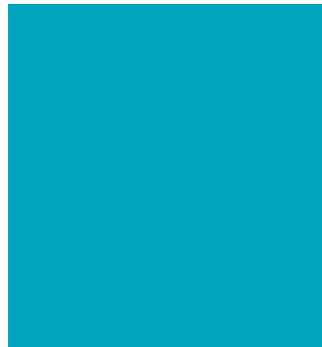


Image Source: Asian Development Bank

# Last Mile Connectivity for Urban Water Supply Services



**A study done for  
Ministry of Housing and Urban  
Affairs (MoHUA)**

**Center for Water and Sanitation  
(CWAS)**



Image Source: The Print-ANI Feed



July 2023

# Last Mile Connectivity for Urban Water Supply Services

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Ministry of Housing and Urban Affairs (MoHUA)

Center for Water and Sanitation (CWAS)

July 2023



Ministry of Housing and Urban Affairs  
Government of India

**CWAS** CENTER  
FOR WATER  
AND SANITATION

**CRDF** CEPT RESEARCH  
AND DEVELOPMENT  
FOUNDATION

**CEPT**  
UNIVERSITY

# Acknowledgements

Recent surveys suggest that household level tap connections in urban areas, particularly in slum areas, need greater attention. The Atal Mission for Rejuvenation and Urban Transformation 2.0 (AMRUT 2.0) aims at 'Har Ghar Nal' and 'Nal se Jal'. It is thus expected that AMRUT 2.0 will address the issue of 'last mile connectivity'. This study aims to identify challenges in the 'last mile connectivity' and suggest a set of actions to improve the situation.

The Centre for Water and Sanitation (CWAS) at CEPT University carried out this study in ten cities of Gujarat and Maharashtra at the behest of the Ministry of Housing and Urban Affairs (MoHUA).

We wish to express our gratitude to Ms. D. Thara (IAS), Additional Secretary, MoHUA for giving CWAS an opportunity to undertake this study. We thank her for the support she has extended to us. At initial stage of the study, she informed the selected municipal corporations and municipalities about this study. The valuable feedback was provided by Ms. D. Thara on the preliminary findings of the study. We would also like to thank various officials of the ten municipal corporations and municipalities, who provided their support.

At CWAS, the study team included Dhruv Bhavsar, Upasana Yadav, Jigisha Jaiswal, Saubiya Sareshwala, Shruti Garg, Digvijay Kerkar, Manish Kulkarni, Abhilash Aloni, Vishal Jadhav, Gautamee Sayamvar and Bhuvaneshwari Karadge, who worked under the guidance of Dr. Dinesh Mehta and Dr. Meera Mehta.

Meera Mehta                  Dinesh Mehta

Center Heads, Center for Water and Sanitation (CWAS)  
CRDF, CEPT University  
Ahmedabad, India



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## 3. Spatial Coverage of Water Supply Network

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## 6. Key Findings and Next Steps

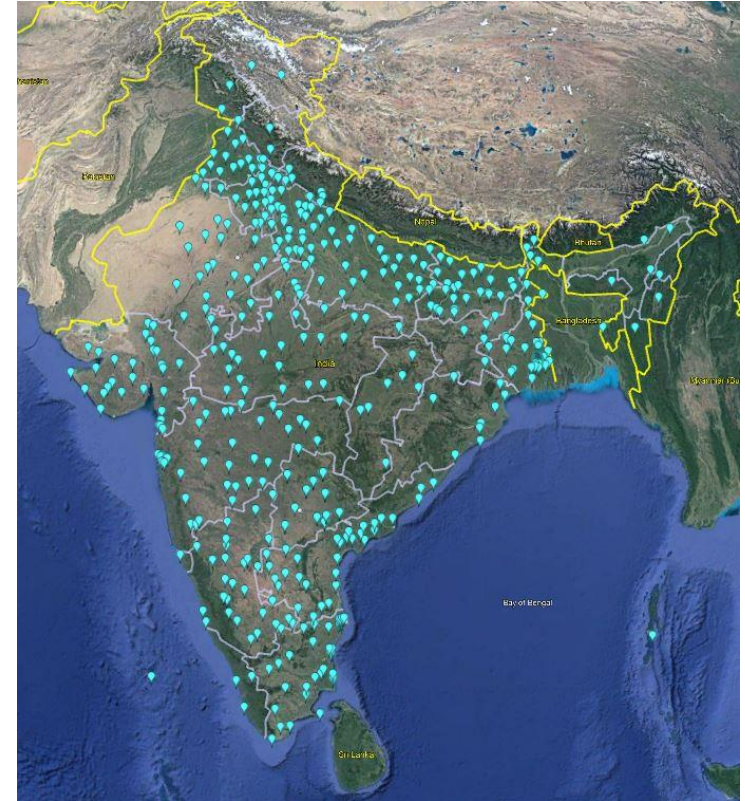
# AMRUT 1.0 has provided 137 lakh water tap connections and 105 lakh sewer connections

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched by Prime minister Narendra Modi in June 2015. **The mission focused on development of basic infrastructure in the selected cities and town, in the sectors of water supply**, sewerage infrastructure, storm water drainage, urban transport and development of green spaces and parks. It also focused on capacity building, reform implementation.

Among all the sectors the **priority zone is water supply** followed by sewerage. During the process of planning, the Urban Local Bodies (ULBs) will strive to include some smart features in the physical infrastructure components. The detail of mission components in water supply are below:

## Key components of Water Supply Sector:

- Water supply systems including **Augmentation** of existing water supply, water treatment plants and universal metering.
- **Rehabilitation** of old water supply systems, including treatment plants.
- **Rejuvenation** of water bodies specifically for drinking water supply and recharging of ground water.
- Special water supply arrangement for difficult areas, hill and coastal cities, including those having **water quality problems** (e.g. arsenic, fluoride)





# AMRUT 2.0 focuses on “Har Ghar Nal” and “Har Nal se Jal”

**AMRUT 2.0** was launched on **1<sup>st</sup> October 2021**. As the next step towards Aatma Nirbhar Bharat, AMRUT 2.0 aims of making the city “water secure’ and “self sustainable” through circular economy of water. The mission was focused on **to move towards universal access to household level water tap and sewerage connections**. Thus, it is expected **to ensure “last mile connectivity” for water supply and sanitation to all households in the city**. AMRUT 2.0 Extends coverage from **500 cities** under AMRUT to all around **4700 cities and towns for the period of five years from FY 2021-22 to 2025-26**.

The aim of AMRUT 2.0:

**100% Coverage of water supply to all HHs of 4000+ statutory towns of India.**

**Key components of AMRUT 2.0 for water supply:**

- Universal household coverage of sewerage/ septage services
- Rejuvenation of water bodies and urban aquifer management;
- Recycle and reuse of treated wastewater
- Major reforms in water supply sector such as reducing non-revenue water to below 20%; 24x7 water supply.

“... In the next stage of **AMRUT**, country targets to have access to clean water for all urban citizens, increase coverage of sewerage & septage management, make our cities water secure and ensure that no dirty water falls into the rivers from drains. The journey of AMRUT and Swachh Bharat Mission so far is a pride for citizens. It is not only Mission, but also denotes honour, modesty & aspiration of the nation and love for the Motherland.”

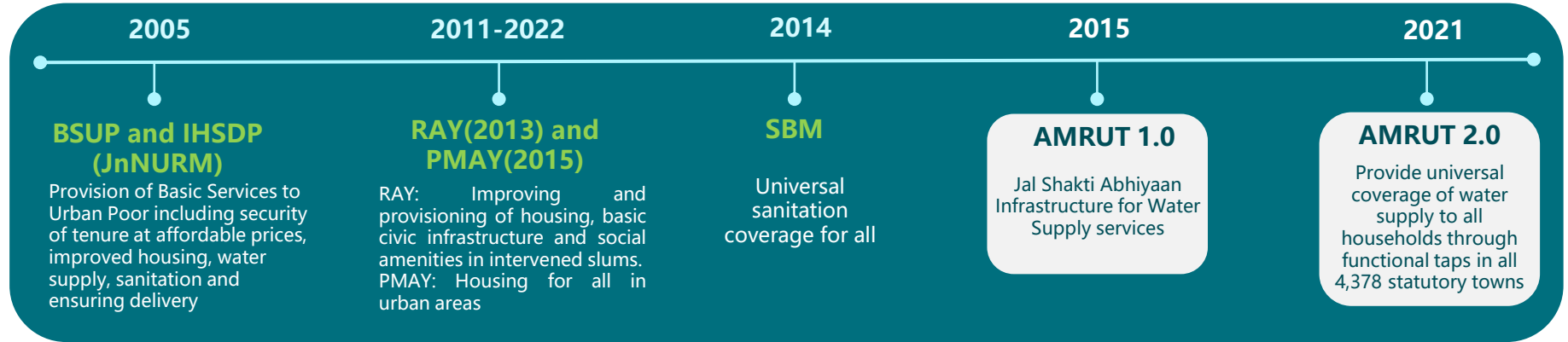


- Hon'ble Prime Minister in his address during launch of AMRUT 2.0, on 1<sup>st</sup> October 2021

## Achievements of AMRUT 2.0

State Water Action Plans have been approved by MoHUA for **6,527 projects** in 4700 statutory towns.

