Creditworthiness Assessment: An Approach for Indian Cities

CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

Acknowledgements

Urban infrastructure projects tend to be capital intensive and not only require upfront capital investment but also annually recurring operations and maintenance expenditures. Recent estimates from the World Bank show that less than 20% of the largest 500 cities in developing countries are deemed creditworthy in their local context, severely constricting their capacity to finance investments in public infrastructure. Enabling cities to become creditworthy is an essential first step in gaining access to more substantial, long-term, sustainable investments. The creditworthiness of a city is a vital component of its ability to finance urban infrastructure projects, particularly in terms of attracting investment and issuing bonds.

Achieving growth targets in cities will require additional financing

By 2036, India will need to invest **$840 billion in infrastructure** - an average of **$55 billion**

or **1.2 percent of GDP per annum**.

Urban infrastructure has been generally financed through public funds however, there are

hard budget constraints

Not enough to meet financing gaps

Own sources and transfers

Taxes	Fees, user charges
State and Central Transfers	Grants from Finance Commissions and SFCs

Extra Budgetary Resources →

Multilateral and Bilateral Institutions	Commercial Banks
Development Finance Institutions	Capital Market Borrowing

For these investments, cities will need to be creditworthy and build confidence of the investors, lenders and the private sector

There is an increasing recognition of the need to mobilise infrastructure investments through borrowings
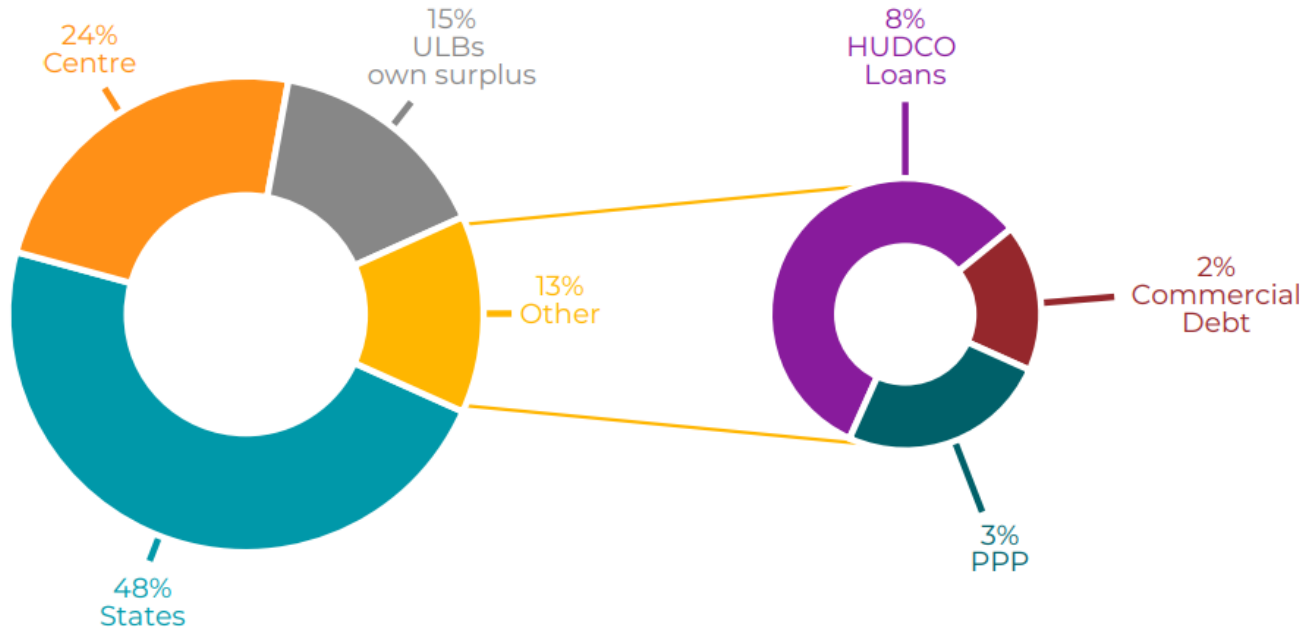
Stronger "creditworthiness" improves a city's ability to access different financing resources

- **Enabling cities to become creditworthy is an essential first step** in gaining access to more substantial, long-term, sustainable investments.

- The **creditworthiness of a city** is a vital component of its ability to finance urban infrastructure projects, particularly for attracting private investment and issuing bonds.

- Creditworthiness is a positive quality, and it takes work and commitment to maintain it.

- Initiatives and efforts by **GoI to undertake credit ratings for 500 cities under AMRUT** Mission.

- Supplementary guidelines by GoI on "**Special Assistance to States for Capital Investment 2023-24**" mention ULB reforms to make them creditworthy for municipal bonds and the issue of municipal bonds.

Commercial financing has played a minor role so far

Figure 3. Commercial financing plays minor role in financing urban infrastructure in India

Total Urban Investment **FY 11-18 - USD 85 billion**

24% Centre

15% ULBs own surplus

8% HUDCO Loans

13% Other

2% Commercial Debt

48% States

3% PPP

Source: Secondary research, CRISIL analysis

CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

Issuance of 33 municipal bonds worth INR 4,231 crore in India (1997-2024)

Issuance of Municipal and Pooled Bonds worth INR 4,231 crore in India (1997-2024)
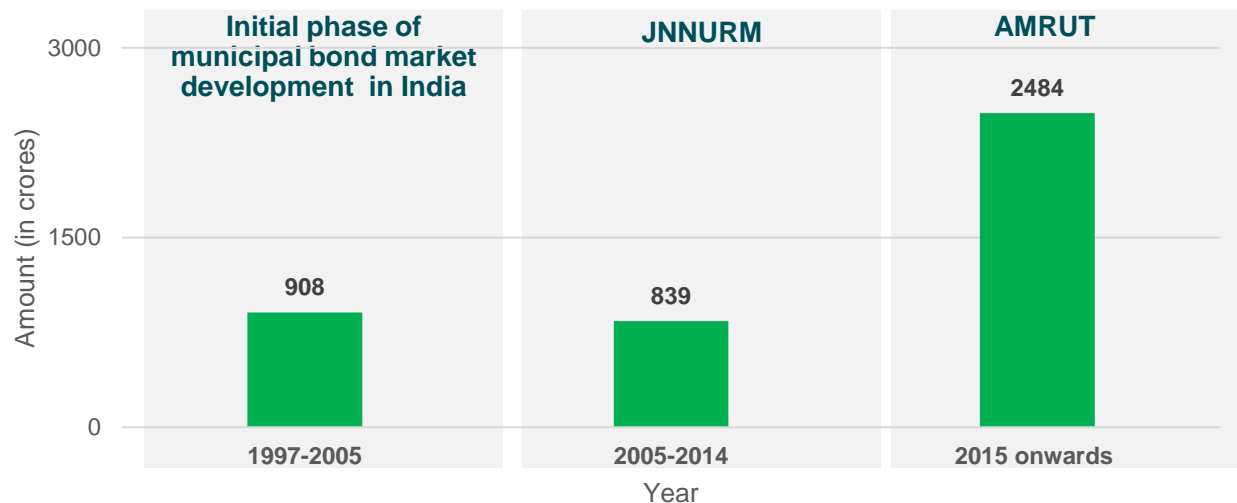
- Between **1997-2005**, ULBs issued **16 municipal bonds worth INR 908 crores**. Between **2005 and 2015**, during the JNNURM period, municipal and pooled bonds worth **INR 839 crores were issued**.

- **In 2015, SEBI** notified a new regulatory framework for issuing municipal bonds in India.

