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DEMAND NO.34

MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

Policy Note – 2020-2021

1. Introduction

The process of transformation from traditional rural economy to modern industrial one is termed as Urbanisation. It relates to change from spread-out pattern of human settlements to clusters in urban centres. Thriving towns and cities are essential elements of a prosperous national economy. The gathering of economic and human resources in one place stimulates innovation and development in business, science, technology and industry. Urbanisation results in growth in the size of the urban population and the extent of urban areas. The principal reason driving people to move to cities is that these centres provide much greater job

opportunities. The availability of services in the areas of literacy, education, better health, a longer life expectancy, greater access to social services and enhanced opportunities for cultural and political participation are other major contributing factors for people's movement from rural to urban areas.

1.1. Global Urbanisation Perspective

55% of the world's population lives in urban areas, which is expected to increase further to 68% by 2050. The world's largest city is Tokyo having agglomeration of 37 million inhabitants, followed by Delhi with 29 million, Shanghai with 26 million Mexico City and Sao Paulo, each with around 22 million inhabitants. Cairo, Mumbai, Beijing and Dhaka all have close to 20 million inhabitants. By the end of the year 2020, Tokyo's population is projected to begin to decline, while Delhi is projected to continue growing and to

become the most populous city in the world around 2028.

The world is projected to have 43 megacities by the year 2030, with more than 10 million inhabitants, most of them in developing Countries. Close to half of the world's urban dwellers are residing in 33 megacities in the world. Some of the fastest-growing urban agglomerations are cities in Asia and Africa with inhabitants lesser than 1 million. Projections show that Urbanisation combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2050. Around 90% of such increase are taking place in Asia and Africa.

The future increase in the size of the world's urban population is expected to be highly concentrated only in few countries. India, China and Nigeria will account for 35% of the projected growth of the world's urban population between

2018 and 2050. By 2050, it is projected that India will add 416 million, China 255 million and Nigeria 189 million urban dwellers.

The urban population of the world has grown rapidly from 751 million in 1950 to 4.2 billion in 2018. The most urbanized regions include Northern America (with 82% of its population living in urban areas in 2018), Latin America and the Caribbean (81%), Europe (74%) and Oceania (68%). The level of Urbanisation in Asia is now approximately 50%. Asia, despite its relatively lower level of Urbanisation, is home to 54% of the world's urban population, followed by Europe and Africa with 13% each.

1.2. Urbanisation in India

India's urban population constitutes a sizeable proportion of world's urban population. People migrate to towns and cities in hope of gaining a better standard of living. They are influenced by pull factors that attract them to urban life and

push factors that make them dissatisfied with rural living.

India shares most characteristic features of urbanisation in the developing countries and is at acceleration stage in the process of Urbanisation. Number of urban agglomeration has grown from 1,827 in 1901 to 7,935 in 2011. Number of the total population has increased from 238.4 million in 1901 to 1.2 billion in 2011. Population residing in urban areas has increased from 25.8 million in 1901 to 377.1 million in 2011.

Globally, there exists a tight positive relationship between per capita income levels and Urbanisation rates. Within India, there is a strong relationship between per capita income levels and urbanisation rates. Relatively richer States such as Maharashtra, Kerala, Tamil Nadu and Gujarat have urbanisation rates above 40% while poorer

States such as Odisha and Bihar have urbanisation rates less than 20%.

1.3. Urbanisation in Tamil Nadu

Urbanisation and Urban growth are inter-related. Urbanisation is one of the important realities of recent decades in Tamil Nadu. Tamil Nadu ranks first in the Country with respect to proportion of urban population and also second largest contributor to the economy and eleventh largest state by area. The State urban population accounts to 9.3 per cent of the National urban population.

The area of the State is 130,058 sq.km. of which the urban area accounts for 12,525 sq.km. Tamil Nadu have the highest number of statutory towns in the country followed by Uttar Pradesh, Madhya Pradesh Maharashtra and Karnataka. A statutory town is defined as any place with a Municipality, Corporation, Cantonment board or Notified town area Committee.

As per 2011 Census, the total urban population in the State was 34.92 million much increased from 27.48 million in 2001 Census. Cities exist and grow because of economies of urban agglomeration associated with industrial and trade activities. In the recent past, liberalization, rapidly growing IT sector, availability of educated, hardworking and disciplined work force and accelerating economic development also contributed to the growth of urban areas in Tamil Nadu. As a result, there was a significant rise in the proportion of urban population to 44 percent in 2001. In 2011, it had further moved up to 48.5 percent which was significantly higher than that of all India average growth rate of urban population (31.2%). The projection indicates that the total population of Tamil Nadu will reach a maximum of 76.8 million in 2031.

The decadal growth rate of urban population has consistently been higher. Due to faster growth of the economy of State, Urbanisation leads to widening gap between demand and supply of essential goods, services and infrastructure. Government of Tamil Nadu adopt appropriately planned programmes in order to meet the challenges of growing infrastructure needs due to rapid urbanisation.

The Government of Tamil Nadu emphasis on the importance of urban development is based on its 'Vision Tamil Nadu 2023' document. It aims to "promote and facilitate the development of inclusive and sustainable cities". Tamil Nadu Vision 2023 is to create and promote urban infrastructure with an outlay of ₹ 2.75 lakh crore during the 11 year period 2012-2023. It is committed to facilitate regional and balanced development across the State through provision of affordable housing to economically weaker

sections, ensuring universal access to 24 x 7 water supply and sanitation services, achieving open defecation-free state, introducing modernized solid waste management system visualizing garbage free environment and access to mass transit system for efficient urban transport.

1.4. Municipal Administration and Water Supply Department

The Municipal Administration and Water Supply Department is entrusted with a task of improving the quality of urban life with sustainable urban infrastructure facilities. The Department is responsible to frame policies and programs, structured institutional & financial arrangements, adoption of technological advancement in providing citizen services and taking appropriate measures for sustainable development.

The Department also focuses on Sustainable Development Goals such as human well being, economic prosperity and environmental protection to achieve a holistic and multi-dimensional development in urban sector.

The Municipal Administration and Water Supply Department is governing 15 Municipal Corporations, 121 Municipalities and 528 Town Panchayats as listed below:

SI No	Districts	Corporations	Municipalities	Town Panchayats
1	Ariyalur	0	2	2
2	Chengalpattu	0	8	12
3	Chennai	1	0	0
4	Coimbatore	1	3	37
5	Cuddalore	0	5	16
6	Dharmapuri	0	1	10
7	Dindigul	1	3	23
8	Erode	1	4	42
9	Kallakurichi	0	1	7
10	Kancheepuram	0	1	5

Sl No	Districts	Corporations	Municipalities	Town Panchayats
11	Kanniyakumari	1	3	55
12	Karur	0	2	11
13	Krishnagiri	1	1	6
14	Madurai	1	3	9
15	Nagapattinam	0	4	8
16	Namakkal	0	5	19
17	Nilgiris	0	4	11
18	Perambalur	0	1	4
19	Pudukkottai	0	2	8
20	Ramanathapuram	0	4	7
21	Ranipet	0	5	9
22	Salem	1	4	33
23	Sivagangai	0	3	12
24	Thanjavur	1	2	22
25	Theni	0	6	22
26	Tenkasi	0	5	18
27	Thiruvallur	1	4	10
28	Thiruvannamalai	0	4	10
29	Thiruvarur	0	4	7
30	Thoothukudi	1	2	19
31	Tiruchirappalli	1	3	16

Sl No	Districts	Corporations	Municipalities	Town Panchayats
32	Tirunelveli	1	2	18
33	Tirupattur	0	4	3
34	Tiruppur	1	5	16
35	Vellore	1	2	4
36	Villupuram	0	2	8
37	Virudhunagar	0	7	9
	Total	15	121	528

The Municipal Administration and Water Supply Department is administering the following Departments and Organizations:

1. Commissionerate of Municipal Administration (CMA)
2. Greater Chennai Corporation (GCC)
3. Directorate of Town Panchayats (DTP)
4. Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
5. Tamil Nadu Water Supply and Drainage Board (TWAD Board)

6. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)
7. Chennai Rivers Restoration Trust (CRRT)
8. Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited (TUFIDCO)
9. New Tiruppur Area Development Corporation Limited (NTADCL)
10. Tamil Nadu Water Investment Company Ltd (TWIC)

2. Commissionerate of Municipal Administration

Government has taken concerted initiatives to provide good quality of life and improve the living conditions of the urban citizens. Government is focusing its efforts towards growth oriented policies and the infrastructure development has been given a major thrust for the sustained growth of the urban areas.