# Over the years, national flagship programmes have focused on WASH infrastructure creation...



**The Government of India has made extensive efforts to expand drinking water and sanitation by creating infrastructure under various flagship programme.**

**In 2005, JnNURM** was the largest national urban initiative that encouraged urban reforms and fast-tracked planned development. "Focus is to be on efficiency in urban infrastructure and service delivery mechanisms, community participation, and accountability of ULBs/ Parastatal agencies towards citizens" JnNURM(2005).

**The Swachh Bharat Mission (SBM) launched in 2014**, to encourage healthy sanitation practices, awareness and behavioral change in people

with regard to urban sanitation, waste management and drainage, private sector participation.

**In 2015, Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** program to provide basic amenities to households like water supply, sewerage and urban transport and build amenities in cities to improve quality of life. Jal Shakti Abhiyaan is one such mission to build infrastructure for water supply services.

Similarly, **AMRUT 2.0** launched in 2021 to provide universal coverage of water supply to all households through functional taps in all 4000+ statutory towns of India

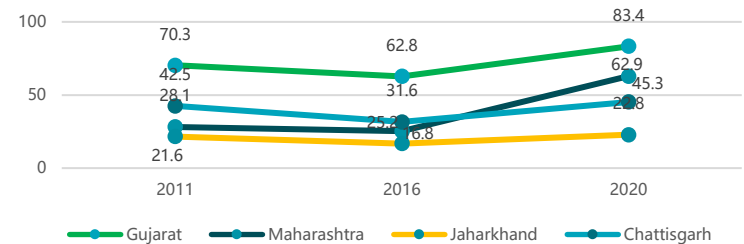
# Need for Last Mile Connectivity

“Last Mile Connectivity is ensuring access to safe water to all households of the city including slums and vulnerable communities through individual tap connections and toilets with sewerage or onsite sanitation systems”.

- Coverage of Water Supply and Sewerage Infrastructure has increased
- Need to move from infrastructure provision towards service provision to households
- With growing population and expanding city limits, efforts to extend water and sanitation services to population living in urban low income and often informal areas becomes crucial.
- The statistics also suggest the need to realize the AMRUT 2.0 achievements will require ensuring ‘Last Mile Connectivity’ even in states such as Gujarat and Maharashtra.



Coverage of Water Supply Connection in Slums







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# The study focuses towards 'last mile connectivity' of water supply specially to slums and low-income households

The Ministry of Housing and Urban Affairs (MoHUA) has tied up with Center for Water and Sanitation (CWAS), CRDF, CEPT University to review completed projects in 10 cities under AMRUT 1.0. It specially focuses towards study on 'last mile connectivity' of water supply specially to slums and low-income households.

The study is conducted focusing on the state of Gujarat and Maharashtra. Four AMRUT cities are selected from Gujarat and Six AMRUT cities are selected from Maharashtra.

The cities selected are as below:

## Gujarat

## Maharashtra

- |                                    |  |
|------------------------------------|--|
| 1. Ahmedabad Municipal Corporation | 5. Amravati Municipal Corporation            |
| 2. Surat Municipal Corporation     | 6. Chandrapur Municipal Corporation          |
| 3. Jamnagar Municipal Corporation  | 7. Panvel Municipal Corporation              |
| 4. Morbi Municipal Council         | 8. Sangli-Miraj-Kupvad Municipal Corporation |
|                                    | 9. Parbhani Municipal Corporation            |
|                                    | 10. Malegaon Municipal Corporation           |

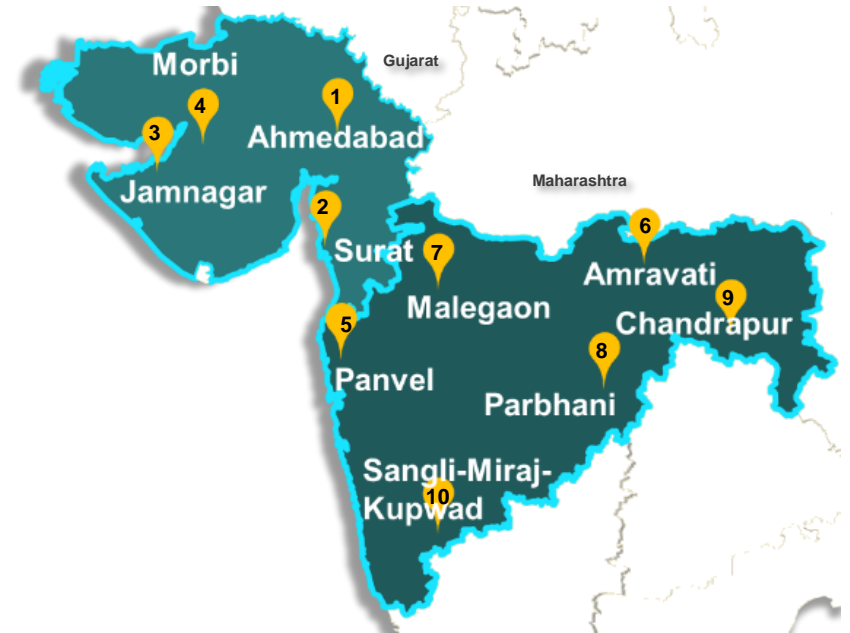


Letter sent from MoHUA to ten municipal corporations and municipalities

# Objectives of the 'Last Mile Connectivity' study

## Objectives of the study

- 1 **Assessment of water supply coverage**
- 2 **Review of Household Water Connection Procedures and Costs.**
- 3 **Assessment of connections given in slums and other vulnerable areas.**
- 4 **Recommendation of Key Policy Interventions at state and city level'**



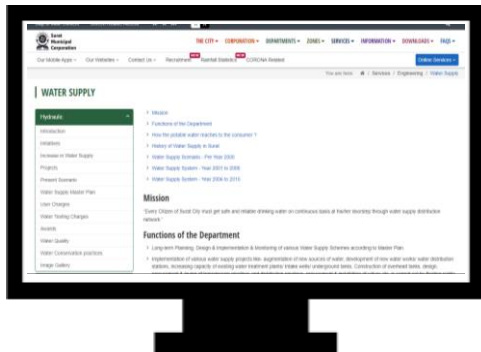
10 AMRUT 1.0 cities from Gujarat and Maharashtra states are selected for the study

# Approach and methodology for the study

1. Assessment and geographical mapping of water supply coverage

2. Review connections given in slums and other vulnerable areas through field visits and interviews.

3. Assessment of Individual Household Water Connection Procedures and Charges.



## Desk based research, analysis and Mapping

- Review of AMRUT DPRs/ CWBP<sup>1</sup>
- Overview of city water supply using city website and PAS –SLB information
- Geographical mapping of each city's served and unserved areas.



## Discussion with City officials

- Water Departments of each ULB
- Zonal office- Water supply connection provision and tax collection



## Discussion with slum residents

To understand the on- ground situation and water supply process for the slum household

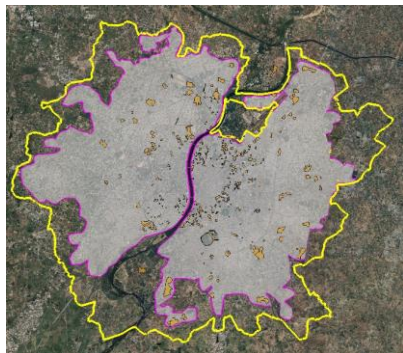


## Site Visits

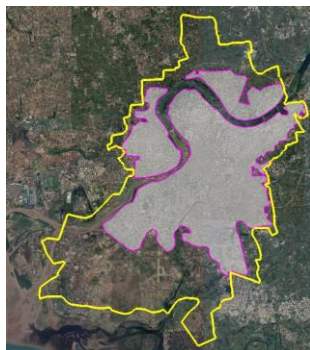
Site visits at completed projects covered under AMRUT scheme



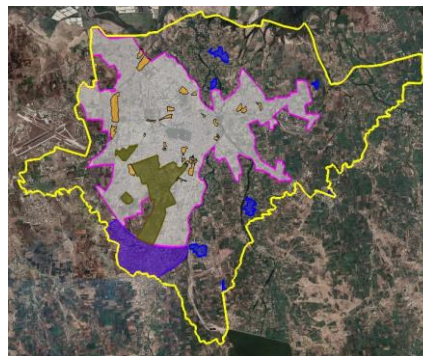
# Four cities are selected from Gujarat



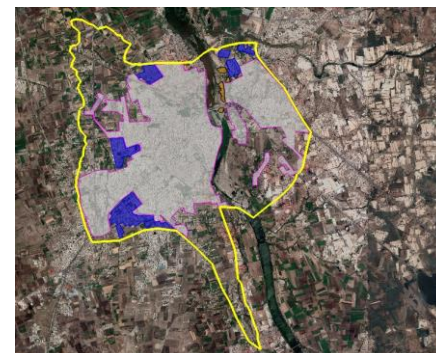
**Ahmedabad**  
(Municipal Corp.)