- Under AMRUT reform, in 2017, GoI started offering incentives worth **INR 13 crore on INR 100 crore bond amount**. This gave a push to the municipal bond market in India. With this, the municipal and pooled bond market size increased by **five folds**, with **mobilization of INR 2,484 crores through bond market.**

Creditworthiness assessment

- **Creditworthiness assessment** helps to assess the credit risk associated with lending to an entity in the public realm, It is an overall assessment and is not linked to the specific terms of a lending instrument such as term loans, bonds etc.

- Assessment can be **done at a very low cost** to assess creditworthiness and identify measures to improve.

- It can be a **pre-cursor to an actual credit rating** of a bond issue or final credit appraisal for approving a specific loan.

Our approach to develop a simple creditworthiness assessment framework

Creditworthiness Assessment

Framework for cities

Cities can use a **creditworthiness self-assessment tool** before approaching a Credit Rating Agency for a formal credit rating

Our Framework uses both **financial performance indicators and service level indicators**

It uses **publicly available datasets** which are annually updated an accessible on web-based portals

Less time-consuming process

WASH and administrative Data – Performance Assessment System (www.pas.org)
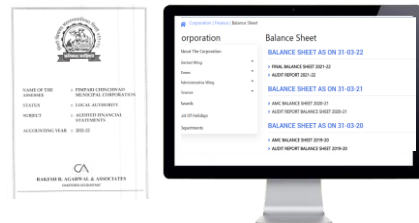
Balance sheets, Audited account statements and City Budgets can be obtained from cityfinance.in and city own websites

CWAS Approach to Creditworthiness Assessment

Parameters	PAS Creditworthiness Assessment Framework Approach
Rationale	**Annual assessment to measure and improve creditworthiness** of cities
Overall Approach and Methodology	Assessment of **Financial and Operational Indicators based on publicly available data**. Detailed assessment of operational indicators is done and reported in city reports
Assessment Model	**Simple, quick self-assessment and improvement** tool to measure creditworthiness of cities
Results and application	Individual detailed reports and consultation with cities. **Do It Yourself Toolkit** for creditworthiness assessment
Scalability	**Easily scalable**

CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

Parameters used for Creditworthiness Assessment

FINANCIAL : 70% weightage

Income Ratios — Translate economic base into municipal revenues and capacity to levy, collect taxes and user charges.

Expense Ratios — City's ability to manage fixed expenses and understand overspending or underspending.

Operating Ratios — Adequacy of revenues to meet operational expenses support additional debt servicing.

Debt Servicing Ratios — Adequacy of municipal cash flows to meet debt servicing requirements in a timely manner.

Leverage Ratio — Current leveraging of ULB, net worth and revenue profile and estimating borrowing capacity

Liquidity Ratio — Measure cash and other current assets to meet short-term business and financial obligations.

Size of revenues — Size of income, expenditure and their growth rate over the years.

SERVICE LEVEL : 30% weightage

WASH Service Levels — Assesses performance of city in WASH service delivery-coverage, treatment, and financial sustainability.

Accounting Quality and Transparency — Reflects the timeliness of providing audited information in public domain.

Human Resources and Adequacy of Staff — Staffing levels in relation to service delivery requirements

Complaint redressal mechanisms — City's ability to redress complaints

Indicators based on availability of data in public domain

	Parameter		Indicator
Financial Ratios			
1	Income Ratios	1.1	Own Tax Revenue to Total Revenue Income Ratio (%)
		1.2	Non-tax Revenue to Total Revenue Income Ratio (%)
		1.3	Assigned Revenue to Total Revenue Income Ratio (%)
		1.4	Revenue Grants to Total Revenue Income Ratio (%)
		1.5	Own Revenue Income/Total Revenue Income (%)
		1.6	Property tax demand as a % of own tax
		1.7	Property tax demand as a % of total revenue
		1.8	Property tax collection as a % of own tax
		1.9	Property tax collection as a % of revenue
2	Expenses Ratios	2.1	Establishment Expenses to Total Revenue Income Ratio (%)
		2.2	Fixed charge=(Establishment + Admin Int.)/ Revenue Income (%)
		2.3	O&M/ Total revenue income
		2.4	Establishment Expenses to Total Revenue Expenditure Ratio (%)
		2.5	Fixed charge= (Establishment + Admin Int.)/ Revenue Expenditure (%)
		2.6	O&M/ Total Revenue Expenditure
3	Operating Ratios	3.1	Surplus / Deficit prior to depreciation / interest) to Total Income Ratio (%)
4	Debt Servicing Ratios	4.1	Interest Service Coverage Ratio (Operating Surplus/ Interest)
5	Leverage Ratios	5.1	Total borrowings/ Total revenue income
6	Liquidity Ratios	6.1	(Cash and bank balance + all investments)/ Revenue Expenditure
7	Budget Size/ Economic Base	7.1	Revenue Income
		7.2	Revenue Expenditure
		7.3	Per Capita Revenue Income
		7.4	Per Capita Revenue Expenditure
		7.5	Per Capita Property Tax
		7.6	Per Capita Own Tax Income
		7.7	Growth of Revenue Income (CAGR)
		7.8	Growth of Revenue Expenditure (CAGR)

Service Level Operating Ratios			
8	WASH Coverage	8.1	Water supply coverage (No of water connections/ property)
		8.2	FSSM / Wastewater/ Sewerage Coverage
		8.3	SWM Coverage
		8.4	Toilet coverage
9	WASH user charges and property tax collection efficiency	9.1	Collection efficiency of water tax
		9.2	Collection efficiency of sanitation tax/ sewerage charges
		9.3	Collection efficiency of SWM charges
		9.4	Collection efficiency of property tax
		9.5	Collection efficiency of arrears
10	WASH Cost Recovery	10.1	Cost Recovery in Water Services
		10.2	Cost Recovery in Sanitation Services
		10.3	Cost Recovery in SWM services
11	Metering and NRW	11.1	Non-Revenue Water
		11.2	Metering of water connections
12	Adequacy, Treatment, Reuse	12.1	Adequacy of water supply (lpcd)
		12.2	Adequacy of treatment of sanitation
		12.3	Adequacy of treatment of SWM
		12.4	Extent of re-use of Wastewater
13	Accounting Quality and transparency	13.1	Does the city prepare annual audit reports of CITIES and publish it in public domain?
		13.2	Does the city follow accrual-based accounting?
14	Human Resource Adequacy	14.1	Total working staff versus sanctioned in water supply
		14.2	Total working staff versus sanctioned in sanitation
		14.3	Total working staff versus sanctioned in SWM
15	Grievance Redressal Mechanism	15.1	Grievance Redressal in water supply
		15.2	Grievance Redressal in sanitation
		15.3	Grievance Redressal in SWM

Two broad themes:
Financial (70%) and Service Level (30%)

53 Indicators

Estimates borrowing capacity of cities

Methodology and indicators were fixed after an **iterative process** based on a detailed review of indicators and the availability of datasets in the public domain.

