

CHENNAI METROPOLITAN WATER SUPPLY AND SEWERAGE BOARD

ANNUAL PERFORMANCE REPORT (APR)

I WATER SUPPLY MANAGEMENT

Sources of Water Supply

The prime and consistent endeavor of the Board is to provide safe drinking water in adequate quantity to the people of Chennai city and to meet the water requirements of industries. The water requirement is met by drawing water from surface sources, ground water sources, reuse of water, desalination plants and tertiary treatment reverse osmosis (TTRO) plants.

The existing water treatment capacity of the CMWSS Board is 1,510 MLD.

Sl.No.	Location of the Plant	Capacity (MLD)	Year of establishment
1.	Kilpauk	270	1914
2.	Redhills	300	1996
3.	Veeranam	180	2004
4.	Chembarambakkam	530	2008
5.	Surapet	14	1965 (Taken over from TWAD Board in 2009)
6.	Minjur Desalination Plant	100	2010
7.	Nemmeli Desalination Plant	100	2013
8.	Porur	6	2022
9.	Kolathur WTP	10	2023
	Total	1,510	

The century old city's first Water treatment plant located at Kilpauk is functioning till now catering to the water needs of the city. Treated water is being distributed from 16 major water distribution stations and 103 subsidiary head works through a pipeline network of 5,247 km.

Desalination Plants

There are no perennial water sources for Chennai city. The city's water sources are primarily dependent on the North East monsoon and whenever monsoon fails, the city faces drought. Further, urbanization of the surrounding areas and the rapid growth of the industries led to drastic increase in demand for water exerting pressure on scarce water resources.

Therefore, as part of drought-proofing measure and taking into account the long term drinking water requirements of the city, Government has invested in desalination plants.

a) Minjur Desalination Plant

Desalination plants play a vital role in fulfilling city's water supply requirements. The first desalination plant with a capacity of 100 MLD at Minjur on Design, Build, Own, Operate and Transfer (DBOOT) basis was inaugurated on 31.07.2010. This plant caters to the needs of the northern parts of Chennai city viz., Manali, Madhavaram, Ennore, Kathivakkam, Thiruvottiyur, Tondiarpet and Vyasarpadi benefiting a population of about 12 lakh.

b) Nemmeli Desalination Plant

Another desalination plant with a capacity of 110 MLD has been constructed at Nemmeli at a cost of Rs.805.08 crore, with full financial assistance from Government of India. The plant became operational in 2013 and water from this plant is being supplied to the southern parts of Chennai viz., Sholinganallur, Neelangarai, Injambakkam, Karapakkam, Semmancherry, Thoraipakkam, Perungudi, Kottivakkam, Palavakkam, Thiruvanmiyur, Velachery, Taramani, Pallipattu, Adyar, Besant Nagar, Nandanam, MRC Nagar, Raja Annamalaipuram and Mylapore benefiting a population of about 10 Lakh.

c) Tertiary Treated Water

In order to cater the needs of industries in and around Chennai city, CMWSS Board has constructed two tertiary treatment reverse osmosis (TTRO) plants of 45 MLD capacity each at Koyambedu and Kodungaiyur, including pipeline to convey the treated used water to the industries in Irungattukottai, Sriperumbudur and Oragadam and in Manali-Ennore corridor and Manali-Minjur corridor. Both the plants are operational and at present, 23 MLD of TTRO water is being supplied from Kodungaiyur and 15 MLD from Koyambedu TTRO plant.

Water Supply Schemes

Schemes under Implementation

i. 150MLD capacity Desalination Plant at Nemmeli and laying of product water pipeline from desalination plant to Pallavaram

Construction of a 150 MLD capacity desalination plant has been taken up at Nemmeli to address the demand-supply gap in water supply in Chennai city. The Government of Tamil

Nadu has accorded revised administrative sanction at a cost of Rs.1,516.82 crore to implement the project under AMRUT scheme and financial assistance from KfW (German Development Bank). The plant is under trial commissioning.

Water produced from this plant will be supplied to the southern parts of Chennai Metropolitan Area viz. Velachery, Alandur, St.Thomas Mount, Tambaram, Medavakkam, Kovilambakkam, Nanmangalam, Keelkattalai, Moovarasampettai, Sholinganallur, Ullagaram-Puzhuthivakkam, Madipakkam and IT corridor areas benefiting nearly 9 lakh people.

ii. Perur Desalination Plant (400 MLD Capacity)

Chennai city's present water demand is 1,400 MLD against which nearly 1040 MLD is supplied leaving a gap of 360 MLD. In order to bridge the gap between fresh water demand and supply, it is imperative to augment the water supply by identifying additional sources.

Accordingly, Government has accorded administrative sanction for setting up of the desalination plant of 400 MLD capacity at Perur along East Coast Road and the work of laying product water transmission main from desalination plant at a cost of Rs. 6,078.40 crore, with financial assistance from JICA, TNIDB & State budgetary support. The project commenced on 5.09.2023 and schedule date of completion is Feb 2027.

On completion of the project, about 23 lakh people living in Chennai city and its surrounding areas like Tambaram, Pallavaram, Madambakkam, Sembakkam, Chitlapakkam, Peerkanganai, Perungalathur, Thirneermalai, Kundrathur, Kattankulathur and Mangadu will get adequate water supply.

iii. Water supply schemes under progress in added areas

Water supply schemes are under progress at a cost of Rs.426.02 crore in the 8 added areas viz, Nerkundram, Madhavaram, Ramapuram, Manali, Chinnasekkadu, Madipakkam, Semmenchery and Neelangarai.

iv. Water supply improvement scheme to Valasaravakkam

To ensure 24X7 equitable water supply by adopting District Metered Area (DMA) concept, Valasaravakkam water supply improvement scheme has been taken up as a pilot project in divisions 149 and 152 at a cost of Rs.69.64 crore. The work is currently in progress and is expected to be completed by March 2024.

v. Metering Policy

The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) has made investments in Desalination plants and Tertiary sewage treatment facilities, and hence the cost of water production is high. Therefore, there is a need for judicious use and conservation of limited available and expensive water. In this context, CMWSSB has taken up a Demand Management program by expanding the Consumer water metering program. This water meter policy provides the basis, details, the objective, roles and responsibilities of all stakeholders and the technical standards for the water metering program. Consumers are also classified as Domestic, Partly Commercial, Commercial, Industrial, Institutional and Municipal Bulk Supply, based on the nature of water usage activity of the consumers.

Now it is proposed to fix meters and the DPR for the work of “ the providing house service connection (HSC), procurement, testing, installation, commissioning, operation, and maintenance of smart water meters (electromagnetic/ ultrasonic AMI meters) and associated communication and billing system in Chennai (added areas), on Public-Private Partnership (PPP) mode Hybrid Annuity Model (HAM basis) for a period of 12 years (including 2 (two) years for construction/ installation)” has been prepared and is under vetting.