The Commissioner of Municipal Administration heads the Department of Municipal Administration. He is assisted by Joint Commissioner, Additional Directors & Joint Directors at the State Level and 7 Regional Directors of Municipal Administration (one each for Chengalpattu, Vellore, Salem, Tiruppur, Thanjavur, Madurai and Tirunelveli regions) at the Regional level.

There are 14 Municipal Corporations viz., Madurai, Coimbatore, Tiruchirappalli, Tirunelveli,

Salem, Tiruppur, Erode, Vellore, Thoothukudi, Dindigul, Thanjavur, Hosur, Nagercoil and Avadi and 121 Municipalities under the administrative control of the Commissionerate of Municipal Administration. The Municipalities are classified into different grades as per revised norms passed as per G.O.(Ms) No.113 Municipal Administration & Water Supply [MA-V(2)] Department, dated 30.08.2019 based on their annual income as follows:-

Sl.No.	Grade	Annual income (₹ crore)	No. of Municipalities
(1)	(2)	(3)	(4)
1	Special Grade	Above 15.00	18
2	Selection Grade	9.00 - 15.00	27
3	First Grade	6.00 - 9.00	32
4	Second Grade	Below 6.00	44
Total			121

2.1. Infrastructure Development

The main important function of the Urban Local Bodies is creation of infrastructure and ensure maintenance of all the amenities. The Government accords highest priority to the creation of quality and functional infrastructure. Works in urban local bodies are taken up by accessing financial assistance through various Central and State Government schemes and from external funding agencies like World Bank, German Development Bank (KfW), Japan International Cooperation Agency (JICA) and Asian Development Bank (ADB).

2.2. Solid Waste Management (SWM)

The most vital problem faced by any urban local body in the State today is Municipal Solid Waste Management (MSWM). Rapid urbanisation and changing lifestyles have led to the generation of huge amount of garbage and waste in the urban areas over the past few decades, that just

handling this Municipal Solid Waste (MSW) has assumed the proportion of a major organizational, financial and environmental challenge.

2.2.1. Solid Waste Management Rules 2016 & SWM Policy

To address the growing concern regarding the safe collection, transportation, scientific processing and safe disposal of the solid waste generated, the Ministry of Environment, Forests & Climate Change devised the Solid Waste Management Rules, 2016 which clearly mandates the framing of State policy on Solid Waste Management and the framing of Solid Waste Management plan by each and every Urban Local body.

Tamil Nadu State Policy on Solid Waste Management was notified on 24.08.2018. All ULBs have framed & notified the bye laws with provisions for user fee & spot fines. Solid Waste Management policy and action plan have been

notified in the Gazette by all ULBs and also the Tamil Nadu Pollution Control Board (TNPCB) has issued authorization under SWM Rules, 2016 to all ULBs

About 6,394 MT of solid waste is being generated in 14 Corporations (except Chennai) and 121 Municipalities. Out of which, wet waste is 3,721 MT and Dry waste is 2,673 MT. Solid Waste Management activities such as source segregation and door to door collection, transportation and processing of solid waste are effectively executed in all 135 ULBs by using Battery operated vehicles (BOVs), Light commercial vehicles (LCVs) and other equipments.

The Wet fraction of the Solid Waste is scientifically processed and disposed by processing in the Decentralized Micro Compost Centres (MCCs), Onsite Composting Centres (OCCs), Windrow composting plants,

Vermicomposting plants and Bio-methanation plants established in the ULBs.

Similarly, the dry waste is being collected and stored at Resource Recovery Centres and disposed to the identified vendors for recycling. 175 Resource Recovery Centres are established in ULBs to collect and store the dry waste for further processing. The non recyclable and combustible waste is separated and transported to nearby cement plants and also to the incinerators available for proper scientific disposal.

The e-waste is collected once in a month and stored in Resource Recovery Centres before disposing to TNPCB authorized vendors.

Construction and Demolition (C&D) waste collection points are identified and earmarked in all ULBs.

Bio-mining process is taken up in a big way to remove the legacy waste from dump yards to

prevent further environmental degradation. Tamil Nadu has achieved status of a leading State in the Country in this aspect

2.2.2. Wet Waste Processing Methods

(a) Bio-Methanation Plants

47 Bio-Methanation Plants with total capacity of 197 TPD has been established in 11 Corporations & 27 Municipalities at a project cost of ₹ 37.42 crore under various schemes to process the food waste, vegetable market waste, slaughter house waste etc. The capacity of plants ranges from 1 TPD to 10 TPD. The bio-gas is used in Gasifier Crematorium and the electricity generated from some of the plants are being used for illuminating the lights in the compost yards, MCCs and STPs.

(b) Decentralized Micro Compost Centre

Decentralized approach is being implemented in all the Corporations and Municipalities after

demarcating the ULB into service areas comprising of 4 to 5 wards. A Micro Composting Centre is established in each service area for processing the wet waste and converting into manure. This encourages the collection and disposal mechanism of wet waste in a decentralized manner which helps to minimise the secondary transportation cost and also to have bin free streets.

At present 811 Nos of Micro Compost Centres for handling the biodegradable waste of 3,820 TPD are sanctioned of which 550 Nos of MCCs with the capacity of 2,590 TPD are put to use in all Corporations and Municipalities. The manure generated from MCCs are distributed to farmers / households at free of cost.

(C) Windrows composting

258 TPD of wet waste in 36 ULBs (5 Corporations and 31 Municipalities) is being processed through Windrows Composting.

(d) Onsite Composting

Onsite Composting Centers (OCCs) are constructed in parks and gardens to process the horticultural waste. So far, 876 OCCs are functioning in 14 Corporations & 121 Municipalities handling 416 TPD.

2.2.3. Incineration Plants

Incineration plants are proposed in feasible ULBs to process the combustible dry waste such as plastics, clothes and other combustible materials. Incineration plants with capacity ranging from 10 TPD to 25 TPD have been sanctioned in Erode, Dindigul & Tirunelveli Corporations and Idappadi and Mettupalayam Municipalities on cluster basis at an estimated cost of ₹ 5.60 Crore for the year 2019-20.

2.2.4. Bio-Mining and Bio capping of legacy waste

Reclamation of dump yard suffused with legacy waste is reclaimed through bio mining. Bio-mining of old and abandoned dump sites have been taken up in 9 Corporations and 86 Municipalities to remove the 78.25 lakh Cu.m of legacy waste through bio remediation process under Swachh Bharat Mission and Smart City Mission.

Bio-Mining has been completed in Kumbakonam, Pammal, Sembakkam & Poonammalle Municipalities by clearing 3,08,376 Cu.m of legacy waste so far and 22 acres of land has been reclaimed. Bio-mining in 91 ULBs are in various stages.

Centre for Environmental studies, Guindy Campus, Anna University Chennai is engaged as Third Party inspection agency in 95 ULBs for guidance in technical aspects of Bio-mining works.

Scientific Bio-capping of legacy waste has been completed in Madurai, Coimbatore and Tirunelveli Corporations and is under progress in Salem Corporation.

2.2.5. Plastic Ban

Government order issued vide G.O.(Ms)No.84, Environment & Forests (EC2) department, dated 25.06.2018 in accordance with the announcement of the Hon'ble Chief Minister under Rule 110 to the effect that one time use and throw away plastics irrespective of thickness is banned with effect from 01.01.2019 under Environment (Protection) Act,1986 in order to ensure prevention of storage, supply, transport, sale, distribution and use of one time use plastics such as plastic carry bags, plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups and plastic tumblers, water pouches , sachets and packets,

plastic straw and plastic flags irrespective of their thickness.

Bye-laws including provision for spot fines have been framed in accordance with Plastic Waste Management Rules, 2016 by all the ULBs and notified in the Gazette.

Continuous IEC activities are being carried out in public places, schools, households to eradicate the plastic. Rallies and awareness campaigns are organised for the school students, College students and the public at large to detail the ill-effects of the usage of plastics.

