

Enhancing Own Revenue Income of Wai Municipal Council: Property and WSS taxes December 2020







# Enhancing Own Revenue Income Of Wai Municipal Council

**Property and WSS Taxes** 

Center for Water and Sanitation

CRDF, CEPT University

December, 2020

Citation: Center for Water and Sanitation. (2020, December). Enhancing Own Revenue Income Of Wai Municipal Council Property and WSS Taxes. Ahmedabad: CWAS-CRDF-CEPT University. Retrieved from: <u>https://cwas.org.in</u>

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# Enhancing Own Revenue Income of Wai Municipal Council

Property tax and WSS taxes

### 1. Introduction

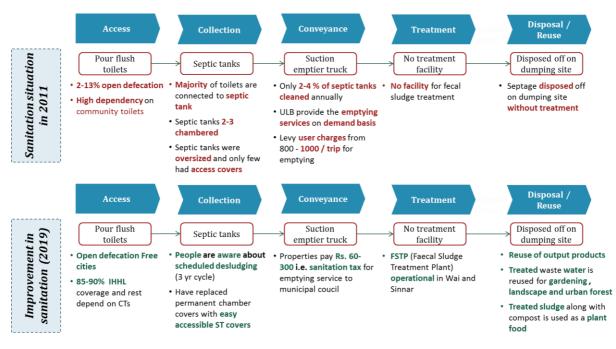
Local governments play a key role in provision of basic services. Urban Local Bodies (ULBs) in India are mandated to undertake certain basic civic functions such as water supply, roads, drains, street lighting and sanitation. Even though the state and central government support in provision of capital funding for the urban infrastructure, the onus of operations and maintenance is on the local government. The financial health of the city is determined by its ability to generate sufficient revenues to meet its ongoing expenses and have surplus to fund the future projects. Hence, to sustain and finance the urban services, it is important for the local governments to have reliable sources and plan to enhance own revenue income.

Wai is a small town of 43,000 population in Maharashtra classified as a class C town. The functional responsibilities and fiscal instruments for various classes of municipalities are defined in the Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965. As per this Act, Wai Municipal council (WMC) is responsible for delivery of Water Supply and Sanitation (WSS) services in Wai. While the investments in water and sanitation have been through projects funded under grants from state government, it has to depend on its own revenue sources to meet its regular operation and maintenance costs for WSS services.

The two main sources of own revenue income are property tax and water tax, which together comprise 95% of WMC's own sources of income. This paper focuses on an assessment of these two main sources of own income. It reviews WMC's performance over the years and discusses areas to improve own revenue income sources. Specific measures are identified for WMC to improve its revenues from both property tax and water tax.

### 2. Sanitation services in the city





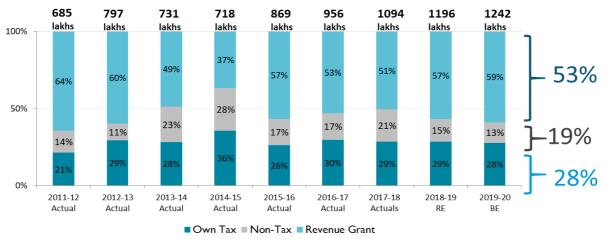
### Source: City Sanitation Plan, 2015; WMC, 2019

As per census 2011, 68% of the households had individual toilets, 30% households depended on community toilets and 2% households defecated in the open. In Wai, all toilets are connected to onsite sanitation system mainly septic tanks which were emptied when full and the waste was disposed without treatment at the solid waste dump site. Desludging of septic tanks was done on demand basis by the city council. The city government owned one suction emptier truck and the city government provides demand based septic tank desludging services to its residents against a charge of Rs.800-1000 per trip. Infrequent or delayed desludging of septic tanks resulted in hardening of septage at the bottom of tanks and reduced the efficiency of the tank.

Post 2015, Wai Municipal Council (WMC) decided to improve sanitation services and introduce scheduled desludging through a public private partnership (PPP) arrangement and built faecal sludge treatment plant. Scheduled desludging is provided as a municipal service to all properties. WMC has introduced a sanitation tax to make sure that adequate funds are available for operation and maintenance of the FSM services. The treated waste water from the treatment plant is used for landscaping within the premise and cleaning suction trucks and vehicles.

### 3. Own revenue income sources of Wai

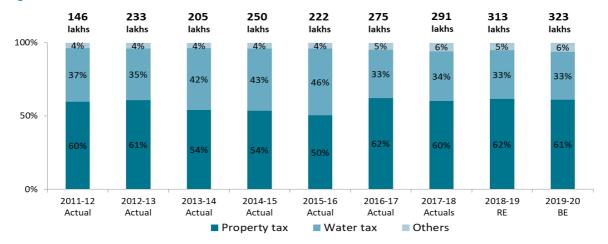
Over past nine years (2011-20), revenue income of Wai has grown from Rs. 6.8 crores in 2011-12 to Rs.10 crores in 2017-18. Nearly half of the revenue income is grants from the State Government and Finance Commission. This paper focus on the own revenue sources of WMC, comprising of 47% of revenue income. **Property taxes and water tax are the main sources of own income.** 





#### Sources: CWAS Analysis from WMC Budget 2011-20

In Wai, own tax sources include property tax, fire tax, tree tax, advertisement tax, education tax, employment tax, water tax and cinema tax. However, property tax and water tax are the two most important sources of revenue which contribute 95% of own tax revenue income. Property tax contributes 60% to own tax income and water tax contributes 35% of own tax income. Other taxes viz. fire tax, tree tax, sanitation tax, solid waste management tax, advertisement tax, cinema tax, education tax and employment tax contribute very small amount.