SIGNIFICANT ACTIVITIES DURING THE YEAR 2023-2024

WATER SUPPLY

Neelankarai

CMWSSB has taken up the execution of comprehensive Water supply scheme to Neelankarai comprising of (Division 192 & 193 (Part)), Zone XV in Expanded Chennai City for a value of Rs.77.03 Crore. Neelankarai is one among the 42 Local bodies added in the expanded area of Chennai city and located in Kancheepuram District. Total geographical area is 2.805 sq.km. The total length of the road/streets is around 57.82 Km and the total no of streets 237. Population to be benefitted is around 19,000.

Semmenchery

CMWSSB has also taken up the execution of comprehensive water supply scheme to Semmenchery (Div 200 122 streets & Div 199 (part) 128 streets, Zone XV in expanded Chennai city at a cost of Rs.50.19 Crore. The Length of Water main is 25.151km and the population to be benefitted is around 51,100. The No. of House service connection is 1100.

FUTURE PLANS FOR COMING YEARS IN TERMS OF APPROVED SCHEMES

WATER SUPPLY

A. “Strengthening / Replacement of Existing Water Transmission mains and formulating a Ring Main System consisting of Existing/New transmission mains connecting existing water treatment plants and water distribution stations in Chennai City”.

At present, Water Supply to the different zones (WDSs) of Greater Chennai Corporation is from four Water Treatment Plants and two Desalination Plants. Water supply from each of these plants is designed on standalone basis through Transmission Mains to the designated areas of the city. In times of distress, surplus water from one source cannot be transferred to another source in deficit. Hence, the Ring main project (RMP) was proposed.

- Ring Main Connecting WTPs and DSPs, Provision of Appurtenances, Arrangements of Emergency, Surge Analysis & Protection measures, SCADA System, Prioritization of the works to be taken up, Final DPR and Bid Documents Formulating a Ring main system (RMS) utilizing the existing transmission mains and by providing necessary additional mains and new WDS/other infrastructure warranted based on the design requirement .
- Strengthening /Replacement of existing of Water Transmission Mains.
- Connecting the existing Water Treatment Plants (WTP’s) and the Water Distributions stations (WDSs) in Chennai city for equitable supply of water to all parts.
- Providing agreed bulk quantities of water (present/future) to the ULB’s (urban local bodies and RLBs (Rural local bodies) in Chennai Metropolitan Area in their storage sumps by CMWSSB depending on the availability of water.
- The Ring main A will be covering the Greater Chennai Corporation Area (426Sq.km) for a length of 94.52km with pipe diameter ranging from 1000mm to 2400mm connecting all the existing WTPs and WDSs.
- In Phase I, the ring main A will be taken for implementation so as to cover the GCC of Chennai City.
- The Ring main B will be covering the Chennai Metropolitan Area (1189Sqkm) and the length of 134.98km with pipe diameter of ranging from 1000mm to 2000mm excluding the core city area.
- In the Phase II, the Ring main B will be taken up for implementation so as to cover the Chennai Metropolitan Area (CMA).

B. Bulk Meters (Under Execution)

Supply, installation and commissioning of Electromagnetic Flow Meters with IoT Technology based data transfer facility and allied works in CMWSSB Water Treatment Plants, Water Distribution Stations and Filling Stations including five years comprehensive Operation & Maintenance. The number of meters to be fixed is 518meters (Full bore-344 meters & Insertion-174 meters).

Necessity of Bulk metering:

- Water audit and assessment of Non Revenue of Water is an important management tool for effective conservation of water and managing water system operations.
- At present, there is no proper account of water received, treated and distributed. It is calculated based on pumping operations.
- Effective metering of transmission mains provides a basis for assessing the total quantity of water received from treatments plants, water received at each and every Water Distribution stations and Filling stations.

Current status:

Work order issued Dt 09.10.23.contract period 6 years
(1 year execution & 5 year maintenance)

C. PROPOSED WORKS:

1. Rehabilitation of 300MLD WTP:

The work of “Conducting consultancy studies for rehabilitation and revamping works including preparation of Detailed Project Report (DPR), process designs and detailed estimates, preparation of bid couments for 300 MLD Water Treatment Plant at Puzhal and 14 MLD Surapet Water Treatment Plant” has been awarded to M/s. Voyants Solutions Pvt Ltd, Haryana – 122001 for a contract value of Rs.66,52, 686.00 (Rupees Sixty six lakhs fifty two thousand six hundred and eighty six only) with contract period of 3 months. On completion of the DPR, CMWSSB will seek necessary funds from the Government and rehabilitate the plant.

2. Rehabilitation of 270MLD WTP, Kilpauk – Proposal given for announcements.

Kilpauk Water Treatment plant of CMWSSB with the maximum treatment capacity of 270 MLD which spread over 66 acres was constructed and commissioned during the year 1914. The surface water from Red Hills Lake is being transmitted to Kilpauk Water Treatment plant through the conduits by gravity. Kilpauk Water Treatment Plant consists of three Water Treatment sections with 45 MLD, 90 MLD

and 135 MLD treatment capacities. There are 4 Nos. of raw water pump houses and 6Nos of treated water pump houses are available. Now, Kilpauk Water Treatment Plant is contributing an average of 220 Million Liters per Day (MLD) to the part of North and Central Chennai city. Being the oldest plant of CMWSSB (109 years old) and all the equipments available are very old, it is necessary for rehabilitation of existing 270 MLD Water Treatment Plant in order to enable cost savings through economical and efficient operation of all devices and to achieve the maximum treatment quantity from Kilpauk Water Treatment Plant. Accordingly, it is proposed to prepare a detailed project report for the Rehabilitation of the 270 MLD WTP at Kilpauk through a consultant.

3. Dedicated main to cover WDS of Area III from 300 MLD WTP

The Area III is one among the added area in the expanded Chennai Madavaram and Puzhal which falls under Greater Chennai Corporation with population of around 2.5 lakhs.

New water supply schemes for Surapet, Puthagaram, Puzhal and Madhavaram have been commissioned. Presently the water required for distribution to Area-III is tapped from existing 1200mm dia North main from 300 MLD WTP.

As the existing 1200 mm dia north main from 300 MLD WTP is inadequate to meet the water requirement in Area III and also considering the future water demand it is proposed to augment supply to all the WDS of Area III by laying a new conveying main of 700 mm dia at an estimate cost of Rs.40 Cr.

4. Preparation of DPR for providing water supply to left out streets.

The Chennai City was expanded in 2011 annexing 42 urban local bodies. Detailed Project Reports (DPRs) for providing Water Supply Schemes and Under Ground Sewerage Schemes were prepared for various areas added to Chennai City in phased manner. The DPRs were prepared based on the areas that were fully developed at that time, excluding undeveloped areas and schemes were implemented in phased manner. At present residential habitations in those undeveloped areas of the newly added areas of Chennai City are increasing in a rapid manner. New streets are being formed and development of residential properties are increasing. Hence, it is necessary to provide Water Supply and Under Ground Sewerage Facilities to those areas. The Sustainable Development Goals aim is to provide individual water and sewer connections to each house hold. Considering the above, CMWSSB is envisaged to prepare the proposals for the same. CMWSSB will take up Preparation of Detailed

Project Reports for Providing Water Supply and Sewerage Facilities to the newly formed streets in which habitations are developed in the added areas of Area I, II, III, VII, XI, XII, XIV & XV in Chennai City.