**Surat**  
(Municipal Corp.)



**Jamnagar**  
(Municipal Corp.)

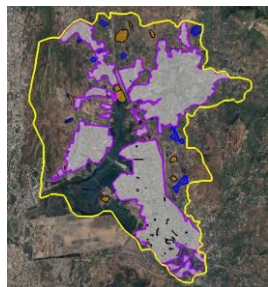


**Morbi**  
(Class A Council)

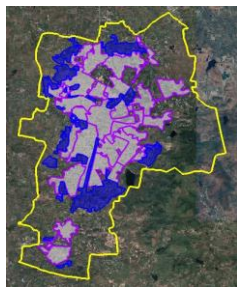
	Ahmedabad	Surat	Jamnagar	Morbi
<b>City Area(sq. km)</b>	505	462	128	24.5
<b>Total population</b>	71,80,000	64,70,000	7,60,000	3,10,000
<b>Total slum population</b>	7,20,000 (10%)	3,80,000 (5.8%)	74,290 (12%)	7,015 (2.3%)
<b>Total households</b>	16,29,734	16,67,209	1,65,648	65,665
<b>Total slum households</b>	1,62,749	74,310	13,874	1,952
<b>Household Water Connection Coverage in the City   Slums</b>	99%   99%	100%   100%	83%   90%	43%   48%



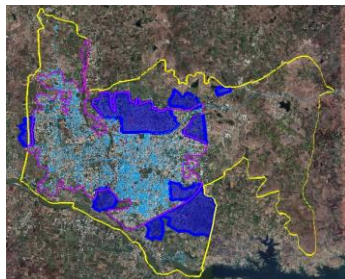
# Six cities are selected from Maharashtra



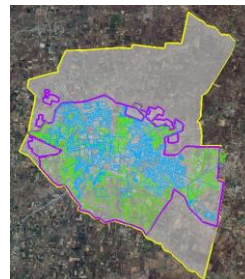
**Panvel**  
(Municipal Corp.)



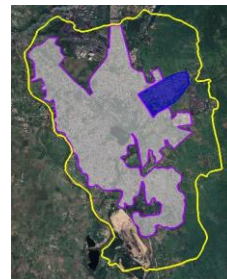
**Amravati**  
(Municipal Corp.)



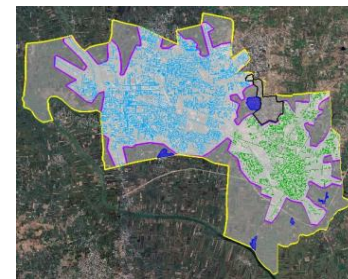
**Malegaon**  
(Municipal Corp.)



**Parbhani**  
(Municipal Corp.)

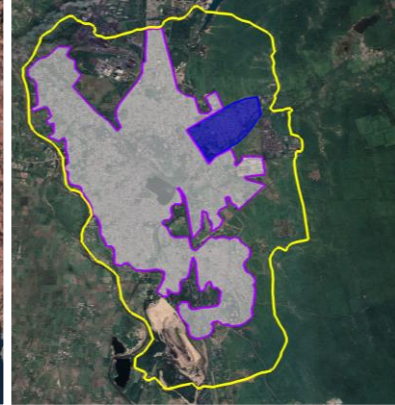
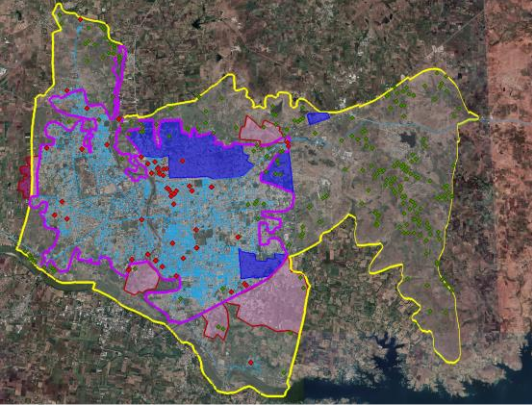


**Chandrapur**  
(Municipal Corp.)



**Sangli Miraj & Kupwad**  
(Municipal Corp.)

	Panvel	Amravati	Malegaon	Parbhani	Chandrapur	Sangli-Miraj-Kupwad
<b>City Area (sq. km)</b>	110.06	121.65	67.89	57.61	76.00	118.18
<b>Total Population</b>	18,50,000	7,71,000	7,09,000	3,64,000	3,84,000	5,03,000
<b>Total Slum Population</b>	33,000 (2%)	3,00,000 (39%)	3,40,000 (43%)	99,000 (27%)	1,59,000 (30%)	55,000 (11%)
<b>Total households</b>	3,33,824	1,61,810	1,12,026	72,738	86,947	1,31,426
<b>Total slum households</b>	6,201	60,229	55,287	18,457	26,823	11,390
<b>Household Water Connection Coverage in City   Slums</b>	74%   69%	68%   30%	57%   44%	74%   39%	65%   52%	72%   37%



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# Cities in Gujarat have laid the water supply network covering more than 90% of its city

Geographical water supply coverage is the extent of water supply network laid in the habitable areas of the city. In Gujarat, city's have >90% habitable areas covered with water supply network

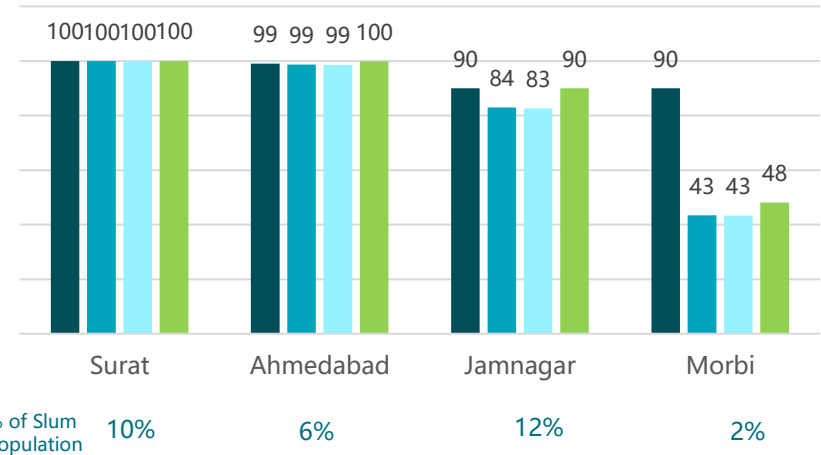
## AMRUT 1.0 Projects

Under AMRUT, cities have strengthened their water supply services. Ahmedabad has provided water supply infrastructure in its outskirt areas and Surat has implemented 24\*7 water supply scheme in few areas. Jamnagar and Morbi have increased the coverage of water supply network in the city

## Network coverage

Ahmedabad and Surat have provided water connections to almost all its households. Jamnagar and Morbi have laid water supply network covering 90% of its geographical area, though 84% and 43% of households are only served in Jamnagar and Morbi respectively

In Morbi and Jamnagar, the areas unserved by network connections are currently being provided water through water tankers



■ Geographical Coverage ■ % of HHs having Tap Connection Total  
 ■ % of HHs having Tap Connection Non-Slums ■ % of HHs having Tap Connection Slums

\*For Jamnagar- A large area is military area which counts as one connection, leading the overall coverage in statistics less.

