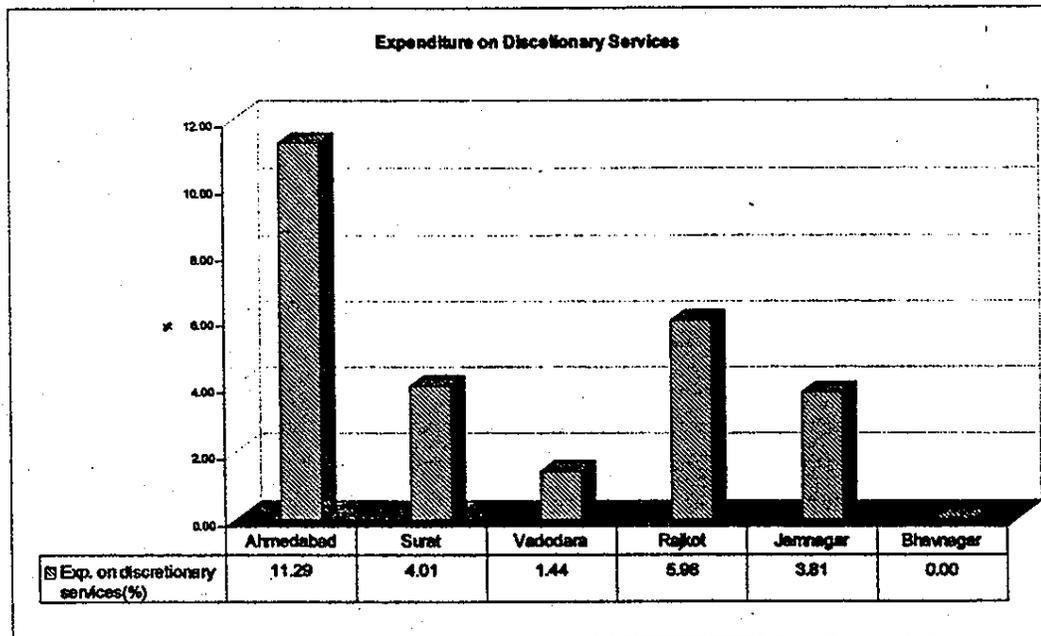
- Bhavn'gr and Surat have >2500 properties assessed per staff, higher among the corporations while collection per staff is lowest for Bhavn'gr.
- The situation calls for a closer look at the property tax formula for rating the properties in Bhavn'gr.

3.3.2 Expenditure Management



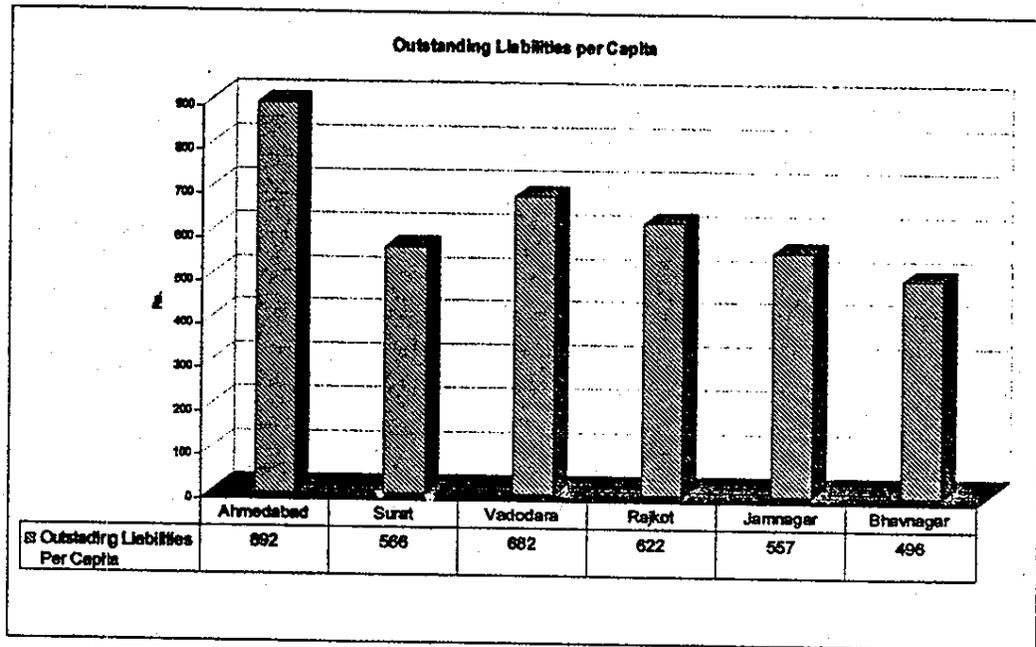
- Revenue exp in the three Group 1 cities are comparable but the surplus vary.
- Surat generates max revenue surplus while Bhavn'gr the value is negative. (Operating Ratio ($Rev\ Exp/Rev\ Inc$) of Bhavn'gr for FY '99-'00 is >1) It's a cause of concern for Bhavn'gr
- It is noteworthy that administrative expenditure is low in Rajkot.
- Establishment exp. is around 50% of the total rev exp in all the corporations except Bhavn'gr, where it is 35%.



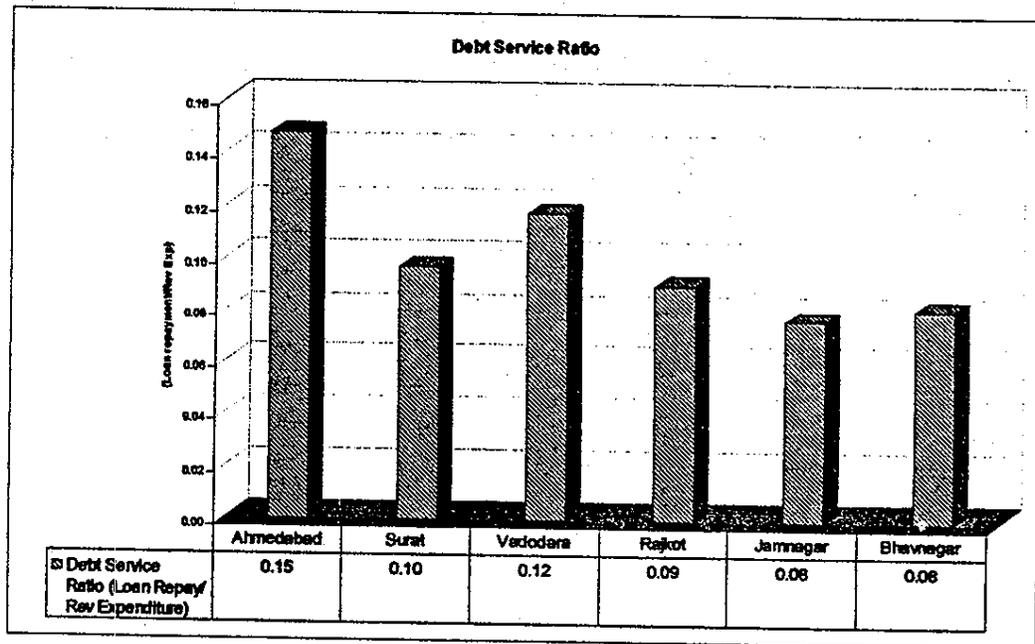


Exp on discretionary services (non obligatory services rendered by the ULB) is max in Ahmedabad, which is primarily on health and education services.

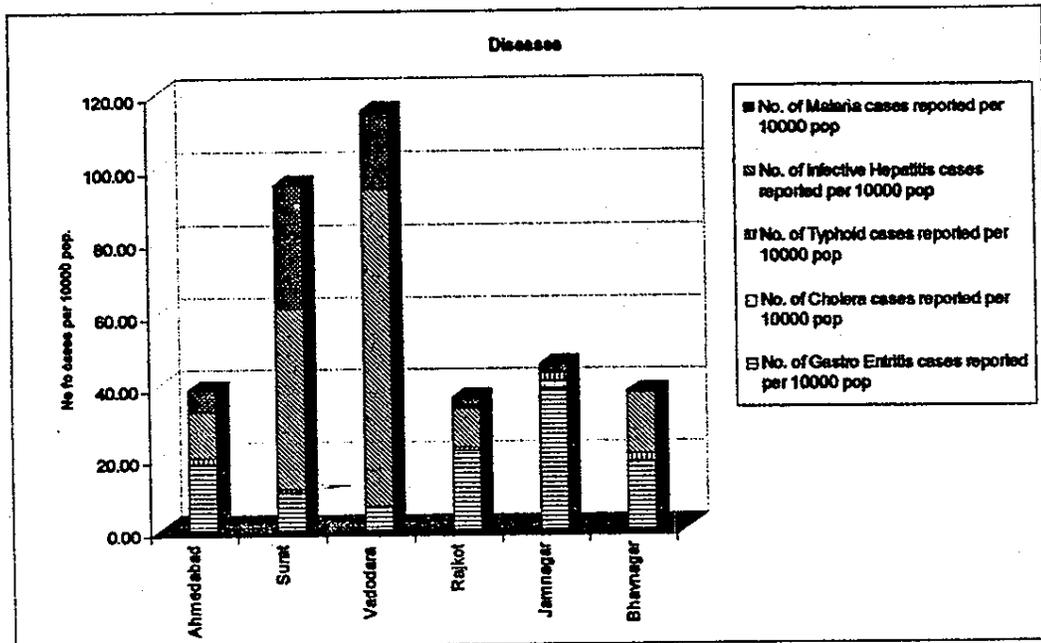
3.3.3 Debt Management



Ahmedabad has highest outstanding liabilities per capita. And also its debt service ratio is high.



3.4 Health Indicators

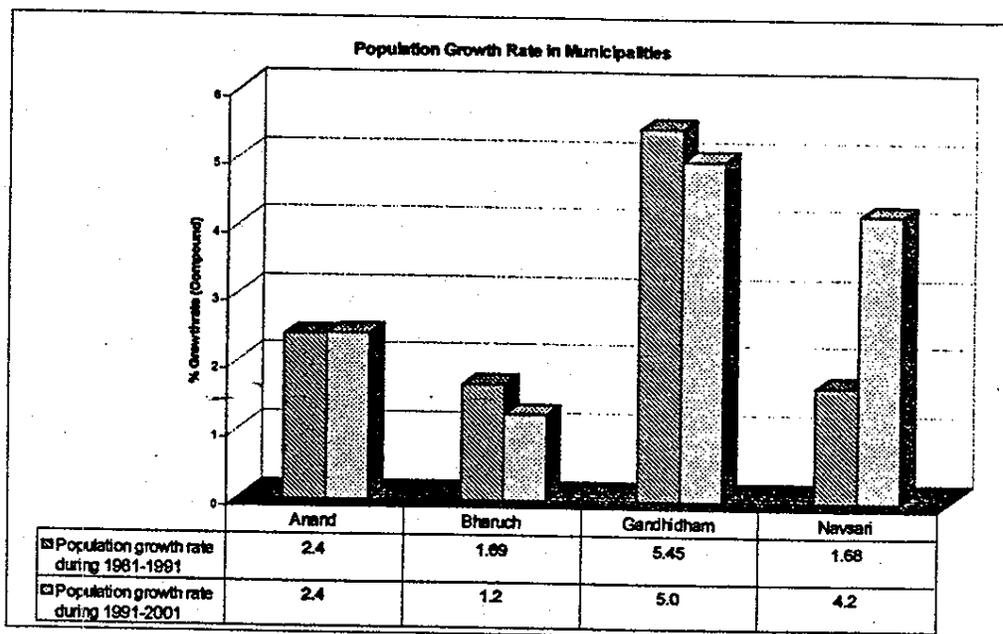


- It is notable that Jamn'gr has highest no of cases reported for Gastroenteritis.
- Surat and Vad have higher no of cases reported for all the recorded diseases.
- Surat has highest no of malaria cases while Vad has highest no of cases of Infective Hepatitis.

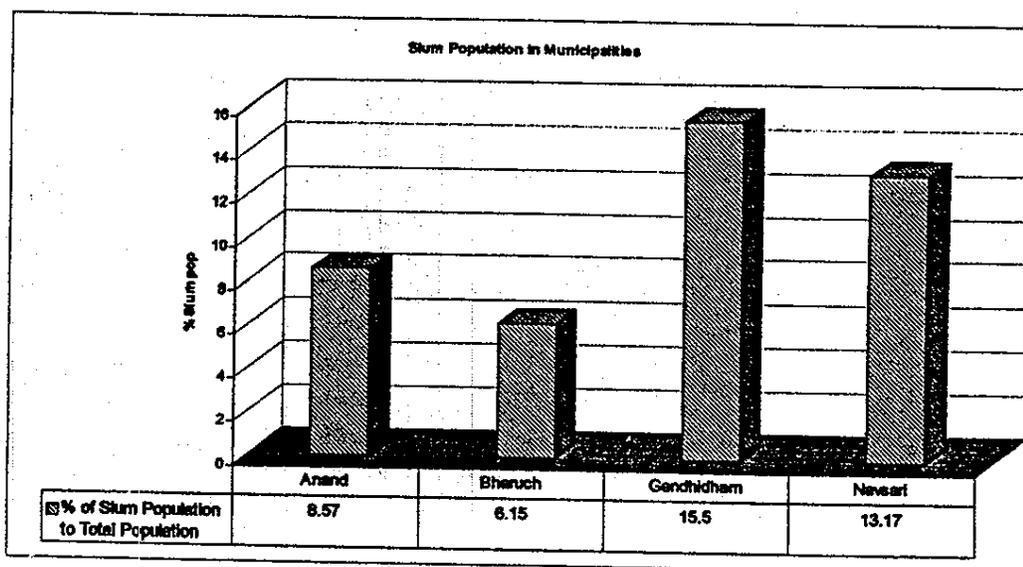
Chapter 4

Analysis - Municipalities

4.1 General Indicators

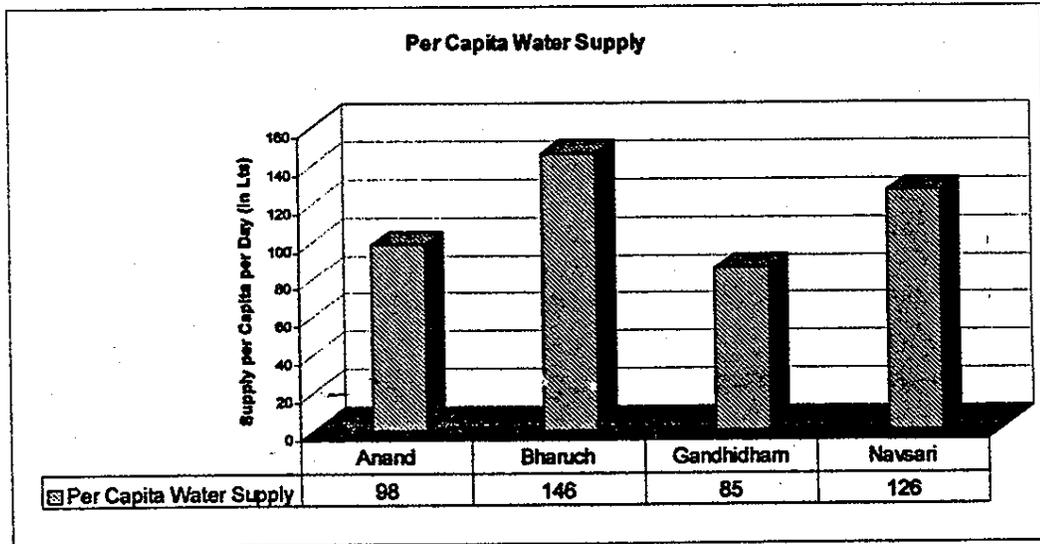


- Pop growth rate in Gandhidham is very high compared to other cities.
- Pop growth rate in Navsari in '99-'00 is extremely high than its growth rate in '98-'99.
- Anand is growing at a steady rate over the two decades.
- Gandhidham and Navsari, which show high pop growth also have higher % of slum pop.