D. Improvement of existing water distribution networks (24x7) is to be carried out in two packages as follows:

Package 1:

Kodambakkam (Area X) & Adyar (Area XIII) has been prioritized and is posed to World Bank for funding. The Consultants M/s SMEC International Pty Ltd, NJS Engineers India Pvt Ltd, TATA Consulting Engineers Ltd and SMEC (India) Pvt Ltd had prepared the Detailed Design Report for Area X and Area XIII in Design-Bid-Build (EPC mode) at an estimate of Rs.1019.57 Cr and Rs.937.58 Cr respectively.

CMWSSB has engaged Water Corporation of Odisha (WATCO) for DPR preparation, assisting bid documents and supervision for the work of “Improvement of existing water distribution system in all the WDS in Area-X & Area-XIII”. With approval of CMWSSB Board and GoTN WATCO has been appointed as PMC on 07.06.2023 and subsequently work order has been issued to WATCO on 09.06.2023. Agreement signed between CMWSSB & M/s.WATCO on 20.07.2023. Asset and consumer survey under progress in Area X and Area XIII.

Package 2:

It is proposed to cover Tondiarpet (Area IV), Royapuram (Area V), Perambur (Area VI), Anna Nagar (Area VIII) and Teynampet (Area IX). The Consultant, M/s.SMEC International & 3 others prepared the Detailed Design Report for Area VI in Design-Bid-Build (EPC mode) at an estimate of Rs.714.07 Cr and is in the process of collecting data for preparation of DPR for Area IV, V, VIII & IX.

E. Chennai City Partnership Programme (CCP)

The Government have accorded in-principle approval for Chennai City Partnership Program and its Disbursement Linked Indicators (DLI) vide G.O.(1D) No.289, Finance (Infrastructure Cell) Department dated 16.09.2021. The participating agencies are Greater Chennai Corporation, Metropolitan Transport Corporation, Water Resources Department, CMWSSB and Chennai Unified Metropolitan Transport Authority. The partnership adopts a framework with three result areas to enable a transition to higher quality, sustainable and resilient services through

- (i) strengthening and professionalizing service delivery institutions
- (ii) improving their operational efficiency and service delivery performance and
- (iii) enhancing financial sustainability.

It is a multi-sector program for results operation (PforR) linked to achievement of key results and indicators. The program development objectives (PDO) for CMWSSB are improvement in service delivery performance and increase in share of operation and maintenance costs recovered through user charges. CMWSSB has to achieve 4 DLIs during the program period.

- i. DLI 4 – Enhance efficiency and transparency of public procurement
- ii. DLI 7 – Improved operational efficiency in water supply
- iii. DLI 8 – Improved access to water supply services
- iv. DLI 10 – Improved financial sustainability of water supply services

Metering Policy

As part of DLI 7 of the Chennai City Partnership, CMWSSB has to adopt a policy for metering. The Board, in its meeting dated 23.11.2022, resolved to approve the metering policy.

The key objectives of the policy are:

- a) To promote water conservation by encouraging efficient water use
- b) To reduce non-revenue water (NRW) and increase cost recovery.
- c) To ensure fairness and equity to all consumers in charging for water services.
- d) To achieve 100% metering of all high-rise buildings and commercial connections by the year 2023 and to achieve 80% of domestic connections (G+2 and below buildings) by the year 2027.
- e) To set out roles and responsibilities of both CMWSSB and consumers in relation to the installation of metered connections, maintenance of the water meters.

This policy covers types of consumers for metering, selection of meter and meter specification and installation guidelines. It also covers the tariff, billing and collection and grievance redressal procedures related to metering. The responsibilities of the Board and consumers with regard to metering are described. The policy further stipulates that CMWSSB shall install water consumption meters for all the consumers having water connections in a phased and progressive manner commencing with high water consumption and high revenue categories and all non-residential and new consumers.

The CMWSSB have taken initiatives to provide measuring devices in the water supply system under smart city mission. As on December 2023, the total number of connections is 770292, out of which 746194 connections are unmetered and 24095 are metered. Out of 746194 unmetered connections, 670652 belong to Domestic, 54140 belong to partly commercial and 21402 belong to Commercial and Institutional. The total meters installed so far is 24,095 nos which is 3.12%.

Bulk Water Metering

Bulk water metering helps in water audit and assessment of non-revenue water (NRW). Water audit provides essential data for system performance studies, facility planning and evaluation of conservation measures.

Based on the proposal from CMWSSB, Government have accorded administrative approval for Rs.43.01 crore under Singara Chennai 2.0 vide G.O. (D) No.54, dated 08.02.2023 for supply, installation and commissioning of electromagnetic flow meters with IoT technology based data transfer facility and allied works in water treatment plants, water distribution stations and filling stations of the Board including comprehensive operation and maintenance for five years. The work is in tender stage.

Metering of all households ensuring at least 1 hour of water supply to all households.

In 2011, Chennai Municipal Council expanded its area from about 176 sq-km to 426 sq-km, by adding 42 local bodies (9 Municipalities, 8 Town Panchayats and 25 village Panchayats). The city is now divided into 15 service areas/zones of which 8 belong to the newly “added areas” and seven belong to “core city”.

Metering of all households ensuring at least 1 hour of water supply to all households intends to measure incremental percentage of households that have a water connection with uninterrupted supply for 1 hour a day in the added areas where CMWSSB has been providing new connections. The target is to achieve coverage of incremental 20% of new HH/domestic connections receiving daily water supply for minimum 1 hour.

Adoption of e-Procurement Roadmap by CMWSSB

The Board, in its meeting dated 23.11.2022, accorded approval for the e-procurement roadmap. The roadmap clearly delineates the types of tenders that will be

invited through e-procurement. It also states that the General Technical Evaluation (GTE) module will be adopted from April 2023 for online evaluation of tenders. Training on GTE module and evaluation of tenders under quality cum costbased selection for consulting services were conducted by NIC for the staff of Contracts and Monitoring wing during August 2022.

Establishment of Service level Bench Marks in CMWSSB

CMWSSB has to establish service level benchmark (SLB) baseline through survey including baseline household connections and hours of supply. The Board, in its meeting dated 23.11.2022, accorded approval for conducting the baseline survey work.