#### Figure 2 Distribution of own tax sources of Wai

Source: CWAS Analysis based on WMC Budget 2011-20 & PAS SLB Data 2017-18

There is a gradual increase in own revenues over the years. The share of property tax in own revenues has remained the same, except for spikes in the year when tax assessments were revised.

### Need focus on improving own tax revenue sources

Wai's own tax revenue income over the years has remained steady at about 29 percent. The per capita own tax revenue income in Wai has increased from Rs. 413 in year 2011 to Rs.632 in year 2017-18.

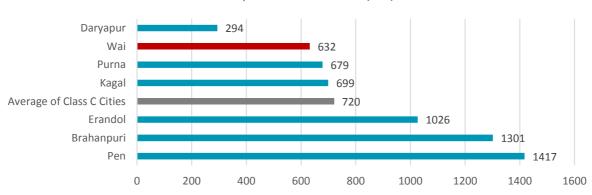




#### Source: CWAS Analysis based on WMC Budget 2011-20 & PAS SLB Data 2017-18

When compared to other towns of similar size and population in Maharashtra like Purna, Pen, Kagal, Erandol, Daryapur, Brahmapuri etc, the per capita own tax revenue income of Wai is much less. This suggests that Wai needs to strengthen its own tax income sources to match the state average of Class C councils and other peer cities.





Per Capita Own Tax Income (INR)

Source: CWAS Analysis based on PAS SLB Data 2017-18

The average property tax per property of Wai when compared to other Urban Local Bodies (ULBs) of Maharashtra is Rs.1311/property which is much less than the average property tax of Municipal Corporations, Municipalities<sup>1</sup> and Class C cities. This shows that there is significant untapped revenue potential from property tax in Wai.

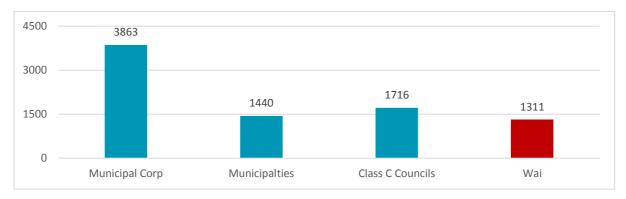


Figure 5 Average Property Tax Per Property of Wai as compared to ULBs of Maharashtra (in INR)

Source: CWAS Analysis based on PAS SLB Data, 2018-19 for Maharashtra

<sup>&</sup>lt;sup>1</sup> Municipalities include Class A, Class B, Class C cities and Nagar Panchayat towns. The cities are categorized based on population. Class A cities have population size >1 lakh, Class B cities have population range 0.5-1 lakh, Class C cities have population size between 0.2-0.5 lakhs and Nagar Panchayat towns have population size <0.2 lakhs

### 4. Property Tax

Property tax is the most important source of own income in Wai. It contributes 35% of the total revenue income and 60% of own tax revenues. The total demand of property tax in Wai for year 2018-19 is Rs.198 lakhs per annum with 10,115 properties.

# 4.1. Measures to enhance method of assessment and rates of property tax

**Property tax in Wai is assessed using annual rateable value method.** This method takes into consideration building material and its type, carpet area and age of the structure. Wai city is divided into three zones and 8 areas for assessment of property tax. The rate for each zone is decided by the town planning department of Satara district. These property tax rates are revised every four years by 30 percent. (Refer Annexure I).

The unit rates to be decided for arriving at the rental value or unit area value is one of the most crucial aspects of assessment of property tax. The town planning department issues a rate table for new addition of properties during the assessment year (Refer Annexure II). However, it is observed that there is no difference between the rate values of the old and new table issued for new construction. One of the key challenges lies in the rationale for values fixed for the rate tables. The base rate tables were prepared two decades ago based on market value of property during that time. Subsequently, rates are increased by 30% once in every four years. This is not necessarily in sync with market values of properties. There is a strong need to revise the base rate table for Wai city based on current market values.

Rates are different for each zone based on ready reckoner rates. Zone 1 consists of areas Songir Vadi and Siddhanth Vadi. Zone 2 consists of areas Ravivar Peth and Gangapuri. Zone 3 consists of Dharampuri, Ganpati Aadi/Bhrahmanshahi and Kisanvir. The city has observed growth and development in the past 10-12 years in its western and southern direction in Zone- 1 (Songirwadi and Siddhanth Vadi areas).

	Area	Maximum /Minimum Value	Current Jantri Rate as per IGR Maharashtra ( Rs/sq m)	Rate Value per month as per the rate table used in Wai (Rs. /sq m)
Zone 1	Songir Vadi	Maximum	30,480	30
		Minimum	30,080	12
	Siddhanth Vadi	Maximum	31,000	30
		Minimum	30,700	12
Zone 2	2 Ravivar Peth Maximum		30,080	26
		Minimum	28,570	10

Table 1: Zone-wise comparison of maximum & minimum market rate value for residential properties in Wai

	Area	Maximum /Minimum Value	Current Jantri Rate as per IGR Maharashtra ( Rs/sq m)	Rate Value per month as per the rate table used in Wai (Rs. /sq m)
	Gangapuri	Maximum	30,910	26
		Minimum	28,380	10
Zone 3	Dharmpuri, Ganpati	Maximum	33,870	29
	Aadi / Brahmanshahi, Kisanvir	Minimum	29,950	10

### Source: Inspector General of Registration (IGR), Maharashtra; Rate values from WMC, 2016

In Maharashtra, Jantri rates (also known as ready reckoner rates or circle rates) are fixed by the Inspector General of Registrations (IGR) for every district and town of the state. Jantri rates is the minimum price at which a property can be registered. It is based on market value of properties and revised every year.