\* For Jamnagar and Morbi- 100% network coverage is to be achieved under AMRUT 1.0, due to Covid period there is delay in laying of piped network

# State level scheme has enabled increasing water connections

## State supportive schemes for increasing connections

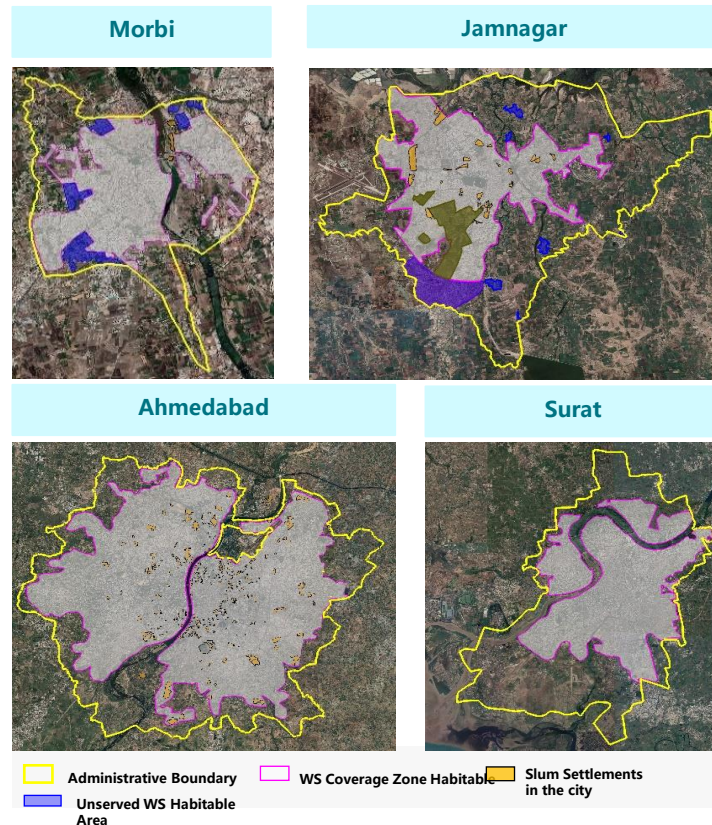
Along with AMRUT, the state has taken the project of 'Har Ghar Jal' under Swarnim Jayanti Mukhya Mantri Shehri Vikas Yojana, under which the cities like Ahmedabad, Surat and Jamnagar have increased the last mile coverage as connection charges under it were only Rs. 500

## Legalizing illegal connections

Cities like Surat, Ahmedabad and Jamnagar have carried out illegal mapping surveys and created awareness amongst the citizens to get legal connection under the available schemes leading to increase in tap connections in the city

## Database challenges

Digitized database of water connections is available at Surat and Jamnagar cities. Ahmedabad has digitized database, though the data is available at Ward level only. In Morbi, slums have individual connections but it doesn't reflect in the ULB database due to property ownership issues





# Cities in Maharashtra have good network coverage, though slum areas are still unserved (1/2)

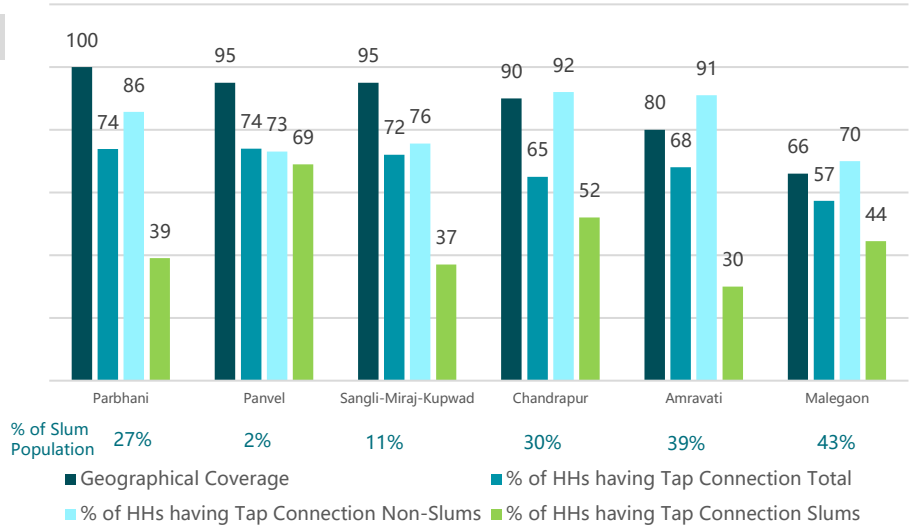
## AMRUT 1.0 Projects

All six cities leveraged AMRUT to increase its geographical coverage of water supply. Parbhani and Sangli-Miraj-Kupwad have increased geographical coverage from 70% to 100% in 2017-2020 and 75% to 95% under AMRUT respectively. Amravati, Malegaon, Panvel and Chandrapur have augmented their water source and water supply infrastructure.

## Network coverage

Parbhani, Panvel, Sangli and Chandrapur have geographical network coverage of more than 90 percent. For Amravati and Malegaon the coverage is 80 and 66 percent resp., laying of network is remaining mainly in the peripheral areas of the city

In Amravati, the water network and connections are provided by Maharashtra Jeevan Pradhikaran (MJP), a parastatal agency. In Chandrapur, HHs connections are under progress as new network is laid in the slums recently. In Malegaon, the uncovered areas are in newly developed areas where there were no road layouts to lay the pipelines.



It is analyzed that most coverage is seen in non-slum areas but low coverage in slums ranging from 30% in Amaravati to 44% in Malegaon reflects a large difference in Last mile Connectivity between slums and non-slums.

Source: Source: City Water Balance Plan (2020-2021) data for Amravati, Panvel and Parbhani; Slum data for Panvel from Shelter Associates (2019) 'Slum HH survey'. Shelter Associates. Available at: <https://app.shelter-associates.org/city::Panvel>; Service Level Benchmark, PAS data (2020-21) data for Malegaon ; Sangli-Miraj Kupwad data verified and updated by city officials 2022; Chandrapur data retrieved from Notesheet which Chandrapur submits to MoHUA for AMRUT monitoring



# Cities in Maharashtra have good network coverage, though slums areas are still unserved (2/2)

## Group connections in slums

Sangli has taken the approach of group water connections, which is shared between 5 or more households (Details in Annex-1). The water bills are divided between the five families sharing the connections

## Illegal connections and legalizing process

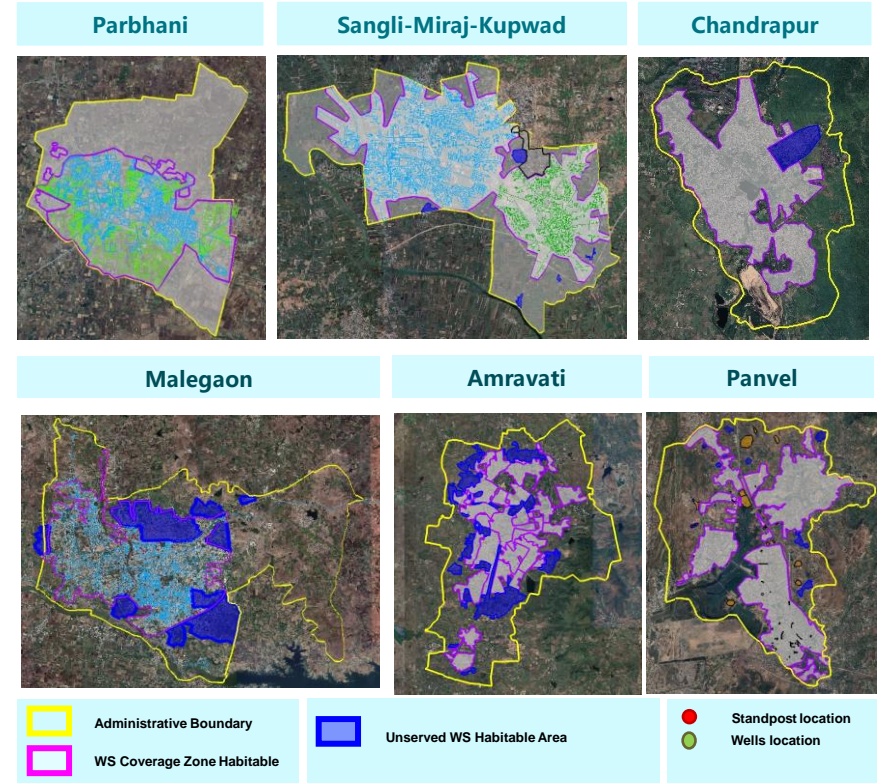
In Malegaon, there are ~10,000 illegal connections as well as high connection charges which hinder in low individual tap connections. Survey was carried out to identify the illegal connections and from 10,000, 7200 connections were legalized

## Supportive State schemes for increasing connections

Maharashtra has Maharashtra Suvarna Mahotsavi Nagari Dalitvasti Water Supply And Sanitation Scheme which provides subsidy for taking tap water connections, Amravati has implemented this scheme though the coverage is still low in slums

## Database challenges

Centralized and digitized database is not available with the cities. The lack of latest data availability reflects lower coverage of water connections



# AMRUT enabled to reach to the vulnerable areas, though household connections have not been provided to all

Under AMRUT, cities have achieved their geographical network coverage to more than 90 percent in most of the cities. Though individual water connections have not reached each household. The households however have access to water through various approaches as mentioned below.