The following five main types of activities will be taken up to develop a robust baseline

1. Validate and update CMWSSB's consumer database
2. Design and implement a household sample survey on access and quality of water services
3. On-site assessment of water supply at the household level on a sample basis
4. Produce baseline estimates, water-services related composite index and reporting system
5. Produce a mapping and data report of un-served pockets in Chennai's core city area

II SEWERAGE MANAGEMENT

Collection, treatment and safe disposal of used water in Chennai city are the primary duties of CMWSS Board. The sewerage system in the core city was installed initially in 1917 and has been divided into five drainage zones. These zones of macro system cover the entire city and have independent zonal collections, conveyance, treatment and disposal facilities. The sewage generated is collected in 322 sewage pumping stations through a 4,419 km long pipe line network. The sewage is then conveyed to sewage treatment plants and disposed safely after treatment.

The present installed capacity of sewerage treatment in the city is 899.80 MLD as detailed in table below.

Zone	Location of STPs	Existing Treatment Capacity (MLD)
I & II	Kodungaiyur (110+120+120)	350
	Thiruvottiyur	31
III	Koyambedu (34+60+120)	214
IV	Nesapakkam (54+40+50)	144
	Nesapakkam TTUF	10
V	Perungudi (60+54+12)	126
	Sholinganallur – I	18
	Modular STPs	
	Chetpet	1
	Choolaimedu	1.2
	Todd Hunter Nagar	4
	Kotturpuram	0.6
	Total	899.80

Operation and Maintenance of Sewerage System

The Board has mechanized the operation and maintenance of the sewerage system to eradicate manual scavenging. The obstructions in the pipeline are removed by jet rodding machines and the solid waste in the machine holes are removed by super sucker machines and desilting machines. At present, 537 machines are deployed for maintaining the sewerage system.

Sewerage Schemes

Schemes under implementation in added areas

Underground sewerage schemes are being implemented in the following 15 added areas namely Nerkundram, Pallikaranai, Manali, Chinnasekkadu, Manapakkam, Karambakkam, Mugalivakkam, Madipakkam, Nandhambakkam, Injambakkam, Kottivakkam, Palavakkam, Neelangerai, Jalladampettai and Uthandi at a cost of Rs.1,551.57 crore.

Construction of additional 54 MLD sewage treatment plant at Sholinganallur.

This sewage treatment plant was sanctioned at a cost of Rs.60.20 crore. Already, one unit of 18 MLD capacity has been commissioned. It uses sequential batch reactor (SBR) technology to treat sewage generated from added areas located along East Coast Road and Old Mahabalipuram Road in the southern parts of Chennai. The another 36 MLD 36MLD capacity STP based on SBR technology with power generation by utilising gas produced is under progress and will be completed by March 2024.

Modular Sewage Treatment Plants

As part of Chennai Rivers Restoration Trust (CRRT) works, modular STPs have been established at Chetpet (1 MLD), Choolaimedu (1.2 MLD), ToddHunter Nagar (4 MLD) and Kotturpuram (0.6 MLD) to prevent sewage outfalls into the waterways.

Chennai is pioneer in recycling and reuse of used water. 20% of used water should be recycled and reused as per the guidelines of Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0). As part of water conservation measures, secondary treated sewage (23 MLD) is being supplied to industries in Manali area. The secondary treated sewage is further treated by the industries through tertiary treatment and reverse osmosis (TTRO) and product water is used for industrial purposes.

CMWSSB has also set up two TTRO plants for producing industrial-grade water.

Tertiary Treatment Reverse Osmosis Plants

Two tertiary treatment reverse osmosis (TTRO) plants of 45 MLD capacity each at Koyambedu and Kodungaiyur are operational and supplying water to industries. This ensures assured and sustainable water supply to industries and reduces the fresh water demand from industries.

Tertiary Treatment Ultra Filtration Plants

In order to ensure sustainability, the CMWSSB has taken up construction of three tertiary treatment ultra filtration (TTUF) plants of 10 MLD capacity each at Perungudi, Nesapakkam and Langs Garden. Amongst these, Nesapakkam TTUF plant was inaugurated by the Hon'ble Chief Minister on 22.11.2022. The product water from Perungudi and Nesapakkam TTUF will be used to supplement the storage in Perungudi and Porur lakes respectively and the product water from Langs Garden plant will be supplied to Southern Railways for wagon cleaning and to the Greater Chennai Corporation.

Preparation of DPR for using 260 MLD of TTUF water for recharging of lakes in and around Chennai has been taken up in association with Indian Institute of Technology (IIT) and Department of Science and Technology (DST), Government of India. The draft detailed project reports for Perungudi and Nesapakkam, in the first phase, have been prepared for recharging of nearby lakes and submitted to World Bank and AIIB for their consideration for investment.

Construction of new STPs and improvement to existing STPs

The Tamil Nadu Pollution Control Board in its fifth updated compilation released on 30.05.2020 has prescribed revised discharge norms based on central enactments, rules, notifications and orders. These norms shown in table would come into effect from 26.05.2026.

Table Standards for sewage treatment plants (STPs)		
	Parameters	Mega and Metropolitan Cities (Chennai)
1.	pH	5.5 - 9.0
2.	Bio-chemical oxygen demand (BOD)	10 mg/l
3.	Total suspended solids (TSS)	20 mg/l
4.	Chemical oxygen demand (COD)	50 mg/l
5.	Nitrogen-total	10 mg/l
6.	Phosphorus (for discharge into ponds, lakes)	1.0 mg/l
7.	Faecal Coliform (FC) (most probable number per 100 ml, MPN/100)	Desirable- 100; Permissible- 230

CMWSSB has taken up construction of 4 new STPs viz. 120 MLD Kodungaiyur – Zone I STP , 120 MLD Kodungaiyur - Zone II STP , 60 MLD Perungudi STP and 50 MLD Nesapakkam STP and improvement works in existing STPs at a cost of Rs.811.40 crore as shown in below table, to enhance treatment capacity and to achieve new disposal standards.

7 Numbers of STPs:

Location	Capacity (MLD)
Construction of new STPs	
Kodungaiyur –I & II	120+120
Nesapakkam	50
Perungudi	60
Total	350
Improvement to existing STPs	
Kodungaiyur	110
Koyambedu (120+60)	180
Nesapakkam(40+54)	94
Perungudi (60+54)	114
Total	498

Among the above, Kodungaiyur- I & II - 120 MLD capacity plants and Nesapakkam 50 MLD capacity plant were inaugurated by the Hon'ble Chief Minister.

Projects under Chennai Rivers Restoration Trust

Chennai Rivers Restoration Trust (CRRT) has taken up the eco-restoration of the Chennai city waterways on behalf of Government of Tamil Nadu. CMWSSB, along with CRRT, has formulated mitigation proposals for the prevention of sewage outfalls into Cooum and Adyar rivers and Buckingham canal and its associated drains. Mitigation measures for Cooum and Adyar rivers at a cost of Rs.186.19 crore and Rs.123.19 crore respectively have been taken up by CMWSSB and work is in progress.

In Adyar, some works (modular STP and I&D works) have been dropped due to ongoing and proposed under ground sewerage schemes in added areas resulting in savings of Rs.64.89 crore from the total project cost of Rs.123.19 crore. To prevent outfalls into Adyar river, 9 works are taken up with the savings for implementation in Area X and XIII at a cost of Rs.64.89 crore and is in progress. These works would strengthen the existing sewerage system.