A sample of 30 cities across 10 states of varied population sizes

Piloted across 30 Indian cities across ten states

Three sets of cities by population size

> 4 Million	1-4 Million	1 Million <
Ahmedabad	Agra	Bhilai
Lucknow	Aurangabad	Bilaspur
Pune	Bareilly	Chas
Surat	Dhanbad	Erode
	Indore	Jalgaon
	Madurai	Jamnagar
	Moradabad	Nizamabad
	Pimpri Chinchwad	Saharanpur
	Prayagraj (Allahabad)	Satna
	Raipur	Tumakuru
	Rajkot	
	Ranchi	
	Vadodara	
	Vijayawada	
	Vishakhapatnam	
	Warangal	

Selection of cities is based on availability of data points in the public domain

Key results of creditworthiness assessment – (1/2)

Overall Creditworthiness Score:

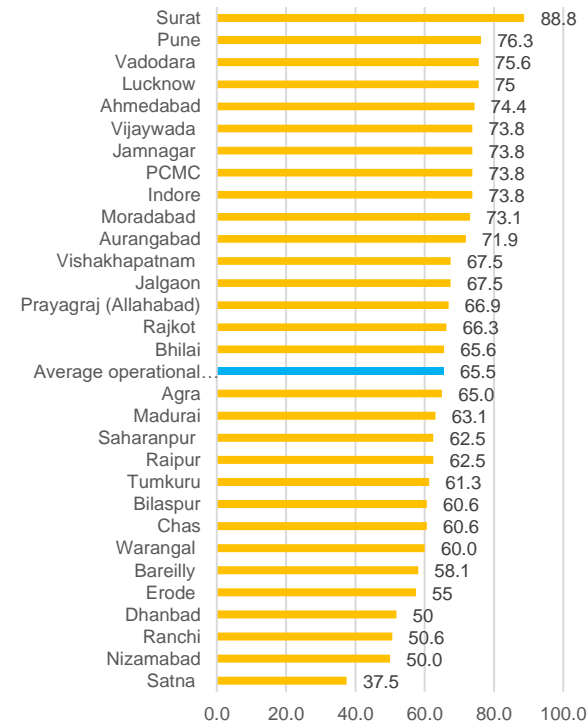| City	Score
Pune	87.6
PCMC	77.3
Surat	73.0
Vadodara	72.6
Indore	71.6
Ahmedabad	71.3
Vishakhapatnam	69.7
Vijayawada	68.1
Jamnagar	63.7
Lucknow	61
Bhilai	62.1
Jalgaon	61.8
Raipur	61.6
Average creditworthiness score	61.6
Rajkot	61.4
Chas	61.1
Moradabad	60.0
Aurangabad	59.6
Tumkuru	59.1
Warangal	58.7
Agra	57.6
Ranchi	57.2
Prayagraj (Allahabad)	55.5
Nizamabad	54.8
Saharanpur	53.8
Bilaspur	52.8
Madurai	52.6
Satna	51.5
Dhanbad	50.0
Erode	50.0
Bareilly	45.9

Financial Score:

City	Score
Pune	92.5
PCMC	78.8
Vadodara	71.3
Vishakhapatnam	70.6
Indore	70.6
Ahmedabad	70.0
Surat	66.3
Vijayawada	65.6
Raipur	61.3
Chas	61.3
Bhilai	60.6
Ranchi	60.0
Average financial score of…	60.0
Jamnagar	59.4
Rajkot	59.4
Jalgaon	59.4
Tumkuru	58.1
Warangal	58.1
Lucknow	58
Satna	57.5
Nizamabad	56.9
Agra	54.4
Moradabad	54.4
Aurangabad	54.4
Dhanbad	51.3
Prayagraj (Allahabad)	51.0
Saharanpur	50.0
Bilaspur	49.4
Madurai	48.1
Erode	48.0
Bareilly	45.9

Operational Score:

City	Score
Surat	88.8
Pune	76.3
Vadodara	75.6
Lucknow	75
Ahmedabad	74.4
Vijaywada	73.8
Jamnagar	73.8
PCMC	73.8
Indore	73.8
Moradabad	73.1
Aurangabad	71.9
Vishakhapatnam	67.5
Jalgaon	67.5
Prayagraj (Allahabad)	66.9
Rajkot	66.3
Bhilai	65.6
Average operational…	65.5
Agra	65.0
Madurai	63.1
Saharanpur	62.5
Raipur	62.5
Tumkuru	61.3
Bilaspur	60.6
Chas	60.6
Warangal	60.0
Bareilly	58.1
Erode	55
Dhanbad	50
Ranchi	50.6
Nizamabad	50.0
Satna	37.5

Pune tops the overall creditworthiness assessment performance
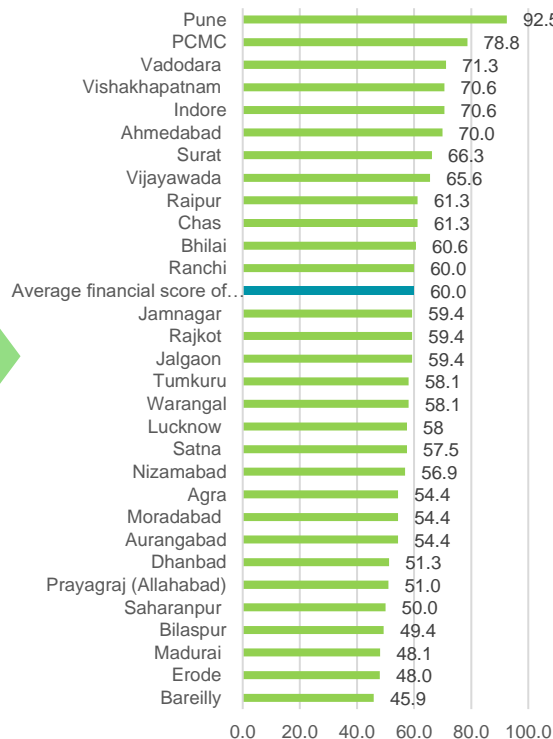
Pune again tops the financial assessment performance

Surat tops the service assessment performance

CWAS — CENTER FOR WATER AND SANITATION | CRDF — CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

13

Key results of creditworthiness assessment – (2/2)

27 cities are creditworthy out of a universe of 30 cities..

Only 8 cities- Ahmedabad, Pune, PCMC, Surat, Indore, Lucknow, Vadodara and Vishakhapatnam have issued municipal bond till now..

7 cities: High quality of creditworthiness
6 cities: Adequate quality of creditworthiness
14 cities: Moderate quality of creditworthiness
3 cities: High level of credit risk

PAS Creditworthiness Score	Rating	Cities	Creditworthiness	
Above 90	PAS AAA		Highest level of creditworthiness	
71-90	PAS AA	Pune, PCMC, Surat, Vadodara, Indore Ahmedabad, Vishakhapatnam	High level of creditworthiness	**Investment Grade**
61-70	PAS A	Vijayawada, Jamnagar, Jalgaon, Bhilai, Raipur, Lucknow, Rajkot	Adequate level of creditworthiness	
51-60	PAS BBB	Chas, Aurangabad, Moradabad, Tumakuru, Warangal, Agra, Ranchi, Bilaspur, Saharanpur, Nizamabad, Madurai, Satna, Prayagraj	Moderate level of creditworthiness	
41-50	PAS BB	Bareilly, Dhanbad, Erode	High level of Credit Risk	**Non-Investment Grade**
31-40	PAS B		Higher level of Credit Risk	
21-30	PAS C		Highest level of Credit Risk	
Less than 20	PAS D		Not creditworthy	