The ULBs have conducted exhibitions with the active participation of the public regarding the availability of alternates to plastic products and propagate its usage. Training programmes were conducted on the making of eco-friendly alternative products with the active coordination of SHGs. Usage of stainless steel tumblers instead of plastic cups, steel containers instead of plastic

containers, cloth bags/eco-friendly bags made out of starch products instead of plastic carry bags to get commodities from shops, taking our own containers to buy food from hotels, avoiding the usage of plastic straws are some of the habits that are inculcated in the minds of the people to achieve the objective of complete eradication of plastic usage.

Surprise raids are conducted in all the ULBs with special emphasis on fruit & vegetable stalls, Flower vendors, Chicken and Mutton stalls to seize such type of plastics. Upto December 2019, 81,826 raids have been conducted in all ULBs and a total quantity of 960 MT of plastics have been seized and a fine of ₹ 4.35 crore has been collected.

2.3. Water Supply

Access to and provision of safe drinking water to every household in the ULB has been one of the primary concerns of the Government.

Ensuring equitable and adequate supply of safe drinking water and its effective delivery is a major challenge for the ULBs.

To achieve the above primary objective, the Government has initiated various water supply projects under Tamil Nadu Urban Development Project(TNUDP - III), Urban Infrastructure Governance (UIG) and Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Jawaharlal Nehru National Urban Renewal Mission(JnNURM), Japan International Co-operation Agency (JICA)and German Development Bank (Kfw). Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Tamil Nadu Sustainable Urban Development Project (TNSUDP). Para-statal agencies such as the TWAD Board and the CMWSS Board have also taken up the implementation of water supply schemes.

Apart from the Para-statal agencies, certain Corporations and Municipalities have started

implementing of major water supply schemes on their own.

Norms prescribed by Central Public Health and Environmental Engineering Organization (CPHEEO) for drinking water supply in Corporations and Municipalities covered by under ground sewerage system is 135 Litres Per Capita per Day (LPCD) and 90 LPCD for non UGSS towns. The aim of the ULBs is to implement water supply schemes with the objective of achieving these norms.

The status of water supply in Corporations and Municipalities are as detailed below:

ULBs	Range (LPCD)	No of ULBs
Corporations	110 LPCD& Above	11
	70 LPCD to 109 LPCD	2
	Below 70 LPCD	1
Municipalities	90 LPCD & Above	71
	40 LPCD to 89 LPCD	50
		135

Under implementation of several water supply schemes, the water supply increased to 1,904.98 MLD and the corresponding per capita supply also increased to 126 LPCD.

Sl.No	Source of Funding	No. of Local Bodies	Estimate Cost (₹ in crores)	Completed ULBs	Ongoing
1.	TNUDP III	16	661.65	Tirunelveli (Thachanallur) Gobichettypalayam, Pollachi, Bodinayakanur, Salem stage-1 & II, Kurichy, Kuniyamuthur, Koundam palayam, Vadavalli (Merged with Coimbatore Corporation), Tiruvannamalai, Sivagangai, Thuraiyur, Krishnagiri, Kuzhithurai	Pallavapuram, Pammal, Theni-Allinagaram

2.	UIG (JnNURM)	10	613.30	Madurai (Vaigai-II and Checkdam), Coimbatore (Pillur-II), Tambaram, Anaiyur, Tirupparakundr am, Avaniyapuram, (Merged with Madurai Corporation), Tirumangalam, Coimbatore added area (Thudiyalur, Vellakinaru, Kalapatti, Saravanampatti & Chinnavedam patti), Avadi	Anakaputtur
3.	UIDSSMT	40	740.47	Devakottai, Karur, Valparai, Tirupattur, Ramanatha puram, Paramakudi, Keelakarai, Sivagangai, Rameshwara m, Arakonam, Thiruthani, Aranthangi, Maraimalai	Kovilpatti, Tindivanam, Kodaikanal

				Nagar, Vickaramasingapuram, Namakkal, Srivilliputtur, Gudalore (Nilgirs) Erode, Rasipuram, Thanjavur, Villupuram, Ottanchathiram, Mettur, Athur, Vandhavasi, Vellakoil, Thiruchenkode Karaikudi, Palladam, Chidhambaram Dharapuram, Periyakulam, Thiruvathipuram, Kangeyam, Kayalpattinam, Cumbum, Arani.	
4.	JICA	9	663.68	Tiruchy, Dindugal, Thoothukudi, Palani, coonoor, Idappadi, Devakottai, Mettupalayam Udumalaipettai	-

5.	KfW	15	869.15	Tirunelveli, Kadaiyanallur, Tiruvannamalai, Pallipalayam, Cuddalore, Karur	Thanthoni, Inamkarur (Merged with Karur), Udhagamandalam, Coonoor, Padmanabapuram, Tirunelveli, Bodinayakkanur, Trichy, Coimbatore (Extn Area)
6.	AMRUT	14	5500.66	Thanjavur, Ambur	Coimbatore, Tiruppur, Erode, Vellore, Nagercoil, Hosur, Rajapalayam, Kumbakonam, Coimbatore (Added area), Coimbatore Pillur III, Tiruppur, Madurai (Mullai Periyar)
7.	TNSUDP	6	660.37	-	Namakkal, CWSS to Sankarankoil, Puliyangudi, Rajapalayam, Sivakasi, Thiruthangal.

2.3.1. Efficient Water Management System

The Government accords top priority to the improvement of the Water Management Systems in Corporations and Municipalities. The following measures are being taken:-

- ❖ Implementing modern control and monitoring systems with the provision of Supervisory Control and Data Acquisition System (SCADA) to continuously monitor the transfer of data on water flow, performance and efficiency of pumps and motors, physical and chemical quality parameters of water, etc.
- ❖ Replacing the inefficient motors and pumps to improve the efficiency of the pumping system in water supply.
- ❖ Revamping the existing water supply network to ensure equitable distribution of water.

2.3.2. District Metering Areas (DMA)

Water supply distribution is being done by dividing the supply network into number of DMA's for the purpose of monitoring and control of Unaccounted-for-water (UFW). In general, about 500-4000 connections are considered during the formation of DMA. Each DMA area would be having a well- defined boundary with DMA meters, isolation valves on both upstream and downstream of the DMA for easy maintenance. Boundary valves are planned on the boundary of each DMA areas where pipes are interlinked. These boundary valves are generally kept in closed position and are operated only during emergency to allow flow of water from one zone to another. These DMAs shall be further divided into sub zones for periodical testing purpose with valve for monitoring and reduction of UFW as per water supply industry practice. These sub zones also help in isolating the sections during repairing

of leaks or carrying out maintenance, without interrupting the total supply to the DMA.

2.3.3. Rain Water Harvesting (RWH)

The path-breaking Rain Water Harvesting Programme was launched in 2001 under the visionary leadership of the Hon'ble Chief Minister AMMA. The effective implementation of this scheme during 2001-2006 had reaped rich dividends in enhancing ground water table.

On the directions of the Hon'ble Chief Minister, necessary amendments were made in the Tamil Nadu District Municipalities Act,1920, and also provisions made in the Tamil Nadu Combined Development and Building Rules 2019. As a result, rain water harvesting structures have been created throughout the State. This intensive programme had helped the ground water table to rise substantially and had led to better recharge of underground aquifers.

In accordance with Government policy, an action plan has been drawn by Urban Local Bodies for the Revival, Rehabilitation and Maintenance of Rain Water Harvesting structures.

Out of 45.98 lakh buildings in Corporations (Except Chennai) and Municipalities, 41.38 lakh buildings (30,366 Government buildings and 41.09 lakh private buildings) have been provided with RWH structures.

Rain water harvesting in the water bodies vested with the ULBs have also been given major thrust. Out of 585 Ponds, 214 have been provided with RWH structures and action is being taken to provide RWH structures in the remaining ponds and temple tanks.

The recharge potential due to the rain water harvested from buildings and water bodies is quite substantial.

In order to improve water bodies under Smart City funds, 8 ponds in Coimbatore Corporation at an estimated cost of ₹ 320 crore and in Thanjavur Corporation, two ponds at estimated cost of ₹ 10.25 crore have been taken up for rejuvenation and works are in progress.