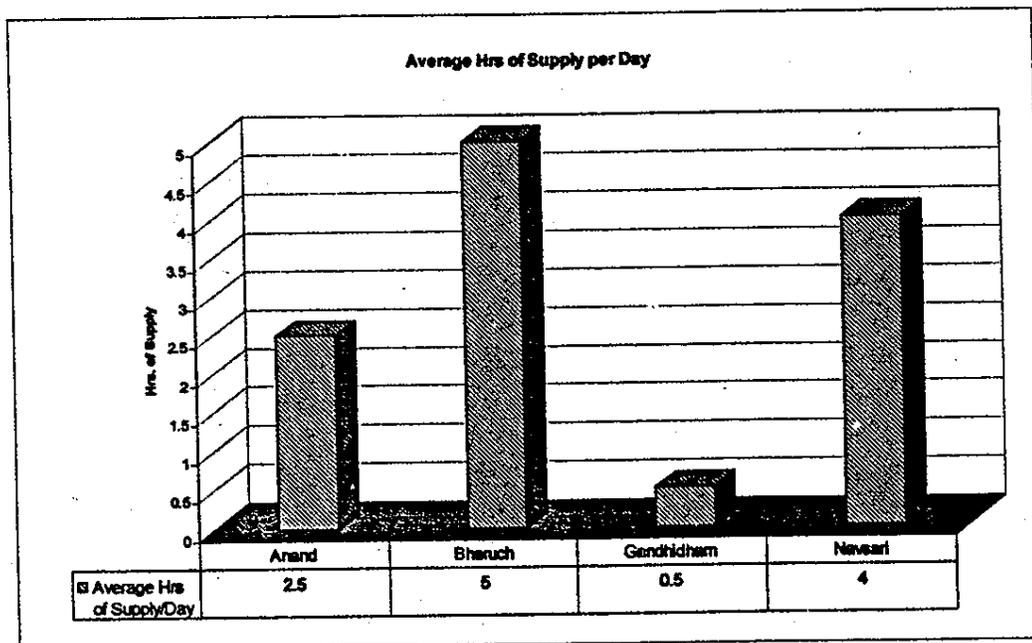


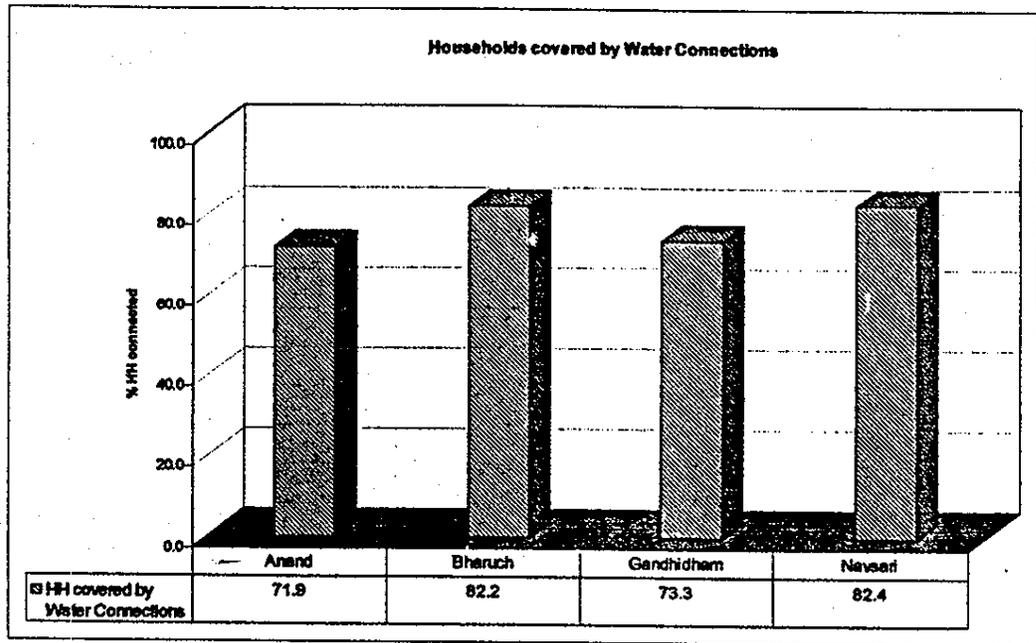
4.2 Infrastructure

4.2.1 Water Supply

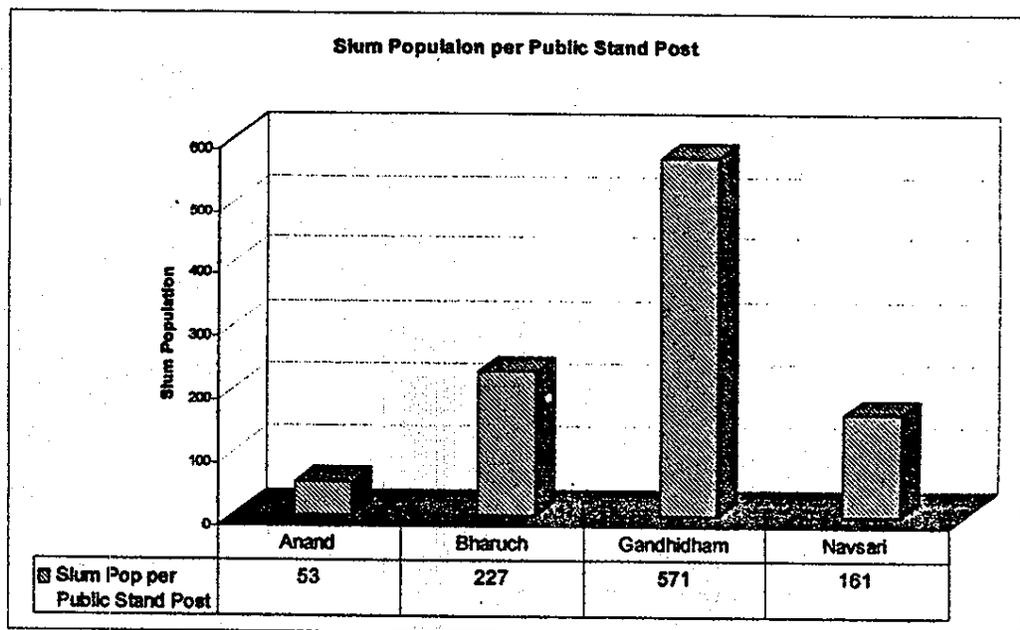


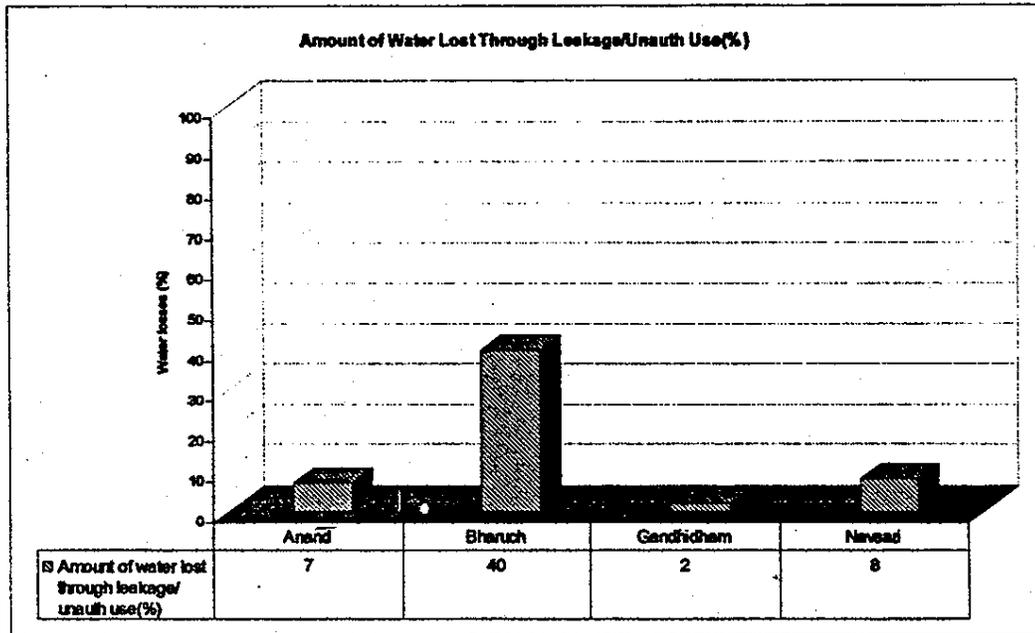
- Per capita supply of water in Gandhidham is lowest among the four municipalities.
- Average hours of supply per day is also lowest in Gandhidham
- Bharuch and Navsari have more than 100 lit of per capita supply per day
- Treatment facility is good in all the cities ($\geq 100\%$)



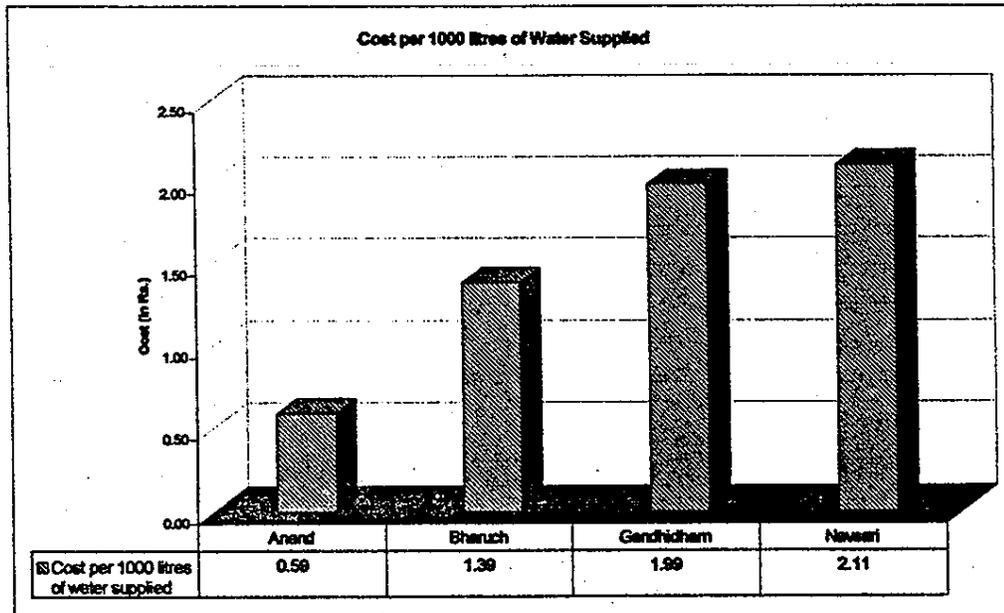


- Bharuch and Navsari have better coverage of household service connections. It can be noted here that % HHs coverage in municipalities is better than in municipal corporations.
- In Gandhidham, ratio of slum pop per PSP is highest while Anand is lowest. Hence Anand provides better services to poor.





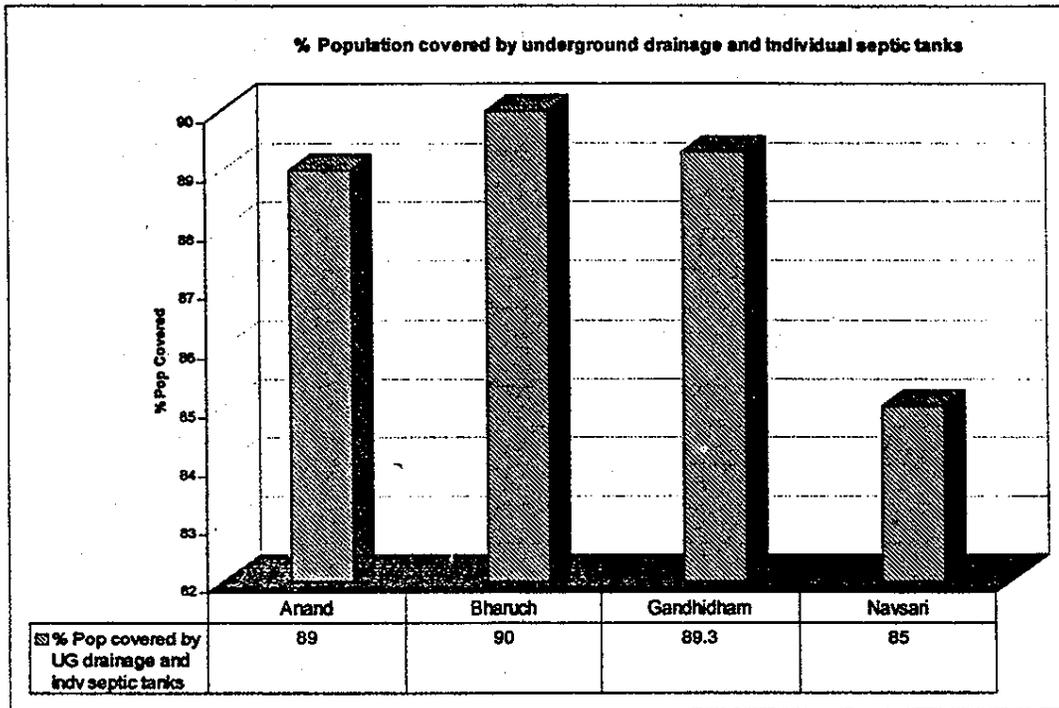
Bharuch has highest % of unaccounted for water suggesting possibility of more illegal connections, water theft, etc.



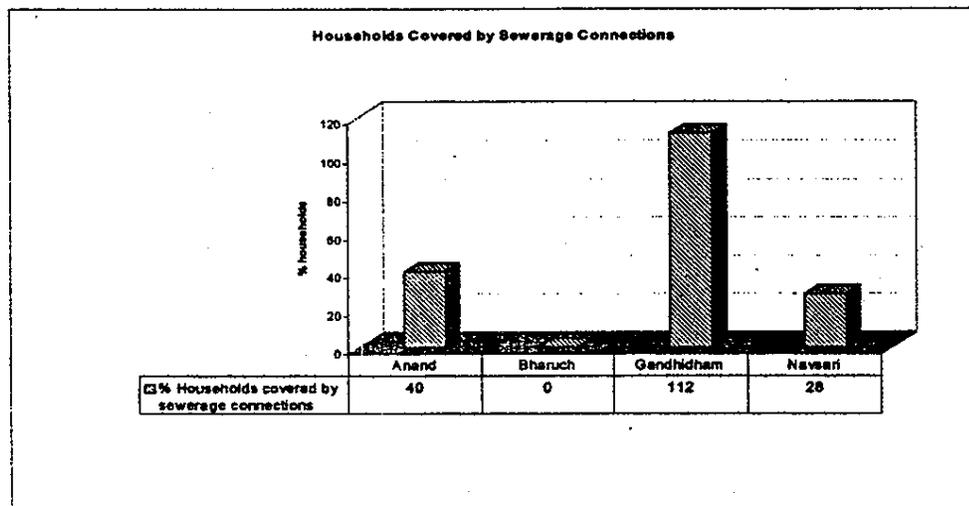
- In Gandhidham, though the establishment cost is low, its total operating cost is high.
- Overall situation seems critical in Gandhidham.
 - With low lpcd
 - Low coverage
 - Poor service to slums
 - High operating cost

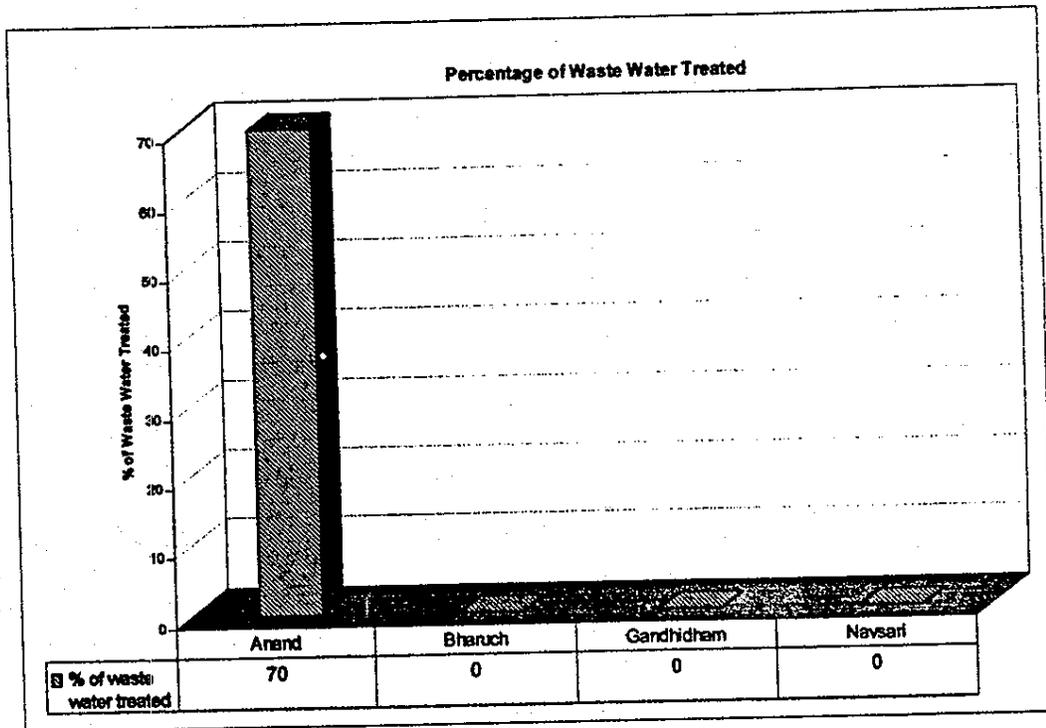
- Anand is managing the service effectively with high lpcd avg coverage in HH and slum pop coverage, good physical coverage and lower operating cost
- Navsari is delivering its service effectively albeit having higher operating cost.

4.2.2 Sewerage

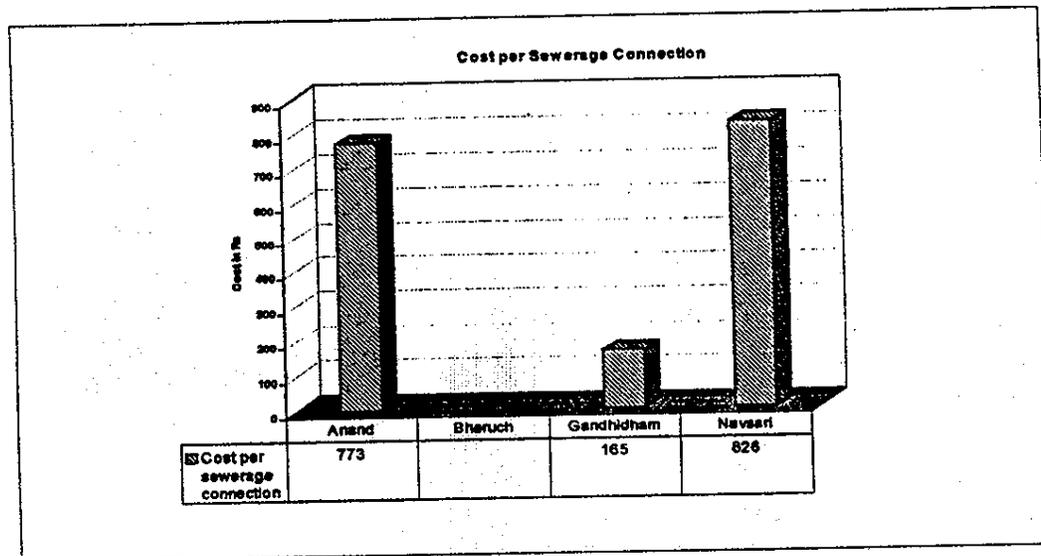


- All the municipalities have good pop coverage in underground and individual septic tanks, ranging between 85% to 90%
- Bharuch does not have under ground drainage network. 90% of pop is covered by ind. septic tanks.
- Gandhidham has exceptionally good coverage of HH sewerage connections, Navsari shows low household coverage.



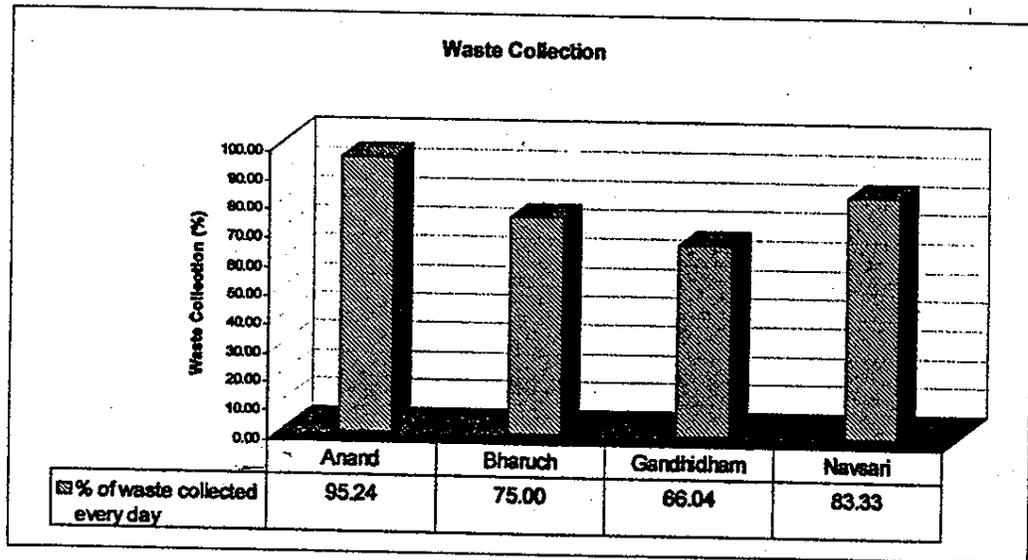


- Only Anand treats its wastewater.
- Rest of the cities need to guard against environmental and health impacts of untreated wastewater.