While, the rate table for the property tax-annual rateable value calculations are prepared by the Town Planning Department (TPD) of each district. For Wai, rates tables are prepared by TPD of Satara District. These rate tables are revised once in four years.

### Table 2: Zone-wise number of residential properties in Wai

Zone	Zone Name	Number of Residential Properties	Maximum Rate ( per sq. mt)	Minimum Rate ( per sq. mt)
Zone 1	Songirwadi, Siddhanathwadi	1916	30	12
Zone 2	Gangapuri, Raviwar Peth	5985	26	10
Zone 3	Dharmpuri, Ganpati Aadi / Brahmanshahi, Kisanvir	1313	29	10

Source: WMC

There is a disconnect between the Jantri rates and the rates prescribed by Town planning department. If Wai decides to move to capital value based property taxation, as suggested in sec 105 of the Municipal Act, it will need to adopt the Jantri rates as a basis of taxation.

### Revise the ready reckoner rate table based on current market values

WMC can revise the rate tables in-house with the help of Town Planning Department of the council. The council can further submit this revised ready reckoner rate table to the Town Planning Department of Satara district for approval. With the revised rates based on current market value of the properties, the property tax demand of WMC will increase.

**Recommendation 1**: Wai should revise the ready reckoner rate table of property tax based on current market values. This is a low-cost measure and can be adopted by WMC in the current property tax assessment year.

### Box Item 1: Property Tax Revision in Sinnar

Sinnar Municipal Council (SMC) in the Nashik district of Maharashtra decided to do property tax reassessment process in year 2018. The Council submitted the proposal to the Town Planning Department of Nashik district for the mapping and reassessment. After approval, the SMC appointed a private consulting agency to carry out GIS Mapping of properties. Along with the assessment, SMC prepared a new rate table based on ready reckoner rates of the areas. The property tax demand was estimated based on the new ready reckoner rates. The annual property tax demand increased from Rs. 279 lakhs to Rs. 392 lakhs. SMC also created an online database through GIS Mapping of properties. This enables SMC to update the database as new properties are added.

Source: Based on discussions with officials from Sinnar Municipal Council

### Change the method of assessment to capture market value of properties

Over time, WMC can also consider a change in the method of assessment. As recommended by the Fifteenth Finance Commission, it can choose Capital Value (CV) of assessment to capture true market values of properties. According to Maharashtra Municipal Council, Nagar Panchayat and Industrial Township, (MMCNPIT) Act 1965, Section 105(a), the Council may pass a resolution to adopt levy of property tax on buildings and lands within the municipal area on the basis of capital value of the buildings and lands. In this system, the tax is levied as a percentage of the market value of the property, which is revised and published yearly. With a shift to this method of property tax valuation, property tax revenues can increase. Mumbai and other cities have shifted to this method. However, it is also important to note that though a shift to capital value method will yield better assessed property values and higher revenue, its implementation will not be easy. Wai will need to carry out a proper survey of all properties and apply the Jantri rate to assess property tax demand.

The MMCNPIT Municipal Act, section 105, states that "Provided [also] that, the property tax levied on the basis of capital value of any buildings or lands on revision made under subsection (3) of section 114 shall not in any case exceed forty percent of the amount of the property tax payable in the year immediately preceding the year of such revision". Thus the overall increase in demand for property tax after such revision will be limited to 40 percent.

As per the section 105, "Provided also that, for the period of five years commencing from the year of adoption of capital value as the base, for levy of property tax under this sub-section, the amount of property tax leviable in respect of a residential building or residential tenement, having carpet area of 46.45 sq. meters (500 sq. feet) or less, shall not exceed the amount of property tax levied and payable in the year immediately preceding the year of such adoption of capital value as the basis".

Hence, if Wai were to adapt Capital Value Method, WMC will have to carry out a property survey to determine and capture the actual carpet area of the property. The Council will then need to assess all the exemptions provided in the Act and estimate the potential increase in property tax demand.

Vacant land parcels in Wai are taxed at flat charges of Rs.6 per year. There are around 1572 such non-agriculture parcels in the city. WMC should plan to revise the vacant land taxation charges. In many cities, vacant land is taxed at a rate higher than that for built-up property. Hence, there is a scope to tap revenue potential from vacant land by levying higher level of property tax on them.

**Recommendation 2**: Wai should plan to shift to capital value method of assessment which captures true market value of properties. This is a long-term measure which can be integrated when the city plans to carry out GIS mapping of properties.

### 4.2. Measures to enhance collection efficiency of property tax

The collection efficiency of property tax in Wai over the past nine years is about 80%. The collection efficiency dropped down from 89% to 73% in FY 2016-17 because of re-assessment and revision of property tax values. The arrear collection efficiency is on an average 60% over the past nine years, however it keeps on fluctuating. This keeps on an average an amount of Rs. 25 lakhs locked in the arrear demands of the property tax.

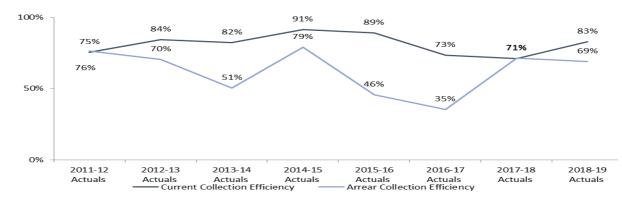


Figure 6: Property tax current & arrear collection efficiency in Wai over the years

### Source: Analysis by CWAS, CEPT from Wai Municipal Council DCB tables 2011-19

The property tax bills are generated by the tax department in WMC using "MAINET" software, which was provided by the state government to all ULBs. The bills are sent to each property address by tax collectors and sanitation workers. The process of bill generation and collection of property tax is described in the following figure.