Results of creditworthiness assessment compared with actual credit rating (1/2)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
1	Pune	PAS AA	AA+ /2023	Municipal bonds	200 cr	CARE
2	PCMC	PAS AA	AA+/2023	Municipal bonds	200 cr	CRISIL
3	Surat	PAS AA	Provisional AA+/2024	Green bonds	200 cr	CRISIL
4	Ahmedabad	PAS AA	AA+/2024	Green bonds	200 cr	India Ratings
5	Indore	PAS AA	AA+/2023	Green bonds / Muni bonds	244 cr / 139 cr	India Ratings
6	Vadodara	PAS AA	AA/2024	Municipal bond	100 cr	CRISIL
7	Vishakhapatnam	PAS AA	AA/2024	Municipal bonds	100 cr	CARE
8	Lucknow	PAS A	AA/2023	Municipal bonds	200 cr	India Ratings
9	Rajkot	PAS A	Provisional AA/2023	Non-Convertible Debentures	100 cr	CRISIL
10	Warangal	PAS A	A-/2021	Issuer rating		India Ratings
11	Vijayawada	PAS A	BBB/2023	Fund based term loans	176 cr	ICRA
12	Jamnagar	PAS A	BBB+/ 2017	Credit assessment under AMRUT		Not known
13	Bhilai	PAS A	BBB+/2017 (withdrawn)	Credit assessment under AMRUT		ICRA
14	Agra	PAS A	BBB/2017	Credit assessment under AMRUT		CRISIL
15	Nizamabad	PAS BBB	B+/2023 (issuer not co-operating as rating is downgraded)	Issuer Rating		ICRA

Source: Credit rating under AMRUT, Retrieved from cityfinance.in, 2022; https://www.careratings.com/upload/CompanyFiles/PR/04012023061544_Pune_Municipal_Corporation.pdf;
https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/PimpriChinchwadMunicipalCorporation_March%2002,%202023_RR_312724.html;
https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/SuratMunicipalCorporation_January%2008,%202024_RR_334250.html;
https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/AhmedabadMunicipalCorporation_January%2017,%202023_RR_309700.html, https://www.indiaratings.co.in/pressrelease/62490,
https://www.indiaratings.co.in/pressrelease/67267, https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/VadodaraMunicipalCorporation_May%2030_%202024_RR_344483.html

Summary of key findings from creditworthiness assessments (1/2)

1. Revenue Size

- **Revenue size and expenditure management** of most cities are reflected on their **overall service level performance.**

- The distribution share of own tax, non-tax and revenue grants differs in the pool of cities and is **mandated by various State Municipal Corporation Acts and mandates.**

- The average percentage of **property tax share to total revenue income is less than 30%** for all city classes

2. Expenditure Management

- Metropolitan cities are spending more on their fixed expenses; however, the spending share is low on operations and maintenance as compared to smaller cities.

3. Operating Ratio

- All four million plus cities from the sample have operating surplus **before depreciation and interest, indicating a healthy financial profile.**

Summary of key findings from creditworthiness assessments (2/2)

1. Liquidity Profile

- Most cities from the sample showed **adequate cash balance and marketable securities** which can be **easily liquidated**. This ensures them to fund for their future regular operations through existing cash reserves. Larger cities with more than one million population also have **adequate assets.**

2. Debt Servicing Ability

- Most cities from the sample can **comfortably pay for their future debt obligations** as they show positive interest coverage ratio prior to depreciation and interest.

3. Borrowing Capacity

- Both larger metropolitan and smaller cities have the ability to borrow and can leverage additional investments. **27 cities** have **investment grade rating** out of the universe of 30 cities and can **leverage additional investments**.

Larger cities have 'significantly' higher potential to borrow compared to their actual borrowings

- Larger cities with higher revenue size like Surat, Vishakhapatnam, Indore, Vadodara, Ahmedabad, PCMC and Pune have issued municipal bonds worth **INR 100-200 crore for infrastructure projects**. These cities have a much higher ability to borrow from the market ranging from **INR 1000-9500 crore** and other sources than what they have borrowed.

Current borrowings vs Estimated borrowing capacity (in INR crore)
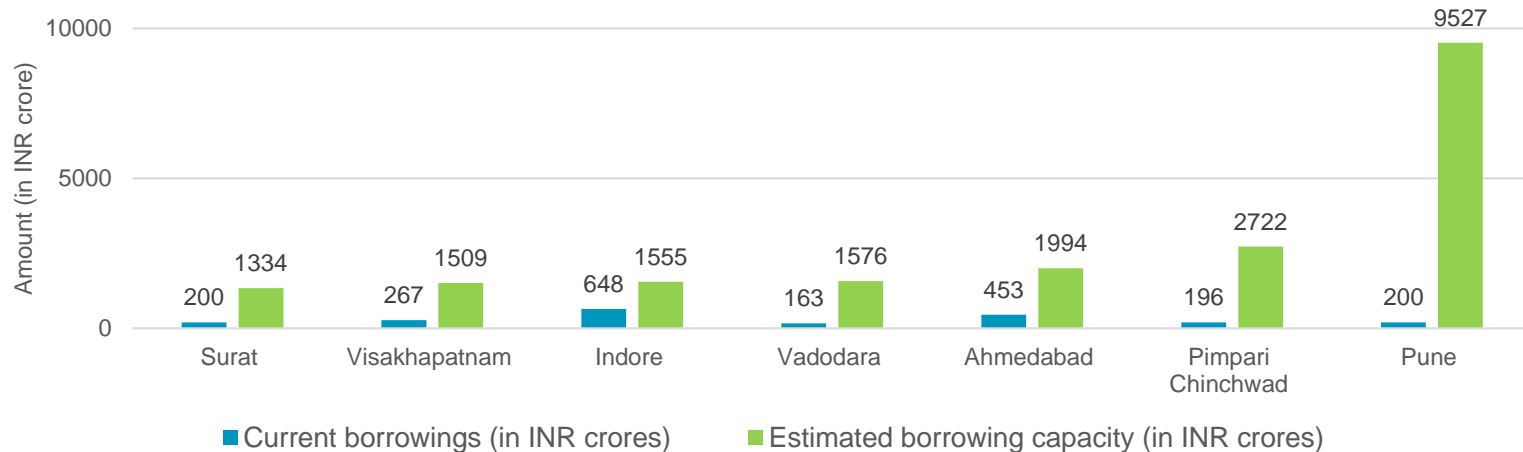
Note: The thumb rule for assessing the borrowing capacity of the municipal corporation is ideally considered as 2.5 times the operating surplus prior to depreciation and interest. If one assumes that a typical borrowing would be for a tenure of 10 years and for simplicity assume an interest of 10%, this covenant translates into borrowing limit of 2.5 times annual operating surplus.

Source: Audited balance sheets of Surat, Vishakhapatnam, Indore, Vadodara, Ahmedabad, PCMC, Pune FY 2018-22

Many smaller cities also have reasonable potential to borrow, yet they haven't borrowed