There is a challenge of not availability of digitized data records and centralized database which is one of the reasons reflecting low coverage in a few cities



The vulnerable areas have access to water through different measures and practices

Individual  
Connections

Group  
Connections  
approach

Illegal  
Connections

Standposts/  
Handpumps

Tanker water  
supply

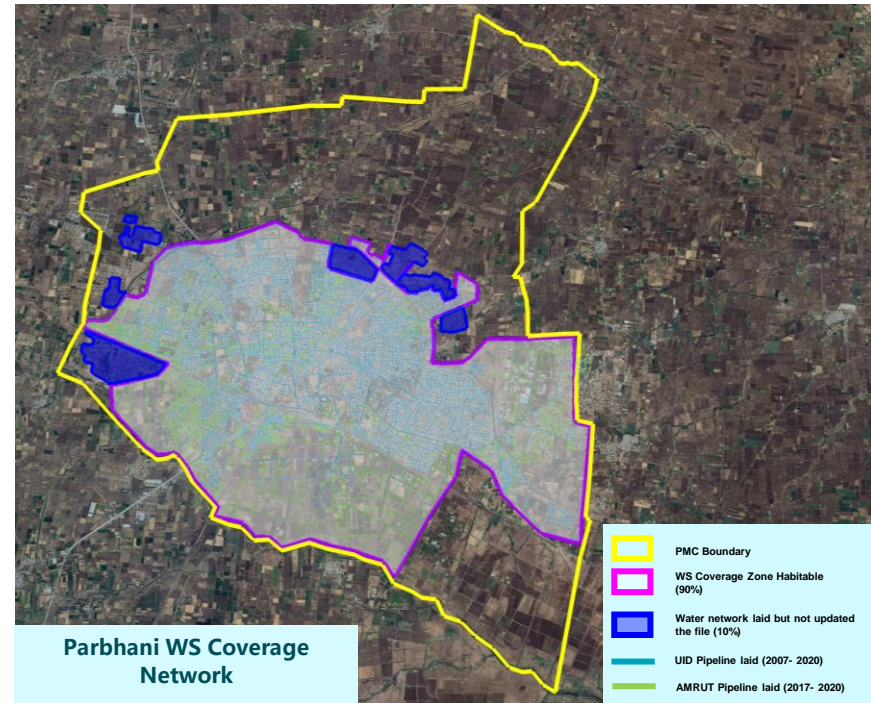
# Good Practice case: Parbhani has shifted from 15-18 days of supply to daily water supply and increasing 25,000 connections

- Initially Parbhani used to get water from Rahati River source since 1977 and citizens get water supply once in 15-18 days. With the augmentation of water source and water supply infrastructure under AMRUT, currently ULB supplies 52 MLD water
- In 2007 under UIDSSMT & in 2017 under AMRUT 1.0 82 MLD water supply according to projected population of year 2049 had been sanctioned by state government and implemented for increased water supply scheme in Parbhani

## Outcomes-

- After AMRUT 1.0 implementation city gets daily water supply
- Household tap connections have increased by 25000.
- 100% private tankers have been stopped for water supply
- Reduction of non revenue water (NRW)

**Though the database strengthening is required to reflect the entire coverage**





# Good Practice case: Understanding last mile connectivity in slums of Parbhani



- Most of the slums have Pacca house constructed under Rami Gharkul Yojna or PMAY scheme and have minimum G or G+1 floor houses.
- When PMC extended their drainage and water supply network, each household in slums were equipped with **individual water supply and drainage connection**.
- New water supply pipeline under AMRUT 1.0 lied in these slum area along with other residential area during 2017-2019 & new connections are given
- Each new connection has water meter installed in it as PMC is going to charge volumetric water tax in future, currently flat rate Water tax is applicable
- No Residents face any **water quality issues or water supply** issues for 2-3 years as current supply is sufficient for their family.



*Housing typology in Ajija nagar slum*



*Metered water connection at Parsawat Nagar & Open drains*



*Interaction with slum residents in Ajija nagar*

*Mixed type (Kaccha and pacca hoses observed in slum)*

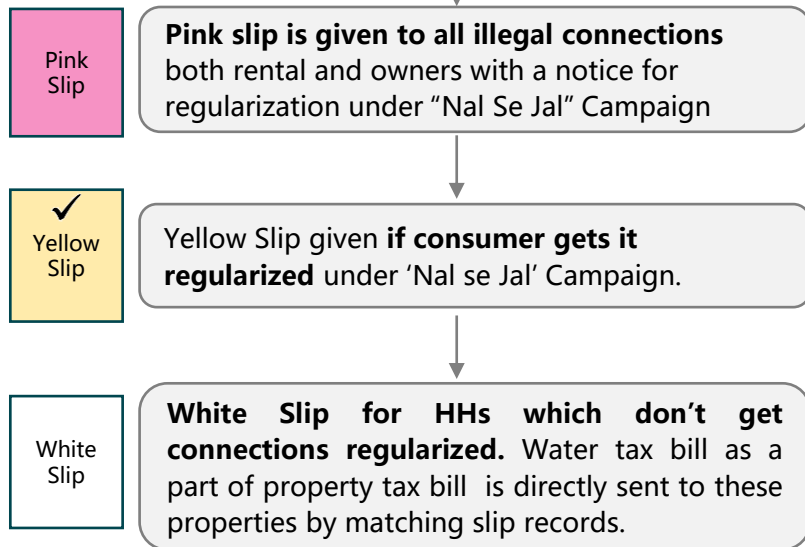


# Good practice case: Introducing three slip system to regularize water connections by Jamnagar Municipal Corp.

## Identification of illegal connections :

- By matching property tax database with water tax database and cross verification through site survey

### Process



### Impact



Over all **22,442 connections** regularized and added to tax base.



Increase in individual water connection coverage from **75% to 86%**



Additional revenue generation of **1.2 crore per annum**





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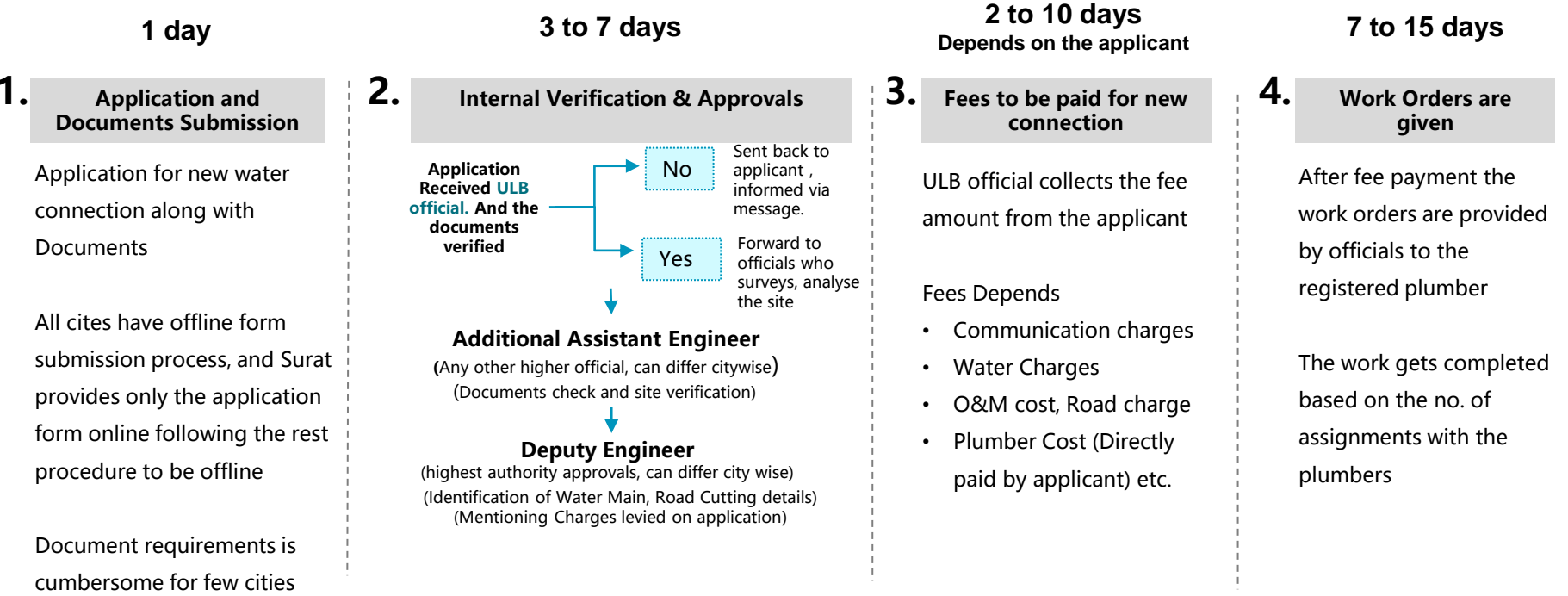
**4. Administrative Processes of New Connections**

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# A four-step process takes 20-45 days to get a new water connection in Gujarat and Maharashtra...