Under Kfw fund, 42 water bodies have been taken up for rejuvenation in 5 ULBs namely Pattukkottai, Pudukkottai, Nagapattinam, Ariyalur and Sattur at an estimated cost of ₹ 38 crore and in Erode Corporation, water bodies rejuvenation have been taken under Kfw at an estimated cost of ₹ 5.95 crore. All the works are in progress.

Under Tamil Nadu Sustainable Urban Development Programme, 2 Water bodies in Pallavapuram Municipality have been taken up for rejuvenation at an estimated cost of ₹ 14.98 crore and the works are in progress.

2.4. Underground Sewerage Scheme (UGSS)

In consonance with the policy decision of the Government to implement the Underground Sewerage Scheme in the needy and feasible Urban Local Bodies in a phased manner, the Detailed Project Report (DPR) for 117 ULBs have been prepared and implementation is taken up by Chennai Metropolitan Water Supply Sewerage Board (CMWSSB), Tamil Nadu Water Supply and Drainage Board (TWAD) and ULBs in 58 towns, with financial assistance from the National River Conservation Programme (NRCP), TNUDP III, JnNURM, UIDSSMT, Kfw, IUDM, TNSUDP, AMRUT, ADB and Smart City. The status of implementation of these works is given below:-

S. No	Source of Funding	No. of Local Bodies	Estimate Cost (₹ In crore)	Completed	Ongoing
1	TNUDP -III	22	1025.51	Udhagamandalam, Chinnamanur, Namakkal, Dharmapuri, Perambalur, Dindigul(part), Thiruvannamalai, Kancheepuram, Ramanathapuram, Tiruvarur, Cuddalore, Theni-Allinagaram, Vellore, Nagapattinam (part), Pudukkottai, Tiruvallur, Virudhunagar, Krishnagiri and Pallavapuram	Salem, Thoothukudi , Sivagangai
2	JnNURM	4	925.49	-	Madurai, Coimbatore, Avadi and Tambaram

3	UIDSSMT	10	575.86	Arakkonam, Maraimalainagar, Udumalaipet, Periyakulam and Ariyalur	Sattur, Chidambaram, Thirupathur, Mettur and Nagercoil
4	Kfw	5	572.30	Villupuram	Erode, Karaikudi, Pollachi and Mettu palayam
5	IUDM	5	193.58	Ariyalur (Left Out Areas), Bodinayakkanur, and Perambalur (Left Out Areas)	Rasipuram and Sathyamanga lam
6	TNSUDP	1	283.94	-	Hosur
7	AMRUT and ADB	10	3563.23	Pallavapuram	Kumbakonam Trichy (Phase II, III), Tirunelveli (Phase II & III), Vellore (Phase II & III), Coimbatore (Phase II), Rameswaram Rajapalayam, Tiruppur and Ambur
8	Smart	3	409.42	-	Thanjavur,

	City				Coimbatore (Left Out areas), Madurai (Phase II)
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In order to avoid the usage of manual labour for the maintenance of sewerage networks, mechanical equipments such as Jet rodding machines, suction machines, desilting machines and robotic desilting machines have been procured and put into use in all Under Ground Sewerage System completed ULBs.

In order to achieve universal water & sewer connection to the citizens, this government has taken an initiative first of its kind in the country to effect Water & Sewer connections in the project itself as a component and the one time deposit and connection charges were linked with the property tax and collected in 10 instalments. Because of this, all the urban local bodies will

achieve 100% connectivity and the assets created will also be fully utilized.

2.4.1. Septage Management

Partially treated sewage that is stored in a septic tank is commonly called as Septage. It includes liquids, solids (sludge), as well as fats, oils and grease (scum) that accumulate in septic tanks over a period of time. Septage management includes the process of design of Septic Tanks and collection, safe treatment and disposal of septage. A comprehensive program that regulates periodic septic tank cleaning, as well as septage transport, treatment, re-use and disposal is important in the context of our rapidly urbanizing economies.

Out of 15 Corporations (including chennai), 121 Municipalities, 528 Town Panchayats and 12,525 Village Panchayats in the State, the UGSS is functioning in 9 Corporations (including chennai), 29 Municipalities and 3 Town

Panchayats. Till the uncovered areas of ULBs are brought under UGSS, there is a need for faecal septage management for safe handling of the faecal sludge.

2.4.2. Need for Septage Management

Comprehensive guidelines have been issued by the Government vide G.O. (Ms) No. 106 MA&WS Department, dated 01.09.2014 to regularize and monitor the handling of faecal sludge by co-treating in the existing STPs and creation of dedicated Fecal Sludge Treatment Plants (FSTPs). The guidelines contemplated the following initiatives:-

- i. Design and Construction of Septic Tanks
- ii. Septic Tank Pumping & De-Sludging
- iii. Septage Transportation
- iv. Treatment & Septage Disposal
- v. Fees / Charges for Collection, Transportation and Treatment

- vi. Information, Education and Communication
- vii. Record-keeping and Reporting

A cluster approach has been adopted to ensure optimum utilisation of Sewage Treatment Plants. 41 Clusters have been identified and grouped in such a way that all collection points are situated approximately at a radius of 5-10 km from the designated Sewage Treatment Plants (STP), of which, 21 Clusters have been firmed up. Urban and Rural Local Bodies situated in and around these clusters are also decanting the faecal sludge in these Sewage Treatment Plants. Clustering of adjacent Urban and Rural Local Bodies in and around the balance STPs is being explored.

SL. NO	Name of the ULB	Capacity (in MLD)	Technology
1	Chennai	727	ASP
2	Chinnamanur	4	ASP
3	Coimbatore	110	SBR
4	Cuddalore	12.25	ASP

SL. NO	Name of the ULB	Capacity (in MLD)	Technology
5	Dharmapuri	4.86	ASP
6	Dindigul	13.65	ASP
7	Kancheepuram	14.7	WSP
8	Karur	15	EAP
9	Kumbakonam	17	ASP
10	Krishnagiri	9	ASP
11	Madurai	170.7	SBR
12	Maraimalai Nagar	2.02	EAP
13	Mayiladuthurai	8.5	WSP
14	Mamallapuram	2.34	ASP
15	Namakkal	5	ASP
16	Nagapattinam	12.59	ASP
17	Orathanadu	1.5	ASP
18	Pallavapuram	PerungudiSTP	ASP
19	Perambalur	4.2	ASP
20	Pudukkottai	10.62	ASP
21	Ramanathapuram	7	ASP
22	Thanjavur	28.05	ASP
23	Thiruvannamalai	8.76	ASP
24	Theni-Allinagaram	12.05	ASP
25	Tiruvallur	6.2	MBBR
26	Tiruvarur	6.92	ASP

SL. NO	Name of the ULB	Capacity (in MLD)	Technology
27	Tirunelveli	24.2	WSP
28	Tiruppur	15	EAP
29	Thiruchendur	3.9	ASP
30	Trichirappalli	58	WSP
31	Udhagamandalam	5	ASP
32	Udumalaipet	7.81	ASP
33	Vellore	10.28	ASP
34	Virudhunagar	7.65	ASP
35	Villupuram	12.5	ASP
36	Periyakulam	5.47	ASP
37	Avadi	40	ASP
38	Ariyalur	4.16	ASP
39	Bodinayakanur	12.08	ASP
40	Mettur	7.2	ASP
41	Arakkonam	11.04	ASP

Enumeration of existing Septic Tanks and establishment of decanting facilities in the functioning STPs are in progress. So far, in Corporations and Municipalities, Sewage is being collected from septic tanks, carried through lorries registered with ULBs are permitted to decant into

nearby Sewage treatment plants and get treated there.

Under IUDM scheme, 49 number of Fecal Sludge treatment plant (Municipalities having below 50,000 Population) has been sanctioned and the works are in various stages of implementation.

2.4.3. Waste Water Reuse Policy

The policy for promotion of use of Treated Waste Water is prepared with a vision to maximise the collection & treatment of sewage generated and reuse of treated waste water on a sustainable basis, thereby reducing dependency on fresh water resources. Further, the policy promotes use of treated waste water as an economic resource.

In this regard, Tamil Nadu Government has launched waste water reuse policy on December 2019.