The Government has given top priority to the restoration of Chennai city waterways. Accordingly, CMWSSB has taken up the proposal of plugging of sewage outfalls in Adyar and Cooum rivers, Buckingham canal and their associated drains. The proposal includes interception and diversion arrangements, strengthening / refurbishment of existing sewerage infrastructure.

The Government has accorded in-principle approval for a total project cost of Rs.2,371 crore to carry out the mitigation proposals and have also accorded administrative sanction for Rs.1,001 crore under Phase-I to carry out the works. Work orders were issued for 36 works for a value of Rs.364.80 crore. Out of 36 works, 28 have been completed and the remaining 08 works are in progress. Revised administrative sanction has been obtained for the works already awarded for a value of Rs.385.38 crore. Proposal for the remaining works at a cost of Rs.468.76 crore is under consideration of the Government.

SEWERAGE SERVICES

Injambakkam

Injambakkam is one among the 42 Local bodies added in the expanded area of Chennai city and located in Kancheepuram District. Injambakkam area is assigned as Division-196 under Zone XV of Expanded Corporation of Chennai City.

Injambakkam area is located on the east of the East coast road at a distance of 5 Kms from thiruvanmiyur and extends over an area of 5.1861 Sq.km bounded by Neelankarai on the North , panaiyar on the South, karapakkam and okkium-Thuraipakkam on the West and Bay of Bengal on the East. Total length of roads is around 50kms. Total No of streets 230. The proposed length of sewer network for Injambakkam is 68.89 km. To suit the topography and to avoid excessive depth of sewers, the contemplated sewerage scheme has been divided in to 14 sub zones with independent Collection System and Sewage Pumping Station / Lift Station to collect and pump the sewage to a downstream Terminal Pumping Station and subsequently to Sewage Treatment Plant. Injambakkam has been divided in to thirteen sub zones proposed with 11 LS (Lift station) and 2 SPS (Sewage Pumping station). Total area covered in the scheme is an extent of 5.18 Sq.Km and the population served is approximately 33,764 Nos. The sewage collected is to be disposed to Sholinganallur STP. The total cost of the project is Rs.196.97 Crore. The project duration is about 36 months. Work order for the project has been issued on 17.08.2023.

Semmanchery

Semmanchery is located next to Sholinganallur on IT corridor (Rajiv Gandhi Salai)

located over an area 701.35 Ha, till recent Semmanchery has been one of the village Panchayats in St.Thomas Mount Panchayat union of Kancheepuram District and subsequently merged with Chennai City. Semmanchery is in Division 200 under revised Zone XV (Sholinganallur) of expanded Corporation of Chennai, bounded by Perumbakkam and Thazhamburon on the West, Uthandi on the East, Navalur on the South and Sholinganallur on the North. Total length of roads is around 43 kms. Total No of streets 236. The proposed length of sewer network for Semmanchery is 19.61 km. Semmanchery has been divided in to seven sub zones proposed with 3 LS (Lift station) and 2 SPS (Sewage Pumping station). Total area covered in the scheme is an extent of 7.00 Sq.Km and the population served is approximately 51,200 Nos. The sewage collected is to be disposed to Sholinganallur STP. The total cost of the project is Rs.78.58 Crore. The project duration is about 30 months. The tender is under evaluation.

Jalladampettai

Jalladampettai located on south of CMA at a distance of 7.5kms south of Velachery and located over an area of 2.28Sq kms. Bounded by Pallikaranai on North East and Perumbakkam on South and Medavakkam on the west. Jalladampettai is part of Sholinganallur assembly and south Chennai parliamentary constituency. Jalladampettai is one among the 42 Local bodies annexed with the Chennai city assigned as Division 191 in expanded Chennai Corporation. Total length of roads is around 43kms and the terrain is sloping from South towards the West, North and North East. Total No of streets is 252. The proposed length of sewer network for Jalladampettai is 33.38 km. Jalladampettai sewer collection system is proposed with 6 Nos of lift stations, 6 Nos of Manhole lift Stations, 2Nos of Sewage pumping station and 2 nos of lift stations for Interception & Diversion Work. Total area covered in the scheme is an extent of 2.28 Sq.Km and the population served is approximately 23,700 Nos. The sewage collected is to be disposed to Sholinganallur STP. The total cost of the project is Rs.92.76 Crore. The project duration is about 36 months. Work order for the project has been issued on 18.12.2023.

Okkium Thoraipakkam

Okkium Thoraipakkam is one among the 42 ULB's added in the expanded Chennai city. It is located in the south part of Chennai, previously a Town Panchayat in St.Thomas Mount Panchayat union of Kancheepuram District and subsequently merged with Chennai City.

Okkium Thoraipakkam falls in Division 193, 194 & 195 under Zone XV (Sholinganallur) of Expanded Corporation of Chennai. Total geographical area is 6.04 sq.km. Okkium Thoraipakkam lies on the Old Mahabalipuram Road (OMR) at a distance of about 7kms from Thiruvanmiyur. It is bounded by Injambakkam and Neelangarai on the east, Pallikaranai on the west, Perungudi on the north and Karapakkam on the south. The total length of the road/streets is about 121.45 Km. It falls under the Sholinganallur Assembly Constituency and South Chennai Parliamentary constituency. The total length of roads/streets in Okkium Thoraipakkam is 121.45km. Out of which 26.61 km length of roads/streets falls within the TNUHDB tenements area where Water Supply & Sewerage facilities have already been provided TNUHDB and maintained by CMWSSB. Total area covered in the scheme is an extent of 6.03 Sq.Km and the population served is approximately 1,41,851 Nos. The sewage collected is to be disposed to Perungudi & Sholinganallur STP. The sewer collection system is proposed with 3 Nos of lift stations and 6Nos of Sewage pumping station. The total cost of the project is Rs.280.80 Crore. The project duration is about 36 months. Tender is under evaluation.

Nandambakkam

Nandambakkam is one among the 42 Local bodies added in the expanded area of Chennai city and located in Kancheepuram District. Nandambakkam area is assigned as Division-158 under Zone XII of Expanded Corporation of Chennai City.

Nandambakkam area is located in the west of the Chennai city extends over an area of 2.61 Sq.km and spreading on both sides of Mount-Poonamallee Road. Total length of roads is around 25kms and the terrain is sloping from South towards the West, North and North East. Total No of streets 82. Total area covered in the scheme is an extent of 2.61 Sq.Km and the population served is approximately 19,100 Nos. The sewage collected is to be disposed to Manapakkam UGSS PS and Nesapakkam STP. The sewer collection system is proposed with 2 Nos of lift stations and 1 Nos of Sewage pumping station. The total cost of the project is Rs.26.94Crore. The project duration is about 18 months. Work order issued and the work is under progress.