Thematic Diagram of Water Connection Procedure that consist of four steps starting from the Application submission to providing water connection to resident's place. This involves duties of applicant, administration, plumbers (licensed/ outsourced) in a specific way that combine and give the outcome of water connection provided by the ULB to any resident.



# In Gujarat, Morbi and Jamnagar have very basic documentation requirement which makes the process easier

Ahmedabad and Surat requires supporting documents like Stamp paper Gaurantee, drainage connection receipt, copy of Plumber's license from corporation's website, etc. This requirement urges an applicant to visit various departments for acquiring these documents at the time of submission of water connection application.

In small cities like Morbi, there are no standard application forms. The citizen is expected to write an application form and submit. It requires only the property tax receipt along with a handwritten application for getting the connection

Supporting documents	Morbi	Jamnagar	Ahmedabad	Surat
Property tax receipt	√	√	√	√
Address Proof and Identity Proof		√	√	√
Copy of House Tax Assessment sheet registered as tenant in case of tenancy		√		
Drainage Connection Receipt			√	√
Building permission/ Certified letter of construction permission and user licence			√	√
NOC Form (Society Chairman)			√	√
Copy of layout plan (Incl. TP scheme final plot and subplot.)			√	
Rs. 300 Stamp Paper Guarantee				√
Income Certificate				√
Copy of Plumber's License (From registered Plumbers provided by Corporation)				√

# In Maharashtra Parbhani, Chandrapur and Sangli-Miraj-Kupwad require very few documents for water connection application

Cities like Parbhani, Chandrapur and Sangli have easier process for the 1st step of document submission with very few supporting documents requirement of property tax receipt and address and identity proof.

Panvel and Amravati require many supporting documents which makes the process of collecting the documents tedious for the applicants. Documents such as Building permission, NOC forms (from ULB, society, etc.), income map are required.

Supporting documents like road dismantle permission, NOC forms require the applicants to visit various departments of the ULBs. Few documents are to be collected via 2/3 visits to the Municipal's office.

Supporting documents	Parbhani	Chandrapur	Sangli	Malegaon	Amravati	Panvel
Property tax receipt	√	√	√	√	√	√
Address Proof and Identity Proof	√	√	√	√	√	√
7/12, Property Card/Purchase Deed			√		√	
Building permission/ Certified letter of construction permission and user licence						√
Rs. 20 or Rs. 100 Stamp Paper/ Rs. 100 bond of applicant				√	√	
NOC Forms (Owner/Society/Council)				√	√	√
Applicant Passport Photo (3 copies)					√	
Road dismantle permission					√	
Income map						√
Owners NOC if applicant is not covered under Mumbai rent control act.						√
<b>Additional documents for slums</b>						
Matters considered by election commission regarding proof of residency will be considered						√
Slum declaration circular				√		



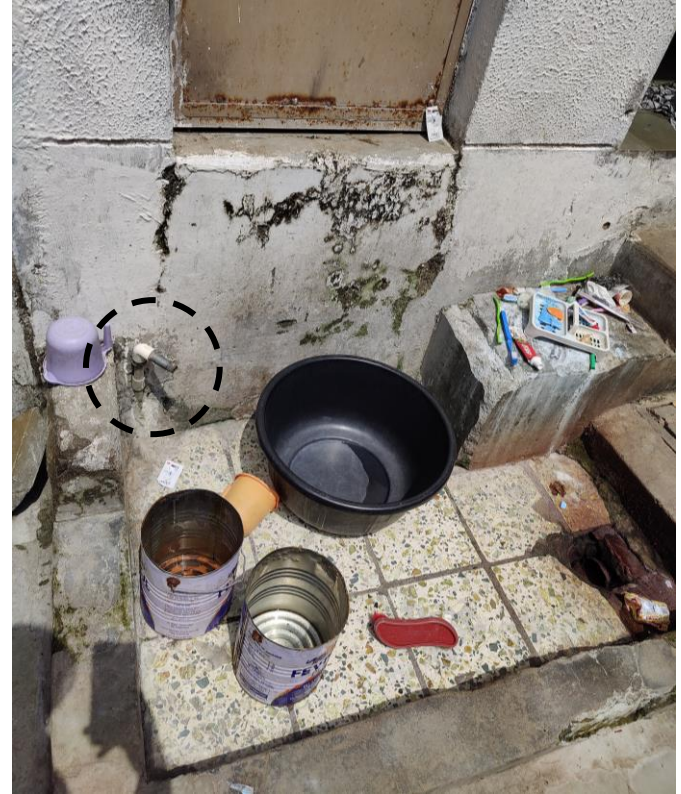
# Administrative process for approving water connections needs to be simplified

- **Large municipal corporations** like Panvel, Ahmedabad, Surat have **higher requirement of supporting documents** in comparison to other cities
- The **documentation process can be streamlined** for these cities and made easier
- The requirement of supporting documents will be lessened if there is **centralized database** available which is linked to property tax
- **Online systems/ E-services** must be developed along with offline systems to make it convenient to the applicant
- **Uploading documents online as well as online verification process** will reduce time period in getting the connection



# Good Practice Case: Delinking tenure for granting access to basic services in Ahmedabad

- For slum improvements in Ahmedabad Municipal Corporation (AMC) initiated various scheme to provide basic services of water, sanitation and electricity
- Considering **tenure issues are complicated**, the **AMC detached tenure** from access to services
- Under the **NOC-500 programme**, the AMC provided slum households with a 'No Objection Certificate' (NOC) based on which they could access official services for a fee of **Rs. 500**
- In order to be eligible, the applicant should be residing in the slum in a unit of not more than **40 sq.m.** and should have **residence proof**
- This provided access to water and sanitation to over **10,500 slum households**
- Extending water and sanitation services to slum communities, regardless of tenure, has been an important step towards their integration into the city



# Good Practice case: Converting group connections to individual connections in Maharashtra

- In the late 1990's, the Directorate of Municipal Administration (DMA) states to **provide group connection in slums**, EWS communities and chawls (As per Gazette No. GNT 1096/Project No. 182/96/4 dated 04.04.1997).
- The **group connections turned to individual connections** with the Maharashtra Suvarna Mahotsavi Nagari Dalit Vasti Pani Purwatha va Swachhata Yojana to **provide individual water connections** to urban Scheduled Caste and Neo Buddhist communities in the state in 2010 (Government Resolution No. Na-Da-Va- 2010/Project No. 219/Pa-Pu-22 dated 25.06.2010).
- For Urban Water Supply, it stated to provide **individual water connections to all authorized households**; conversion of stand posts into group connections.
- In case of non-notified slums, Public Water Booth should be constructed for water supply.



Source: Government of Maharashtra (2010) Government Resolution No. Na-Da-Va- 2010/Project No. 219/Pa-Pu-22 dated 25.06.2010. Government of Maharashtra





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# Water connection charges vary significantly across cities even in the same state (1/2)

AMRUT 2.0 guidelines mention “Providing universal piped water supply with household water tap connection through Last mile connectivity to households (Not exceeding ₹ 3,000 per HH)” (MoHUA, 2021).