At present Memorandum of Understanding (MoU) has been executed between the ULB and the user agency for the re-use of Secondary Treated Effluent Water (STEW) which is given below:

S.No	Name of the ULB	Quantity (in MLD)	Usage/ Purpose
1	Nagapattinam	2.00	M/s KVK Power for cooling purpose
2	Dindugul	5.00	To maintain the TDS level of Tanners as well for Agro- forestry.
3	Tirunelveli	24.00	Nanguneri SEZ for Industries
4	Perambalur	3.00	MRF Industrial use
5	Ramanathapuram	3.00	NTC Infra
6	Pollachi	11.50	Agricultural use
7	Chinnamannur	3.00	Agricultural use
8	Karur	7.00	Agricultural use
9	Arakkonam	7.00	MRF Industrial use

2.5. Roads

Roads play a major role in connecting various parts of the town and also improving the mobility

and the quality of life in Urban areas. The safe motorable roads are designed and built for the use of vehicular traffic and safe pedestrian walk by following Ministry of Road Transport and Highways (MORTH) norms.

Corporations (except Chennai) and Municipalities maintain a total road length of 23,465 Km of roads. This includes 5,505 Km of CC roads, 15,976 Km of BT roads, 592 Km of WBM roads, 1,156 Km of Earthen roads and 236 Km of other type of roads like paver block etc.

Tamil Nadu Urban Road Infrastructure Programme (TURIP) emphasizes on improvement of roads damaged due to laying of sewer lines, water mains and natural calamities over a period of time to make it motorable. During the year 2019-2020, a sum of ₹ 692.70 crore was sanctioned to improve roads to a length of 1,121 Km in 121 Municipalities and 14 Corporations.

Under the Integrated Urban Development Mission (IUDM) 2019-20, road works have been taken up for a length of 304 Km in 27 ULBs at a cost of ₹53.91 Crore.

2.6. Street Lights

Provision of Street lighting is one of the important basic functions of every local body. All the 14 Corporations (except Chennai) and 121 Municipalities in the State maintain 7.63 Lakh street lights. The maintenance of Street Lights consumes a sizeable portion of financial resources of the ULBs.

Many innovative initiatives like replacement of existing conventional lights by LED lights and other energy efficiency measures are being taken up continuously under various schemes. Totally 3,78,364 number of street lights of all categories are converted into LED lights at a cost of ₹ 399.72 crore.

2.7. Special Infrastructure Programme

2.7.1 Roof Top Solar Energy

As per the Tamil Nadu Solar Energy Policy 2012, the Government has set a target of achieving 3000 MW of solar power capacity by harvesting solar energy potential in the State. This Policy envisages solar roof top system, solar water heating system, development of solar parks and so on. The total number of buildings owned by the ULBs were enumerated in order to erect roof top solar panels on them to produce electrical energy and use it for office requirement.

Roof top photo voltaic panels have been installed in 445 buildings of ULBs, from which 2,198 kwh power is being generated.

Installation of Solar roof top panel in 640 buildings to harvest 2.94 MW energy are taken up for the year 2018-19 as a first phase in Tiruchirappalli, Salem, Thoothukudi, Tirunelveli,

Tiruppur, Vellore and Thanjavur Corporations under Smart City Mission.

2.7.2. Ground- Mounted Solar Panel System

The Ground-Mounted Solar Panel System is to be established at an estimated cost of ₹ 116.85 Crore to harvest the 21.41 MW Solar Photo Voltaic Power in Coimbatore, Tiruchirappalli, Thoothukudi, Tiruppur, Vellore & Salem Corporations. At present 2 MW energy is harvested in Coimbatore Corporation.

2.7.3. Modern Gasifier Crematorium

Modern Gasifier Crematoriums are established in Urban Local Bodies to protect the environment and also to reduce the cremation time. The cremation can be performed efficiently during the rainy season also.

Out of the 135 ULBs, 98 ULBs were identified for construction of 116 modern gasifier crematoriums at a cost of ₹

40.43 crore. Out of the 116 gasifier Crematoriums taken up, 101 has become operational and are maintained by NGOs / Philanthropic Organizations.

2.7.4. Modern Slaughter Houses

In order to facilitate safe and hygienic slaughtering of animals, to reduce water and air pollution, it has been decided to construct modern slaughter houses in ULBs. To promote the modernization of slaughter house and make them environment friendly and free from health hazards, during the last seven years, under Part - II scheme and Infra Gap Filling Funds, 39 Modern Slaughter houses were taken up and are operational in 8 Corporations and 27 Municipalities at a cost of ₹11.58 crore.

2.8. Capital Grant Fund and Operational & Maintenance Gap Filling Fund

2.8.1. Capital Grant Fund (CGF)

Based on the 5th State Finance Commission (SFC) recommendation, Capital Grant fund is established replacing the Infrastructure Gap Filling Fund (IGFF) into which 15 % of the aggregate devolution intended for ULBs tier wise is paid. This fund has three parts corresponding to each tier of ULB and is being utilized to support capital works linked to basic functions and services in the ULBs.

During the year 2019-20, a total sum of ₹ 379 Crore have been allocated under CGF for taking up various Infrastructure works. A sum of ₹215 Crore has been allocated to 15 Corporations and ₹164 Crore has been sanctioned to 38 Municipalities.

2.8.2. Operational and Maintenance (O&M)Gap filling Fund

The allocation for Operational and Maintenance Gap filling is distributed to the Urban Local Bodies where fund is required for the Operational and Maintenance of the needy infrastructural facilities such as water supply, UGD and payment of dues to water charges and EB dues etc., Now the percentage of O&MGFF for each tier of ULBs is increased from 3% to 5%.

Under O & M Gap Filling Fund, during 2019-2020, a total sum of ₹ 128 crore has been allocated, out of which ₹52.58 Crore sanctioned to 8 Corporations and ₹75.42 Crore to 29 Municipalities.

2.9. Integrated Urban Development Mission (IUDM).

IUDM has been re-launched in the year 2018-19 with an annual grant of ₹ 750 crore from state funds for Corporations (except Chennai),

Municipalities to improve the basic Infrastructure facilities such as Water Supply, Sewerage and Sanitation, Roads & Street lights, Storm Water Drain, Solid Waste Management, Parks and improvement and Modernizing the bus stand. During 2019-20, 1074 works are taken up at a cost of ₹ 1050.02 Crore in Corporations, Municipalities and Town Panchayats.

2.10. Centrally Sponsored Schemes

2.10.1. Smart Cities

The Smart City Scheme has been launched by the Government of India in the year 2015. Central and State shares are 50:50. The objective of the Scheme is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and an application of “Smart Solutions”. The focus is on sustainable and inclusive development and the idea is to look at

compact areas, create a replicable model which will act like a light house to other aspiring cities.

The two major components in the above scheme are

- 1) Area Based Development (ABD)
- 2) Provisions of Pan City Solutions.

Provision for adequate water supply, assured electricity supply, sanitation, including solid waste management, efficient urban mobility and public transport, affordable housing, especially for the poor, Robust IT connectivity and digitalization, Good governance, especially e-Governance and citizen participation, sustainable environment, safety and security of citizens, particularly women, children and the elderly and health and education comes under Area based Development (ABD) Component.

Application of Smart Solutions will involve the use of technology, information and data to

improve infrastructure and services better. Provisions of Pan-city solutions envisage application of selected Smart Solutions to the existing city-wide infrastructure.

In Tamil Nadu, based on the "City Challenge Competition", Chennai and Coimbatore Corporations were selected in the first round for 2015-2016.

In the year 2016-17, in the 2nd round, Madurai, Salem, Thanjavur and Vellore Corporations have been selected.

In the year 2017-18, in the 3rd round, Thoothukudi, Tirunelveli, Tiruppur and Tiruchirappalli Corporations have been selected. In the 4th round, Erode has been selected in the year 2017-18.

In all the 10 Corporations (excluding Chennai), Special Purpose Vehicles (SPV) have been formed.

Under this scheme, an amount of ₹ 9513.29 crore have been sanctioned for implementation of 399 works in 10 Corporations. So far, ₹ 2,106 crore from Government of India and ₹ 1,754 crore from Government of Tamil Nadu have been released to Mission Directorate to distribute to respective ULBS for implementation of projects.

Coimbatore and Vellore Corporations are the winners of India Smart Cities Awards contest 2019 under Project Award Category. Erode Corporation has been recognized for the best performance in implementation of Smart Cities Mission among the Round 4 cities.