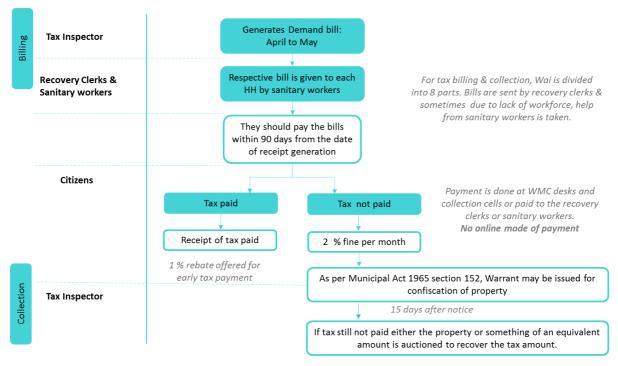


Figure 7: Billing & collection process of property tax in Wai

#### Source: Analysis by CWAS, CEPT from discussions with Wai Municipal Council

### Improve online payment mechanism

WMC has initiated payment of taxes with HDFC bank. However, property tax database is not linked to this online portal. Hence, once the payment is done, the property owner has to visit the Council in order to receive official receipt.

With increased use of net banking, Wai can consider linking its payment system through banks. Improving the current online payment mechanism process will improve the collection efficiency. In future, WMC can also develop links with payment APIs (like BHIM) to enable easy payment of municipal taxes and fees. WMC can also provide access to property tax assessment to users. This will help in increasing the understanding of residents of Wai about their property valuation. To improve the overall collection efficiency, easy payment methods must be introduced.

**Recommendation 3**: Wai should introduce and increase channels and modes of online and easy payment methods to increase collection efficiency.

### Improve arrear collection by introducing amnesty or one-time settlement scheme

WMC organises collection drives in the month of March to collect arrears. They disconnect water connections of the properties for which property tax is not paid. As mentioned in the Maharashtra Municipal Council, Town Planning & Industrial Township Act, 1965, a tax recovery collector can be assigned for this purpose.

WMC can offer rebates or relax the penalties and collect only the arrear amount to make the defaulters pay. The city can also introduce Amnesty Scheme or One Time Settlement Scheme in which a discount on penalties can be given to top defaulters to pay arrears.

Cities like Pune and Bangalore have successfully used this approach. With the consolidated tax arrear demand of Rs.98 lakhs in the year 2018-19, improving he arrear collection efficiency to 70% may add revenue collection of Rs. 40 lakhs on property tax and

Figure 8: Disconnection of water connections of defaulters by WMC officials



Source: WMC

Rs. 68 lakhs on the overall consolidated property tax bills.

**Recommendation 4**: Wai should improve the collection of arrears either by introducing Amnesty Scheme or One Time Settlement Scheme or through arrear collection drives.

### Box Item: 2. Case of Pune, Maharashtra/ Pune Municipal Corporation (PMC)

The Pune Municipal Corporation (PMC) proposed a property tax amnesty scheme to help mop up pending property taxes and boost revenue. Due to the non-receipt of bills, individual financial problems, health issues in family, court matters, and pending matters with department; most of the defaulters demanded One Time settlement (OTS) scheme. Under this scheme, a list of tax defaulters was generated and monitored by the department. Limited time was given to the defaulters, to settle the tax through a one-time payment; to avail a 75% & 50% discount (duration based) on the penalty amount. SMS and email Notification were sent to all defaulters, which proved a very useful tool to reach out to the defaulters in a short time span. The result was 1.2 lakh defaulters paid Rs. 222.55 crores, in one year. This was a very successful Amnesty Scheme.

Source: Pune Municipal Corporation. (2017). Property Tax Collection- A Unique Drive by PMC Creates History.

### 4.3. Measures to enhance billing efficiency of property tax

Along with the fair valuation, periodic revision of property tax assessment is also critical to bring assessed values in line with market realities. Assessment of properties is carried out every four years as prescribed in the Maharashtra Municipal Act, 1965. The last assessment was done in FY 2015–16. Properties that belong to the Municipal Council, religious places, dharamshalas, slums and places of cultural importance are exempted from payment of property tax in Wai. There are around 110 properties which are exempted from paying property tax which includes 96 religious places and rest are WMC owned schools and buildings. However, the city collects property tax and service charges from state government buildings.

Types of Properties	Residential	Commercial	Religious places	Hospitals	Schools	Govt. Properties	Vacant Land Parcels	Total properties
Nos.	8511	1835	96	3	2	26	1572	12,045

#### Table 3 Total number of properties in Wai

Source: CWAS Analysis from WMC Property Details, 2018

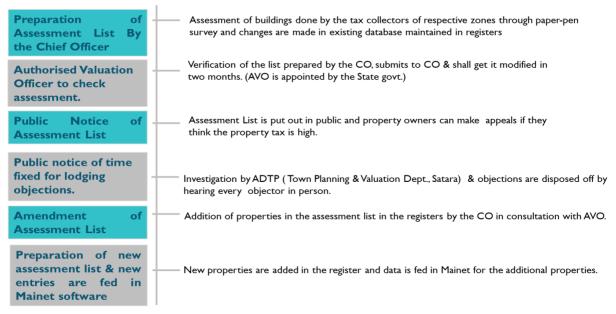
In Wai, the assessment and up-gradation of property database is done manually in registers and thereafter the data is entered in the system once in four years. The property tax bills are generated by the tax department in WMC using MAINET software.