Kottivakkam:

Kottivakkam is one among the 42 Local bodies added in the expanded area of Chennai city. Kottivakkam area is assigned as Division-183 under Zone XIV of Expanded Corporation of Chennai City. Kottivakkam area is located between Perungudi on the West, East coast road on the East, Thiruvanmayur on the North and Palavakkam on the South.

The total geographical area is 2.47 sq.km. The total length of the road/streets is around 46.3 Km and the total no of streets is 271 nos. The topography of Kottivakkam area falls on both sides from ECR towards East coast on the East and towards Buckingham canal on the West. Total area covered in the scheme is an extent of 2.47 Sq.Km and the population served is approximately 29,245 Nos. The sewage collected is to be disposed to Perungudi & Sholinganallur STP. The total cost of the project is Rs.418.20 Crore. The project duration is about 36 months. Work order for the project has been issued on 17.08.2023.

Pallavakkam:

Palavakkam is one among the 42 Local bodies added in the expanded area of Chennai city. Palavakkam area is assigned as Division-185 under Zone XIV of Expanded Corporation of Chennai City. Palavakkam is located in the South East boundary of the Chennai City at a distance of about 2kms from Thiruvanmiyur, located on both sides of ECR. Palavakkam shares border with Kottivakkam on the North, Neelankarai on the South, East coast road on the East and Perungudi on the West. The total geographical area of Palavakkam is 2.072 sq.km. The total length of the road/streets in Palavakkam is around 39.8 Km and the total no of streets available is about 266. The topography of Palavakkam area falls either side from ECR towards Sea coast on the East and towards Buckingham canal on the West. Total area covered in the scheme is an extent of 2.07 Sq.Km and the population served is approximately 32,520 Nos. The sewage collected is to be disposed to Perungudi & Sholinganallur STP. The total cost of the project is Rs.418.20 Crore. The project duration is about 36 months. Work order for the project has been issued on 17.08.2023.

Neelankarai:

Neelankarai is one among the 42 Local bodies added in the expanded area of Chennai city. Neelankarai area is assigned as Division-192 under Zone XV of Expanded Corporation of Chennai City. Neelankarai is located in the South East side of Chennai City around 7 kms from Adyar, bordering with Palavakkam in the North, Injambakkam in the South, East coast road in the East and Okkiyam Thoraipakkam in the West. The total geographical area of Neelankarai is 2.805 sq.km. The total length of the road/streets is around 53.31 Km and the total no of streets 237. The overall Network length of Kottivakkam, Palavakkam and Neelankarai area is 137.92 Km (including Parallel mains). Total area covered in the scheme is an extent of 2.80 Sq.Km and the population served is approximately 42,206 Nos. The sewage collected is to be disposed to Perungudi & Sholinganallur STP. The total cost of the project is Rs.418.20 Crore. The project duration is about 36 months. Work order for the project has been issued on 17.08.2023.

Puzhal:

Puzhal, an erstwhile town Panchayat distributed among division 22 and 23 of Madhavaram Zone III of Greater Chennai city Corporation and is located in Ponneri Taluk of Thiruvallur district. Redhills lake, one of the two major rain-fed reservoirs from where water is supplied to Chennai City is located in Puzhal. NH-5 the Grand northern trunk road connecting Chennai with Guntur is passing through the town and Central jail of Chennai is also located in Puzhal. Puzhal shares boundary with Vadaperumbakkam on north, Kathirvedu and Manali in south, Chinnasekadu in east and constituted under Madhavaram assembly and North Chennai parliamentary constituency. Total geographical area is about 6.737 Sq.Km, total length of streets/roads is about 83 Km and No. of assesses are 7597. Total area covered in the scheme is an extent of 6.74 Sq.Km and the population served is approximately 65,322 Nos. The sewage collected is to be disposed to Kodungaiyur STP. The total cost of the project is Rs.632.50 Crore. The project duration is about 36 months. Tender is under evaluation.

Mathur:

Mathur is one among the 42 local bodies added in the expanded area of Chennai city, erstwhile a village panchayat in Ponneri Taluk of Thiruvallur District is now assigned as Division- 19 of Manali Zone II in Chennai Corporation constituted under Madhavaram assembly and North Chennai Parliamentary constituency. Total geographical area is about 2.977 Sq.Km and total length of streets is about 53kms and number of assesses are 6886. Total area covered in the scheme is an extent of 2.98 Sq.Km and the population served is approximately 36,769 Nos. The sewage collected is to be disposed to Kodungaiyur STP. The total cost of the project is Rs.632.50 Crore. The project duration is about 36 months. Tender is under evaluation.

Kathirvedu:

Kathirvedu is one among the 42 local bodies added in the expanded area of Chennai city, erstwhile a village panchayat is now assigned as Division- 25 of Manali Zone III in Chennai Corporation. Kathirvedu is bounded by Madhavaram and Rettri lake in the East, Puzhal in North & West and Korattur division in the south. Total geographical area is about 1.59 Sq.Km, and total length of streets/roads is about 37.73 Km. As per the 2011 census, total population was 7580, and projected as 12428, 21110 and 35857 for the years 2025, 2040 and 2055 respectively. The profile of the terrain is falling from South towards North East.

Vadaperumbakkam & Theeyambakkam:

Theeyambakkam once a village panchayat was merged in to Ariyalur village from 2001 onwards, this union includes Chettimedu and Kossapur also. As on date, total union of Theeyambakkam and Vadaperumbakkam do not have Underground Sewerage System, many of the households are having soak pits and septic tanks for disposal of sewage, in some cases sewage is being discharged into storm water drain also. Since, the population density for Vadaperumbakkam & Theeyambakkam is assumed including the future development of vacant area of 2.29 Sq.Km, the collection system and subsequent pumping mains & pumping stations are designed considering the contributing population of 36,070 Nos for ultimate year (2055). The total length of proposed sewer network for Vadaperumbakkam, Theeyambakkam, Puzhal, Mathur & left out streets of Kathirvedu is 183.38 Km

Uthandi

Uthandi is a Village in St. Thomas Mount Taluk of Kanchipuram District and is located 68 KM towards East from District headquarters Kanchipuram, 12 KM from St. Thomas Mount and 24 KM from State capital Chennai. Uthandi is one among the 42 Local bodies annexed with the Chennai city assigned as Division 197 (Old no.199) in expanded Chennai Corporation. Uthandi area is located in the west of the Chennai city extends over an area of 3.4 Sq.km and profile of the project area falls on either side of East coast Road with elevation varying between 6m at ECR to 0.5m on east coast and up to 2m towards Buckingham canal. Total length of roads is around 26kms and the terrain is sloping from South towards the West, North and North East. Total No of streets 89. The proposed length of sewer network for Uthandi is 31.612 km. Total area covered in the scheme is an extent of 3.41 Sq.Km and the population served is approximately 9400 Nos. The sewage collected is to be disposed to Sholinganallur STP. The sewer collection system is proposed with 9 Nos of lift stations and 2 Nos of Sewage pumping station. The total cost of the project is Rs.82.00 Crore. The project duration is about 30 months. Work order for the project has been issued on 17.08.2023.