Tamil Nadu is in the 9th place in implementing the Smart City Projects at national level.

2.10.2. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Atal Mission for Rejuvenation and Urban Transformation has been launched by the Government of India in the year 2015. The cities having more than 1 lakh population are selected for this scheme. For the cities having more than 10 lakh population, Central share 33%, State share 20% and ULB's share 47% and for the other cities Central share 50%, State share 20% and ULB's share 30% are provided.

The aim of the scheme is to 1) ensure that every household has access to a tap with assured supply of water and a sewerage connection, 2) increase the amenity value of cities by developing greenery and well maintained open spaces and 3) reduce pollution by switching to public transport or constructing facilities for non motorized transport.

In Tamil Nadu, 15 Corporations, 17 Municipalities(5 Municipalities merged with Corporations) and 1 Town Panchayat have been selected with a population of more than 1 lakh under this scheme for implementation.

Sector	No. of Projects	No. of ULBs	Estimate Cost (₹ in crore)	Completed	Ongoing
Water Supply	14	11	5500.66	Thanjavur and Ambur	Coimbatore(3works - 8 added areas, 24x7&Pillur 3), Tiruppur(2 works), Madurai, Vellore, Erode, Nagercoil Rajapalayam, Kumbakonam and Hosur
Under Ground Sewerage Scheme	13	10	3856.36	Pallavapuram	Coimbatore, Tiruppur, Vellore (2works), Tiruchirappalli (2works), Tirunelveli(2works), Rameswaram, Rajapalayam, Kumbakonam and Ambur
Green Space Improvements	358	26	194.26	All 26 AMRUT towns.	

So far, ₹ 1,997.86 crore from Government of India and ₹ 887.78 crore from Government of Tamil Nadu have been distributed to respective ULBS for implementation of projects.

For the Water Supply and Underground Sewerage Schemes, part funding under ADB/Kfw/TNSUDP/IUDM/CGF has been made towards ULB contribution for smooth implementation.

At all India level, Tamil Nadu is in the 11th place under AMRUT Scheme.

2.10.3. Deendayal Antodaya Yojana - National Urban Livelihood Mission (DAY – NULM)

The Ministry of Housing and Urban Affairs, Government of India introduced NULM by revamping SJSRY from the year 2014-15. The Components of NULM are.

1. Social Mobilization and Institution Development (SM&ID)
2. Capacity Building and Training(CB&T)
3. Employment through skills training and Placement (EST&P)
4. Self Employment Programme.(SEP)
5. Support to Urban Street Vendors. (SUSV)
6. Scheme of Shelter for Urban Homeless. (SUH)

The state and central funds made available for DAY – NULM for the year 2018-19 and 2019-20 is ₹344.39 Crore for all the above 6 components. This Scheme is now implemented in

all statutory towns. with simultaneous order of Government to transfer 4 components namely SM&ID, EST&P, SEP and CB&T to Tamil Nadu Corporation for Development of Women (TNCDW) and designating them as Mission Directorate.

The remaining two components, Shelter for Urban Homeless (SUH) and Support to Urban Street Vendors (SUSV) are implemented by the Commissionerate of Municipal Administration through Urban Local Bodies.

Under the SUH Component, so far, 250 Shelter Units have been given sanction during the period with occupation capacity for 12,384 Residents covering 32 Districts at an estimated cost of ₹ 105.41 Crore. 167 shelters are functioning now.

Under NULM, the support to Urban Street Vendors (SUSV) is a major component. So far, 1,03,048 have been given identity cards by the street vending committees formed in 482 ULBs of the State. Under Support to Urban Street Vendors (SUSV), a total number of 1,243 Vending Carts at an outlay of ₹ 698.74 Lakh have been approved for Madurai Corporation.

2.10.4. Swachh Bharat Mission (SBM – Urban)

Swachh Bharath Mission was launched by the Ministry of Urban Development on 02.10.2014 for a period of five years. The objectives of the Swachh Bharath Mission are:

- (i) Elimination of open defecation
- (ii) Eradication of Manual scavenging
- (iii) Modern & scientific Municipal solid waste management
- (iv) To effect behavioral change regarding healthy sanitation practices
- (v) Generate awareness about sanitation and its linkage with public health
- (vi) Capacity augmentation for urban local Bodies and to create enabling environment for private sector participation in Capital expenditure and Operational expenditure (Capex & Opex).

The Government of Tamil Nadu is implementing Swachh Bharat Mission with components such as construction of Individual Household Latrine (IHHL), Community Toilet (CT), Solid Waste Management (SWM), Information Education & Communication (IEC) activities, Capacity Building, Administrative and Office Expenditure (A & OE). In this regard, a State Level High Powered Committee has been constituted under the Chairmanship of Additional Chief Secretary to Government, MA&WS department to sanction and monitor the implementation of the projects with the following funding pattern.

Component	Funding Pattern	
	GOI Share	State Share
IHHL	₹ 4000/Number	₹ 2000/Number
CT	₹ 39200/seat	₹ 34300/seat
SWM	35%	55%
IEC	75%	25%
CB and A&OE	75%	25%

2.10.4.1. Individual House Hold Latrines (IHHL)

With a vision to eradicate the open defecation, construction of Individual house hold toilets has been the main component of the Swachh Bharat Mission and 5,05,282 IHHLs had been completed.

2.10.4.2. Community Toilets

Community Toilets are constructed for providing sanitation to the households without land for the construction of IHHL. 21,894 seats had been completed.

2.10.4.3. Solid Waste Management

So far, 6,297 works have been sanctioned under solid waste management component in 664 ULBs viz 15 Corporations, 121 Municipalities 528 Town Panchayats at a total estimated cost of ₹1,800 crore.

2.10.4.4. Information, Education and Communication (IEC) activities

In order to inculcate and sustain activities related to curbing of open defecation practices, promoting source segregation and encouraging home composting, advocating clean and healthy sanitation practices, 2,846 animators, 230 Supervisors and 11 Co-ordinators have been engaged in all ULBs initially for a period of 3 years and extended further.

2.10.4.5. Sustainable Development Goals (SDG)

The Government of Tamil Nadu is giving high priority for implementation of Sustainable Development Goals in this State before 2030.

1. Providing universal & equitable access to safe and affordable drinking water
2. Providing access to adequate and equitable sanitation and hygiene for all and curb open defecation

3. Improving water quality by reducing pollution, eliminating dumping and minimizing the release of hazardous chemicals & materials halving the proportion of untreated waste water and substantially increasing recycling and safe reuse .
4. Capacity Building for Water & Sanitation related activities
5. Substantially reduce waste generation through prevention reduction, recycling and reuse.

Action is being taken to achieve the above said goals through the following:

1. All necessary measures taken to ensure safe and affordable drinking water supply to everyone.

2. Waste water treatment facilities are established to treat the waste water and the treated water is reused
3. As far as sanitation is concerned, Individual Households Latrines and Community Toilets have been constructed and insanitary latrines had been converted to sanitary latrines to ensure complete sanitation and to eradicate open defecation.
4. Wet waste and Dry waste processing facilities are established to process the generated waste and rigorous IEC activities are undertaken to achieve prevention, reduction, recycling and reuse of waste.

2.11. Externally Aided Projects

The Government of Tamil Nadu is implementing many infrastructure projects funded through external agencies.

2.11.1. Japan International Cooperation Agency (JICA) assisted TNUIP

The Government of Tamil Nadu has implemented the JICA projects to provide water supply in urban towns with a financial outlay of ₹663.68 crore, in which 9 water Supply improvement Schemes in 9 Urban Local Bodies were taken up. All schemes have been completed and put in to public use.

2.11.2. German Development Bank (KfW) assisted SMIF

Under this project, 35 schemes such as road improvement, storm water drain, water body improvement, water supply improvement, development of parks and play fields and underground sewerage schemes were taken up in

26 Urban Local Bodies at a cost of ₹3,047.20 crore.

2.11.3. Tamil Nadu Sustainable Urban Development Project (TNSUDP)

The World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP) is being implemented at a cost of ₹ 3,831.00 crore.

The project consists of 3 components viz., Urban Governance Component, Urban Sector Technical Assistance Component and Urban Investment Component.