### Additional plumbing charges making the connection cost expensive

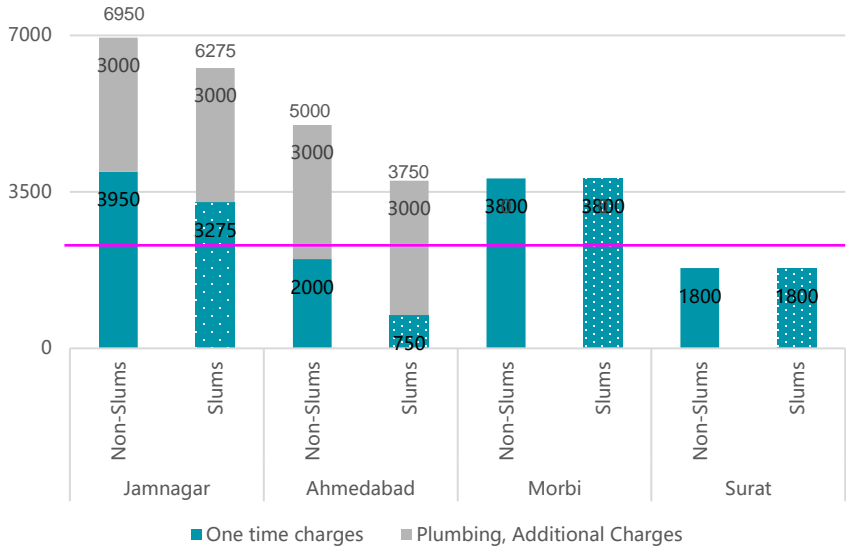
The analysis shows that Ahmedabad, even though the One-time connection cost is under 3000/- mark the plumber charges in placing the connection goes high upto additional 3000/-. Similarly, in Jamnagar the one-time charges are itself above 3000/- mark both for slums and non-slums. Additionally plumbing charges goes upto 3000/- which gives a total cost of around 6950/- for non-slums and 6275/- for slums. These high charges becomes a major barrier for taking the water tap connection for the vulnerable communities.

In Jamnagar even for slum households, the connection cost is around Rs. 6200 while in Ahmedabad the slum connection cost is Rs. 3750

Morbi, since its fixed charges includes all plumbing and additional charges for placing connection it is just above the base mark and is same for both slums and non-slums.

Only Surat has connection charges of Rs. 1800, same for slum and non-slum households which is less quite less than the other cities.

Water connection charges in cities of Gujarat



Note: The total charges are one-time connection charges along with additional plumbing charges levied in a few cities  
Morbi- Bifurcation of one-tome charges and plumbing charges is not available

# Connections charges across cities of Gujarat were Rs. 500 under the Swarnim Jayanti Mukhya Mantri Shehri Vikas Yojana till April 2022

Under Swarnim Jayanti Mukhya Mantri Shaheri Vikas Yojana, infrastructure projects related to water supply and underground drainage in the cities of the state are being taken up by the Gujarat Municipal Finance Board and the Gujarat Urban Development Mission.

In lines with the “Har Ghar Jal” campaign under Nal Se Jal by The Ministry of Jal Shakti, the state government of Gujarat has made a commitment to provide clean drinking water to all the families in the cities through taps on a daily basis. Under this 35 projects have already been given principal approval from GoG.

Rs. 500 connection charges (1/3<sup>rd</sup> cost in comparison to current charges) were decided under this scheme to provide connections to all the household applicants. The charges were same for slum and non-slum households.

Taking the benefit of this scheme, the cities have provided individual tap connections to many households, increasing the overall coverage of tap connections



# Water connection charges vary significantly across cities even in the same state (2/2)

Chandrapur is the only city which provides water connections free of cost to all for slums as well as non-slums applicants

Malegaon has the highest connection cost levied which are same for both slums and non-slums. The additional charges in Malegaon are the advance payment of one year of user charges as a deposit. But the higher cost of connection reflects the less coverage of individual connections in the city

In Panvel, the total charges include connection charges along with meter charges of Rs. 3000 which is mandatory for the applicant.

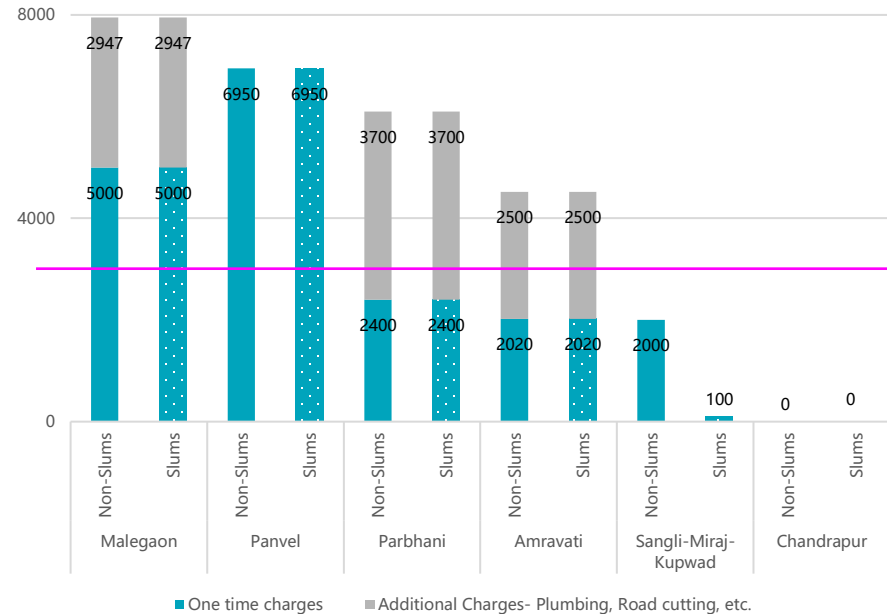
In Parbhani, the one time charges are Rs.2400, though the road cutting, plumbing cost sums up the total connection cost to more than Rs.6000

Lower connection cost for slums under state/city level schemes for urban poor

Sangli-Miraj-Kupwad provides water connections at Rs.100 per connection under govt. schemes of SLUM rehabilitation programmes by MHADA

Amravati has implemented Maharashtra Suvarna Mahotsavi Nagari Dalitvasti Water Supply And Sanitation Scheme which provides Rs.4000 incentive to the identified applicants (i.e. Dalitvasti) to take the connection

Water connection charges in cities of Maharashtra



Malegaon- Additional charges include advance payment of Rs. 2611 flat charges for one year  
 Panvel- One time charges include tap deposit amount, boring fee, labor charges, road repair charges and source generation fees (Bifurcation is not available)

# High user charges may be a barrier for urban poor households

Ahmedabad	Surat	Jamnagar	Morbi	Parbhani	Chandrapur	Malegaon	Panvel	Amravati	Sangli Miraj Kupwad
Water tax based on property tax/ property size		Flat Charges Per Year per connection					Metered and Non-Metered Charges Bifurcation Per Year		
<b>30% of the property tax</b>  Rs. 100-200** per year for 40-50 m <sup>2</sup> carpet area)	Rs. 174-3750** per year upon the size of the property (0-15m <sup>2</sup> to 501m <sup>2</sup> and above).	<b>Non-slums: Rs.1,150</b>  <b>Slums: Rs.575</b>	<b>Rs.600</b>	<b>Rs. 2,400</b>	<b>Rs.1,430</b>	<b>Rs. 2,611</b>	<b>Metered Rs 9/1000 L</b>  <b>Rs. 2187*</b> Per year  <b>Non-Metered Rs. 1500</b>	<b>Metered: Rs. 19 per 1000 L till 15,000 L</b>  <b>Rs. 29 per 1000 L till 15k-25k L</b>  <b>Rs. 5278*</b> per year  <b>Non-Meter: Rs. 6,720</b>	<b>Metered: Rs 8/1000 L</b>  <b>Rs. 1,944*</b> per year  <b>Non-Meter: Rs. 1,920</b>

\*Charges derived for metered connections considering 135 lpcd consumption of water and family size of 5. \*\* Charges derived considering a sample property size

- Cities have adopted various mechanisms for levying user charges i.e. flat charges, metered slab charges and charges linked to property tax
- The user charges slab is higher in the case of Amravati. These rates are issued by MJP as it is providing water in Amravati.