Current borrowings vs Estimated borrowing capacity (in INR crore)
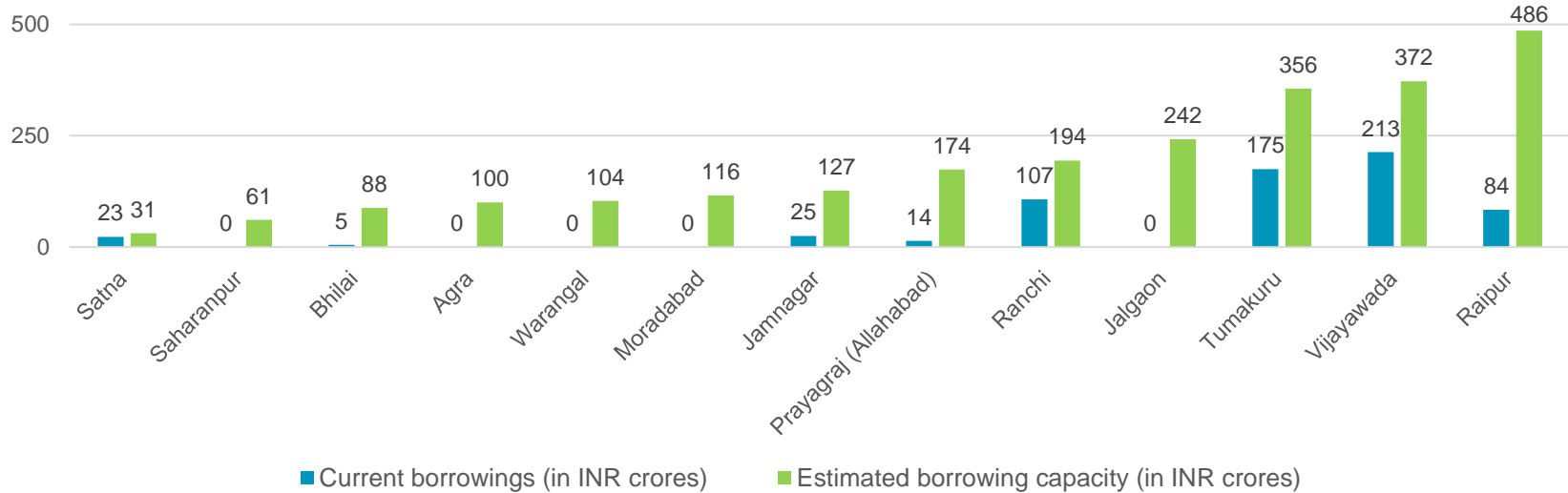
Legend: ■ Current borrowings (in INR crores) ■ Estimated borrowing capacity (in INR crores)

City	Current borrowings	Estimated borrowing capacity
Satna	23	31
Saharanpur	0	61
Bhilai	5	88
Agra	0	100
Warangal	0	104
Moradabad	0	116
Jamnagar	25	127
Prayagraj (Allahabad)	14	174
Ranchi	107	194
Jalgaon	0	242
Tumakuru	175	356
Vijayawada	213	372
Raipur	84	486

Note: The thumb rule for assessing the borrowing capacity of the municipal corporation is ideally considered as 2.5 times the operating surplus prior to depreciation and interest. If one assumes that a typical borrowing would be for a tenure of 10 years and for simplicity assume an interest of 10%, this covenant translates into borrowing limit of 2.5 times annual operating surplus.

Source: Audited balance sheets of Satna, Saharanpur, Bhilai, Agra, Warangal, Moradabad, Jamnagar, Prayagraj, Ranchi, Jalgaon, Tumakuru, Vijayawada, Raipur FY 2018-22

The Creditworthiness Assessment Tool

Creditworthiness Assessment Tool (1/4)

A Simple Excel Based Tool to assess creditworthiness and borrowing capacity of a city

Creditworthiness Assessment
An Approach for in Indian Cities

Creditworthiness Score

City : ABC Municipal Corporation
State : XYZ

Financial Year : 2018-22 [Best Performing Year:2019-20]

	Benchmark	Creditworthiness Score
Total Score	100	77.88
Financial Score	100	73.75
Operational Score	100	87.50

Rating	PAS AA	High level of creditworthiness

Borrowing capacity	**1941** INR crores

Tool controller

Drop Down Menu is here

Select finacial year from the drop down menu	**All Financial Year**

View Report

Print PDF

Clear input fields from **Data Input Sheet**

Clear fields

Instructions for using the tool

1. Enter data in grey cells in the Data Sheet. Please **DO NOT** enter any values in purple coloured cells in data sheet as they are autocalculated.

2. Incase data is not available for an indicator, add **ND** which means **No Data.**

3. The sheets Financial Ratios, Financial Score, Operating Ratios, Operating Score, Final Score and Rating are autocalculated. Kindly DO NOT enter anything in these sheets.

4. The Summary sheet gives a quick summary of the creditworthiness assessment for any particular financial year and also helps city derive the best performance over the years to monitor multi-year creditworthiness.

5. The report can be downloaded from **Tool Controller > Print PDF** from Instructions sheet.

Creditworthiness Assessment Tool (2/4)

Financial and Operational Data Input

Name of state	XYZ
Name of city	ABC Municipal Corporation

Data source	Assessment Year	Unit	2018-19	2019-20	2020-21	2021-22
PAS	Water supply coverage	%	98.1	99.1	99.9	93.5
PAS	FSSM / Wastewater/ sewerage HH Coverage	%	100.0	100.0	100.0	100.0
PAS	SWM Coverage (Household)	%	100.0	95.2	91.9	95.2
PAS	PAS Rating	%	100.0	100.0	100.0	100.0
PAS	Cost Recovery of water tax	%	204.0	209.7	195.4	210.9
PAS	Cost Recovery of sanitation tax/ sewerage charges	%	67.2	57.9	57.6	55.3
PAS	Cost Recovery of SWM charges	%	148.5	143.4	146.6	146.7
PAS	Current Year Property Tax Billed Demand	Lakhs	91299.0	92958.3	107803.7	103549.0
PAS	Current Year Property Tax Collection	Lakhs	65710.0	86238.6	96429.1	96034.4
PAS	Collection Efficiency of water tax	%	82.2	81.3	85.5	80.3
PAS	Collection Efficiency of sanitation tax	%	86.2	90.8	91.3	85.7
PAS	Collection Efficiency of SWM tax	%	87.8	85.2	81.5	83.7
PAS	Non-Revenue Water	%	20.0	20.0	21.1	30.0
PAS	Metering of water connections	%		13.7	13.6	12.6

When a City wants to do its own Creditworthiness Assessment!

Data sheet enables entry of financial and service level data using data from sources such as

- **Audited Balance Sheets**
- **Income and Expenditure Statements**
- **Demand Collection Balance Table**
- **Service Level Data**
- **City Budgets**

Creditworthiness Assessment Tool (3/4)

Financial Ratios

Name of state	XYZ
Name of city	ABC Municipal Corporation

Assessment Year	Unit	2018–19	2019–20	2020–21	2021–22
Income Ratios					
Own Tax Revenue to Total Revenue Income Ratio (%)	%	41.8%	41.2%	44.5%	40.5%
Non–tax Revenue to Total Revenue Income Ratio (%)	%	29.4%	24.2%	17.6%	26.8%
Assigned Revenue to Total Revenue Income	%	24.9%	23.7%	25.9%	21.9%
Revenue Grants to Total Revenue Income	%	3.9%	10.9%	12.0%	10.9%
Property tax demand as a % of total revenue	%	22.6%	28.3%	34.6%	29.0%
Property tax collection as a % of total revenue	%	22.6%	28.3%	34.6%	29.0%
Expenses Ratios					
Establishment Expenses to Total Revenue Income Ratio (%)	%	51.0%	51.5%	51.2%	46.3%
Fixed charge=(Establishment + Admin Int.)/ Revenue Income (%)	%	55.4%	58.3%	71.5%	64.0%
O&M/ Total revenue income	%	13.4%	14.3%	13.6%	16.4%
Establishment Expenses to Total Revenue Expenditure Ratio (%)	%	51.0%	51.5%	51.2%	46.3%
Fixed charge=(Establishment + Admin Int.)/ Revenue Expenditure (%)	%	62.5%	62.8%	65.9%	61.0%