The Urban Governance (Model City) Component and Urban Sector Technical Assistance Component are being implemented by the Commissioner of Municipal Administration.

The Urban Investment Component is being implemented through Tamil Nadu Urban Infrastructure and Financial Services Limited.

2.11.3.1. Urban Governance (Model City) Component

The main objective is to demonstrate effective models of Urban Management. These Model Cities are envisaged to become role models for ULBs across Tamil Nadu in term of Urban Management and Governance.

Erode City Municipal Corporation, Vellore City Municipal Corporation and Hosur City Municipal Corporation have been selected as Model Cities under Urban Governance (Model City) Component. A sum of ₹ 383.10 crore has been earmarked for the entire project period of 7 years to improve Urban Management Practices in Model Cities. This Component will support the Model Cities in improving Urban Management in four areas namely (i) ULB empowerment and organizational capacity (ii) spatial / development planning (iii) sustainable

finances and (iv) e-governance and public disclosure.

The following reform activities were completed during the years from 2014-15 to 2019-2020.

2.11.3.1.1. ULB empowerment and Organizational capacity

Year	Activities
2014-15	Government has issued orders for raising administrative sanction and technical sanction powers of ULBs. Government issued orders for constitution of Technical Expert Cell in each Model City
2015-16	Technical Expert Cell was established in each Model City
2016-17	Capacity Enhancement Plan was prepared for each Model City
2017-18	The vacancies in the Model Cities have been brought less than 20% of the sanctioned posts
2018-19	Annual accounts of 3 Model cities for the year 2017-18 have been publically disclosed

2.11.3.1.2. Spatial Development Planning

Year	Activities
2016-17	Gandhi Nagar area of Vellore City Municipal Corporation, Paneerselvam Park Area of Erode City Municipal Corporation and Ramanaiken Lake area of Hosur City Municipal Corporation were selected for preparation of Urban Design Improvement Plan.
2017-18	Multi Year Capital Improvement Plan was prepared for each Model City.
2018-19	Urban Design Improvement Plans for Gandhi Nagar Area of Vellore City Municipal Corporation for ₹65.75 crore, Panneerselvam Park Area and Periyar Nagar Area of Erode City Municipal Corporation for ₹33.65 crore and Ramanaiken Lake Area of Hosur City Municipal Corporation for ₹ 28.35 crore have been prepared
2019-20	Budget provision for execution of the above plan has been made in the Revised Estimate 2019-2020 and Budget Estimate 2020-2021 for each Model City.

2.11.3.1.3. Sustainable Finance

Year	Activities
2015-16	Revenue Improvement Plan and action plan was prepared for each Model City
2016-17	The Councils of Model Cities passed resolutions to adopt the Revenue Improvement Plan and Action Plan
2017-18	The Own Source Revenue in the year 2017-18 was increased over the previous year in each Model City as follows: Erode.....₹ 7.742 Cr Hosur.....₹ 4.257 Cr Vellore.... ₹ 8.886 Cr
2018-19	The Own Source Revenue in the year 2018-19 was increased over the previous year in each Model City as follows: Erode.....₹ 46.140 Cr Hosur.....₹6.985 Cr Vellore.... ₹ 15.595 Cr
2019-20	Action is being taken to increase the Own Source Revenue of each Model City.

2.11.3.1.4. e-governance and Public Disclosure

Year	Activities
2015-16	The implementation of 10 Municipal e-governance modules were completed in Model Cities
2016-17	Implementation of all 29 Municipal e-governance modules were completed in Model Cities and an action plan was prepared to support these Models.
2017-18	The Budget for 2017-18 and unaudited accounts for 2016-17 were publicly disclosed.
2019-20	Action is being taken to redress the grievances received from the public within the time limit prescribed under its citizen charter in 80% of cases.

In the year 2020-21, it is planned to execute the works proposed under the Urban Design Improvement Plan of each Model City.

Further, the Model Cities will establish an online platform to exchange information with citizens regarding key service delivery parameters.

2.11.3.1.5. Release of Disbursement Linked Indicator-Grant (DLI)

So far, an amount of ₹ 191.55 crore was sanctioned and released to Model Cities so far towards the achievements made by the Model Cities in Urban Management practices as explained above during the years from 2015-16 to 2017-18. An amount of ₹ 191.55 crore will be released to the 3 Model Cities towards the achievement to be made in Urban Management areas for the years from 2018-19 to 2020-21 at the rate of ₹ 63.85 crore per year.

2.11.3.2. Urban Sector TA Component

Under the Urban Sector TA component, the following four sub components are being

implemented by the Commissioner of Municipal Administration.

S. No	Sub Component	Total Finance	World Bank Finance
		(US \$ Million Dollars)	
1	Municipal e – governance / PFM and GIS	21.50	11.50
2	Knowledge and Institutional Strengthening	7.00	6.00
3	Project Preparatory Fund	2.00	0
4	Project Management, Incremental Operation Costs	3.5	3.5
	Total	34.00	21.00

2.11.3.3. e-Governance in ULBs

The Government of Tamil Nadu is giving a major thrust to e-governance systems in Municipal Administration. 29 Municipal e-governance modules have been identified for providing quick and better services to the urban

citizens. To achieve this goal, a major e-governance project namely “Centralized Web Based Software Application for all Urban Local Bodies” was taken up for implementation under TNSUDP at a cost of ₹ 18.31 crore. All the 29 Municipal e-governance modules have been rolled out to all Corporations and Municipalities as on 31.07.2019. 14,610 staff of Urban Local Bodies were provided end users training on all the modules of Centralized Web Based Software Application.

2.11.3.4. Knowledge and Institutional Strengthening

Under knowledge and Institutional Strengthening sub component, training programmes have been completed at a cost of ₹ 9.28 crore and 37,401 staff and officers of ULBs have been provided various Capacity Building Training.

During the year 2020-21, 4 training programmes will be organized at an estimated cost of ₹10,422 crore and training will be provided to 29,733 staff and officers of ULBs

2.12. Tamil Nadu Combined Development and Building Rules (TNCD & BR) 2019

The 74th Amendment of the Indian Constitution mentions about the Urban Planning including Town Planning and Regulation of Land use and Building Constructions. To enforce it, the New Combined Building Rules applicable to Corporations/Municipalities/Town Panchayats and Village Panchayats have been prepared and notified as "Tamil Nadu Combined Development and Building Rules 2019" Vide G.O.(MS) No 18. Municipal Administration and Water Supply Department dated 04.02.2019.

2.13. Online Building Approval System and Ease of Doing Business

In continuation of notification of TNCD&BR 2019 and as per the direction of the Ministry of Housing and Urban Affairs Department, and to enhance the services of 'Ease of Doing Business, online building application and approval system has been introduced in all Municipalities and Corporations. Any person can submit building application, drawings and documents through online without accessing to Municipal Office. Commissioner of Municipal Administration developed a software for online scrutiny of building drawings through automated plan scrutiny engine and public can pay their fees through cashless online transactions and get the approval orders and drawings through mail. By this system, end to end human interface has been completely eliminated.

Further, the Government have issued orders in G.O. (Ms)No. 110. Municipal Administration and Water Supply Department, dated. 21.08.2019 to simplify the procedure for issue of building plans for small buildings for built up area up to 1,200 sq ft, without site inspection.

2.13.1. Regularization of Unapproved plots

Under the special Scheme of "Regularization of unapproved Layouts and unapproved plots" 83,568 number of plots were regularized after Collecting Regularization Charges and Development Charges. ₹ 486.87 crore have been collected as the Development Charges by local bodies. This amount is being utilized for development of infrastructures in the unapproved layouts. The remaining unapproved plots, if any lies within the regularized layout could be regularized under this scheme at any point of time as per G.O. (Ms) No. 21, Housing and Urban Development Department, dated 05.02.2019.

2.14. Tamil Nadu Institute of Urban Studies (TNIUS)

Tamil Nadu Institute of Urban Studies, Coimbatore was established in 1981 with a view to achieving greater efficiency in the functioning of the administration of ULBs. The main objectives are:-

- To create awareness on the need for the application of latest management techniques in various branches of municipal administration.
- To disseminate knowledge of municipal administration and urban development through training programmes, seminars, conferences, publications etc.,
- To conduct research studies and consultancy services in urban development, municipal administration and related disciplines and

- To foster and assist in the development of urban infrastructure and for integrated urban development.