Image 2 Property Tax Registers maintained manually and data fed in MAINET software

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### Source: Wai Municipal Council

### Figure 9: Property Tax Assessment Process in Wai



Source: Wai Municipal Council

# Match existing property tax data-base with utility and building permission records to improve billing efficiency

One of the practices observed is that once reassessment is done, the Council does not bill newly added properties till the next assessment. There are around 100 building permissions given each year during 2017-2019. However, these will be added in the tax net only in the assessment year 2020. It is recommended that once the building permission is given, WMC should include that property in its tax register and charge property tax from that year. This does not happen because property tax bill is not issued till a property tax number is given and that happens only once in four years when assessment is done. One simple reform could be to digitize the building permission process and assign a property number so that the property is added in the property tax system. The council can decide that no 'building use certificate' will be issued without the property being assessed by the property tax department.

WMC can also match the property records with utility data records to increase coverage of properties. For example, Indore Municipal Corporation during property tax re-valuation matched the property tax records with electricity records and found that total commercial power connections were 5198, while property tax records showed only 2570, which means 51% of properties did not declare commercial/mixed usage. Similarly, WMC can match its property records with electric connections, water connections, number of trade license fees issued, etc. This will enable WMC to bring additional properties into the fold of property tax register.

**Recommendation 5**: Wai should digitise its property tax records and link them with building permissions and utility database. This will ensure all properties are covered and billed under the property tax systems.

# Introduce GIS Mapping to ensure enumeration of all properties in Wai and update property database

Several municipalities across India have introduced innovative practices in property tax assessment and administration. There are many examples that highlight the use of GIS as a tool to enhance and ease property tax system in cities. This has helped in adding several properties to the tax bracket. The valuation of properties can be done according to the actual size of the property.

The Directorate of Municipal Administration, Maharashtra has initiated the process of creating GIS based database and mapping for cities of Maharashtra. This will help Wai in creating a digital database of properties that can be linked to property tax register. The GIS mapping of properties will also help in effective management of property tax system and reduce grievances related to property valuation. Though state government will support cities

to create GIS database for property tax assessment, but it will be responsibility of Wai council to periodically update that database.

**Recommendation 6**: Wai can plan to introduce property tax reforms like GIS mapping and digitisation of property database. This will improve coverage and collection efficiency of property tax in the city. But GIS Mapping of properties is expensive and WMC should await support from the state government for this exercise.

### Box Item 3: Case of Kanpur, Uttar Pradesh- Kanpur Municipal Corporation (KMC)

The property tax reform in Kanpur involved modernization of the system by linking GIS and property database to establish a more scientific, transparent and self-assessed process.

- Property tax reform requires latest and accurate database of properties within the municipal jurisdiction. KMC with help of Indian Institute of Technology (IIT), Kanpur undertook a GIS mapping of properties.
- The initial stages of the survey witnessed protests and agitations from residents and elected representatives who anticipated a manifold increase in taxes. However, with help of mass media and awareness campaigns, KMC managed to communicate with residents and convince them that reform which will ultimately benefit the residents. As a part of the communication strategy adopted by KMC, all officials of KMC would speak about support for property tax reforms at all government forums. Also, a poster campaign with user friendly content (guidelines and information) was launched. The posters encouraged residents to reach out to KMC for clarification. Telephone booths were setup for residents to register complaints or grievances during the survey, to which the on-duty survey officer had to provide immediate clarification.

Source: National Institute of Urban Affairs (2009) *Documentation of Urban Reforms under JNNURM: Peer Experience and Reflective Learning*. Volume 2

### 5. Water Tax

# Wai Municipal Council manages to achieve 100% cost recovery in its water supply operations & maintenance services.

Water tax contributes to 11% of the total revenue income and 38% of own-tax income. It is levied as a flat charge on the basis of the size of the connection and type of property. The base rate for water tax is Rs. 1500 per annum for a residential connection and Rs. 6000 per annum for a commercial connection.

Water connection charge is levied at Rs. 2100 for all sizes and types of connections. Water tax charges were last revised in the year 2013-'14. It is billed and taxed separately from property tax, though billing and collection process of water tax is same as property tax. The average per capita water tax for Wai is Rs. 356 which is higher than the average per capita water taxes of ULBs of Maharashtra.



#### Figure 10 Average Per Capita Water Tax of Wai compared to ULBs of Maharashtra

### Source: CWAS Analysis based on PAS SLB Data, 2018-19 for Maharashtra

WMC is able to cover some of the expenses related to water through the water tax levied for each connection. The expenditure for water supply is for bulk purchase of raw water, salaries and electricity bills, water treatment, distribution & material. There are 30 workers hired on contract basis in water supply department. Salary of these contract workers and water electricity bill are paid from government grant. The other expenses are recovered through water tax charges.

Financial performance of water services in Wai is good. The Directorate of Municipal Administration (DMA) monitors cost recovery of water supply service of all municipal councils in the state. Water tax can be increased when the council is unable to meet its operating expenses. This provision by DMA has led WMC to pass a resolution to increase the water tax in 2020-21 by 20 percent from Rs. 1500 to Rs. 1800 per connection.