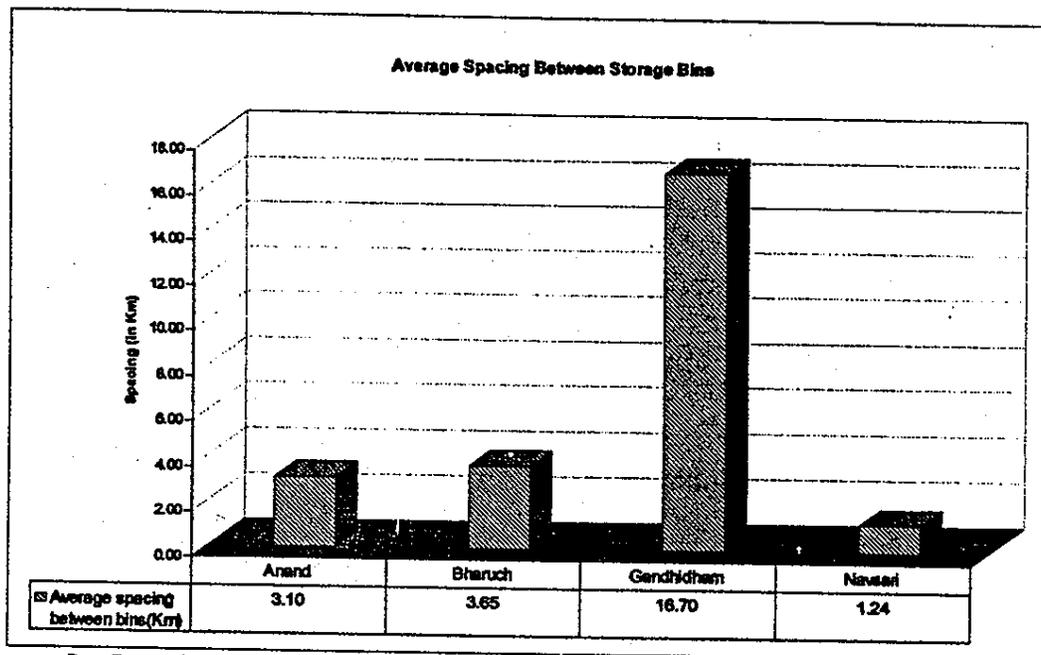


- Gandhidham is managing the service effectively – providing better coverage at lower cost than others
- Navsari is operating at very high costs, has lesser coverage and has highest no of employees per 1000 connections

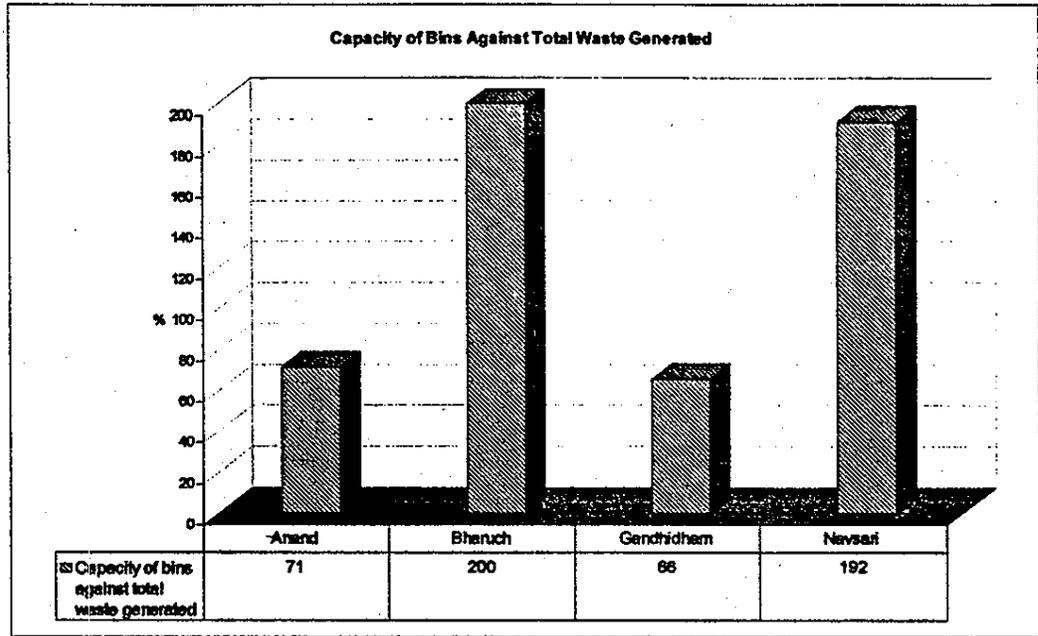
4.2.3 Solid Waste management



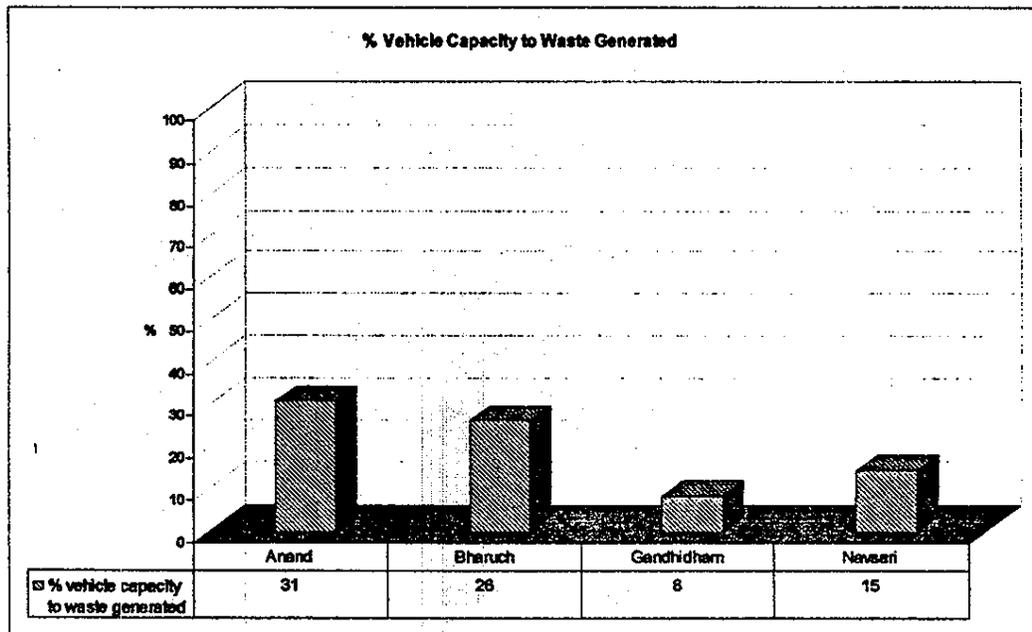
- All municipalities except Gandhidham have more than 70% of waste collection.

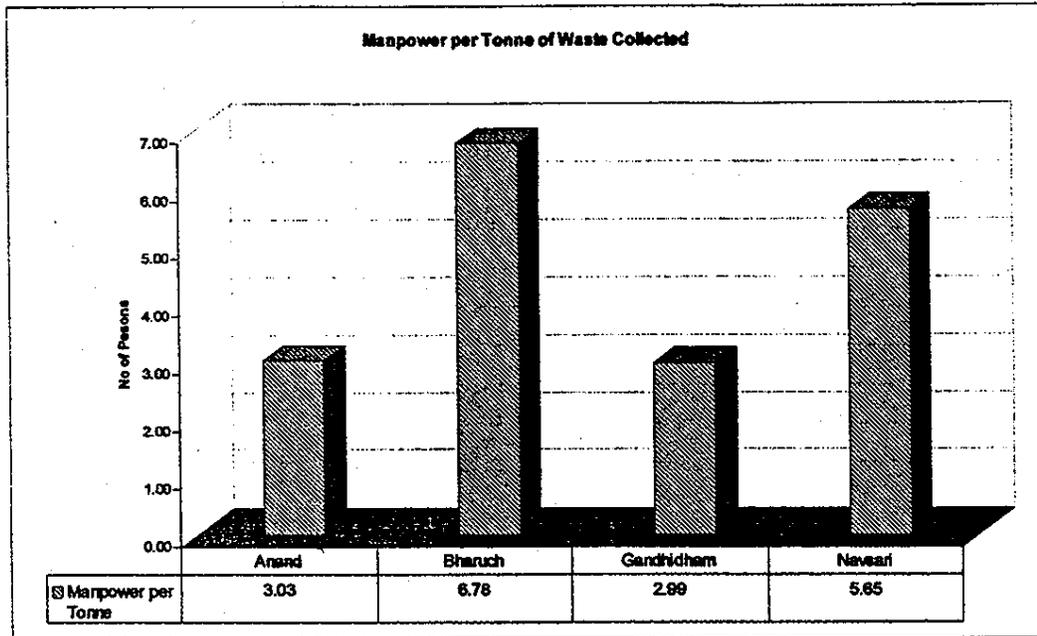


- In Gandhidham,
 average spacing between dustbins is more
 capacity of bins is less
 manpower available per tonne is low.
 Overall it needs to improve the service.

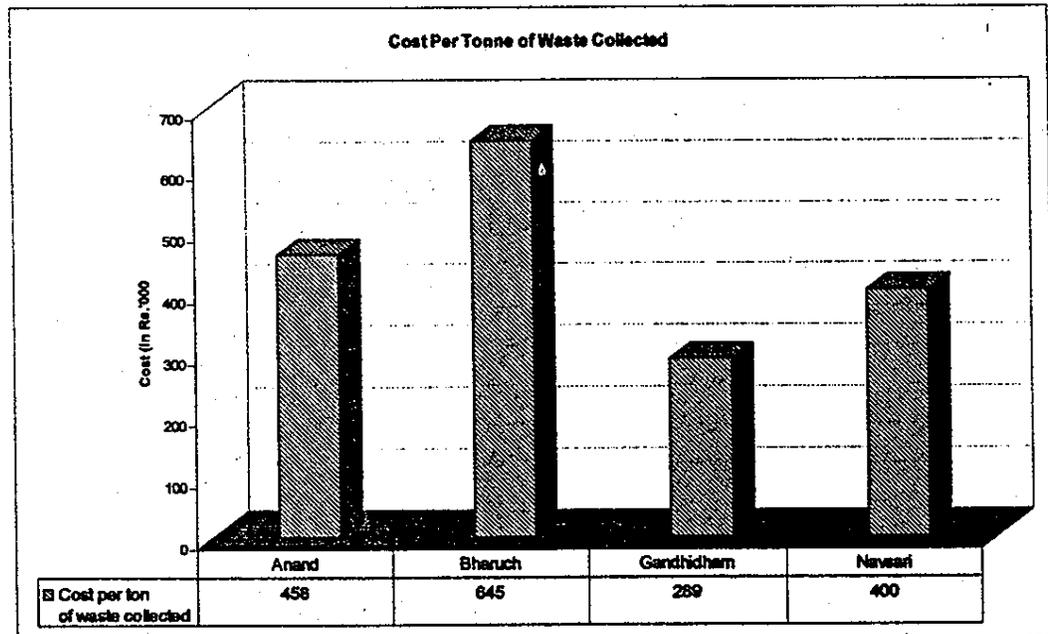


Navsari is managing the service effectively with
 high collection
 least spacing between bins
 high capacity of bins
 adequate staff
 relatively lower cost



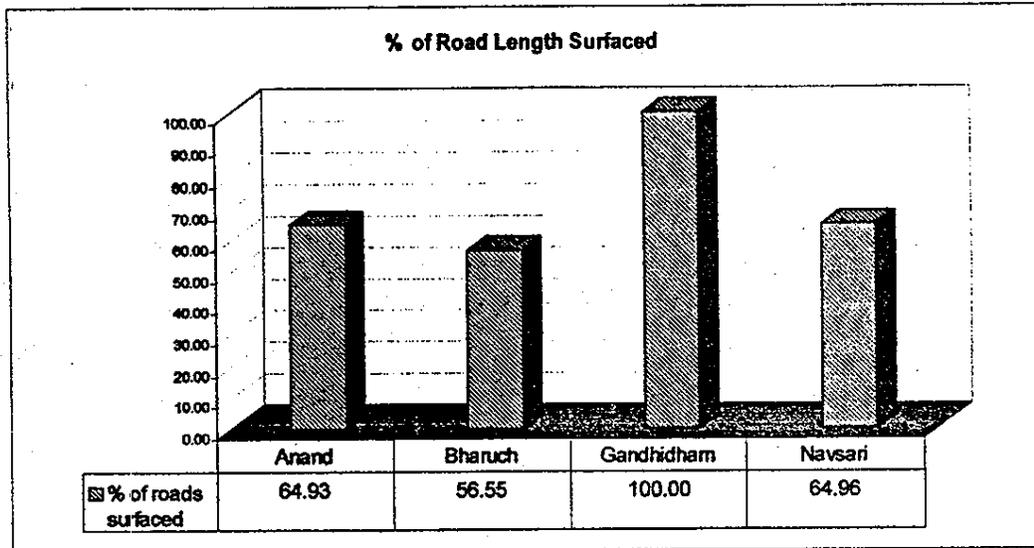


Bharuch has highest operating cost per Tonne with other parameters being comparable to Navsari.

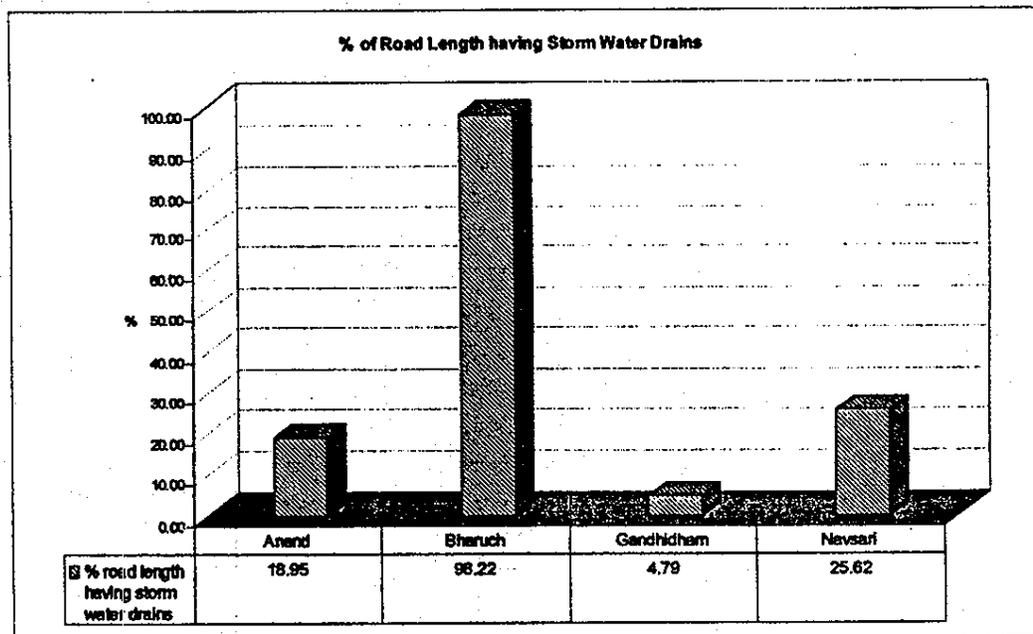


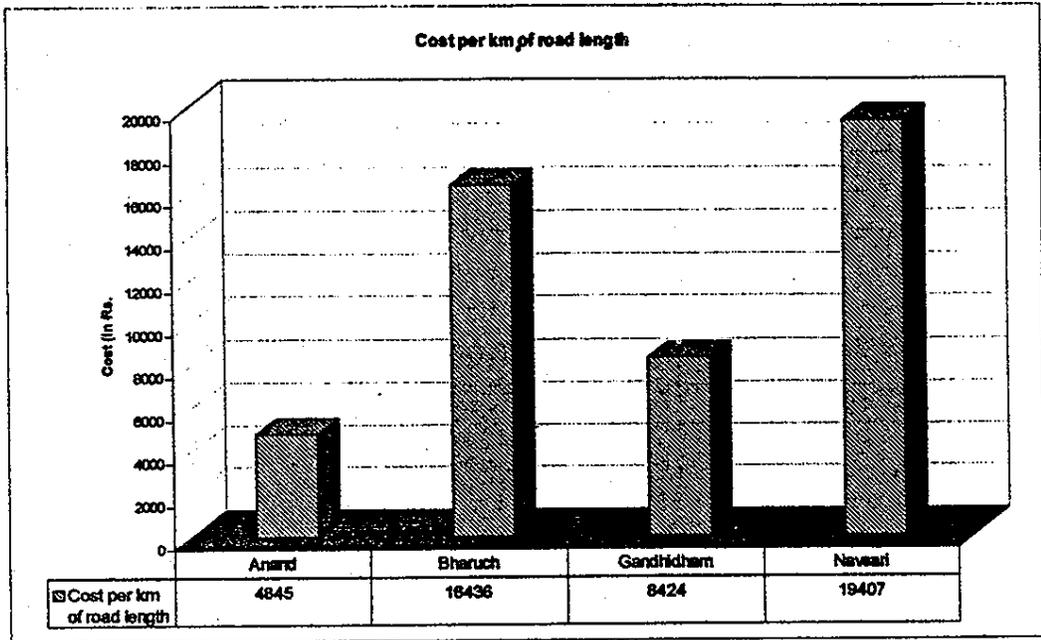
Anand is managing the service smoothly with avg values of all the indicators.

4.2.4 Roads and Storm Water Drains

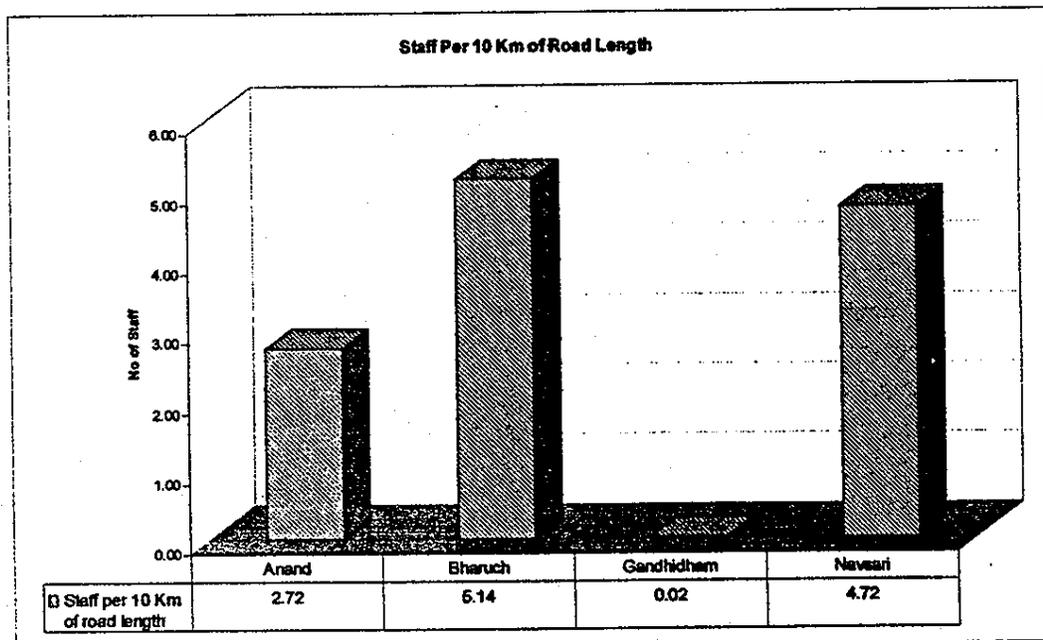


- It is noteworthy that Gandhidham has 100% of its roads surfaced.
- Bharuch has the least % of roads surfaced.

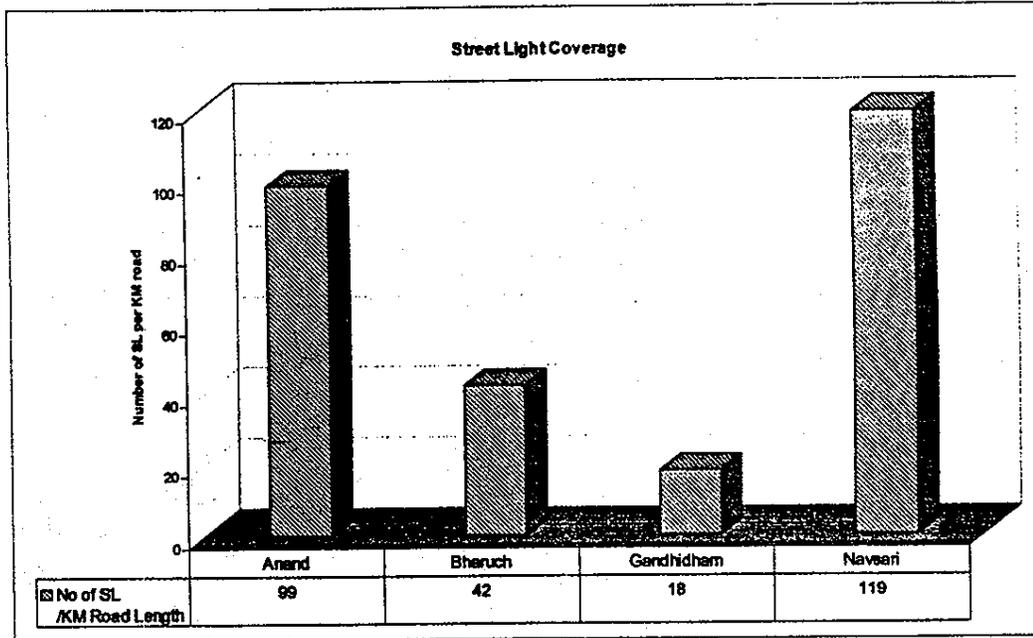




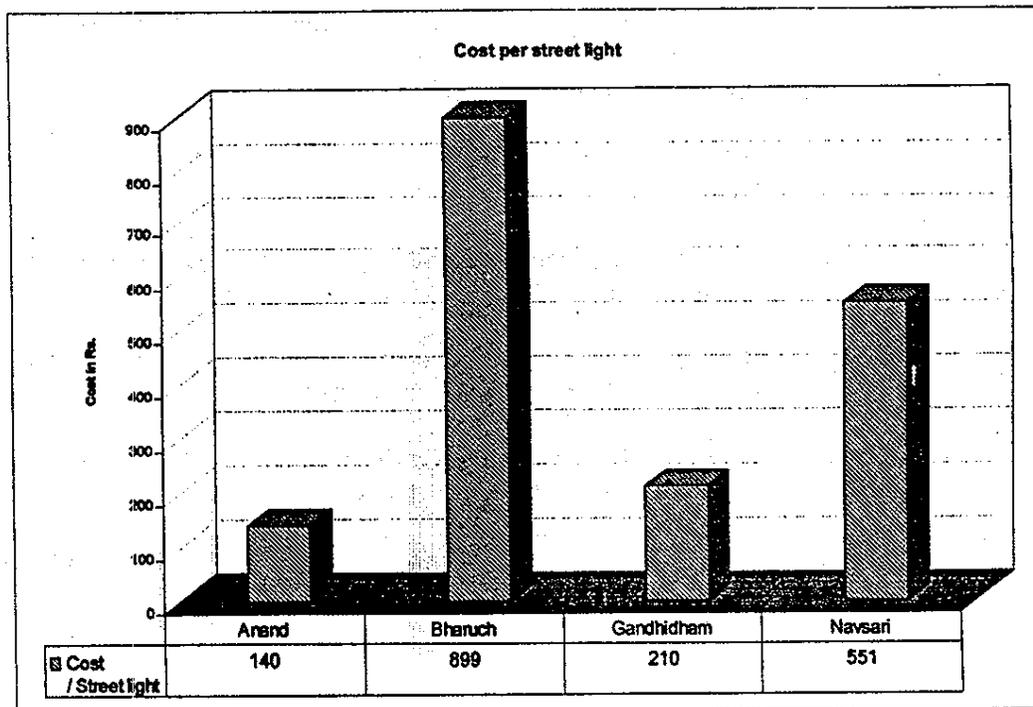
- In Bharuch, road infrastructure is critical with
 Least % of roads surfaced
 More staff per Km of road length and
 Higher O&M costs
- Gandhidham is managing the service at lower cost and staff.