Financial Score

Name of state	XYZ
Name of city	ABC Municipal Corporation

Assessment Year	Unit	2018–19	2019–20	2020–21	2021–22
Income Ratios					
Own Tax Revenue to Total Revenue Income Ratio (%)	Number	4.0	4.0	4.0	4.0
Non-tax Revenue to Total Revenue Income Ratio (%)	Number	3.0	3.0	2.0	3.0
Assigned Revenue to Total Revenue Income Ratio (%)	Number	3.0	3.0	3.0	3.0
Revenue Grants to Total Revenue Income Ratio (%)	Number	4.0	4.0	4.0	4.0
Property tax demand as a % of total revenue	Number	3.0	4.0	4.0	4.0
Property tax collection as a % of total revenue	Number	4.0	4.0	4.0	4.0
Expenses Ratios					
Establishment Expenses to Total Revenue Income Ratio (%)	Number	2.0	2.0	2.0	3.0
Fixed charge=(Establishment + Admin Int.)/ Revenue Income (%)	Number	2.0	2.0	1.0	1.0
O&M / revenue income (%)	Number	4.0	4.0	4.0	4.0
Establishment Expenses to Total Revenue Expenditure Ratio (%)	Number	2.0	2.0	2.0	3.0
Fixed charge=(Establishment + Admin Int.)/ Revenue Expenditure (%)	Number	2.0	2.0	0.0	2.0
O&M / revenue expenditure (%)	Number	4.0	4.0	4.0	4.0

Auto-calculated Financial Ratios and Scores which assess financial performance

City can self-assess its financial performance over the years

CWAS CENTER FOR WATER AND SANITATION   CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION   CEPT UNIVERSITY

Creditworthiness Assessment Tool (4/4)

Know Your City's Creditworthiness Score

Name of state	XYZ
Name of city	ABC Municipal Corporation

Total Score			
Year	70% finance, 30% service levels	Rating	Creditworthiness
2018-19	76.00	PAS AA	High level of creditworthiness
2019-20	77.88	PAS AA	High level of creditworthiness
2020-21	72.81	PAS AA	High level of creditworthiness
2021-22	68.75	PAS A	Adequate level of creditworthiness
Best Score	77.88	PAS AA	High level of creditworthiness

Your city has PAS AA rating and has High level of creditworthiness

Recommendations

Based on the latest financial year data, factors which can improve creditworthiness score -

Water Supply and NRW losses :
• Improvement in water supply coverage will help achieve better service levels. The city should plan to reduce its NRW losses through scientific processes like water audits, repair leakages and replacement of old network.

Accounting Quality :
• The city should follow accrual based accounting process.

Transparency :
• The city should increase transparency of accounting practices by uploading the annual audited statements, balance sheets and property tax DCB tables on the city website.

Overall Creditworthiness Score of the City ABC which is 77.88 with PAS AA rating

Downloadable report with list of recommendations and factors which can improve a city's creditworthiness score

Round Table meet on Creditworthiness assessment at MoHUA in July'24

- Roundtable meeting on 'Creditworthiness Assessment - An Approach for Indian Cities' was held at MoHUA, Delhi

- **Hybrid mode** (online and offline) on July 16,2024, under the chairpersonship of **Ms. D Thara, Additional Secretary, Ministry of Housing and Urban Affairs (MoHUA).**

Stakeholders who attended the round-table meet:

- **MoHUA Team,**
- **Municipal Commissioners,**
- **Chief Accounting Officer,**
- **Credit Rating Agencies (CRISIL, CARE, India Ratings, ICRA)**
- **Development Banks (NHB, World Bank, ADB)**
- **Sector Experts**

Key Discussion Points from the Round Table Meet

"The framework and tool developed by CWAS, CEPT can be considered as a ready reckoner for evaluating ULBs creditworthiness before undertaking the actual credit rating process and CWAS can build capacity of ULBs to use this tool. "

-Ms. D Thara (IAS), Additional Secretary, MoHUA, GoI

"The proposed creditworthiness tool can be of great importance for the cities since it can also assess the influence of service level parameters. Citing experience from Vadodara's municipal bond issuance, good service levels of Vadodara helped facilitate over-subscription of bonds and helped in gaining investor confidence. "

-Ms. Shalini Agrawal (IAS), Municipal Commissioner, Surat

Credit Rating Agencies

*"The framework will be **helpful for the ULBs and can also be very useful for rating agencies as this will help ULBs prepare necessary data** for creditworthiness assessment which is generally the most time-consuming part of the exercise."*

Financial agency representatives

*"The **creditworthiness tool will be helpful for them to track the debt servicing, income, and expenditure performance of cities** before an actual credit evaluation. They also suggested that the tool could also capture any credit default history."*

Ministry of Housing and Urban Affairs, GoI

"CWAS, CEPT can do a deep-dive with a few cities to validate information taken from public domain with ULB records. For this, MoHUA can provide necessary support such as tender/ DPR details of urban Missions to understand the spending capacity of the ULBs."

Way Forward

Scaling up creditworthiness assessment through capacity building

Creditworthiness assessment framework can be scaled across Indian cities by capacity building of city government officials.

Collaboration with cities

- **Deep dive creditworthiness** assessment with a few cities.
- **Identify measures to improve creditworthiness of cities** and assess feasible borrowing options from the market.

Explore use of the Tool with potential lenders

Explore with other potential lenders such as commercial banks, NHB - Urban Infrastructure Development Fund (UIDF), NABFID, HUDCO etc**.**

Read the report on CWAS website
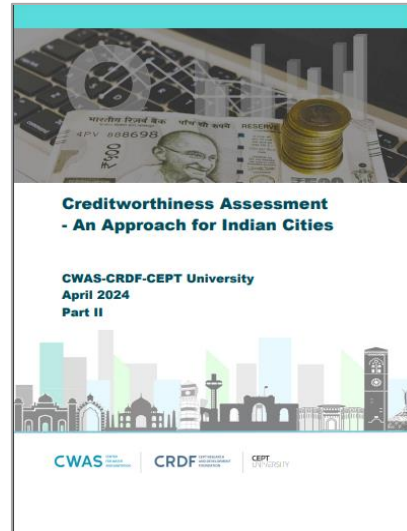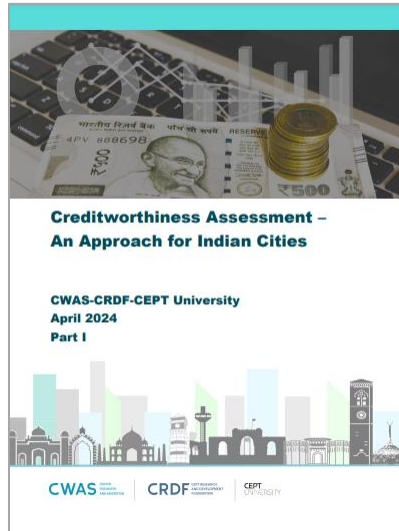
Link of the report: Creditworthiness Assessment for Urban Local Bodies

Scan the QR to read the report

Thank you

CWAS CENTER FOR WATER AND SANITATION | **CRDF** CEPT RESEARCH AND DEVELOPMENT FOUNDATION | **CEPT** UNIVERSITY

About us

The Center for Water and Sanitation at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

cwas.org.in
pas.org.in

cwas@cept.ac.in
tiny.cc/pasenews

CEPT_CWAS

cwas.cept

cwas.cept

cwas.cept

References

References (1/6)

Basak, D. D. (2018, November 26). Retrieved from http://mohua.gov.in:
http://mohua.gov.in/upload/uploadfiles/files/10%20Surat%20MC_GIS_Ptax_Debasish%20Basak.pdf

Business Line. (2023, January 17). *TN should continue to devolve 10% of State's own tax revenue to the local bodies: SFC.* Retrieved from
thehindubusinessline.com: https://www.thehindubusinessline.com/news/tn-should-continue-to-devolve-10-of-states-own-tax-revenue-to-the-local-bodies-sfc/article66374181.ece

CWAS. (2018). *Know Your City.* Retrieved from Centre for Water & Sanitation :
https://www.pas.org.in/web/ceptpas/knowyourcity?p_p_id=Knowyourcity_WAR_Portal&p_p_lifecycle=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1&actionVal=Retrieve&SkipAccessChecking=false

Department of Economic Affairs, M. o. (September 2017). *Guidance on use of Municipal Bond Financing for Infrastructure projects.* Ministry of Finance.