Edayanchavadi, Sadayankuppam & Kadappakkam

Edayanchavadi, Sadayankuppam & Kadappakkam is one among the 42 local bodies added in the expanded area of Chennai city. Edayanchavadi, Sadayankuppam & Kadappakkam Village panchayat are now assigned as Division- 15 & 16 in Chennai Corporation. Since the area now falls under Chennai Corporation limits it becomes mandatory for CMWSSB to

provide water supply and sewerage scheme to these areas. Edayanchavadi, Sadayankuppam & Kadappakam division extends over an area of 8.7sqkm, 6.9sqkm and 3.11sqkm respectively. Edayanchavadi, Sadayankuppam & Kadapakkam are bounded by Kathivakkam and Thiruvottiyur in the East, Manali & Theeyambakkam in the South, Vallur in the North and Vichoor in the West. The total length of 262 Road/ streets in Edayanchavadi, Sadayankuppam & Kadapakkam is 88 Kms. The terrain of this town falls from 4.5m to 1.1m.

Left out streets of Madhavaram

The project envisages providing sewerage facilities for the Left out areas of Madhavaram (Division-26,27,28,30,31 and 33) Area III, comprising of Providing Collection system(Network of sewers),Construction of Pumping stations,Laying of Pumping mains and House service connections. The ultimate average flow generation from Madhavaram(including the existing sewerage infrastructure already laid about 105KM) is projected as 63.22MLD.The total length of streets/roads in Madhavaram is 208.71Km. Out of total length of 208km, the sewerage facilities have already been provided for length of 105Km.Now, UGSS for left out areas of Madhavaram including the left out streets in the existing sewer network is proposed for the total length of about 99.828Km. Total area covered in the scheme is an extent of 17.41 Sq.Km and the population served is approximately 2,36,129 Nos. The sewage collected is to be disposed to Kodungaiyur STP. The sewer collection system is proposed with 6 Nos of lift stations and 3 Nos of Sewage pumping station. The total cost of the project is Rs.439.65 Crore. The project duration is about 36 months. The tender is under evaluation.

FUTURE PLANS FOR COMING YEARS IN TERMS OF APPROVED SCHEMES SEWERAGE

“Preparation of Detailed Project Reports for Improvement of Existing Sewerage System in Core Area of Greater Chennai City (174 Sq.Km) and Providing SCADA for the entire Greater Chennai City (426 Sq.Km)”

The sewage generated from the residences of the city is collected through the network of sewage collection system of 3597 Km Sewer Mains which is pumped through 273 Nos of Pumping Stations in the city to the 4 Sewage Treatment Plants with a total capacity of 727 MLD. The sewerage system in the old city areas which includes Area – IV, V, VI, VIII, IX, X & XIII have been in existence for over 30 years. The capacity of the Gravity Main, Wells, Pumping Main and pumping equipments are inadequate to meet the present population requirements and hence, the sewerage system could not be operated under full efficiency.

In addition to this, in most of the reaches the existing pipes are incrustated and thus the part of the existing Sewerage system requires renewal in the project area. Therefore, it is necessary to improve the existing Sewerage system in the project area for the effective disposal of sewage.

- a) Improvement works of Sewage Pumping Station / Lift Station and Collection System Network in the project area of 174Sq.Km.
- b) Verifying the adequacy of STP for disposal of sewage from the project area.
- c) To establish safe disposal of sewage as per CPHEEO. Providing / Rehabilitation / Revamping / Redesigning / Designing of the entire Collection System including Pumping mains, Pumping stations, etc.
- d) Enhancing the adequacy and efficiency of existing Pumps by replacement/additional Pump capacity.
- e) To control the odour level in the existing Sewage Pumping Station / Lift station by cost effective and environment friendly odour control measures/methodology.
- f) Introducing any novel technology for removing silt in the design of Collection system network / Manhole.
- g) Effecting innovative technologies which are practically implemented in sewerage projects.
- h) Establish the Central Monitoring SCADA system for Sewerage system operation & maintenance for the entire Chennai City of 426Sq.Km
- i) To ensure the safe disposal of sewage from collection system to Pumping station and in turn into Sewage Treatment Plants.
- j) Supplying and fixing suitable flow meter / measuring instrument to access the quantity of sewage pumped in each pumping station.

Project Development Consulting Services for Preparation of Assets and Utility Maps using Geo-Spatial Techniques (GIS)

- The Scope of the project is to survey and map geo spatially all the underground and above ground assets and utilities of CMWSSB (both water & sewer).
- Assets being mapped comprises from water source to the house service connection including the WTP, transmission mains, WDS and distribution lines and the entire sewer network from house service connection till treatment & disposal including the sewer collection system, pumping stations, conveying mains and STPs.

- All facilities along with land details are being geo tagged using DGPS/ RTK survey along with extensive attribute data to create robust Geo-database for CMWSSB.
- After completion of this assignment, the geo database created will be updated continuously using GIS Control room (Data Centre) proposed to be created to update the data of assets and utilities on regular basis.

III.FINANCIAL TRENDS

1. The following section provides a synopsis of financial trend of the Board for FY 20-21 and FY 21-22.

During the year, the Board has made revenue expenses of Rs.11.17 Crs, and capital expenses of 10231.45 Crs, this is 2.12 percentage more than expenditure incurred during the previous year for revenue expenses and 12.97 percentage more than expenditure incurred during the previous year for capital expenses.

Revenue expenses items for F.Y 2021-22 and 2020-21in Crores.						
Description	2021-22 (Rs.) provisional	2021-22(In %)	2020-21 (Rs.)	2020-21(In %)	Difference	Difference (In %)
O&M Expenditure	694.12	62.16%	662.73	60.61%	31.39	4.74%
Employees cost	249.47	22.35%	250.58	22.92%	-1.11	-0.44%
Office and administration expenses	9.60	0.86%	8.21	0.75%	1.39	16.93%
Water lorry hire charges	83.56	7.48%	88.33	8.08%	-4.77	-5.40%
Finance charges	79.89	7.15%	83.65	7.64%	-3.76	-4.49%
Total	1116.64	100%	1093.5	100%	23.14	2.12%

Capital expenses items for F.Y 2021-22 and 2020-21 in Crores.						
Description	2021-22 (Rs.) provisional	2021-22(In %)	2020-21 (Rs.)	2020-21(In %)	Difference	Difference (In %)
Fixed asset	10231.45	78.17%	9056.71	79.51%	1174.74	12.97%

2. Own source revenue of the Board was Rs.1203.95Crores, an increase 8.36 percentage over the previous year.
3. Own sources revenue made up Rs.831.21 Crores, an increase/decrease of 26.21 percentage over the previous year.