Water Supply	2011-12	2012-	2013-	2014-	2015-	2016-	2017-	2018-	2019-
	Actual	13	14	15	16	17	18	19	20
		Actual	Actual	Actual	Actual	Actual	Actuals	RE	BE
Income through	54	82	87	107	102	91	99	106	106
tax & connection									
charges									
O&M Expenditure	66	58	84	92	64	68	104	77	165
Cost Recovery	82%	141%	104%	116%	160%	134%	95%	137%	64%
Source: CWAS analy	/sis from W	/MC Budg	get 2011-	20			All val	ues in R	s. Lakhs

#### Table 4: Income-Expenditure in Water-Supply Service in Wai

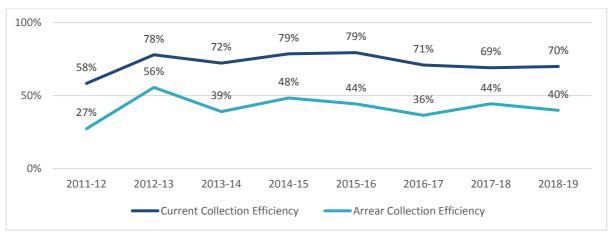
The current collection efficiency of water tax is 67 percent. It is low in comparison with collection efficiency of 78 percent for other Class 'C' Councils. Also, the water tax arrear collection efficiency is low at 45 percent. Water tax arrears demand of previous years has also increased from Rs.45 lakhs to Rs.58 lakhs in year 2017-18 (WMC, 2018).

#### Table 5. Water Tax - Current & Arrear Demand Collection

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Current Demand (in lakhs)	70	72	100	101	102	104	105	107
Current Collection (in lakhs)	41	56	72	80	81	74	73	75
Current Collection Efficiency (%)	58%	78%	72%	79%	79%	71%	69%	70%
Arrear Demand (in lakhs)	29	46	36	55	45	45	58	71
Arrear Collection ( in lakhs)	8	25	14	27	20	17	26	23
Arrear Collection Efficiency (%)	27%	56%	39%	48%	44%	36%	44%	40%

Source: Water Tax DCB Tables 2011-18, WMC





Source: Analysis of CWAS based on Water Tax DCB Tables provided by WMC

WMC should increase its water tax collection efficiency to 80% and meet the suggested guideline by the DMA to recover 100% of operational costs of water supply. This can be done if WMC increases its target collections and takes regular follow ups with the defaulters. The Council should also plan to identify its major water tax defaulters to recover arrears.

### Box Item 4: Case of Hyderabad, Telangana- Andhra Pradesh

Hyderabad Metro Water Supply and Sewerage Board devised an incentive scheme for its customers through its One-Time Settlement scheme. This applied to customers who had huge arrears in their bills. A close look at the billing statistics of the Board revealed that there were as many as 0.28 million customers who had not paid their water cess to the Board. To encourage customers to settle their arrears, the Board launched a scheme in June 2004, giving a discount of 10 percent to those who would pay their water cess arrears upfront. Alternatively, an instalment facility of 10 instalments was made for those who could not make upfront payments of arrears all at one time. There was a huge response to the scheme with a record collection of US\$4.71 million in June 2004, the highest-ever recorded in the history of the Board.

Source: WSP . (2008). Developing Effective Billing & Collection Practices. Water & Sanitation Programme, Pg 17

**Recommendation 7**: Wai should improve the collection efficiency of water tax arrears either by introducing Amnesty Scheme or One Time Settlement Scheme or through arrear collection drives.

### 6. Sanitation Tax

WMC introduced sanitation tax to partially recover its operating expenses of Faecal Sludge and Septage Management (FSSM) and drain cleaning services. In the year 2016-'17, WMC introduced flat charges of Rs. 60 as sanitation tax per property, as a part of property tax bill and is collected along with property tax. These charges cover 33% of the Operation and Maintenance (O&M) of desludging services. Currently, the operations and maintenance of Faecal Sludge Treatment Plant (FSTP) is carried out by a private company. After two years, the FSTP will be handed back to the WMC for operations. Thereafter, WMC will have to manage operations of desludging services as well as FSTP. The total annual expenditure of FSM services is estimated to be Rs. 16 lakhs for scheduled emptying and Rs. 24 lakhs for running FSTP. The existing charges will not be sufficient to meet these expenses. Apart from this, WMC has to also carried out its other wastewater related expenses like maintenance of drains from sanitation tax and own municipal fund.

	2011-	2012-	2013-	2014-	2015-	2016-	2017-	2018-	2019-
	12	13	14	15	16	17	18	19	20
	Actual	RE	BE						
Sanitation tax Income	0	0	0	0	0	4	5	2	6
Sanitation Expenditure	46	51	18	99	52	0	41	73	82
Cost Recovery	-	-	-	-	-	100%	12%	3%	7%

Table 6 Income-Expenditure in FSSM & Wastewater Service in Wai

Source: CWAS analysis from WMC Budget

All values in Rs. Lakhs

WMC should plan to incrementally increase its sanitation charges from current Rs. 60 to Rs.120 to Rs. 180 per year. With this, the city will be able to recover 30% of its FSSM and wastewater O&M expenses. The existing flat sanitation charges can also be enhanced by converting flat tax to percentage of property tax, making it more equitable and inclusive.

**Recommendation 8**: Wai needs to increase the current sanitation tax to ensure full cost recovery of sanitation services. Wai should also shift sanitation tax from flat charge system to percentage of property tax, to make it more equitable and inclusive.