GoI. (2022-23). *Annual Financial Statement of the central government.* GoI.

HPEC. (March 2011). *Report on Indian Infrastructure and Services- High Powered Expert Committee.* ICRIER.

https://www.livemint.com. (2018, September 15). Retrieved from https://www.livemint.com/Politics/Pd9d9RdXIXvFc6tZdPUOJL/Ahmedabad-to-levy-user-charge-for-doortodoor-garbage-col.html

Indo-USAID. (1999). *Developing a Municipal Credit Rating System-Indo-US Financial Institutions Reform and Expansion Project - Debt Market Component (FIRE-D).* Indo-USAID.

Indo-USAID. (2004). *Indo-US Financial Institutions Reform and Expansion Project- Debt Market Component (FIRE D).* Indo-USAID.

References (2/6)

Kimani, A., Advani, R., & Sy, J. (2011). *Financing Urban Water Services in Kenya : Utility Shadow Credit Ratings.* Washington DC: Water and Sanitation Program, World Bank .

Kumar, C. (2019, June 28). *The Times of India .* Retrieved from https://timesofindia.indiatimes.com/: https://timesofindia.indiatimes.com/city/bengaluru/rural-property-owners-can-soon-pay-taxes-online/articleshow/69984056.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Kumar, R. (2012, June 12). *GeoSpatial World.* Retrieved from https://www.geospatialworld.net/article/gis-simplifying-property-tax-collection-in-india/

Loay AlMujadidi, C. A. (2019, July 12). *Public Sector Insights.* Retrieved from www.mckinsey.com: https://www.mckinsey.com/industries/public-sector/our-insights/unlocking-the-full-potential-of-city-revenues

Ministry of Finance, G. (2023, June 19). Scheme for Special Assistance to States for Capital Investment 2023-24. Ministry of Finance, GoI.

MoHUA. (2021). *AMRUT Operational Guidelines.* MoHUA.

MOHUA. (2023). *Demand for grants 2023-24.* MOHUA.

Network, T. N. (2019, May 6). *timesofindia.indiatimes.com.* Retrieved from www.timesofindia.com: https://timesofindia.indiatimes.com/city/pune/online-payment-systems-for-property-tax-click-with-owners/articleshow/69191471.cms

Prasad, V. C. (2014). *Municipal Finances and Service Delivery in India.* ASCI.

Press Information Bureau, G. o. (2017, March 26). *Press Information Bureau, Govt of India, MoHUA.* Retrieved from www.pib.gov.in: https://pib.gov.in/newsite/printrelease.aspx?relid=159951

References (3/6)

Pune Municipal Corporation. (n.d.). *Property Tax Collection- A Unique Drive by PMC Creates History.* Retrieved from www.pmc.gov.in:
http://pmc.gov.in/informpdf/Smart_City/Smart_Project/19.%20Property%20Tax%20Booklet.pdf

Rao, M. G. (2013). *Property Tax System in India.*

Service, E. N. (2019, May 17th). *The Indian Express.* Retrieved from https://www.newindianexpress.com/cities/bengaluru/2019/may/17/bda-property-tax-collection-goes-online-1977955.html

Sohaib Athar, Roland White, Harsh Goyal;. (2022). *Financing India's urban infrastructure needs.* The World Bank.

The Bastion . (2020, September 10). *How 'Development' in Jharkhand Contributed to a Water Crisis.* Retrieved from www.bastian.co.in:
https://thebastion.co.in/politics-and/how-development-in-jharkhand-contributed-to-a-water-crisis/#:~:text='Freely%20available'%20natural%20resources%20are,state%20currently%20finds%20itself%20in.

Times of India . (2023, July 4). *State receives Rs 9,021 crore GST compensation from Centre.* Retrieved from Times of India :
https://timesofindia.indiatimes.com/city/ahmedabad/state-receives-rs-9021-crore-gst-compensation-from-centre/articleshow/101469792.cms?from=mdr

Times of India. (2018, September). *Pimpri Chinchwad is third fastest growing city in the country.* Retrieved from www.timesofindia.indiatimes.com:
https://timesofindia.indiatimes.com/city/pune/pimpri-chinchwad-is-third-fastest-growing-city-in-the-country/articleshow/65687190.cms

UNCTAD. (2022). World Investment Report. United Nations Conference on Trade and Development (UNCTAD).

World Bank . (2016). City Creditworthiness Initiative: A Partnership to Deliver Municipal Finance. Retrieved from worldbank.org:
https://www.worldbank.org/en/topic/urbandevelopment/brief/city-creditworthiness-initiative

WSP . (2008). Developing Effective Billing & Collection Practices. Water & Sanitation Programme.

References (4/6)

Ahmedabad Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://ahmedabadcity.gov.in/SP/BalanceSheet

Surat Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5eb5844f76a3b61f40ba0693

Pune Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5eb5844f76a3b61f40ba0694

Chennai Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5fa24662072dab780a6f156f and https://chennaicorporation.gov.in/gcc/department/finance/

PCMC Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5f5610b3aab0f778b2d2cabf

Vadodara Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5ef21d79b455b309f9aa23d1

Rajkot Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5fa2465d072dab780a6f1098 ; https://www.rmc.gov.in/Budget

Aurangabad Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://www.aurangabadmahapalika.org/audit-department

Warangal Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5e33ffd0d6f5614a4bba6226

Raipur Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42eb8

Ranchi Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24b8f91344e2300876cac

Indore Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5e4a75dc47cb2749e5a56be0

CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

References (5/6)

Agra Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42f46

Bareilly Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42f6c

Moradabad Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd2472a437ba31f7eb42ffb

Prayagraj Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42ee4

Madurai Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5eb5845076a3b61f40ba07a8

Vishakhapatnam Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42ed2; ; https://www.gvmc.gov.in/thirdlevel.htm

Vijaywada Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5e33ffd0d6f5614a4bba621f

Satna Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5f4e582a7678199697d82e06

Saharanpur Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd2472a437ba31f7eb42ffa

Nizamabad Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42f35

Jamnagar Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://www.mcjamnagar.com/Departments/JmcDepartment.aspx?dept=21&SID=DEPTSUP

CWAS CENTER FOR WATER AND SANITATION   CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION   CEPT UNIVERSITY RSITY

References (6/6)

Dhanbad Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from
https://cityfinance.in/dashboard/city?cityId=5dd24b8f91344e2300876ca9

Lucknow Municipal Corporation, Retrieved from https://www.indiaratings.co.in/pressrelease/67267, Crisil Ratings (2024).

Vadodara Municipal Corporation, Retrieved from
https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/VadodaraMunicipalCorporation_May%2030_%202024_RR_344483.html,

Crisil Ratings (2023). Rajkot Municipal Corporation, Retrieved from
https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/RajkotMunicipalCorporation_December%2015,%202023_RR_333472.html,

CARE Ratings (2024). Greater Visakhapatnam Municipal Corporation,
https://www.careratings.com/upload/CompanyFiles/PR/202401120116_Greater_Visakhapatnam_Municipal_Corporation.pdf, India Ratings and
Research (2021).

Warangal Municipal Corporation, Retrieved from https://www.indiaratings.co.in/pressrelease/bankersdetailshtml?pressreleaseid=54355, ICRA (2023).
Aurangabad Municipal Corporation, Retrieved from https://www.icra.in/Rating/GetRationalReportFilePdf?id=121054; ICRA (2023). Nizamabad
Municipal Corporation, Retrieved from https://www.icra.in/Rating/GetRationalReportFilePdf?id=129371.