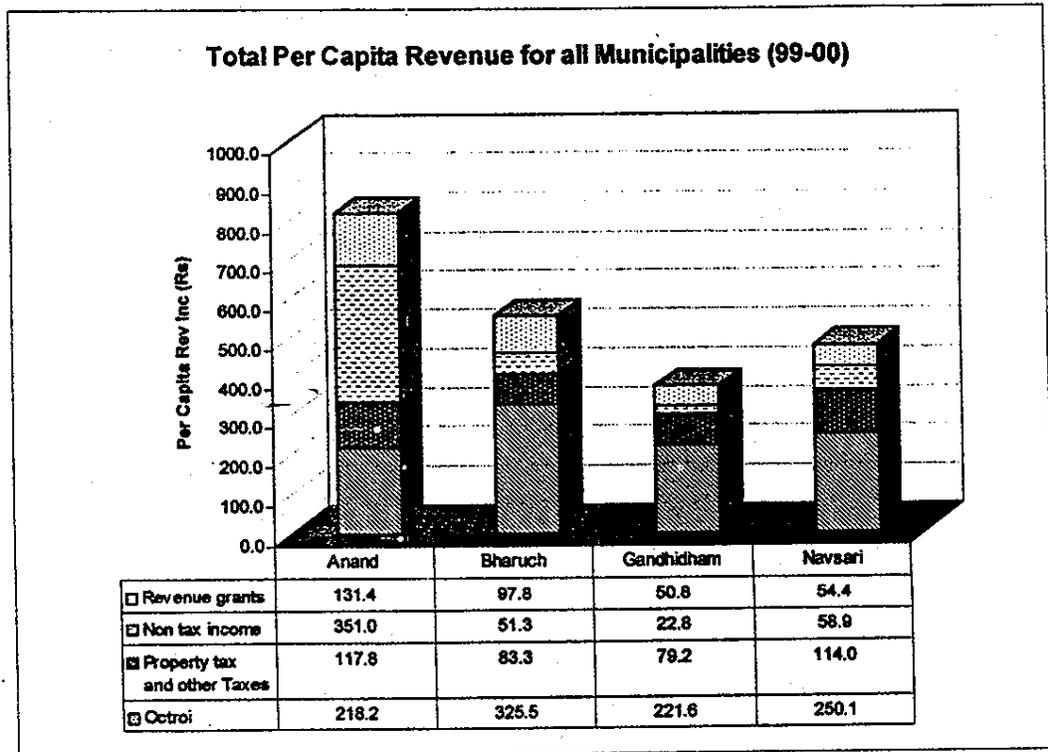
4.2.5 Streetlights



- Anand and Navsari have better coverage of streetlight service
- In Bharuch, operating cost per streetlight is extremely high compared to other Nagarpalikas.



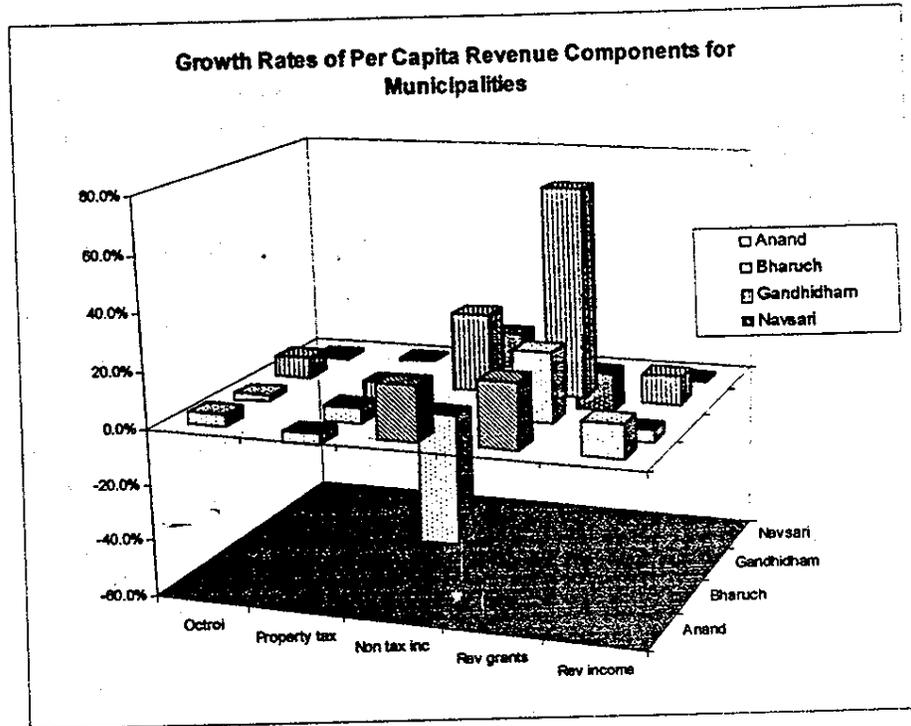
4.3 Finance Indicators
4.3.1 Resource Mobilisation



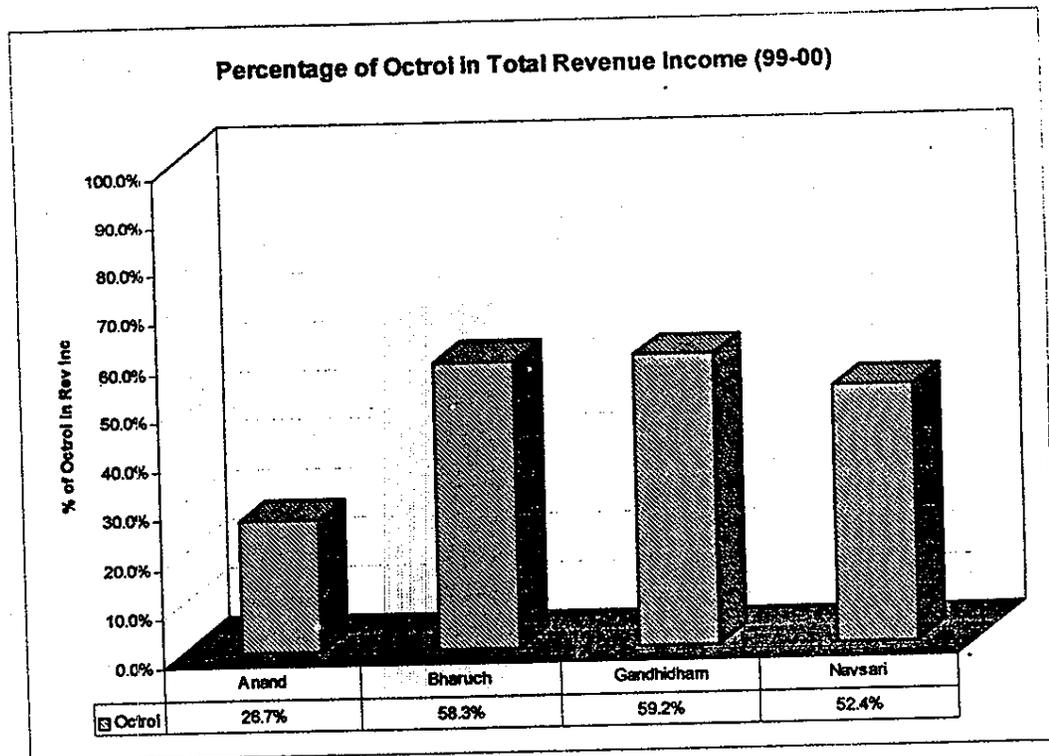
- Anand has highest per capita revenue income while Gandhidham has the least
Per capita revenue income
- It is noteworthy that Anand has a very high Non Tax Income, which is its biggest source of income.
- Anand and Bharuch have higher per capita grant income than Gandhidham and Navsari.
- Gandhidham has the lowest per capita revenue income and the growth in income is mainly due to Grants
- Anand, Bharuch and Gandhidham have dipped in their Property Tax Income from FY '98-'99 to '99-'00.
- In Bharuch, total income has gone down due to the drastic drop in Non tax incomes.

Annexure 1

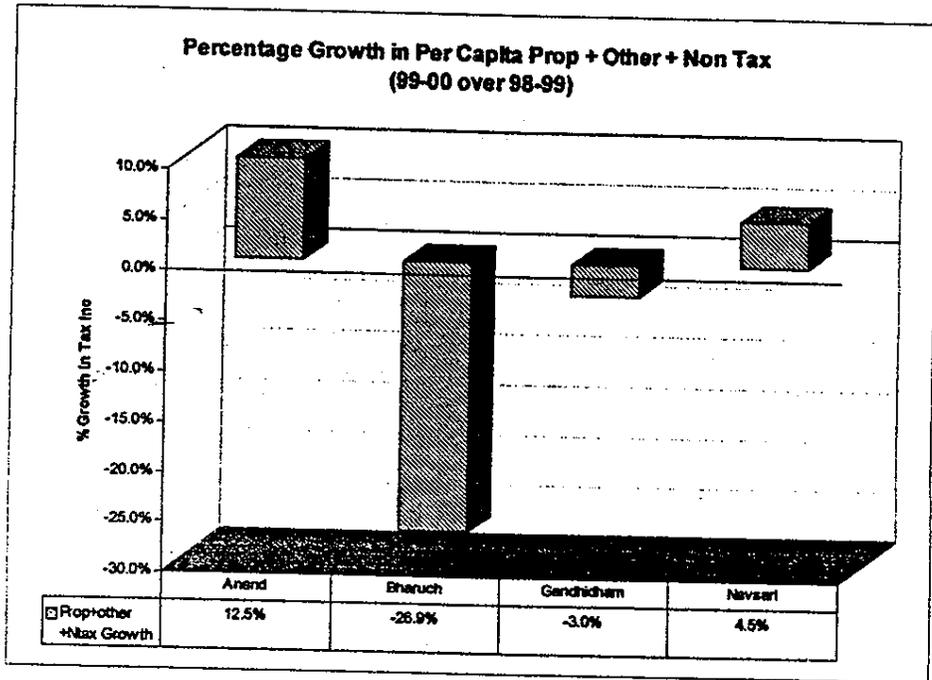
**List of Participants in the State Level Workshop
On Urban Indicators organized on 30th June 2001**

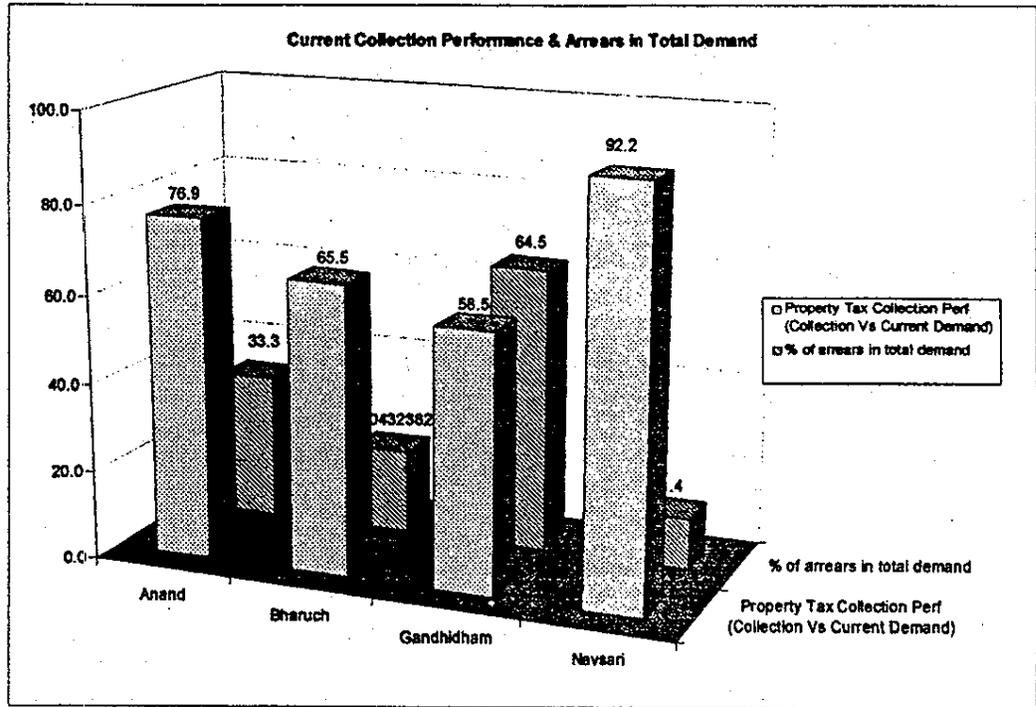


- Anand had kept its dependence on Octroi to a minimum - 27% whereas all the other cities were highly dependent on Octroi income.



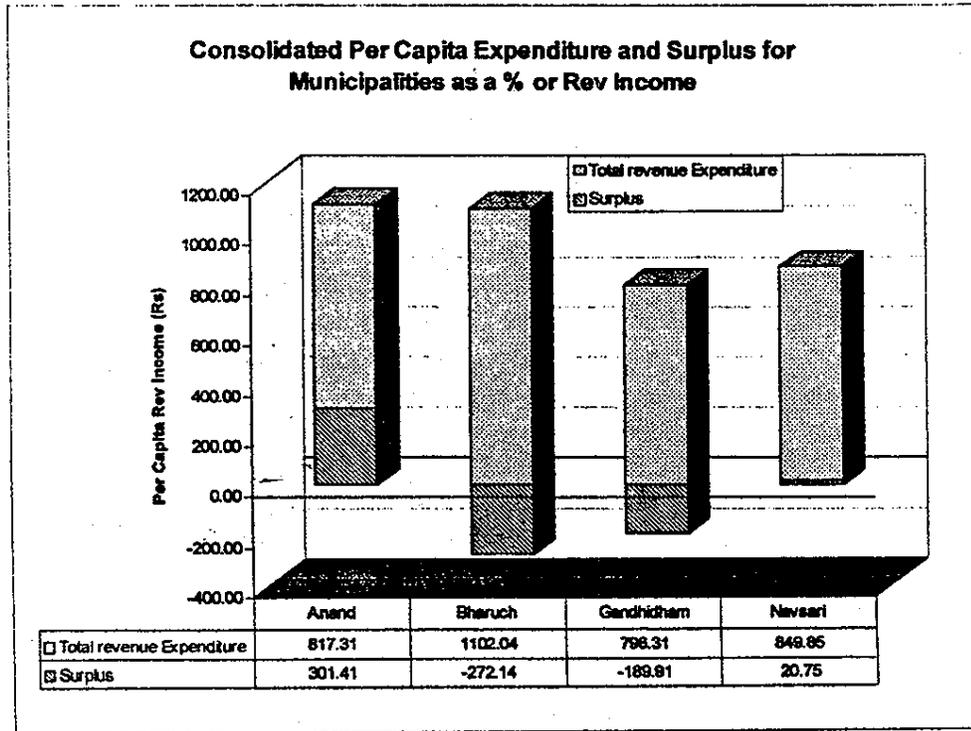
- After abolition of Octroi in municipalities, Prop and other taxes and Non tax income becomes very important
- Growth of prop and other tax and non tax is high and positive for Anand and Navsari whereas it is negative for Bharuch and Gandhidham.



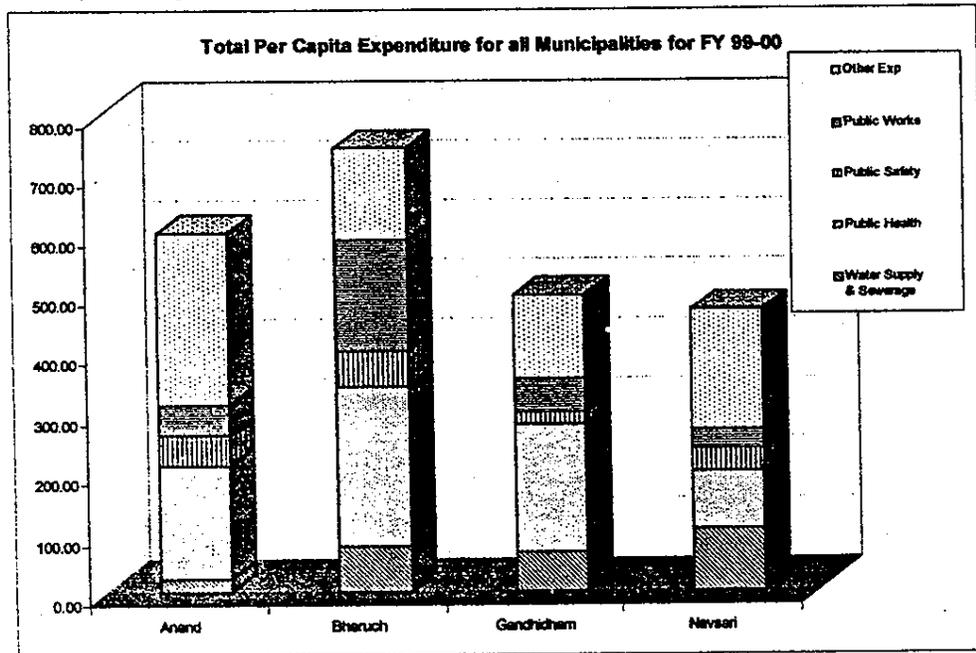


- Navsari shows high current prop tax collection performance and has also kept its arrears low.
- Gandhidham has very high arrear burden compared to other municipalities.