### 7. Solid Waste Management Tax

WMC introduced solid waste management tax based on a notification passed by the Government of Maharashtra dated July 1, 2019 which mentioned that all the small and medium towns should levy Solid Waste Management (SWM) charge for SWM services in the cities. WMC started levying solid waste management tax at flat charges of Rs. 180 per residential property and Rs. 360 per commercial property per annum in the city to recover solid waste management operations and services. Cross- subsidization is done as SWM tax is levied differently for different property types. The charges levied are lowest for residential properties and higher for hotels, restaurants and industries. Prior to this, the Council was managing its SWM expenses from its Swachch Bharat Mission grant and 14th Finance Commission grant.

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
	Actual	Actual	Actual	Actual	Actual	Actual	Actuals	RE	BE
SWM tax Income	-	-	-	-	-	-	-	-	10
SWM Expenditure	18	12	12	16	8	6	120	64	90
Cost Recovery	-	-	-	-	-	-	-	-	11%

### Table 7 Income-Expenditure in Solid Waste Management Service in Wai

Source: CWAS analysis from WMC Budget

All values in Rs. Lakhs

Major expenses in SWM consists of payments for contract of sanitation workers, fuel charges for waste collection and transportation vehicles. In the future, WMC is planning to improve its solid waste services by involving private service provider. This will require ensured sum to pay private service provider for their services. Through discussions with the council and scrutinizing the SWM DPR, it seems that yearly expenditure in SWM will be Rs. 118 lakhs. With the present tax rate, WMC will be able to recover only 11% of its SWM expenditure. **Thus, there is a need to improve existing SWM tax in the city to ensure proper O and M funds for these services.** The notification passed by the state government states that cities should at least increase their SWM tax by minimum 5% every year to ensure cost recovery of O and M expenses and increase the charges every year to ensure 30% recovery of solid waste management operations and maintenance expenses. WMC also provides solid waste management services to the neighbouring areas outside the city limit. Thus, the Council can collect additional charges from them as well. The city can also sell its waste to recyclers and generate additional income.

**Recommendation 9**: Wai needs to increase the current SWM tax to ensure proper cost recovery of solid waste services.

### 8. Summary of key recommendations

Financial health of a city is determined by its ability to generate sufficient revenues to meet its ongoing expenses and have surplus to fund future projects. Wai uses cash-based accounting system. Its annual budget size is Rs. 17 crores. Improving collection efficiency and proper management of property tax systems will have the significant impact on own income of Wai.

Overall, WMC has a good share of own revenues. Its income and expense profiles have been largely stable over the years. However, WMC is struggling to attain revenue surplus, without which it has to finance its WASH expenses from grants received from state and central government. It becomes important to improve revenues from own sources of taxes and charges to sustain operations and maintenance of the services and plan future capital projects.

### Key action points & possibilities for Wai:

### 1. Revise the existing property tax rate table to capture market value of properties.

WMC follows Annual Rateable Value (ARV) method of assessment based on which property tax is calculated. One of the key factors of ARV assessment is the rate tables provided by the district town planning department. These rate tables were prepared 15-20 years ago on the basis of market rates prevalent then. During re-assessment that takes place once in four years, these rates are increased by 30% rather than reassessed based on market values. One of the key challenges lies in the rationale of values fixed for the rate tables. The market rates of the properties have changed since the past two decades. Properties which had less market value back then have upgraded values based on current market rate. Thus, there is a strong need for WMC to change its current rate table based on which property tax assessment is done to assess true value of the property.

### 2. Improve the current property tax management system and billing efficiency.

In Wai, the assessment and updating of property database is done manually in registers and thereafter the information is entered in MAINET software. This happens once in four years. WMC had initiated payment arrangement with HDFC bank. However, this payment is not linked with the property tax department. WMC should link the existing property tax database with the online payment mechanism for ease of payment. Also, to improve the overall collection efficiency, easy payment methods must be introduced such as payment through apps, credit/ debit cards etc. Collection Centres can also be established at banks for payment of property tax.

Wai can consider introducing GIS mapping and digitisation of property tax database. This will ensure enumeration of all properties and update property database. The Government of Maharashtra and the Directorate of Municipal Administration (DMA) is expected to support it. GIS Mapping of properties, creation of digitised database, integration of property tax management software along with online payment option will create a robust and efficient property tax management system in Wai. This will help increase coverage of more properties in the property tax data-base, improve billing and collection and help monitor arrears.

## 3. Introduce amnesty scheme or one time settlement scheme to improve arrear collection of property tax and water tax.

In Wai, the property tax arrears collection efficiency is 60% and the water tax arrears collection efficiency is 45%. This needs to be improved. WMC can introduce One Time Settlement Schemes to collect its property tax and water tax arrears. WMC can also organise arrear collection drives and can offer rebates or relax the penalties. Under the One Time Settlement Scheme, the city can give a discount to the defaulters and settle their property tax and water arrears in one go.

## 4. Revise sanitation tax and solid waste management tax to recover operation and maintenance cost of these services.

WMC should progressively increase its sanitation tax and solid waste management tax. This is needed to improve cost recovery of sanitation services. WMC can also consider moving from the flat rate of sanitation tax to percentage property tax. This will allow the tax to be more equitable as those with smaller properties and low property tax will pay lower sanitation tax while those with larger properties will pay a higher property and sanitation tax.