MoHUA (2022). City Finance-Credit Ratings under AMRUT, Retrieved from cityfinance.in, 2022

Jalgaon Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5dd24e98cc3ddc04b552b7cd

Erode Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5eb5845076a3b61f40ba0717

Bhilai Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5dd24728437ba31f7eb42e7a

Bilaspur Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5dd24729437ba31f7eb42ee0

Chas Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from https://cityfinance.in/dashboard/city?cityId=5dd24b8f91344e2300876c8f

Tumakuru Municipal Corporation (2018-2022), Annual Financial Statements, Retrieved from

https://cityfinance.in/dashboard/city?cityId=5fa2465e072dab780a6f11b9

CARE Ratings (2024). Retrieved from https://www.careratings.com/upload/CompanyFiles/PR/04012023061544_Pune_Municipal_Corporation.pdf; Crisil Ratings (2023). Pune Municipal Corporation, Retrieved from https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/PimpriChinchwadMunicipalCorporation_March%2002,%202023_RR_312724.html,

Crisil Ratings (2024). PCMC, Retrieved from https://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/SuratMunicipalCorporation_January%2008,%202024_RR_334250.html,

Crisil Ratings (2023). Ahmedabad Municipal Corporation, Retrieved from https://www.crisilratings.com/mnt/winshare/Ratings/RatingList/RatingDocs/AhmedabadMunicipalCorporation_January%2017,%202023_RR_309700.html,

India Ratings and Research (2023). Indore Municipal Corporation, Retrieved from https://www.indiaratings.co.in/pressrelease/62490; India Ratings and Research (2023).

Annexures

Results of creditworthiness assessment compared with actual credit rating (1/5)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
1	Pune	PAS AA	AA+ /2023	Municipal bonds	200 cr	CARE
2	PCMC	PAS AA	AA+/2023	Municipal bonds	200 cr	CRISIL
3	Surat	PAS AA	Provisional AA+/2024	Green bonds	200 cr	CRISIL
4	Ahmedabad	PAS AA	AA+/2024	Green bonds	200 cr	India Ratings
			AA+/2023	Municipal bonds	200 cr	CRISIL
5	Indore	PAS AA	AA+/2023	Green bonds	244 cr	India Ratings
				Municipal bonds	139 cr	India Ratings
6	Vadodara	PAS AA	AA/2024	Municipal bond	100 cr	CRISIL
			AA/2023	Municipal bond	100 cr	CRISIL
			AA+/2022	Municipal bond	100 cr	India Ratings
			AA/2021	Municipal bond	100 cr	CRISIL
			A+/2016	Credit assessment under AMRUT		CRISIL
7	Vishakhapatnam	PAS AA	AA/2024	Municipal bonds	100 cr	CARE
			AA/2023	Municipal bonds	100 cr	CARE
			AA/2022	Municipal bonds	100 cr	CARE
			AA/2021	Municipal bonds	100 cr	India Ratings
			AA/2020	Municipal bonds	100 cr	India Ratings
			AA/2017	Credit assessment under AMRUT		CARE
			A-/2018	Credit assessment under AMRUT		Brickworks

Results of creditworthiness assessment compared with actual credit rating (2/5)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
7	Vishakhapatnam	PAS AA	AA/2024	Municipal bonds	100 cr	CARE
			AA/2023	Municipal bonds	100 cr	CARE
			AA/2022	Municipal bonds	100 cr	CARE
			AA/2021	Municipal bonds	100 cr	India Ratings
			AA/2020	Municipal bonds	100 cr	India Ratings
			AA/2017	Credit assessment under AMRUT		CARE
8	Lucknow	PAS A	AA/2023	Municipal bonds	200 cr	India Ratings
			AA/2022	Municipal bonds	200 cr	Brickworks
			AA/2021	Municipal bonds	200 cr	Brickworks
			AA/2020	Municipal bonds	200 cr	India Ratings
			AA (SO).2019	Municipal bonds	200 cr	Acuite
			A-/2018	Credit assessment under AMRUT		Brickworks

Results of creditworthiness assessment compared with actual credit rating (3/5)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
9	**Rajkot**	PAS A	Provisional AA/2023	Non-Convertible Debentures	100 cr	CRISIL
			AA-/2022	Non-Convertible Debentures	150 cr	CRISIL
			AA/2022	Non-Convertible Debentures	150 cr	India Ratings
			A-/ unknown	Credit assessment under AMRUT (withdrawn)		CRISIL
10	**Warangal**	PAS A	A-/2021	Issuer rating		India Ratings
			A-/2020	Issuer rating		CARE
			A-/2019	Issuer rating		CARE
			A/2018	Credit assessment under AMRUT		CARE
11	**Raipur**	PAS A	BBB+/2017 (withdrawn)	Credit assessment under AMRUT		ICRA
			BBB/2010	General creditworthiness not an instrument		CARE

Results of creditworthiness assessment compared with actual credit rating (4/5)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
12	Jamnagar	PAS A	BBB+/ 2017	Credit assessment under AMRUT		Not known
13	Bhilai	PAS A	BBB+/2017 (withdrawn)	Credit assessment under AMRUT		ICRA
14	Agra	PAS A	BBB/2017	Credit assessment under AMRUT		CRISIL
15	Moradabad	PAS A	BBB-/2017	Issuer rating		Brickworks
			BB-/2011 (no longer in use)	Issuer rating under JNNURM		CARE
16	Vijayawada	PAS A	BBB/2023	Fund based term loans	176 cr	ICRA
			A-/2018 (withdrawn)	Issuer rating		ICRA
17	Jalgaon	PAS A	BB+/2017			Brickworks
18	Chas	PAS A	BB-/2017 (outstanding)	Credit assessment under AMRUT		Brickworks
19	Aurangabad	PAS A	BB+/2022	Issuer rating (Issuer not co-operating since rating declined)		ICRA
20	Madurai	PAS BBB	A-/2017 (withdrawn)	Credit assessment under AMRUT		ICRA
21	Bilaspur	PAS BBB	BBB/2017 (withdrawn)	Credit assessment under AMRUT		ICRA
22	Saharanpur	PAS BBB	BB+/2016	Credit assessment under AMRUT		CRISIL
23	Ranchi	PAS BBB	BB-/2016 (withdrawn)	Credit assessment under AMRUT		CRISIL
			BB-/2008	Issuer rating under JNNURM		CRISIL

Results of creditworthiness assessment compared with actual credit rating (5/5)

	City	PAS Creditworthiness assessment grade (2023)	Rating through a CRA/ year (status)	Type of rating	Debt security amount	CRA
24	**Nizamabad**	PAS BBB	B+/2023 (issuer not co-operating as rating is downgraded)	Issuer Rating		ICRA
			BB+/2022 (issuer not co-operating as rating is downgraded)	Issuer Rating		ICRA
			BBB/2021	Issuer Rating		ICRA
			BBB-/2017 (withdrawn)			India Ratings
25	**Satna**	PAS BBB	Not available			-
26	**Tumkuru**	PAS BBB	Not available			-
27	**Dhanbad**	PAS BB	BB/2017	Credit assessment under AMRUT		Brickworks
28	**Erode**	PAS BB	BB+/2019	Credit assessment under AMRUT		Brickworks
			BB+/2017 (withdrawn)			Brickworks
29	**Prayagraj (Allahabad)**	PAS BB	B+/2011 (no longer in use)			CARE
30	**Bareilly**	PAS BB	BB+/2017	Credit assessment under AMRUT		Brickworks