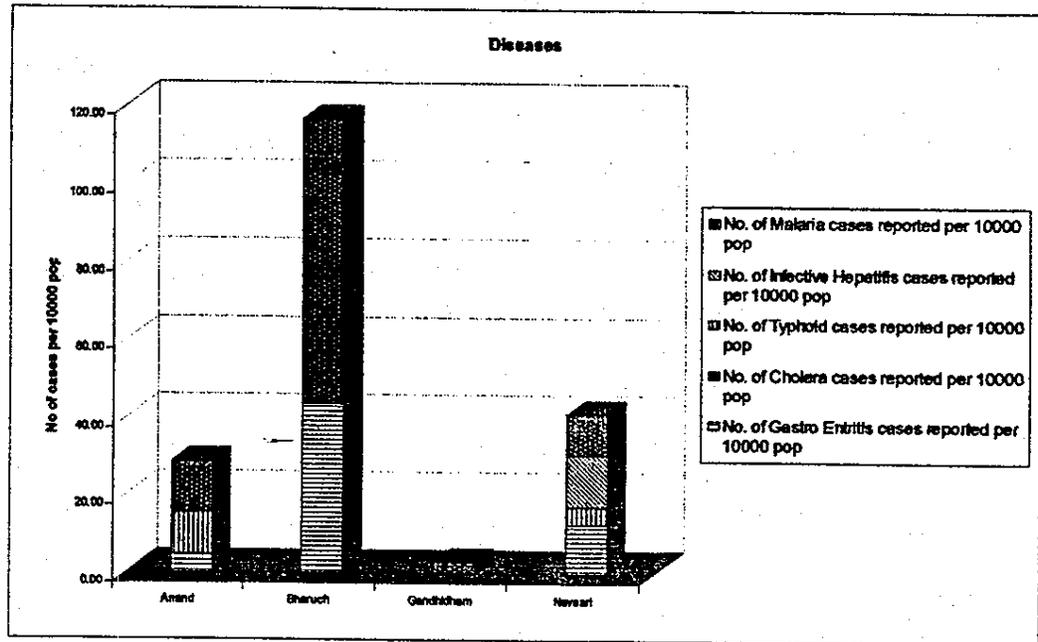
4.3.2 Expenditure Management



- Anand is spending 3% of rev exp on water supply whereas Navsari is spending 22% of its rev exp on water supply.
- Bharuch is spending 25% on Public works whereas other municipalities are spending between 6% and 11% of their rev exp.
- Only Anand is making a significant surplus. Bharuch and Gandhidham are spending more than their rev inc.



4.4 Health Indicators



- Bharuch has higher no of cases of Malaria and Gastro.
- There are no cases recorded for Malaria, Gastro, Cholera and Infective Hepatitis in Gandhidham.

Chapter 5 Performance Measurement

An attempt has been made to rate all the cities based on few selected indicators from the long list of indicators developed for all the sectors of infrastructure and finance. General and Health indicators have not been considered for performance measurement. The cities are not rated against any benchmarks or standards/norms. It is a comparative measurement among the urban local bodies.

A total of 15 finance indicators and 32 infrastructure indicators are selected for comparative performance assessment.

5.1 Performance indicators

List of performance indicators is listed in the table below.

Infrastructure Indicators

Sectors		Indicators	Performance	Correlation
Infrastructure				
Water Supply	Service Level	Water Supplied per Capita per day	Yes	positive
		Average Hours of Supply per day	Yes	positive
		Number of Supply days in a week		
		Treatment Plant Capacity as % of Water Supply from Surface Water Resources	Yes	positive
		Storage Capacity Adequacy		
	Service Coverage	Ratio of Slum Pop to Public Stand Post	Yes	negative
		% HH covered by Water Supply Connection	Yes	positive
		% Pipe Length to Total Road Length		
	Service Cost & Efficiency	Cost of Supply	Yes	negative
		Establishment Cost per Capita	Yes	negative
		Cost Recovery	Yes	positive
		Amount of Unaccounted for Water	Yes	negative
		Staff per MLD supplied	Yes	negative
	Sewerage and Sanitation	Service Level	% of Waste Water treated	Yes
Slum Population per Public Convenience			Yes	negative
Ratio of Pay and Use Toilets to Total Public Toilets			Yes	positive

Sectors		Indicators	Performance	Correlation
	Service Coverage	% of Pop covered by Underground Drainage and Indv Septic Tanks	Yes	positive
		% HH covered by Sewerage Connection	Yes	positive
	Service Cost & Efficiency	Cost per Sewerage Connections	Yes	negative
		Cost Recovery	Yes	positive
		Staff per 1000 sewerage connections	Yes	negative
	Solid Waste Management	Service Level & Coverage	% Waste Collection	Yes
% vehicle to waste generated			Yes	positive
Spacing of Waste bins			Yes	negative
% Capacity of bins			Yes	positive
Service Cost & Efficiency		Road Length covered per sweeper		
		Total Cost per ton of waste collected	Yes	negative
		Manpower per Tonne	Yes	negative
		Cost Recovery	Yes	positive
Roads & Storm Water Drains	Service Level	% Roads Surfaced	Yes	positive
		% Road length having storm water drains	Yes	positive
	Service Coverage	Road Density		
		% city area covered by Storm Water Drains	Yes	positive
	Service Cost & Efficiency	Cost per KM of road length		
		Staff per 10 Km of Road Length	Yes	negative
Street Lights	Service Level & Coverage	Street Light Coverage	Yes	positive
	Service Cost & Efficiency	Cost per Street Light	Yes	negative
		Staff per 1000 Streetlights	Yes	negative

The three Saurashtra cities – Rajkot, Jamnagar and Bhavnagar face a critical situation in water supply due to unavailability of water sources. It was felt that values of water supply being skewed for these cities will not give the true overall picture. And therefore, rating for water supply has been done separately for the two group of cities – one comprising of Rajkot, Jamnagar and Bhavnagar and the other comprising of Ahmedabad, Surat and Vadodara.

Finance Indicators

Sectors	Indicators	Performance	Correlation
Finance			
Resource Mobilisation	Per Capita Revenue Income		
	Per Capita Tax Income	Yes	positive
	Per Capita Non Tax Income	Yes	positive
	% of Own Resource in Revenue Income	Yes	positive
	% of Own Resource in Capital Income		
	% Growth in Per Capita Tax Income	Yes	positive
	% Growth in Per Capita Non Tax Income	Yes	positive
	% Growth of Own Resources in Revenue Income		
	% of Octroi in Revenue Income	Yes	negative
	% of Total Grants in Total Income		
	Per Capita Property Tax Income	Yes	positive
	Property Tax Collection Performance	Yes	positive
	Numbers of Properties Assessed Per Staff		
	Property Tax Collection Per Staff		
	Properties Assessed per Sq Km of City Area		
% of Arrears in Total Demand	Yes	negative	
Expenditure Management	Per Capita Revenue Expenditure		
	Per Capita Expenditure on Water Supply & Sanitation		
	Per Capita Expenditure on Public Health		
	Per Capita Expenditure on Public Safety		
	Per Capita Expenditure on Public Works		
	Per Capita Expenditure on General & Admin		
	% of Establishment Exp in Total Rev Expenditure	Yes	negative
	Operating Ratio	Yes	negative
	Per Capita Expenditure on Capital Works	Yes	positive

Sectors	Indicators	Performance	Correlation
	% of Expenditure on Discretionary Services	Yes	positive
Debt Management	Debt Service Ratio (Loan repay./Rev Inc)		
	Debt Service Ratio (Loan repay./Rev Exp)	Yes	0.12 - 5 <0.12 - 6 >0.12 - 3
	Outstanding Liabilities per Capita	Yes	negative

5.2 Rating Methodology

Specific indicators are rated on a 7-point scale. As this is a comparative performance measurement, the indicator values across the cities have been compared with the average value. The average value of the performance indicator has been assigned the score of 4. The scoring depends on the deviation from the average and the correlation.

The cities have been assigned the score of 3 or 5 if the deviation of the indicator value is 10% from the average; score of 2 or 6 has been assigned if the deviation is 20% from the average value; if the deviation is more than 30%, score of 1 or 7 is assigned accordingly. After the indicators were given scores, weighted score was calculated multiplying the score by the Weightage. Weightages were assigned after consulting the experts.

Weightages have been assigned at 4 levels:

- Level 1: Overall Weightage to Infrastructure and Finance
- Level 2: Weightage to each of five services of infrastructure and three sectors of finance
- Level 3: Weightage to service level, service coverage and efficiency
- Level 4: Weightage to each specific performance indicator within the above sub head

At level 1, Infrastructure and finance were given equal weightages i.e., 50% Weightage to each.

At the second level, i.e., Level 2, weightage was assigned to each of four services of infrastructure. Water supply service has been excluded in case of municipal corporations. But in case of municipalities, water supply is included. The weightages have been summarized below:

Sectors	Weightage (Level 2) Muni. Corp.	Weightage (Level 2) Municipality
Infrastructure		
Water Supply		24%
Sewerage and Sanitation	30%	24%
Solid Waste Management	30%	24%
Roads & Storm Water Drains	23%	17%
Street Lights	17%	11%
Finance		
Resource Mobilisation	55%	55%
Expenditure Management	35%	35%
Debt Management	10%	10%

Incase of infrastructure, further the weightages were assigned to service level, service coverage and efficiency.

Sectors	Weightage (Level 3)	
Infrastructure		
Water Supply	Service Level	40%
	Service Coverage	35%
	Service Cost & Efficiency	25%
Sewerage and Sanitation	Service Level	35%
	Service Coverage	35%
	Service Cost & Efficiency	30%
Solid Waste Management	Service Level & Coverage	65%
	Service Cost & Efficiency	35%
Roads & Storm Water Drains	Service Level	60%
	Service Coverage	20%
	Service Cost & Efficiency	20%
Street Lights	Service Level & Coverage	55%
	Service Cost & Efficiency	45%

Weightage assigned to each specific performance indicator is summarized below:

Sectors		Indicators	Weightage (Level 4)
Infrastructure			
Water Supply	Service Level	Water Supplied per Capita per day	35%
		Average Hours of Supply per day	45%
		Treatment Plant Capacity as % of Water Supply from Surface Water Resources	20%
	Service Coverage	Ratio of Slum Pop to Public Stand Post	50%
		% HH covered by Water Supply Connection	50%
	Service Cost & Efficiency	Cost of Supply	15%
		Establishment Cost per Capita	20%
		Cost Recovery	30%
		Amount of Unaccounted for Water	10%
		Staff per MLD supplied	25%
Sewerage and Sanitation	Service Level	% of Waste Water treated	30%
		Slum Population per Public Convenience	40%
		Ratio of Pay and Use Toilets to Total Public Toilets	30%
	Service Coverage	% of Pop covered by Underground Drainage and Indv Septic Tanks	50%
		% HH covered by Sewerage Connection	50%
	Service Cost & Efficiency	Cost of Sewerage facility	40%
		Cost Recovery	25%
		Employee Strength	35%
Solid Waste Management	Service Level & Coverage	% Waste Collection	30%
		% vehicle to waste generated	15%
		Spacing of Waste bins	20%
		% Capacity of bins	35%
	Service Cost & Efficiency	Total Cost per ton of waste collected	40%
		Manpower per ton	40%
		Cost Recovery	20%
Roads & Storm Water Drains	Service Level	% Roads Surfaced	60%
		% Road length having storm water drains	40%
	Service Coverage	% city area covered by Storm Water Drains	100%
	Service Cost & Efficiency	Staff per 10 Km of road length	100%
Street Lights	Service Level & Coverage	Street Light Coverage	100%
	Service Cost & Efficiency	Cost per Street Light	50%
		Staff per 1000 Streetlights	50%

Following the weightages as expatiated above, the weighted scores were calculated and the cities were rated. A Software has been developed, which calculates and represents the final rating at each level on a graphical front-end. It is called "City Manageware". At each level, scoring less than 3 (on a 7 point scale) has been considered critical.

5.3 Rating of Municipal Corporation and Municipalities

Detailed scoring and rating sheets have been enclosed in the annexure. The final rating is as given below:

Municipal Corporation

Infrastructure

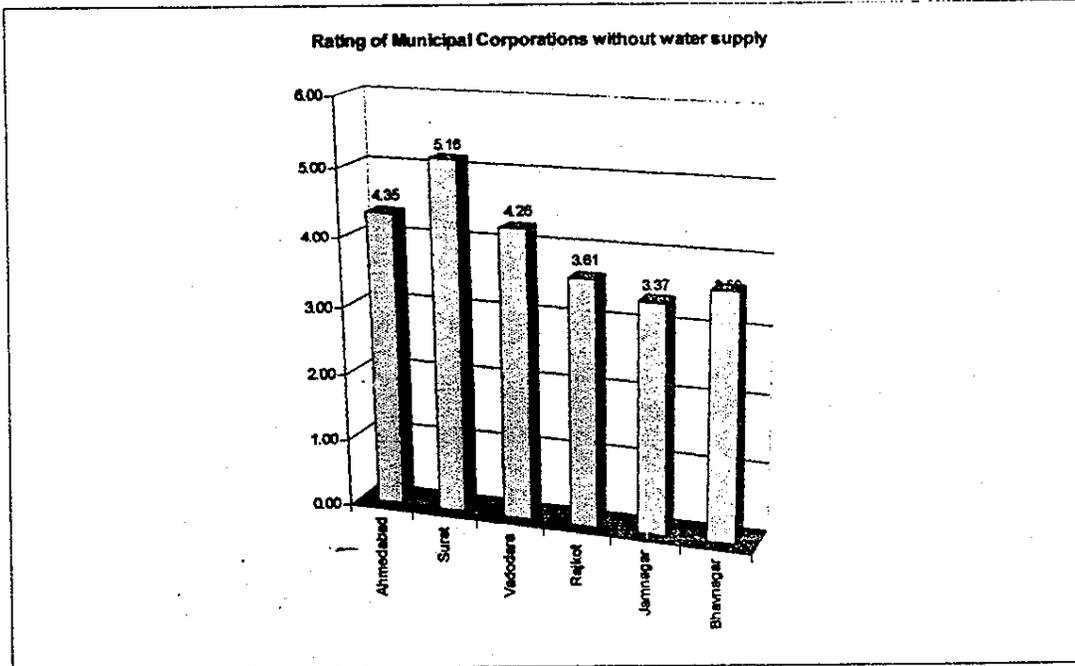
Service level	A'bad	Surat	Vad	Rajkot	Jamn'gr	Bhavn'gr
Sewerage and Sanitation	3.4	5.0	4.2	4.2	2.1	4.1
Solid Waste Management	3.9	5.8	5.2	4.1	4.2	3.5
Roads and Storm Water Drains	4.3	5.4	4.5	2.6	3.3	6.3
Street Lights	6.6	2.9	3.3	3.5	2.9	6.1
Final Infrastructure Rating (without water supply)	4.3	5.0	4.4	3.7	3.1	4.8

Finance

Service level	A'bad	Surat	Vad	Rajkot	Jamn'gr	Bhavn'gr
Resource Mobilisation	4.3	5.9	4.9	2.4	3.4	1.7
Expenditure Management	5.5	4.6	3.0	4.9	3.2	2.5
Debt Management	1.5	5	4	5	6	6.5
Final Finance Rating	4.4	5.3	4.1	3.5	3.6	2.4

Final Consolidated rating

Service level	A'bad	Surat	Vad	Rajkot	Jamn'gr	Bhavn'gr
Finance	4.4	5.3	4.1	3.5	3.6	2.4
Infrastructure (without water supply)	4.3	5.0	4.4	3.7	3.1	4.8
Final Consolidated Rating	4.35	5.16	4.26	3.61	3.37	3.59



Municipalities Infrastructure

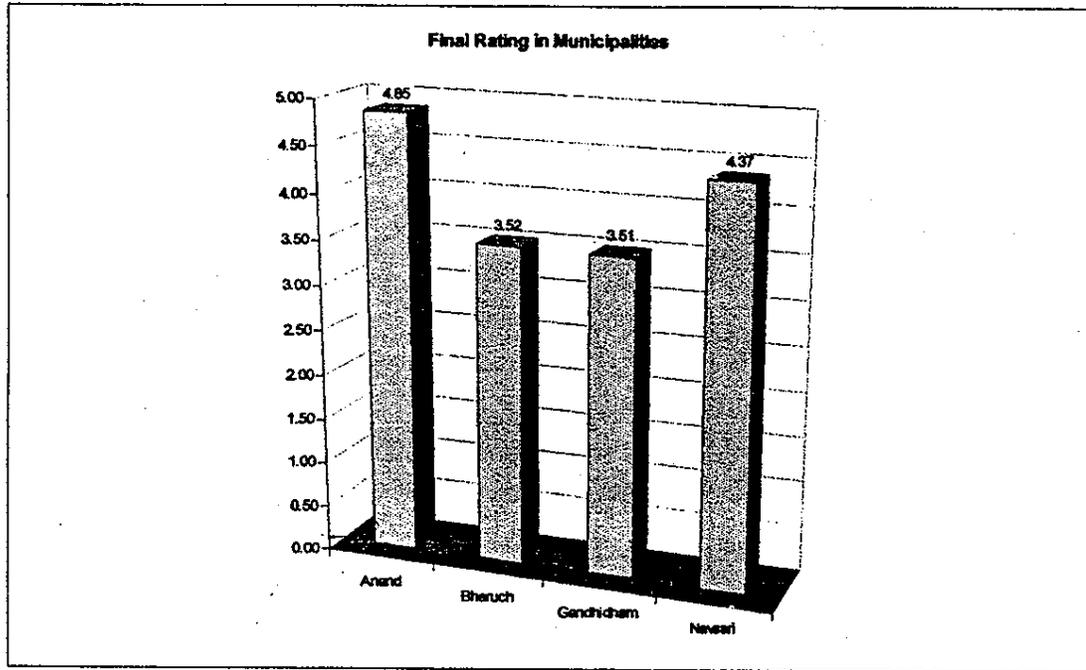
Service level	Anand	Bharuch	Gandhidham	Navsari
Water Supply	4.0	5.1	2.8	4.8
Sewerage and Sanitation	3.8	2.3	4.8	2.8
Solid Waste Management	5.1	4.3	3.5	4.9
Roads and Storm Water Drains	3.1	4.0	4.4	3.3
Street Lights	6.6	2.4	3.0	4.5
Final Infrastructure Rating	4.35	3.74	3.74	4.08

Finance

Service level	Anand	Bharuch	Gandhidham	Navsari
Resource Mobilisation	5.7	3.2	3.2	4.0
Expenditure Management	5.3	2.4	2.4	6.0
Debt Management	4.0	7.0	7.0	4.0
Final Finance Rating	5.4	3.3	3.3	4.7

Final Consolidated Rating

Service level	Anand	Bharuch	Gandhidham	Navsari
Infrastructure	4.35	3.74	3.74	4.08
Finance	5.4	3.3	3.3	4.7
Final Consolidated Rating	4.85	3.52	3.51	4.37



Chapter 6

Problems Faced

Once the raw data was obtained from the corporations and municipalities, the data was compiled in a similar format and it was then that the eccentricities in the data became visible. It was realized that this was because of the dissimilar formats of data keeping in each of the urban local bodies. Some of the problems faced during the course of the program are listed in the following section.

One of the significant fallout of this program is realization of an urgent need for uniform accounting codes and an information system for the services provided by the municipal bodies.

1.1 Finance

Income statements

- ▶ Property Tax Structure is not defined. Structure of property tax observed in various corporations are:
 - Ahmedabad includes water tax/charges as well as conservancy tax/charges in its property tax income. Even if it includes these taxes, it should give separate figures for water and conservancy tax.
 - Jamnagar includes conservancy tax and its education tax income in the Property Tax. Rajkot accounts all its direct tax income under property tax income (even the toll tax).
 - All corporations except for Surat and Vadodara give a total of current and arrear collection in the actual figures. Surat shows its arrears collection in the Non tax income.
 - There is no standardized definition of Property Tax, hence property tax figures for all the cities are not comparable.

For this program, property tax was assumed as sum total of general, water and conservancy tax.

- ▶ When the ULBs were asked for the current and arrear demand of the property tax, the figures given were in line with their understanding of the property tax structure and not our assumptions. It was a task calculating their current property tax collection and demand.
- ▶ Water and Conservancy charges are also included in the tax income while they are essentially Non Tax sources of income.

- ▶ Revenue collected under conservancy tax is used for sewerage as well as solid waste management and therefore it is difficult to decide the revenue income for each of these services separately.
- ▶ Project Income is a separate head in Bhavnagar and Rajkot. It has been added in capital income for these cities.
- ▶ Income from Advances is added as a source of revenue income in Jamnagar. It should be included in the extraordinary income.