## References

- Ahluwalia, I. et. al. (2019) *State of Municipal Finances in India: A study prepared for fifteenth finance commission* Indian Council for Research on International Economics Relation, New Delhi
- Administrative Staff College of India (ASCI) (2014) *Municipal Finances and Service Delivery in India*, Report prepared for 14th Finance Commission, ASCI, Hyderabad
- CEPT University. (2019). Performance Assessment System SLB database for Maharashtra, 2017-18. Unpublished raw data.
- National Institute of Urban Affairs (2015) Urban Reforms in Indian Cities: Compendium of Good Practices, Peer Experience and Reflective Learning. National Institute of Urban Affairs, New Delhi; available at: http://pearl.niua.org/good-practice-documentations
- National Institute of Urban Affairs (2013) *Urban Initiatives under JNNURM: Peer Experience and Reflective Learning*. Volume 6. National Institute of Urban Affairs, New Delhi; available at: http://pearl.niua.org/good-practice-documentations
- National Institute of Urban Affairs (2010) *Best Practices on Property Tax Reforms in India Research Study Series No.111.* National Institute of Urban Affairs, New Delhi
- National Institute of Urban Affairs (2009) *Documentation of Urban Reforms under JNNURM: Peer Experience and Reflective Learning*. Volume 2. National Institute of Urban Affairs, New Delhi; available at: http://pearl.niua.org/good-practice-documentations
- Wai Municipal Council (2010-2020) Wai Municipal Council Budget. WMC, Wai
- 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
- 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

## Annex 1

### Example showing assessment of property in Wai

Considering that a residential property of RCC structure is built recently and has a carpet area of 100 sq.m, the following table demonstrates an example of calculation of property tax.

Annex Table 1 Calculation of taxable value using ARV method of assessment

Carpet area (sq.m.)	Rate (Rs./ sqm t )	Time	Annual rent (rs.)	Improvement expense (10%)	Taxable value (Rs.)
100	21	12	25,200	2,520	22,680

Source: Analysis by CWAS, CEPT from Wai Municipal Council Budget

A property having carpet area of 100 sq.m., rate as 21 (from the rate table) is liable for annual rent of Rs. 25,200. Deducting 10 percent improvement expense, the total taxable value comes to be Rs. 22,680. Various taxes are levied as a percent of this taxable value.

#### Annex Table 2 Calculation of payable property tax based on ARV

Components of Property Tax Bill	% of ARV	Calculations
General Tax	25%	Rs. 5670
Education Tax	6%	Rs. 1361
Employment Guarantee Tax	3%	Rs. 680
Tree Tax	1%	Rs. 227
Fire Tax	2%	Rs. 113
Sanitation Tax	Flat charges	Rs.60/-
Solid Waste Management Tax	Flat Charges	Rs. 180/-
Total payable tax		Rs.8,291

Thus, the total tax to be paid= Rs. 8291~ Rs. 83/ sq.m.

The same method of calculation is used for commercial buildings but with different rates as mentioned in the rate table.

### Annex 2

### Property Tax Rate Tables for all zones in Wai

### Annex Table 3 Rate table for zone 1

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चतुर्थ वार्षिक रिव्हीजन २०१५-२०१६

### द्याई नगरपरिपद बाई सुधारीत कर निर्धारण दराचा तुलनात्मक तक्ता २० फुट रुंद रस्ता अथवा त्यावरील रुंदीच्या रस्त्यावरील संन्मुख असलेल्या मिळकती

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### Annex Table 4 Rate Table for zone 2

चतुर्थ वार्षिक सिकीजन २०१५-२०१६

वाई नगरपरिषद वाई सुधारीत कर निर्धारण दराचा तुलनात्मक तक्ता त्वाच भागातील इतर मिळकती

त्रचे नांव - गंगापूरी, मधली आळी-गणपती आळी, रविवार पेठ भाग १, रविवार पेठ भाग २

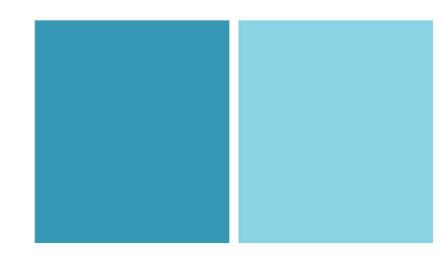
अ.क्र.	गावठाण/गावठाण 11 बाहेरील मिळकती साठी		प्रतिचे आ स्टार्टल फ					सर्वसाधा	रण आरस		लम, सिमें ब" प्रकार		व दर्जाची	लोड बेअरींग, बिटा बाळू सिमेंट मधील बांधकाम राहावाद फ़रशों कोलारु पक्की इमारत "क" प्रकार							साभ्या थिटा मातीच्या भिती, पत्रा छन्मर, यवेल, मातीची जमिनी इत्यारी स्वरुपाये साथे यांपकाम/रोड "ड" प्रजार						
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### Annex Table 5 Rate Table for Zone 3

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भागाचे नांव - धर्मपूरी, बाम्हणशाही, रामडोह आळी

अ.च मावठाण/ गावठाणा बाहेरील मिळकली साठ		प्रतिचे अ स्टाइंल प	ारसोसो च			रिशोग च	सर्व	साधारण ३ दञ	गरसीसी थ पंची इमार			स्टर,य	लोड शहाव	इ बेअर्रांग, बाद फरशो	विटा याव कौलारु प	ठू सिमेंट पवकी इम	नधील यांध रत "क"	साध्या थिटा मातीच्या भिती, पत्रा छप्पर, कोले, मात्तीत्ती जमिनी इत्यादी स्यरुपाचे साथे यांपर्यम/शेड "ड" प्रकार								
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### **CENTER FOR WATER AND SANITATION**

The Center for Water and Sanitation (CWAS) is a part of CEPT Research and Development Foundation (CRDF) at CEPT University. CWAS undertakes actionresearch, implementation support, capacity building and advocacy in the field of urban water and sanitation. Acting as a thought catalyst and facilitator, CWAS works closely with all levels of governments - national, state and local to support them in delivering water and sanitation services in an efficient, effective and equitable manner.