Income and Expenditure items for F.Y 2021-22 and 2020-21 in Crores						
Description	2021-22 (Rs.) provisional	2021-22 (In %)	2020-21 (Rs.)	2020-21 (In %)	Difference	Difference (In %)
Sale of water & sewerage charges	591.16	49.10%	481.32	43.32%	109.84	22.82%
Water and sewerage tax *	240.05	19.94%	232.17	20.90%	7.88	3.39%
Grants and subsidies	236.49	19.64%	224.32	20.19%	12.17	5.43%
Other income	127.00	10.55%	79.51	7.16%	47.49	59.73%
Prior period adjustment	9.24	0.77%	93.73	8.44%	-84.49	-90.14%
Total	1203.94	100%	1111.05	100%	92.89	8.36%
O&M Expenditure	694.12	55.59%	662.73	53.57%	31.39	4.74%
Employees cost	249.47	19.98%	250.58	20.26%	-1.11	-0.44%
Office and administration expenses	9.60	0.77%	8.21	0.66%	1.39	16.93%
Water lorry hire charges	83.56	6.69%	88.33	7.14%	-4.77	-5.40%
Depreciation	127.97	10.25%	130.01	10.51%	-2.04	-1.57%
Finance charges	79.89	6.40%	83.65	6.76%	-3.76	-4.49%
Provision for doubtful debts	4.14	0.33%	13.57	1.10%	-9.43	-69.49%
Total	1248.75	100%	1237.08	100%	11.67	0.94%
Deficit*	-44.81		-126.03			

- One of the major reasons for increase in revenue during FY 2021-22 compared to FY 2020-21, is due to increase in supply of Tertiary Treated Water to Industries based on their demand
- Secondly, the increase is due to conversion of unmetered consumers primarily pertaining to the commercial and partly commercial category into metered consumers by fixing AMR meters and charging the consumers on volumetric actual consumption basis instead of flat fixed tariff.
- The increase is also due to increase in number of new connections during the FY 2021-22 over FY 2020-21
- Tariff for Domestic and Partly Commercial consumers increased by 5% and Commercial, Institutional and Industrial consumers by 10% with effect from 1st half of 2023-24 and every year thereafter.

Metered and Unmetered revenue items for F.Y 2021-22 and 2020-21 in Crores.						
Description	2021-22 (Rs.) provisional	2021-22 (In %)	2020-21 (Rs.)	2020-21 (In %)	Difference	Difference (In %)
Domestic	99.2	16.78%	92.8	19.28%	6.40	6.90%
Commercial	216.03	36.54%	189.69	39.41%	26.34	13.89%
Institutional	24.71	4.18%	20.7	4.30%	4.01	19.37%
Municipalities	13.22	2.24%	5.4	1.12%	7.82	144.81%
Sale of treated Water	19.57	3.31%	16.75	3.48%	2.82	16.84%
Mobile Water Supply	34.04	5.76%	43.56	9.05%	-9.52	-21.85%
Sewer Charges	184.39	31.19%	112.41	23.36%	71.98	64.03%
Total	591.16	100%	481.31	100%		

- New connection drives especially in added areas of Greater Chennai Corporation (GCC) are being conducted to increase the revenue base for user charges
- As per the latest Metering policy of the Board, it is proposed to make 100% of the Commercial and Multi Storied Buildings connections as metered by the year 2024 and 85% of domestic connections by the year 2027.
- Moreover, all the new connections would compulsorily be fitted with a meter for charging on volumetric tariff
- Identification of Upward Revision of Category of consumers periodically based on comparison of GCC data base and TNEB database with CMWSSB database
- Increase in revenue grants by Rs. 12.17 Crore from Government for FY 2020-21 to 2021-22 is due to additional amount received towards State disaster relief fund for tackling the situation of Nivar cyclone and Pandemic situation of Covid -19.
- As per the request of CMWSS Board, Government had released a sum of Rs.135.96 Crore in FY 2022-23 under 6th State Finance Commission to compensate the revenue deficit of the Board. Government is currently providing Rs.36 Crore on annual basis for supplying of water to slum tenements. CMWSSB is continuously representing the government for additional grant since the expenditure incurred is around Rs.80 Crore on an average. In this regard, CMWSSB had requested Rs.79.78Cr and Rs.88.23Cr for Financial year 2020-21 and 2021-22 respectively for Water supply to Slum Tenements in Government Budget.

4. As per the income & expenditure account, the board had a deficit on revenue account amounting to Rs.44.80 Crores.
5. The Board's assets have increased by Rs.1697.94 Crores.

Assets items for F.Y 2021-22 and 2020-21 in Crores.						
Description	2021-22 (Rs.) provisional	2021-22 (In %)	2020-21 (Rs.)	2020-21 (In %)	Difference	Difference (In %)
Fixed asset	10231.45	78.17%	9056.71	79.51%	1174.74	12.97%
Current asset	2857.70	21.83%	2334.50	20.49%	523.20	22.41%
Total	13089.15	100%	11391.21	100%	1697.94	

6. The ULB's liabilities have increased by Rs.385.12 Crores, primarily due to increase in deferred credits and current liabilities.

Liabilities items for F.Y 2021-22 and 2020-21 in Crores.						
Description	2021-22 (Rs.) provisional	2021-22 (In %)	2020-21 (Rs.)	2020-21 (In %)	Difference	Difference (In %)
Long term borrowings	1915.32	38.75%	1919.88	42.12%	-4.56	-0.24%
Deferred credits and deposits	1751.69	35.44%	1588.64	34.85%	163.05	10.26%
Current liabilities	1276.18	25.82%	1049.54	23.03%	226.64	21.59%
Total	4943.19	100%	4558.06	100%	385.12	8.45%

7. The Board's net worth has increased during the year. However the accumulated deficit is cause of concern.
8. The Board has taken Rs.16crs loan (Rs.7crs and Rs.9crs) during the year for 45MLD TTRO Kodungaiyur as part of funding pattern as G.O (Ms) NO.1 and G.O (Ms) NO.152.

Metered and Unmetered revenue items for F.Y 2021-22 and 2020-21		
Description	2021-22 (Rs.) provisional	2020-21(Rs.)
Domestic	99.2	92.8
Commercial	216.03	189.69
Institutional	24.71	20.7
Municipalities *	13.22	5.4
Sale of treated Water	19.57	16.75
Mobile Water Supply	34.04	43.56
Sewer Charges	184.39	112.41
Total	591.16	481.31
Income and Expenditure items for F.Y 2021-22 and 2020-21		
Description	2021-22(Rs.)provisional	2020-21(Rs.)
Sale of water & sewerage charges	591.16	481.32
Water and sewerage tax *	240.05	232.17
Grants and subsidies	236.49	224.32
Other income	127	79.51
Prior period adjustment	9.24	93.73
Total	1203.94	1111.05
O&M Expenditure	694.12	662.73
Employees cost	249.47	250.58
Office and administration expenses	9.6	8.21
Water lorry hire charges	83.56	88.33
Depreciation	127.97	130.01
Finance charges	79.89	83.65
Provision for doubtful debts	4.14	13.57
Total	1248.75	1237.08
Deficit*	-44.81	-126.03