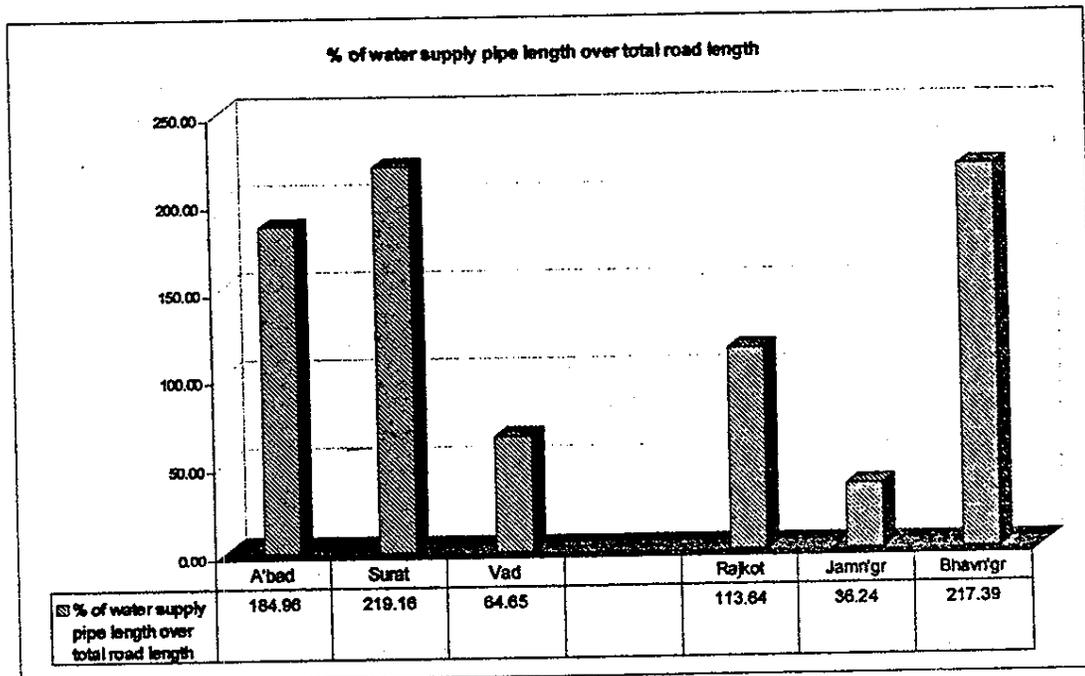
Expenditure

- ▶ Loan charges in case of Bhavnagar is accounted under extra ordinary exp., which alters the revenue exp figure.
- ▶ In Rajkot, loan repayment is a part of revenue expenditure as well as project expenditure. The amount of loan charges had to be added in rev exp and the same amount deducted from capital expenditure.
- ▶ The word conservancy is used for both drainage as well as solid waste management. It needs to be clarified and standardized for all the municipal bodies.
- ▶ Heads under 'General Administration' vary across the cities.
- ▶ Major heads under Public Health, Public Safety and Public Works must be standardized.
- ▶ In case of municipalities, loan charges are considered as a part of extra ordinary expenditure which must be included in revenue expenditure.

6.2 Infrastructure

Water Supply

- ▶ Figure for unaccounted for water is based on perception, there is no actual justification.
- ▶ It is difficult to find the slum population, which is dependent on Public Stand Posts.
- ▶ For calculating the pop coverage, indicators like connections/properties assessed and connections/households have been adopted for finding the pop covered by piped supply.
- ▶ For calculating the physical coverage, % of pipe length to total road length was adopted where the figures were >200, this might be because pipelines are laid on both the sides of the road or the transmission pipe length has been included in the figure given for pipe length.



Sewerage and Sanitation

- ▶ Population coverage by under ground sewerage, individual septic tanks and public toilets can be estimated, there is no way to justify the figures.
- ▶ Total no of public toilet seats are listed in the zonal offices and are not updated in the central office.
- ▶ Again, similar to water supply, to find the physical coverage, correct data of distribution network length is required.

Roads

- ▶ Roads are a part of building department. And thus it was difficult to verify separate figures for the staff and the expenses (establishment + O&M) incurred.

**List of Participants in Workshop of Urban Indicators and Performance Measurement on
30th June 2001**

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Annexure 2

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Annexure 3

Urban Indicators

- **Municipal Corporations**
- **Municipalities**

Urban Indicators – Municipal Corporations
General Indicators

	Ahmedabad	Surat	Vadodara	Rajkot	Bhavnagar	Jamnagar
Population growth rate during 1981-1991	3.40	6.70	3.45	2.31	2.90	1.70
Population growth rate during 1991-2001	2.22	5.25	3.79	5.44	4.39	3.59
Population density (1991)	15074	13483	9527	8107	12463	7651
Population density (2001)	18770	22266	13819	9060	10882	19157
Municipal staff per 10000 population	71	64	74	61	58	22
% of Slum Population to Total Population	41	30.7	20.7	21	25	25

Infrastructure Indicators
Water Supply Indicators

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Service Level							
Per Capita Water Supply	Lpcd	113	149	182	79	95	76
Average hrs of supply per day	Hrs	2.5	3	0.67	0.25	0.5	0.496
No. of supply days in a week	days	7.00	7.00	7.00	3.00	2.40	3.60
Treatment plant capacity (Operational)	%	120	109	38	313	200	152
Storage Capacity Adequacy	%	135.969	84.960	47.269	120.598	70.464	61.015
Service Coverage							
Ratio of slum pop to Public Stand Posts	Number	133	154	100	143	143	290
Households covered by water supply connections	%	38.36	37.07	62.51	73.33	69.60	59.57
% of pipe length to total road length	%	184.96	219.16	64.65	113.64	36.24	217.39
Service Costs and Efficiency							
Cost per 1000 litres of water supplied per day	Rs.	3.29	1.83	2.59	5.37	2.89	6.84
Establishment cost per capita	Rs.	31.0	18.0	48.1	36.2	15.7	33.5
Cost recovery	%	57.32	83.35	55.72	18.08	134.26	22.05
Amount of unaccounted for water	%	22	22	10	15	17	17
Staff per MLD supplied	Person(s)	3	2	3	5	9	7

Sewerage and Sanitation

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Service Level							
% of waste water treated	%	78.46	62.08	24.77	73.42	0.00	0.00
Slum population per public convenience	Person(s)	43	158	361	66	73	62
% of Pay and use toilets to total public toilets	%	3	100	11	3	3	23
Service Coverage							
% Population covered by underground drainage and Individual septic tanks	%	82.7	90	80	82	86	83
% of sewerage connections to total no. of households	%	36	66	77	37	0	56
Service Costs and Efficiency							
Cost per sewerage connection	Rs.	1209.90	372.24	292.27	308.45	-	381.06
% Cost recovery	%	121.55	7.14	203.38	2.66	-	104.03
Staff per 1000 Sewerage Connections	Person(s)	6	2	3	3	-	6

Solid Waste Management

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Service Level & Coverage							
% of waste collection	%	83.75	98.00	93.58	80.00	90.91	66.81
% vehicle capacity to waste generated	%	83.75	56.50	76.87	45.00	30.55	30.17
Average spacing between storage bins	Mts	1.62	0.82	1.33	3.38	2.73	0.95
Capacity of bins against total waste generated	%	77.89	144.45	120.32	194.74	109.09	86.21
Road Length covered by each sweeper	Mts	168	169	311	473	374	181
Service Costs and Efficiency							
Cost per Tonne of waste collected	Rs. In '000	467	367	294	397	310	358
Manpower per ton of waste collected	Person(s)	6	5	6	8	5	9
% Cost recovery	%	0.33	52.28	0.00	23.59	10.59	15.34

Roads and Storm Water Drains

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Service Level							
% of roads surfaced Length of pucca roads/ Total road length (kutcha + pucca)	%	93	97	64	57	75	88
% of road length having storm water drains (Road length having storm water drains/ Total road length)*100	%	24	24	20	5	11	25
Service Coverage							
Road density Total road length/City area	Km/Sq Km	6.49	7.31	14.42	20.98	20.77	4.32
% City area covered by storm water drains	%	35	86	45	0	30	65
Service Costs and Efficiency							
Cost per km of road length	Rs.	25002	295249	24497	34370	2608	35490
Staff per 10 Km of road length	Person(s)	10	7	1	1	2	2

Streetlight

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Service Level & Coverage							
No of street lights per Km length of road	Number	68	41	45	25	35	61
Service Costs and Efficiency							
Cost per street light	Rs.	1388	2093	1791	1257	2175	1154
Staff per 1000 street lights	Person(s)	2	9	7	1	1	4

Finance Indicators
Resource Mobilisation

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Per Capita Revenue Income	Rs.	1615	1587	1373	959	856	758
Per Capita Tax Income	Rs.	1215	1253	1018	804	661	563
Per Capita Non Tax Income	Rs.	118	216	258	97	120	22
% of Own resources in Revenue Income	%	83	93	93	94	91	77
% of Own Resources in Capital Income	%	41	92	51	36	37	48
% Growth in Per Capita Tax Income	%	9	14	6	3	-1	4
% Growth in Per Capita Non Tax Income	%	13	29	0	-2	3	-5
% Growth of Own Resources in Revenue Income	%	-6	1	-3	2	1	-2
% of Octroi Income in Total Revenue Income	%	55	59	49	60	40	52
% of Grants in Total Income	%	19	6	7	4	11	23
Per Capita Property Tax Income	Rs.	303	316	346	207	316	168
Property Tax Collection Performance	%	40	74	82	58	69	44
No of Properties Assessed Per Staff	No.	1344	2684	674	600	800	2774
Property Tax Collection Per Staff	Rs.	14	36	14	10	18	8
% of Arrears in Total Demand	%	79	15	45	72	63	77

Expenditure Management

Indicators	Unit	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Per Capita Revenue Expenditure	Rs.	1479	1189	1360	814	824	871
Sectoral Expenditure (%)							
Total Water supply & Sewerage	%	14.8%	13.1%	16.6%	21.9%	13.4%	27.7%
Public Health	%	22.7%	10.9%	12.6%	23.7%	23.0%	15.3%
Public Safety	%	3.0%	2.5%	5.3%	6.8%	3.8%	3.9%
Public Works	%	5.9%	9.4%	7.2%	7.6%	4.0%	4.2%
General & Adm. Expenditure	%	14.1%	20.2%	18.8%	18.4%	25.9%	20.7%
Loan charges	%	14.7%	9.7%	11.7%	9.0%	7.7%	8.1%
Other Expenditure	%	24.8%	34.3%	27.8%	12.5%	22.3%	20.0%
Per Capita Expenditure							
Water Supply & Sanitation	Rs.	219	156	226	179	110	241
Public Health	Rs.	336	130	172	193	190	134
Public Safety	Rs.	44	30	72	56	31	34
Public Works	Rs.	87	111	98	62	33	37
General & Adm. Expenditure	Rs.	208	240	255	150	214	180
% of Establishment Exp to Total Revenue Exp.	%	45	55	50	46	53	35
Operating Ratio (Revenue Exp/Rev. Inc.)		0.92	0.75	0.99	0.85	0.96	1.15
Per capita Capital Expenditure	Rs.	545	853	423	390	405	85
Exp. on discretionary services (%)	%	11.29	4.01	1.44	5.98	3.81	0.00

Debt Management

Indicators	Unit	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Debt Service Ratio (Income)	No.	0.13	0.07	0.12	0.08	0.07	0.09
Debt Service Ratio (Expenditure)	No.	0.15	0.10	0.12	0.09	0.08	0.08
Outstanding Liabilities Per Capita	Rs.	892	566	682	622	557	496

Health Indicators

Indicators	Units	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Infant mortality rate	-	25.67	22.26	19.53	50.36	52	64
Maternal mortality rate	-	0.14	0.21	0.13	0.05	0.1	3.89
No. of Gastro Enteritis cases reported per 10000 population	No	17.88	10.25	6.17	21.62	39.23	18.61
No. of Cholera cases reported per 10000 population	No	0.26	0.00	0.00	0.00	1.67	0.00
No. of Typhoid cases reported per 10000 population	No	1.81	0.94	0.00	0.92	2.19	2.13
No. of Infective Hepatitis cases reported per 10000 population	No	12.76	50.01	88.04	11.10	0.00	17.15
No. of Malaria cases reported per 10000 population	No	6.37	34.11	21.26	2.89	2.51	0.36
% of full protection by immunisation	%	NA	97.01	100.22	62	70.55	100

Urban Indicators - Municipalities

General Indicators

Indicators	Anand	Bharuch	Gandhidham	Navsari
Population growth rate during 1981-1991	2.4	1.69	5.45	1.68
Population growth rate during 1991-2001	2.4	1.2	5.0	4.2
Population density (1991)	5218	8915	3536	1484
Population density	6626	7744	5747	22222
Municipal staff per 10000 population	40	41	28	62
% of Sium Population to Total Population	8.57	6.15	15.5	13.17

Infrastructure Indicators

Water Supply

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Service Level					
Per Capita Water Supply	lpcd	98	146	85	126
Average Hrs of Supply Per Day	Hrs	2.5	5	0.5	4
No. of Supply Days in a Week	Days	7	7	3	7
Treatment Plant capacity as % of total supply	%	100	100	160	187.5
Storage Capacity Adequacy (%)	%	49.96	70.00	41.29	50.00
Service Coverage					
Ratio of Slum population to public stand posts	Number	53	227	571	161
% of water connections in total households	%	71.9	82.2	73.3	82.4
% of water supply pipe length over total road length	%	80.4	8.9	107.8	175.2
Service Costs and Efficiency					
Cost per 1000 litres of water supplied	Rs.	0.59	1.39	1.99	2.11
Establishment cost per capita	Rs.	17.34	8.86	10.79	23.64
% Cost recovery in water supply	%	31.58	40.74	67.28	25.47
Amount of Unaccounted for water	%	7	40	2	8
Staff per MLD supplied	Person(s)	3	1	4	4

Sewerage and Sanitation

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Service Level					
% of waste water treated	%	70	0	0	0
Slum population per public convenience	Person(s)	714	62	234	36
% of Pay and use toilets to total no of public toilets	%	33.3	9.1	0.0	2.9
Service Coverage					
% Population covered by underground drainage and Individual septic tanks	%	89	90	89.3	85
% of sewerage connections to total number of households	%	40	0	112	28
Service Costs and Efficiency					
Cost per sewerage connection	Rs.	773	NA	165	826
% cost recovery	%	24.42	NA	0.00	66.67
Employees per 1000 connections	Person(s)	4	Na	3	9

Solid Waste Management

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Service Level and Coverage					
% of waste collection	%	95.24	75.00	66.04	83.33
% vehicle capacity to waste generated	%	31	26	8	15
Average spacing between dustbins	Km	3.10	3.65	16.70	1.24
Capacity of bins against total waste generated	%	71	200	66	192
Road Length covered by each sweeper	Km	1.33	0.98	4.00	0.59
Service Costs and Efficiency					
Cost per Tonne of waste collected	Rs. In '000	458	645	289	400
Manpower per ton	Person(s)	3.03	6.78	2.99	5.65
Cost Recovery	%	0.74	0.00	0.00	19.49

Roads and Storm Water Drains

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Service Level					
% of roads surfaced	%	64.93	56.55	100.00	64.96
% of road length having storm water drains	%	18.95	98.22	4.79	25.62
Service Coverage					
Road density	Km/Sq Km	4.00	8.50	28.23	8.67
% City area covered by storm water drains	%	42.5	72.5	20	80
Service Costs and Efficiency					
Cost per km of road length	Rs.	4845	16436	8424	19407
Staff per 10 Km of road length	Person(s)	2.72	5.14	0.02	4.72

Streetlight

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Service Level and Coverage					
No of street lights per Km length of roads	Number	99	42	18	119
Service Costs and Efficiency					
Cost per street light	Rs.	140	899	210	551
Staff per 10000 street lights	Person(s)	8	4	10	17

Finance Indicators
Resource Mobilisation

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Per Capita Revenue Income	Rs.	818	558	374	477
Per Capita Tax income	Rs.	336	409	301	364
Per Capita Non Tax Income	Rs.	351	51	23	59
% of own resources in revenue Income	%	84	82	86	89
% of Own Sources in Capital Income	%	17	29	0	0
% Growth in Per Capita Tax Income	%	1	0	2	-1
% Growth in Per Capita Non Tax Income	%	19	-47	28	13
% Growth in income from own resources in revenue income	%	-2	-5	-5	2
% of Octroi in Revenue Income	%	27	58	59	52
% of Total grants to Total Income	%	23	34	27	19

Property Tax

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Per Capita Property Tax collection (current + arrears)	Rs.	92	52	35	44
Property Tax collection Performance (%)	%	77	65	59	92
No of properties assessed per staff	No.	3833	1134	1875	2182
Property Tax Demand (current + arrears) Per Staff	Rs.	21	4	17	4
Property Tax collection (current + arrears) Per Staff	Rs.	13	3	4	4
% of arrears in total demand	%	33	19	64	11

Expenditure Management

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Per Capita Revenue Expenditure	Rs.	598	741	492	466
Sectoral Expenditure (% to total revenue exp.)					
Water Supply	%	4	10	13	22
Public Health	%	23	35	43	19
Public Safety	%	8	8	4	8
Public Works	%	8	25	11	7
Per Capita Expenditure					
Water Supply	Rs.	22	75	65	101
Public Health	Rs.	187	265	211	96
Public Safety	Rs.	50	59	20	38
Public Works	Rs.	50	187	56	31
% of Establishment Exp to Total Revenue Exp.	%	48	38	39	28
Operating Ratio (Revenue Exp/Rev. Inc.)	No.	0.73	1.33	1.31	0.98
Per capita Capital Expenditure	Rs.	307	45	61	292

Debt Management

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Debt Service Ratio (Loan Repayment/Rev Inc.)	No.	0.0	0.1	0.0	0.2
Ratio of Loan Repaid to Revenue Expenditure	No.	0.0	0.0	0.0	0.2
Per capita Outstanding Liabilities	Rs.	152.4	26.2	2.8	7.0

Health Indicators

Indicators	Units	Anand	Bharuch	Gandhidham	Navsari
Infant mortality rate		1.52	4.41	NA	NA
Maternal mortality rate		0	0.87	NA	NA
No. of Gastro Enteritis cases reported per 10000 population	No	4.76	43.62	NA	12.89
No. of Cholera cases reported per 10000 population	No	0.00	0.00	NA	0.00
No. of Typhoid cases reported per 10000 population	No	10.61	0.00	NA	4.55
No. of Infective Hepatitis cases reported per 10000 population	No	0.00	0.00	NA	13.16
No. of Malaria cases reported per 10000 population	No	13.31	73.00	3.15	10.58
% of full protection by immunisation	%	101	98.9	NA	65.4

Annexure 4

Comparative Performance Rating

- **Municipal Corporations**
- **Municipalities**

Rating - Municipal Corporations
Water Supply

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Average
Service Level					
Per Capita Water Supply	0.35	113	149	182	148
		2	4	6	
Average Hrs of Supply Per Day	0.45	2.5	3	0.67	2
		6	7	1	-
Treatment Plant capacity as % surface water supply	0.2	120	109	38	89
		7	6	1	5
Service Level Rating	0.4	4.8	5.75	2.75	
Service Coverage					
Households covered by water supply connections	0.5	38.36	37.07	62.51	46
		3	3	7	
Ratio of slum pop to Public Stand Posts	0.5	133	154	100	129
		4	3	6	129
Service Coverage Rating	0.35	3.5	3	6.5	
Service Cost and Efficiency					
Cost per 1000 litres of water supplied	0.15	3.29	1.83	2.59	2.57
		2	6	4	
Establishment cost per capita	0.2	31.01	17.99	48.11	32
		4	7	1	-

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Average
% Cost recovery in water supply	0.3	57.32	83.35	55.72	65
		3	6	3	
Amount of water lost through leakage / unauth use(%)	0.1	22	22	10	18
		2	2	7	
Staff per MLD supplied	0.25	2.92	1.53	3.12	2.53
		3	7	2	
Service Costs and Efficiency Rating	0.25	2.95	6.05	2.9	
Water Supply Rating		3.9	4.9	4.1	