# Relaxing cost of connection and user charges for vulnerable communities will enable them to take individual connections

- Few cities have lowered the connection costs for slums, to increase the individual connections in slums
- Gujarat state level scheme SJMMSVY leveraged everyone to get the connections in Rs. 500 which also reflects in good coverage (i.e. slums and non-slums equal coverage percentage) of individual connections in the cities
- The user charges do not have bifurcation for slum and non-slum households for 9 out of 10 cities. Only Jamnagar has the bifurcation of non-slums and slums with slum user charges rate half in comparison to non-slum user charges.
- Providing equitable rates for water user charges will encourage the slum households to procure individual connections



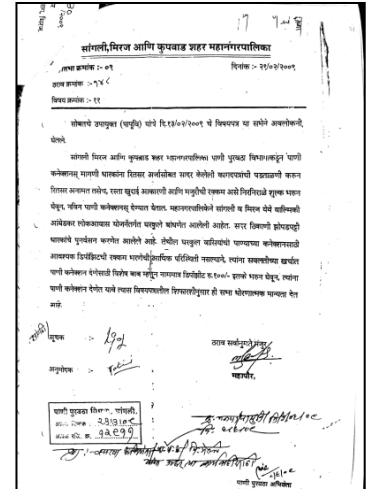
# Good Practice Case: Sangli Miraj Kupwad provided connections in slums at only Rs. 100

## GB Resolution for slum household for the water connection

- Corporation passed resolution for the water connections to slum household
- Each connection is given at deposit amount of Rs. 100 and no additional cost to be borne by the slum household beneficiary
- Additional required fund is used from 14<sup>th</sup> finance commission, 13<sup>th</sup> Finance commission / Ward development fund
- Till now 1142 water connections given to beneficiary at slum area at Miraj under the Amrut Phase

## Slum Rehabilitation and Water Connections

- Under various govt. scheme SMKMC has implemented the rehabilitation project of Slum area
- The apartment were constructed under the Mhada scheme and named as **Valmiki Niwas** where the populations from the slum areas were shifted
- The water connections to these areas were given at nominal deposit rate of Rs. 100.
- There will be no additional cost to beneficiary viz. road excavation, plumbing, fitting etc.



# Good Practice Cases: Initiatives to increase water connection coverage in slums through incentives or lower charges

## Incentivizing slums through state level scheme

### Amravati

Implemented state govt. scheme- **Maharashtra Suvarna Mahotsavi Nagari Dalitvasti Water Supply And Sanitation Scheme**

₹ **Rs. 4000 Incentives** given and rest to be borne by beneficiary

Focused on giving **individual water supply connections and household toilets to SC and ST household.**

**3500 water connections** given to slum households.

## Free water connections under AMRUT programme

### Chandrapur

Individual water connection provision across city under **AMRUT programme**

Individual water connection increased from **42% to 65%**

**No connection charges** for provision of new water connections

**Installation of meters** in all new water connections under **AMRUT**

# Good practice cases: Initiatives to improve water connection coverage in Gujarat

These are some of the schemes and policies that were followed in Gujarat to increase the connection coverage and support slum and vulnerable area's households to get water supply tap connections

## Slum Networking Program (1995)

Ahmedabad

Ahmedabad Municipal Corporation (AMC)



NGOs and Slum Communities

**Infrastructure expanded:**  
80% cost of physical infrastructure by AMC, remaining 20% by participating HHs


## 500 NOC Scheme (2002)

Ahmedabad

Rs. 500 NOC Scheme

Eligibility

 < 40 sq. m

 Rs. 500 per connection

**Documents** – Property Proof (if not) they take photograph and provide NOC only to have water and drainage


## Free Drinking Water Policy (2012)

Surat

Free Connections

 < 25 sq. m

**Eligibility-** Homes which fall under the category of Slums and have only a roof or a shade on two sides of constructions.

 < 20 m  
SMC Distribution line


**Documents-** NOC from owner whose land is encroached.

## 'Nal Se Jal'-urban scheme (2021)

Gujarat State

Under Swarnim Jayanti Mukhya Mantri Shaheri Vikas Yojana- Nal Se Jal for urban

To regularize Illegal connections and Provide New WS Connection

 Rs. 500 per connection

**Documents-** Application form and an Affidavit.





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# A consultative workshop was organized with several ULB officials to discuss the last mile challenges

## Solving infrastructure barrier

Need to design ESR/ water storage in the vicinity of slum areas to provide individual connections  
(As earlier, the network is not designed keeping the slum development in any particular areas)

## Legalize illegal connections

Surveys and drives must be carried out to legalize the connections which will also help in reduction of NRW

## Systematic process

Need for a systematically defined process for taking connections (with defined requirement of supporting documents, all documents available at Water Supply Dept., etc.)

## Strengthening database

The database of connections vs households served is not maintained by the ULB. GIS based mapping/ centralized database systems must be developed

## To increase coverage by reducing cost of connections

Few cities have taken up the approach of giving connections at lower rates. For example, Navi Mumbai passed a council resolution to provide individual connections to slums for only Rs. 50.



# Major findings from the study

**Slum households have access** to water through individual/ group connections, groundwater sources, stand posts, etc. Since they have access and there are high and unaffordable connection charges, they do not opt for individual connections

**High connection charges in a few cities** act as a barrier for households to connect to formal water supply connection



**Illegal or unregistered connections** reflect less coverage of connections in some cities

Water connection process requires **multiple documents for approvals**

**Lack of data** availability reflects lower coverage of water connections



# Key challenges in providing access to water supply ...

## Administrative Barriers



**Involvement of multiple department in providing connection**



**Lack of Required Documents**

Land Tenure & Ownership Documents



**Absence of Application Tracking System**



**Lack of adequate and reliable Information**



**Lack of Citizen Awareness**



**Complex and lengthy approval procedures**

## Cost Barrier



**Affordability to Obtain new Water Connection**



**High water tariffs**

## Infrastructure Barrier



**Lack of Distribution Network Coverage**



# Recommendations to improve household water connections coverage (1/4)

## Central level initiatives required

### **AMRUT guidelines can suggest that land tenure and rental status should be delinked from the provision of water connection (as in Gujarat)**

It is recognized that the tenure issues are complicated. It becomes one of the major challenge for the slum households to procure any basic services because of the land tenure details. It is thus significant for the central government, to recognize it and provide guidelines under AMRUT itself to delink provision of tap connections with land tenure

### **AMRUT can provide additional funds for water connections in slums/vulnerable areas**

Considering the last mile connectivity challenges in the urban poor areas of the cities, AMRUT can consider to provide additional funds to the slums/ vulnerable areas. Special incentive or additional fund with some share from the beneficiary can be identified to make the individual water connections affordable.

# Recommendations to improve household water connections coverage (2/4)

## State level initiatives required

### **State government can provide subsidy/ give incentive to take up new water connections (as in Amravati)**

Recognizing that cost of connection becomes one of the barriers for taking an individual water connection, subsidy/incentive can be provided by the state government for all the urban poor. The conditions for the incentive can be defined similar to the share provided under Swachh Bharat Mission for toilets.

### **Initiate relaxations for water connection provision through State level schemes**

State can guide the ULBs through circular, GRs, or schemes and define a systematic process to give water connections. Under that, it can give relaxations of documentations needs, financial relaxations and more particularly for the urban poor.

### **Direct ULBs to conduct detailed assessment of illegal connections and gaps in coverage**

One of the major reasons for low coverage is the prevailing illegal connections. The state must direct the ULBs to take up drives and surveys to identify illegal connections and give them measures to legalize them. This will support in increasing the coverage across the city. The cities must also be directed to address the gaps due to which the coverage is not across the whole city. State must monitor and advise the ULBs accordingly.

# Recommendations to improve individual tap connections coverage (3/4)

## City level initiatives required

### **Identify and regularize illegal connection**

At city level, the ULB officials must identify the areas where illegal connections are prominent. Surveys and drives must be carried out by the water supply department team and the illegal connections must be legalized. Legalization can be done using various mechanisms of lowering connection costs for urban poor, penalizing, regular monitoring, etc.

### **Online systems/ E-services must be developed to ease the connection process**

Many cities still have offline procedure to procure an individual connection. This process can be made easier by having online system/E-services. The uploading of documents, online verification and payment for connection fees can be made online which will ease the process

### **Improved IEC campaign in city/slums for availing new water connections under AMRUT**

IEC campaigns and awareness drives must be carried out across the city to encourage everyone to take individual water connection

# Recommendations to improve individual tap connections coverage (4/4)

## City level initiatives required

### **Simplify connection process**

The ULBs can simplify the process by reducing the requirement of supporting documents, and streamline the process through single window systems where the applicant doesn't have to visit various departments of the council office to procure documents and apply for connection

### **Provision of water connections at affordable rate**

The councils can take the decision of providing equitable water services across the city. It can consider to decide affordable rate for the water connection, particularly the urban poor, so that everyone has individual water connection (Har Ghar Jal).

### **Proper database maintenance systems**

The ULBs must maintain a proper database system. It can be a centralized database by linking everything with property tax which will help them to monitor the provision of services as well. GIS mapping with different layers can also be done to spatially understand the services.

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AND SANITATION

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AND DEVELOPMENT  
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## About CWAS

The Center for Water and Sanitation (CWAS) is a part of CEPT Research and Development Foundation (CRDF) at CEPT University. CWAS undertakes action-research, 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.

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