Water Supply

Performance Indicators	Weightage	Rajkot	Jamnagar	Bhavnagar	Average
Service Level					
Per Capita Water Supply	0.35	79	95	76	83
		4	5	4	
Average Hrs of Supply Per Day	0.45	0.25	0.500	0.496	0.42
		1	6	5	
Treatment Plant capacity as % surface water supply	0.2	313	200	152	221
		7	4	1	
Service Level Rating	0.4	3.25	5.25	3.85	
Service Coverage					
Households covered by water supply connections	0.5	91.67	49.74	115.38	85.60
		4	1	7	
Ratio of slum pop to Public Stand Posts	0.5	143	143	290	192
		6	6	1	
Service Coverage Rating	0.35	5	3.5	4	
Service Cost and Efficiency					
Cost per 1000 litres of water supplied	0.15	5.37	2.89	6.84	5.03
		4	7	1	
Establishment cost per capita	0.2	36.16	15.69	33.45	28.43
		2	7	3	
% Cost recovery in water supply	0.3	18.08	134.26	22.05	58
	-	1	7	1	-

Performance Indicators	Weightage	Rajkot	Jamnagar	Bhavnagar	Average
Amount of water lost through leakage/unauth use(%)	0.1	15	17	17	16
	-	4	4	4	-
Staff per MLD supplied	0.25	5	9	7	7
		6	1	4	7
Service Cost and Efficiency Rating	0.25	3.2	5.2	2.45	-
Water Supply Rating	-	3.9	4.6	3.6	-

Water Supply (All Corp)

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Service Level								
Per Capita Water Supply	0.35	113	149	182	79	95	76	116
		4	6	7	1	3	1	
Average Hrs of Supply Per Day	0.45	2.5	3	0.67	0.25	0.5	0.49	1.24
		7	7	1	1	1	4	
							1	
Treatment Plant capacity as % surface water supply	0.2	120.14	109.22	37.83	313	200	152	155
		2	2	1	7	6	4	
Service Level Rating	0.4	4.95	5.65	3.1	2.2	2.7	1.6	
Service Coverage								
Households covered by water supply connections	0.5	38.36	37.07	62.51	91.66	49.74	115.38	66
		1	1	4	67	2	4	
					7		7	
Ratio of slum pop to Public Stand Posts	0.5	133	154	100	143	143	290	160
		5	4	7	5	5	1	
Service Coverage Rating	0.35	3	2.5	5.5	6	3.5	4	
Service Cost and Efficiency								
Cost per 1000 litres of water supplied	0.15	3.29	1.83	2.59	5.37	2.89	6.84	3.80
		5	7	7	1	6	1	
Establishment cost per capita	0.2	31.01	17.99	48.11	36.161052	15.692	33.451724	30
		4	7	1	63	7	4	
					3		3	

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Cost recovery in water supply	0.3	57.32	83.35	55.72	18.08	134.26	22.05	62
		4	7	4	1	7	1	
Amount of water lost through leakage/ unauth use (%)	0.1	22	22	10	15	17	17	17
		2	2	7	5	4	4	
Staff per MLD supplied	0.25	2.92	1.53	3.12	5	9	7	5
		7	7	7	4	1	1	
Service Cost and Efficiency Rating	0.25	4.7	6.5	4.9	2.55	5.05	1.7	
Water Supply Rating		4.2	4.8	4.4	3.6	3.6	2.5	

Sewerage and Sanitation

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Service Level								
% of waste water treated	0.3	78.46	62.08	24.77	73.42	0.00	0.00	39.79
		7	7	1	7	1	1	
No. of persons per public convenience	0.4	43	158	361	66	73	62	127
		7	2	1	7	7	7	
Ratio of Pay and Use Toilets to Total Public Toilets	0.3	3	100	11	3	3	23	24
		1	7	1	1	1	4	4.1
Service Level Rating	0.35	5.2	5	1	5.2	3.4	4.3	
Service Coverage								
% Population covered by underground drainage and Individual septic tanks	0.5	82.7	90.0	80.0	82.0	86.0	83.0	83.675
		4	4	4	4	4	4	
% of sewerage connections to total no. of households	0.5	36	66	77	37	0	56	53.93824
		1	6	7	1	1	4	1
Service Coverage Rating	0.35	2.5	5	5.5	2.5	2.5	4	
Service Costs and Efficiency								
Cost per sewerage connection	0.4	1209.90	372.24	292.27	308.45	0.00	381.06	512.7850
		1	6	7	7		6	7
% cost recovery	0.25	121.55	7.14	203.38	2.66	0.00	104.03	87.75
		7	1	7	1		5	
Employees per 1000 connections	0.35	6	2	3	3	0	6	3.89
		1	7	5	6	0	1	
Service Cost and Efficiency Rating	0.3	2.5	5.1	6.3	5.15	2.1	4	
Sewerage and Sanitation Rating		3.4	5.0	4.2	4.2		4.1	

Solid Waste Management

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jaminagar	Bhavnagar	Average
Service Level								
% of waste collected every day	0.3	83.75	98.00	93.58	80.00	90.91	66.81	85.50876
		4	5	4	4	4	2	6
% vehicle capacity to waste generated	0.15	83.75	56.50	76.87	45.00	30.55	30.17	53.806
		7	4	7	3	1	1	3
Average spacing between dustbins	0.2	1.62	0.82	1.33	3.38	2.73	0.95	1.804847
		5	7	6	7	7	7	9
Capacity of bins against total waste generated	0.35	77.89	144.45	120.32	194.74	109.09	86.21	122.1155
		4	7	7	7	7	5	4
Service Level and Coverage Rating	0.65	4.65	5.95	5.9	4.3	4	3.9	

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Service Costs and Efficiency								
Cost per ton of waste collected (Rs in '000)	0.4	467	367	294	397	310	358	365.5627
		2	4	5	4	5	4	5
Manpower per ton	0.4	6	5	6	8	5	9	6.801587
		4	6	4	2	6	1	4
Cost Recovery (%)	0.2	0.33	52.28	0.00	23.59	10.59	15.34	17.02331
		1	7	1	7	1	4	9
Service Cost and Efficiency Rating	0.35	2.6	5.4	3.8	3.8	4.6	2.8	
Solid Waste Management Rating		3.9	5.8	5.2	4.1	4.2	3.5	

Roads and Storm Water Drains

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Service Level								
% of roads surfaced	0.6	93	97	64	57	75	88	78.88132
		5	6	3	2	4	5	2
% road length having storm water drains	0.4	24	24	20	5	11	25	18.26144
		7	7	5	7	7	7	3
Service Level Rating	0.6	5.8	6.4	3.8	1.6	2.8	5.8	
Service Coverage								
% area covered by storm water drains	0.2	35	86	45	0	30	65	43.5
		3	7	4	1	1	7	
Service Costs and Efficiency								
Staff per 10 Km of road length	0.2	10	7	1	1	2	2	3.887627
		1	1	7	7	7	7	
Roads & Storm Water Drains Rating		4.3	5.4	4.5	2.6	3.3	6.3	

Street Lights

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Service Level								
No of streetlights per Km of road length	0.55	68	41	45	25	35	61	45.74096
		7	4	4	1	2	7	
Service Costs and Efficiency								
Cost per street light	0.5	1388	2093	1791	1257	2175	1154	1642.9956
		5	2	4	6	1	6	
Staff per 1000 street lights	0.5	2.31	8.70	7.37	1.05	1.47	3.80	4.1168741
		7	1	1	7	7	4	
Service Cost and Efficiency Rating	0.45	6	1.5	2.5	6.5	4	5	
Street Lights Rating		6.6	2.9	3.3	3.5	2.9	6.1	-

	Weightage	A'bad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Water Supply	0.24	4.2	4.8	4.4	3.6	3.6	2.5
Sewerage and Sanitation	0.24	3.4	5.0	4.2	4.2	2.1	4.1
Solid Waste Management	0.24	3.9	5.8	5.2	4.1	4.2	3.5
Roads and Storm Water Drains	0.17	4.3	5.4	4.5	2.6	3.3	6.3
Street Lights	0.11	6.6	2.9	3.3	3.5	2.9	6.1
Consolidated Infrastructure Rating (with water Supply)	-	4.23	4.97	4.42	3.69	3.24	4.16
Sewerage and Sanitation	0.3	3.4	5.0	4.2	4.2	2.1	4.1
Solid Waste Management	0.3	3.9	5.8	5.2	4.1	4.2	3.5
Roads and Storm Water Drains	0.23	4.3	5.4	4.5	2.6	3.3	6.3
Street Lights	0.17	6.6	2.9	3.3	3.5	2.9	6.1
Consolidated Infrastructure Rating (without water supply)	-	4.3	5.0	4.4	3.7	3.1	4.8

Finance Rating
Resource Mobilisation

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Average
Per Capita Tax Income	0.11	1215	1253	1018	804	661	563	919
		7	7	5	3	2	1	
Per Capita Non Tax Income	0.11	118	216	258	97	120	22	138
		3	7	7	2	3	1	
% of Own resources in Revenue Income	0.11	83	93	93	94	91	77	88
		4	4	4	4	4	3	
% Growth in Per Capita Tax Income	0.12	8.69	14.28	6.28	3.43	-1.40	3.7	6
		7	7	4	1	1	1	
% Growth in Per Capita Non Tax Income	0.11	12.56	28.57	-0.28	-1.68	3.18	-5.13	6
		7	7	1	1	1	1	
% of Octroi Income in Total Revenue Income	0.11	54.62	59.06	48.86	60.21	40.27	51.85	52
		4	3	4	3	6	4	
Per Capita Property Tax Income	0.11	302.93	315.88	345.95	207.02	315.75	167.90	276
		4	5	6	2	5	1	
Property Tax Collection Performance	0.11	39.78	74.31	81.54	58.19	68.82	44.33	61
		1	6	7	4	5	2	
% of Arrears in Total Demand	0.11	78.72	14.72	45.30	72.00	63.33	77.22	59
		1	7	6	2	4	1	
Rating of resource mobilisation indicators	0.55	4.3	5.9	4.9	2.4	3.4	1.7	

Expenditure Management

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Avg.
% of Establishment Exp to Total Revenue Exp.	0.25	45.02	54.92	49.82	45.60	53.24	34.88	47
		4	3	4	4	3	6	
Operating Ratio (Revenue Exp/Rev. Inc.)	0.2	0.92	0.75	0.99	0.85	0.96	1.15	1
		4	5	4	4	4	2	
Per capita Capital Expenditure	0.2	545.21	853.36	423.03	389.97	404.98	85.43	450
		6	7	4	3	3	1	
Exp. on discretionary services (%)	0.35	11.29	4.01	1.44	5.98	3.81	0.00	4
		7	4	1	7	3	1	
Expenditure Management Rating	0.35	5.5	4.6	3.0	4.9	3.2	2.5	

Debt Management

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar	Avg.
Debt Service Ratio (Expenditure)	0.5	0.15	0.10	0.12	0.09	0.08	0.08	0.12
		2	5	4	6	7	7	
Outstanding Liabilities Per Capita	0.5	891.66	565.94	682.31	621.53	557.42	495.91	636
		1	5	4	4	5	6	
Debt Rating	0.1	1.5	5.0	4.0	5.0	6.0	6.5	
Consolidated Finance Ranking		4.4	5.3	4.1	3.5	3.6	2.4	

Performance Indicators	Weightage	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Consolidated Finance Rating	0.5	4.4	5.3	4.1	3.5	3.6	2.4
Consolidated Infrastructure Rating (with water supply)	0.5	4.23	4.97	4.42	3.69	3.24	4.16
Final Rating (with water supply)	—	4.31	5.15	4.27	3.61	3.42	3.29
Consolidated Finance Rating	0.5	4.4	5.3	4.1	3.5	3.6	2.4
Consolidated Infrastructure Rating (without water supply)	0.5	4.3	5.0	4.4	3.7	3.1	4.8
Final Rating (without water supply)	—	4.35	5.16	4.26	3.61	3.37	3.59

Rating of Municipalities
Water Supply

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Service Level						
Per Capita Water Supply	0.35	98	146	85	126	114
		3	6	2	5	
Average Hrs of Supply Per Day	0.45	2.5	5	0.5	4	3.00
		3	7	1	7	
Treatment Plant capacity as % surface water supply	0.2	100.00	100.00	160.02	187.50	137
		2	2	5	7	
Service level rating	0.4	2.8	5.65	2.15	6.3	
Service Coverage						
Households covered by water supply connections	0.5	71.89	82.16	73.33	82.45	77
		4	4	4	4	
Ratio of slum pop to Public Stand Posts	0.5	53	227	571	161	253
		7	5	1	7	
Service coverage rating	0.35	5.5	4.5	2.5	5.5	
Service Cost and Efficiency						
Cost per 1000 litres of water supplied	0.15	0.59	1.39	1.99	2.11	1.52
		7	4	1	1	
Establishment cost per capita	0.2	17.34	8.86	10.79	23.64	15
		3	7	6	1	
% Cost recovery in water supply	0.3	31.58	40.74	67.28	25.47	41
		2	4	7	1	

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Amount of water lost through leakage/unauth use(%)	0.1	7	40	2	8	14
		7	1	7	7	
Staff per MLD supplied	0.25	2.76	1.05	4.20	3.92	3
	0.25	4	7	1	1	
Service Cost and Efficiency Rating		3.95	5.05	4.4	1.6	
Water Supply Rating	-	4.0	5.1	2.8	4.8	-

Sewerage and Sanitation

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Service Level						
% of waste water treated	0.3	70.00	0.00	0.00	0.00	17.50
		7	1	1	1	
No. of persons per public convenience	0.4	714	62	0	36	203
		1	7	7	7	
Ratio of Pay and Use Toilets to Total Public Toilets	0.3	33	9	0	3	11
		7	3	1	1	3.85
Service Level Rating	0.35	4.6	4	3.4	3.4	
Service Coverage						
% Population covered by underground drainage and Individual septic tanks	0.5	89.0	90.0	89.3	85.0	88.325
		4	4	4	4	
% of sewerage connections to total no. of households	0.5	40	0	112	28	44.78
		3	1	7	1	
Service Coverage Rating	0.35	3.5	2.5	5.5	2.5	
Service Costs and Efficiency						
Cost per sewerage connection	0.4	773.27	0.00	165.21	826.45	588.31
		1		7	1	
% cost recovery	0.25	24.42	0.00	0.00	66.67	30.36
		3		1	7	
Employees per 1000 connections	0.35	4	0	3	9	5.17
		6	0	7	1	
Service Cost and Efficiency Rating	0.3	3.25		5.5	2.5	
Sewerage and Sanitation Rating	-	3.8	2.3	4.8	2.8	-

Solid Waste Management

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Service Level						
% of waste collected every day	0.3	95.24	75.00	66.04	83.33	79.90
		5	4	3	4	
% vehicle capacity to waste generated	0.15	30.95	26.25	8.30	14.58	20.02
		7	7	1	2	
Average spacing between dustbins	0.2	3.10	3.65	16.70	1.24	6.17
		7	7	1	7	
Capacity of bins against total waste generated	0.35	71.43	200.00	66.04	191.67	
		4	7	3	7	
Service Level Indicator	0.65	5.35	6.1	2.3	5.35	
Service Costs and Efficiency						
Cost per ton of waste collected (Rs in '000)	0.4	458	645	289	400	448.16
		4	1	7	5	
Manpower per ton	0.4	3	7	3	6	4.61
		7	1	7	2	
Cost Recovery (%)	0.2	0.74	0.00	0.00	19.49	5.06
		1	1	1	7	
Service Cost and efficiency Rating	0.35	4.6	1	5.8	4.2	
Solid Waste Management Rating	-	5.1	4.3	3.5	4.9	-

Roads and Storm Water Drains

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Service Level						
% of roads surfaced	0.6	65	57	100	65	71.61
		4	2	7	4	
% road length having storm water drains	0.4	19	98	5	26	36.90
	0.6	1	7	1	1	
Service Level Rating		2.8	4	4.6	2.8	
Service Coverage						
% area covered by storm water drains	0.2	42.5	72.5	20	80	53.75
		2	7	1	7	
Service Costs and Efficiency						
Staff per 10 Km of road length	0.2	3	5	0	5	3.15
		5	1	7	1	
Roads and Storm Water Drains rating		3.1	4.0	4.4	3.3	3.68

Street Lights

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Service Level						
No of streetlights per Km of road length	0.55	99	42	18	119	69.51
		7	1	1	7	
Service Costs and Efficiency						
Cost per street light	0.5	140	899	210	551	450.27
		7	1	7	2	
Staff per 1000 street lights	0.5	8.39	4.31	10.00	16.98	9.92
		5	7	4	1	
Service Cost and Efficiency Rating	0.45	6	4	5.5	1.5	
Streetlight Rating		6.6	2.4	3.0	4.5	

	Weightage	Anand	Bharuch	Gandhidham	Navsari
Water Supply	0.24	4.0	5.1	2.8	4.8
Sewerage and Sanitation	0.24	3.8	2.3	4.8	2.8
Solid Waste Management	0.24	5.1	4.3	3.5	4.9
Roads and Storm Water Drains	0.17	3.1	4.0	4.4	3.3
Street Lights	0.11	6.6	2.4	3.0	4.5
Consolidated Infrastructure Rating	-	4.35	3.74	3.74	4.08

Finance Indicators
Resource Mobilisation

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Per Capita Tax Income	0.11	336	409	301	364	352
		4	5	3	4	
Per Capita Non Tax Income	0.11	351	51	23	59	121
		7	1	1	1	
% of Own resources in Revenue Income	0.11	84	82	86	89	85
		4	4	4	4	
% Growth in Per Capita Tax Income	0.12	1.36	0.38	2.45	-0.56	1
		7	1	7	1	
% Growth in Per Capita Non Tax Income	0.11	19.18	-46.60	27.83	12.89	3
		7	1	7	7	
% of Octroi Income in Total Revenue Income	0.11	26.66	58.34	59.17	52.38	49
		7	3	2	4	
Per Capita Property Tax Income	0.11	92.11	52.07	35.16	43.56	56
		7	4	1	2	
Property Tax Collection Performance	0.11	76.93	65.45	58.53	92.16	73
		4	3	2	6	
% of Arrears in Total Demand	0.11	33.26	19.04	64.49	11.43	32
		4	7	1	7	
Resource Mobilization Rating	0.55	5.7	3.2	3.2	4.0	-

Expenditure Management

% of Establishment Exp to Total Revenue Exp.	0.35	48.17	38.10	38.69	27.79	38
		2	4	4	6	
Operating Ratio (Revenue Exp/Rev. Inc.)	0.35	0.73	1.33	1.31	0.98	1.09
		7	2	2	5	
Per capita Capital Expenditure	0.3	306.91	45.20	60.52	291.73	176
		7	1	1	7	
Expenditure Management Rating	0.35	5.3	2.4	2.4	6.0	-

Debt Management

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari	Average
Debt Service Ratio (Expenditure)	0.5	0.00	0.04	0.01	0.22	0.12
		7	7	7	1	
Outstanding Liabilities Per Capita	0.5	152.42	26.15	2.85	7.02	47
		1	7	7	7	
Debt Management Rating	0.1	4.0	7.0	7.0	4.0	-
Consolidated Finance Rating	-	5.4	3.3	3.3	4.7	-

Final Rating - Municipalities

Performance Indicators	Weightage	Anand	Bharuch	Gandhidham	Navsari
Consolidated Finance Rating	0.5	5.4	3.3	3.3	4.7
Consolidated Infrastructure Rating	0.5	4.35	3.74	3.74	4.08
Final Consolidated Rating		4.85	3.52	3.51	4.37

Annexure 5

Data Tables

- **Municipal Corporations**
- **Municipalities**

**Data Tables – Municipal Corporations
General Demography Data**

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Population (1991)	2876710	1498817	1031346	559407	325275	407800
City Area(Sq. Km.) 1991	190.84	111.16	108.26	69	26.1	53.3
Estimated Population (2001)	3582078	2500000	1496000	950000	500000	580000
City Area (Sq. Km.) 2001	190.84	112.28	108.26	104.86	26.1	53.3
Population growth rate during 1991-2001	2.2	5.2	3.8	5.4	4.4	3.6
Population growth rate during 1981-1991	3.4	6.7	3.5	2.3	1.7	2.9
pop projected for 99-00	3504380	2375313	1441381	900998	478959	559925
pop projected for 98-99	3428367	2256845	1388757	854524	458803	540545
Total Staff of ULB	24888	15131	10675	5495	1048	3251
Municipal staff per 10000 population	71	64	74	61	22	58
Slum Population	1468652	461327	298574	200000	125000	145000

Infrastructure Data

Water Supply

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Total Water Supply to city (MLD)	406.02	373	272.4	74.91	47.67	44.12
Domestic	393.84	350	250.6	69.71		36
Commercial	8.93	5	16.3	3.7		2.5
Industrial	3.25	18	5.5	1.5		1.5
Qty drawn from Surface water resources(MLD)	249.7	282	240	33.6	36.32	39.5
Qty drawn from ground water resources(MLD)	156.32	91	32.4	41.31	11.35	4.62
No. of borewells	370	41	2746	104	686	300
% Popn not receiving water supply	10	0	1.7	0	3	5
% Pop receiving water supply from piped network	74.0	95	91	68.5	80	80
% Pop receiving water supply service from PSP	16	1.0	7.3	31.5	17.0	5
% of population served by tankers		4.0				10
Hrs of Supply (Scarcity)	2.5	3	0.67	0.5	1.5	0.75
Frequency (Scarcity)	1	1	1	2	3	2
Hrs of Supply (Normal)	2.5	3	0.67	0.5	1	0.75
Frequency (Normal)	1	1	1	2	2	1.4
Treatment Capacity(MLD)	300	308	90.8	105	72.64	60
Distribution network length (Km)	2291.29	1800	1009.4	2500	196.5	500
Distribution network area (Sq. Km)	150	101		69	16.2	40
Storage capacity(MLD)	552.06	316.9	128.76	90.34	33.59	26.92
No. of Public Stand Posts	7000	162	1347	2100	700	200
Operating cost (Rs. In lacs)	4871.3	2494.03	2579.74	1467.42	502.38	1101.41
Establishment expenditure	1110.78	449.72	719.8	343.53	78.46	194.02
Cost recovery(in lacs)	2792.42	2078.74	1437.44	265.27	674.49	242.84
Water leakage(%)	22	22	10	15	17	17
No. of house service connection(HSC)	246239	182000	180194	110000	60000	69000
Total staff involved in water supply	1187	572	850	384	450	312

Sewerage and Sanitation

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
% of pop covered						
Under ground	62	60	65	40	0	67
Individual septic tanks	20.7	30	15	42	86	16
Other	17.3	10	20	18	14	17
Treatment capacity(ML)	633	262	54	44.5	0	0
Reuse/recycling	0	0	0	0	0	0
Amount of waste water generated	325	298	218	60	36	32
Amount of waste water treated	255	185	54	44	0	0
No. of toilet seats for slums	14000	0	739	2500	927	1225
No of toilet seats(pay&use)	426	1580	90	80	27	375
Total no of toilet seats	14426	1580	829	2580	954	1600
Annual operating cost (Rs.in Lacs)	2786.5	1208.12	674.19	169.65	26.6	247.69
Cost Recovery (Rs. In Lacs)	3386.91	86.31	1371.2	4.52	0	257.66
No of sewerage connections	230309	324550	230675	55000	0	65000
Total staff engaged	1311	615	723	150	1036	391

Solid Waste Management

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Manpower	7598	5303	3460	2882	1304	1433
Collection	6827	4708	3200	2642	1095	1118
Transportation and disposal	637	491	200	240	167	315
Processing and disposal	134	104	60		42	
Waste collection bins	708	963	750	370	150	213
% primary collection from door step	0	10	0	20	5	10
% Primary collection from comm bins	100	90	95	80	95	90
Recyclable waste segregated (%)	0	20	0	0	0	0
street sweeping on Sundays/holidays	Yes	Yes	Yes	Yes	Yes	Yes
Total quantity of waste generated (Tonnes)	1200	980	560	490	250	200
Spacing between waste storage depots (in mts)	500	100	150	500	400-500	75
Total waste transported (Tonnes)	1200	980	560	342	250	155
Vehicle Capacity (Tonnes)	1200	565	460	171	84	70
Total annual cost (Rs. In Lacs)	5604.19	3600	1646.58	1357.55	775.48	554.66
Cost recovery (Rs. in Lacs)	18.47	1882.12	0	320.27	82.16	85.1
Capacity of waste storage bins (Tonnes)	1116	1444.5	720	740	300	200

Roads and Storm Water Drains

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Total length of surfaced roads (Km)	1149.15	793.89	995.25	1250	409.18	202
Total length of Kutchra roads (Km)	89.63	27.41	566	950	133	28
Length of roads having storm water drains	280	192.4	200	0	45.5	50
Annual expenditure on O&M of roads (Rs. in lacs)	287.31	2343.95	243.81	429.63	10.67	71.69
Staff strength	1100	595	109	120	93	39
Cost recovery (Rs. in Lacs)	503.9	2.19	11.61	147.35	1.59	3.76
% area covered by storm water drains	35	86	45	0	30	65

Streetlights

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Total number of street lights	77900	32748	44513	31500	14271	12242
Street light spacing (m)	30	25	35	30	100	18
Area not covered by street lights	25 Km	62 Km of road	5	29%	500 km	na
O&M costs for street light (Rs. In lacs)	1081.58	685.38	797.1	396.08	310.38	141.23
Total staff	180	285	328	33	21	47

Finance Data

Data of FY '99-'00	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Revenue Account (Rs. in Lacs)						
Octroi	30918.73	22259.84	9671.41	5203.3	1650.42	2200.5
Property tax	10615.97	7503.07	4986.4	1865.29	1512.33	940.12
Other taxes	1049.35	7.86	17.33	171.21	1.59	9.71
Total of Property and Other Direct Taxes	11665.32	7510.93	5003.73	2036.5	1513.92	949.83
Total tax income	42584.05	29770.77	14675.14	7239.8	3164.34	3150.33
Non tax income	4127.4	5128.74	3714.39	874.53	572.92	125.66
Revenue grants	9900.35	2791.4	1403.73	527.65	361.54	968.32
Total revenue income	56611.8	37690.91	19793.26	8641.98	4098.8	4244.31
Total revenue expenditure	51829.86	28235.7	19607.98	7337.05	3948.99	4872.85
Capital Account (Rs. in Lacs)						
Capital (income from own resources)	4832.08	9593.7	2982.06	3388.97	424.83	316.84
Loan income	3935.34	785	2414.59	0	533.6	0
project income				5836.34		0
Capital grants	3003.7	60.6	394.57	123.01	202.8	152.73
Total Capital Income	11771.12	10439.3	5791.22	9348.32	1161.23	661.62
Capital expenditure	19106.16	20269.94	6097.53	3513.62	1939.7	478.32
Total grants (revenue & capital)	12904.05	2852	1798.3	650.66	564.34	1121.05
Total Income (revenue + capital)	68382.92	48130.21	25584.48	17990.3	5260.03	4905.93

Property Tax Data (Rs. in lacs)

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Current demand (during '99-'00)	15358.98	10097.46	5659.43	2100	1100	400.07
Current collection (during '99-'00)	6109.44	7503.07	4614.48	1221.9	757	177.34
Arrear Demand	56811.55	1743.47	4687.54	5500	1900	1356.45
Total Demand	72170.53	11840.93	10346.97	7600	3000	1756.53
Total Collection	10615.97	8897.66	6197	2036.5	1166.21	389.87
Staff engaged in property tax collection	784	250	430	200	65	50
Total no. of properties assessed	1053923	671108	289820	120000	52000	138710

Expenditure (Rs. in Lacs)

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Sectoral Expenditure						
Total Water supply & Sewerage	7657.80	3702.15	3253.93	1609.57	528.98	1349.10
Public Health	11758.67	3077.25	2479.10	1739.68	908.76	747.96
Public Safety	1545.52	711.03	1039.13	501.87	148.52	190.08
Public Works	3057.11	2642.33	1407.92	557.62	156.04	206.49
General & Adm. Expenditure	7306.04	5691.53	3682.23	1351.34	1023.90	1008.64
Loan charges	7631.57	2735.50	2301.90	661.88	302.58	395.37
Other	12873.15	9675.91	5443.77	915.09	880.21	975.21
Total revenue expenditure	51829.86	28235.7	19607.98	7337.05	3948.989963	4872.85
Establishment expenditure	23335.83	15507.68	9768.48	3345.62	2102.39	1699.49
Expenditure on Discretionary exp.	5850.73	1132.54	281.39	438.82	150.55	0

Debt (Rs. in Lacs)

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Outstanding loan as on 1/4/1999	31247	13442.8	9834.71	5600	2669.8	2776.75
Loan repayment during FY '99-'00	7631.57	2735.5	2301.9	661.39	302.58	395.37

Health Data (Yr. 2000)

	Ahmedabad	Surat	Vadodara	Rajkot	Jamnagar	Bhavnagar
Infant mortality rate	25.67	22.26	19.53	50.36	52	64
Maternal mortality rate	0.14	0.21	0.13	0.05	0.1	3.89
Total no of Gastro Enteritis cases	6266	2435	890	1948	1879	1042
Total no of Cholera cases	90	0	0	0	8	0
Total No of Typhoid cases	636	223	0	83	105	119
Total no of Infective Hepatitis cases	447	1188	1269	100	0	96
Total no of Malaria cases	2232	8103	3065	260	120	20
% of full protection by immunisation	NA	97.01	100.22	62	70.55	100

Data Tables - Municipalities

General Demography Data

	Anand	Bharuch	Gandhidham	Navsari
Population (1991)	110266	133102	104584	126089
City Area (Sq. Km.) 1991	21.13	14.93	29.58	8.55
Estimated Population (2001)	140000	150619	170000	190000
City Area (Sq. Km.) 2001	21.13	19.45	29.58	8.55
Population growth rate during 1991-2001	2.4	1.2	5.0	4.2
Population growth rate during 1981-1991	2.4	1.7	5.5	1.7
pop projected for 99-00	136697	148768	161939	182367
pop projected for 98-99	133472	146940	154260	175040
Total Staff of ULB	551	612	454	900
Municipal staff per 10000 population	40	41	28	49
Slum Population	12000	9277	26500	25026

Infrastructure Data Water Supply

	Anand	Bharuch	Gandhidham	Navsari
Total Water Supply to city (MLD)	13.75	22	14.53	24
Domestic	8.65			
Commercial	1.8			
Industrial	0			
Qty drawn from Surface water resources(MLD)	0	14	9.08	16
Qty drawn from ground water resources(MLD)	13.75	8	5.45	8
No. of borewells	20	11	0	28
% Popn not receiving water supply	6	3.3	5	21
% Pop receiving water supply from piped network				
% Pop receiving water supply service from PSP				
% of population served by tankers				
Average Hrs of supply	2.5	5	1	4
Frequency of supply	1	1	0.5	1
Treatment Capacity(ML)	0	14	14.53	30
Distribution network length (Km)	104.5	26	900	200
Distribution network area (Sq. Km)				
Storage capacity(MLD)	6.87	15.4	6	12
No. of Public Stand Posts	151	22	35	249
Operating cost (Rs. In lacs)	29.77	111.52	105.52	185.08
Establishment expenditure	24.27	13.35	18.35	44.92
Cost recovery(Rs. in lacs)	9.4	45.43	70.99	47.14
Unaccounted for water (%)	7	40	2	8
No. of house service connection(HSC)	19949	20600	22000	21580
Total staff involved in water supply	38	23	61	94

Sewerage and Sanitation

	Anand	Bharuch	Gandhidham	Navsari
% of pop covered				
Under ground	40		89.3	85
Individual septic tanks	49	90		
Other	11	10	11.7	15
Treatment capacity(ML)	7.7	0	0	0
Amount of waste water generated	11	17.6	11.624	19.2
No. of toilet seats for slums	14	220	64	400
No of toilet seats (pay&use)	7	22	0	12
Total no of toilet seats	21	242	64	412
Annual cost (Rs. In Lacs)	85.06	0	62.78	60
Cost recovery (Rs. In Lacs)	20.77	0	0	40
No of sewerage connections	11000	0	38000	7260
Total staff engaged	40	0	100	67

Solid Waste Management

	Anand	Bharuch	Gandhidham	Navsari
Total Manpower engaged in SWM	121	407	209	226
Collection	98	297	209	195
Transportation and disposal	23	110	6	31
Waste collection bins	42	80	50	92
% primary collection from door step	18	20	0	20
Recyclable waste segregated (%)	0	0	0	0
Street sweeping on Sundays/holidays	y	y	y	y
Total quantity of waste generated (Tonnes)	42	80	106	40
Spacing between waste storage depots (m)	100	200		817
Total waste transported (Tonnes)	40	60	70	40
Total annual cost (Rs. in Lacs)	183.34	386.96	202.39	160.09
Cost recovery (Rs. in Lacs)	1.36	0	0	31.2
waste composted in the plant (Tonnes)	0	0	0	0
Capacity of waste storage bins (Tonnes)	30	160	70	92
Capacity of vehicles	13	21	8.8	7
Waste generated every day@ 400 per capita per day	42	80	106	48

Roads and Storm Water Drains

	Anand	Bharuch	Gandhidham	Navsari
Total length of surfaced roads (Km)	84.42	165.31	835	74.15
Total length of Kutcha roads (Km)	45.6	127.02	0	40
Length of roads having storm water drains	16	162.36	40	19
Annual expenditure on O&M of roads (Rs. in lacs)	4.09	27.17	70.34	14.39
Staff strength	23	85	2	35
Cost recovery (Rs. in Lacs)	0	0	56.93	10
% area covered by storm water drains	42.5	72.5	20	80

Streetlights

	Anand	Bharuch	Gandhidham	Navsari
Total number of street lights	8344	6960	15000	8833
Street light spacing (m)	50	50	50	20
Area not covered by street lights	3 sq. Km	0	5%	20%
O&M costs for street light (Rs. in lacs)	11.7	62.6	31.53	48.69
Total staff	7	3	15	15
Cost recovery (Rs. in lacs)	1.71	0	0	0

Finance Data

Financial Year	Anand		Bharuch		Gandhidham		Navsari	
	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
Revenue Account (in Rs. Lacs)								
Octroi	279.11	298.28	468.74	484.17	318.1	358.83	442.56	456.04
Property tax	91.10	125.92	81.00	77.47	68.9	56.93	79.59	81.05
Water tax(gen)	3.16	3.38					45.98	47.14
Water tax (special)	45.39	6.02	46.88	45.43	65.36	70.99		
conservancy tax(gen)	1.27	1.36			0.10		29.84	31.2
Drainage tax	18.94	20.77			0.02		32.49	40.00
Vehicle tax	1.24	1.16	1.32	0.57			0.66	0.8
Theatre tax	0.65	0.7	0.46	0.52	0.46	0.4	0.85	0.47
Toll Tax							6.72	5.45
Street light	1.59	1.7						
Other taxes						0.01	2.21	1.81
Total of tax income	301.53	322.61	470.52	485.26	318.58	359.24	485.49	504.57
Property & other taxes	22.42	24.33	1.78	1.09	0.48	0.41	42.93	48.53
Non tax income	534.03	616.52	269.00	199.20	161.88	164.85	246.70	266.76
Revenue grants	142.87	179.59	115.63	145.44	45.09	82.31	110.73	99.27
Revenue income	978.43	1118.72	855.15	829.9	525.55	606.4	842.92	870.6
Total revenue exp.	714.52	817.31	924.24	1102.04	935.95	796.31	658.12	849.85
Revenue Surplus	263.91	301.41	-69.09	-272.14	-410.4	-189.91	184.8	20.75
Capital Account (Rs. In Lacs)								
Capital (own)	47.21	22.93	250.85	104.78			132.1	1.98
Loan income	16.79		25.00		3.00		44.00	286.07
Capital grants	175.38	114.72	140.17	261.7	74.54	108.82	66.25	150.35
Total Capital Income	239.38	137.65	416.02	366.48	77.54	108.82	242.35	438.4
Total capital exp	443.53	419.53	108.49	67.24	13.50	98.00	252.08	532.02
Total Grants (Rev.+Cap.)	318.25	294.31	255.8	407.14	119.63	191.13	176.98	249.62
Total Income (Rev. + Capital)	1217.81	1256.37	1271.17	1196.38	603.09	715.22	1085.27	1309

Property Tax Data (in Rs. Lacs)

Financial Year	Anand		Bharuch		Gandhidham		Navsari	
	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
Property tax demand (current)	107.59	143.03	79.57	88.00	90.72	97.26	79.67	82.64
Property tax demand (arrears)	53.97	71.27	22.13	20.70	154.84	176.66	12.28	10.66
Total Demand	161.56	214.30	101.70	108.70	245.56	273.92	91.95	93.30
Collection (current)	80.26	110.04	58.73	57.60	68.9		75.60	76.16
Collection (arrears)	10.02	15.87	22.27	19.86	68.90	56.93	5.69	3.27
Total Collection	90.28	125.91	81.00	77.46	137.80	56.93	81.29	79.43
No of properties	37789	38330	29525	30624	22000	30000	45286	47997
Staff engaged in property tax collection	10	10	27	27	16	16	22	22

Expenditure (in Rs. Lacs)

Financial Year	Anand		Bharuch		Gandhidham		Navsari	
	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
Street light								
Estb.	4.23	6.38	1.12	0.94	4.42	5.8	11.09	12.18
other	61.49	5.32	36.09	61.66	35.09	25.73	43.35	36.51
Total of Streetlight	65.72	11.7	37.21	62.6	39.51	31.53	54.44	48.69
Water supply								
Estb	24.6	24.27	11.89	13.35	16.28	18.35	40.55	44.92
Other		5.5	165.66	98.17	87.19	87.17	139.91	140.16
Total of water supply	24.6	29.77	177.55	111.52	103.47	105.52	180.46	185.08
Public Health								
Estb	114.1	120.25	280.45	302.7	128.92	173.55	127.45	139.42
Other	44.8	67.07	69.46	87.43	63.53	168.44	25.42	20.67
sub total	158.9	187.32	349.91	390.13	192.45	341.99	152.87	160.09
Medical facility	59.36	68.87	11.24	4.23			5.03	14.72
Total of Public Health	218.26	256.19	361.15	394.36	192.45	341.99	157.9	174.81
Public Safety	90.3	68.75	57.82	88.39	40.54	32.83	76.53	69.18
Public Works	41.87	68.16	120.33	277.67	69.4	90.92	44.94	56.97
SWM								
Estb	110.05	117.02	211.91	299.53	30.58	147.45	127.45	139.42
O&M	43.44	66.32	69.45	87.43	16.1	54.94	25.42	20.67
Total SWM	153.49	183.34	281.36	386.96	46.68	202.39	152.87	160.09
Roads								
Estb	27.23		4.67	5.89			13.77	8.88
Other	14.02	4.09	115.66	27.17	48.13	70.34	2.88	14.39
Total of Roads	41.25	4.09	120.33	33.06	48.13	70.34	16.65	23.27
Total establishment exp.	386.12	393.73	402.38	419.9	489.5	308.06	379.88	236.19
Total revenue exp.	714.52	817.31	924.24	1102.04	935.95	796.31	658.12	849.85
Total capital exp	443.53	419.53	108.49	67.24	13.50	98.00	252.08	532.02

Debt (in Rs. Lacs)

Financial Year	Anand		Bharuch		Gandhidham		Navsari	
	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
Outstanding Loan as on 1-4-99	88.51	89.84	128.42	117.20	10.57	9.05	37.99	71.20
Loan repaid (principle +interest)	47.10	0.00	41.52	45.56	1.52	4.44	12.34	190.64

Health Data (Yr. 2000)

	Anand	Bharuch	Gandhidham	Navsari
Infant mortality rate	1.52	4.41	NA	NA
Maternal mortality rate	0	0.87	NA	NA
Total no of Gastro Enteritis cases	65	649	0	235
Total no of Cholera cases	0	0	0	0
Total No of Typhoid cases	145	0	0	83
Total no of Infective Hepatitis cases	0	0	0	24
Total no of Malaria cases	182	1086	51	193
% of full protection by immunisation	101	98.9	NA	65.4

Also Available.....

CD Containing

- City Manageware (Comparative Analysis of Gujarat Cities)
- Presentation on the Urban Indicators & Performance Measurement Program
 - Report



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