The annual contributions collected from the Municipal Corporations, Municipalities and Town Panchayats constitute a major source of revenue for its operation.

The Institute is at the forefront in conducting training for elected representatives and the personnel of urban local bodies. Various training programmes such as orientation training for elected representatives and comprehensive and refresher training courses for officials and staff of Urban Local Bodies are conducted. The details of training programmes organized during 2019-20 are as follows:

**Programmes conducted during 2019-20
(01.04.19 to 24.01.2020)**

Sl. No.	Name of Programme	Number of Trainers
1	2	3
1	Four Weeks Comprehensive Training Course for Junior Assistants of Municipalities and Corporations.	44
2	Two day orientation training on "Tamil Nadu Combined Development and Building Rules" for Town Planning officials of Corporations & Municipalities.	194
3	One day Awareness programme on 'Prevention. Prohibition and Redressal of Sexual Harassment of Women at Work place'	292
4	Three-day Special training programme on Planning for Retirement for Officials and staff of ULBs	41
5	Three days training on 'Safe water supply and Sanitation' for Engineers of Municipalities and Corporations.	159

Sl. No.	Name of Programme	Number of Trainers
1	2	3
6	Refresher Training for Accountants of Municipalities	75
7	Refresher training programme for the Asst. Engineers and Junior Engineers of Municipalities.	18
8	Three days National Level Exposure Workshop on Solid Waste Management for the Officials of ULBs sponsored by NIUA under SBM scheme	90
9	Two- day exposure visit for newly recruited Health Inspectors of ULBs in Karnataka State.	34
10	Three-day special training programme on "Managing and Flourishing in Dual Role" for Women officials of ULBs.	43
11	Three days Training programme on 'Urban Risk Mitigation-Making Cities Resilient' in collaboration with NIDM.	69
	Total	1062

The Government in its order G.O. No.84, Finance (Finance Commission-IV) Department,

dated 31st March 2017, sanctioned a special grant of ₹ 25.00 crore to TNIUS for developing infrastructure at its existing campus and to open regional centres. The Government has released the first and second instalments, a sum of ₹10.00 crores for strengthening the Institute infrastructure.

Accordingly, the Institute has shortlisted the public sector Institutions for executing the proposed construction work at Tamil Nadu Institute of Urban Studies. The Institute is in search of similar government training Institutions for co-locating the proposed regional centres.

2.15. Finance Commission

2.15. 15TH State Finance Commission Recommendation and Release of Grants

Each State has to constitute a State Finance Commission once in Five Years to review the financial position of the local bodies

as per 73rd&74th Constitutional Amendments and as envisaged in Article 243 I and 243 Y of the Constitution of India and to make its recommendations.

Accordingly, Fifth State Finance Commission constituted w.e.f. 01.12.2014 and its report and recommendations has been submitted to Hon'ble Governor of Tamil Nadu and Hon'ble Chief Minister on 27.12.2016. The Government has accepted the recommendations and issued G.O.No.84, Finance (FC IV) Department dated 31.03.2017.

The award period for the Fifth State Finance Commission is 5 years (from 2017-2018 to 2021-2022) commencing from April 2017 to March 2022. Based on the recommendations of Fifth State Finance Commission, devolution Grant will be released

to urban local bodies by the State Government as follows:

- The Government has decided that the vertical sharing of devolution is 10% of the Net State Own Tax Revenue (SOTR).
- The Vertical sharing Ratio between Rural and Urban Local Bodies is 56:44.
- The devolution formula for both the vertical sharing between the tiers and horizontal sharing within the tier for ULBs is given below.

S.No	Criterion	Weightage
1.	Population as per 2011 Census	65%
2.	Area	15%
3.	Per Capita consumption expenditure,distance	10%
4.	Proportion of Slum population	10%
	Total	100%

Based on the 5th State Finance Commission recommendations, the quantum of 5th State Finance Commission Grant released to Municipal Corporations and Municipalities for the year 2019-2020 and the provision for sanction of SFC grant in the budget estimate for the year 2020-21 are furnished below:-

(₹in crore)

	Year									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	2019-2020	2020-21	Corporations (Basic Grant)	Capital Grant Fund	Operational & Maintenance Gap Filling Fund	Total	Municipalities (Basic Grant)	Capital Grant Fund	Operational & Maintenance Gap Filling Fund	Total
	1568.55	1611.71	294.10	302.20	98.03	100.73	1960.68	1137.20	213.23	71.08
							2014.64	1168.49	219.09	73.03
										1421.51
										3475.25
										3382.19
										Grand Total (5+9)

2.15.2. 14th Central Finance Commission (CFC) -Grants

The 14th Central Finance Commission has recommended General Basic Grants to the Local Bodies as below:-

- (i) Based on 2011 Population data, distribution of grants to the States with a weight of 90 percent of population and area with a weight of 10 percent. The grant to each State will be classified into two parts.
- (ii) The two parts of Grants are - a Basic grant and performance grant for duly constituted Gram Panchayats and Municipalities. In the case of gram Panchayats, 90 percent of the grant will be Basic grant and 10 percent will be the Performance grant. In case of Urban Local bodies, the division between Basic and Performance grant will be on 80:20 basis.

(iii) The Basic Grant for Urban Local Bodies will be divided into tier wise shares and distributed across each tier, namely the Municipal Corporations, the Municipalities (the tier II Urban Local Bodies) and the Town Panchayats (the tier III Local Bodies) using the formula given by the respective State Finance Commission. The State Government should apply the Distribution formula of the most recent State Finance Commission whose recommendations have been accepted.

The details of allocation of funds for sanction of 14th Central Finance Commission Grant for the year from 2015-2016 to 2019-2020 are furnished below:-

(₹ in Crore)

Year	Basic Grant	Performance Grant	Total
2015-2016	560.92	---	560.92
2016-2017	776.70	229.24	1005.94
2017-2018	872.13	259.41	1131.54
2018-2019	1008.90	286.29	1295.19
2019-2020	1363.24	374.88	1738.12
Total	4581.89	1149.82	5731.71

2.16. Corporations

2.16.1. Coimbatore Corporation

Coimbatore Corporation was constituted on 01.05.1981. The population of Coimbatore Corporation is 16,01,438 as per 2011 census. The Corporation consists of 100 Wards with an extent of 265.36 Sq.km, with an average annual income of ₹ 714.20 crore.

During the Year 2019-20, the following projects were taken up for implementation:-

- Under Smart City Mission, 35 works at a cost of ₹1,128.09 crore have been sanctioned and works are under various stages of implementation.
- Under AMRUT, KfW and with assistance of Asian Development Bank Water Supply Improvement Scheme and Underground Sewerage Scheme have been taken up for implementation in Coimbatore Corporation including added areas of at an estimated cost of ₹1606.20 crore and the works are in progress.
- Under Integrated Urban Development Mission, road improvement works to a length of 35.86 Kms at an estimated cost of ₹25 crore were taken up in the year 2018-19 in 15 packages and the works are in progress in various stages.

- In order to dispose of the Old Legacy wastes of 9.4 lakh Cu.m which is now dumped at Vellalore, Coimbatore Corporation Bio-mining project at a cost of ₹ 60.11 crore has already been sanctioned under Smart City Mission.
- The Construction of an integrated Bus Stand at an extent of 61.62 acres at Vellalore at an estimated cost of ₹ 168 crore has been sanctioned and the works are commenced.

2.16.2. Tiruchirappalli Corporation

Tiruchirappalli Municipality was upgraded as Corporation on 01.06.1994. The population as per 2011 census is 9,16,857. The Corporation consists of 65 wards with an extent of 167.23 Sq.Km with an average annual income of ₹ 485.60 crore.

The projects taken up for implementation and its present status are furnished below:

- Under AMRUT Scheme with Asian Development Bank aid, Underground drainage scheme Phase II has been taken up for implementation at an estimated cost of ₹ 377.29 crore (3 Packages) and the works are under progress.
- Under AMRUT Scheme with Asian Development Bank aid, implementation of underground drainage scheme Phase III at an estimated cost of ₹ 336 crore is to be taken up soon.
- Water Supply Improvement Scheme to the added areas is being implemented at an outlay of ₹ 63.70 crore under KfW fund assistance, and the works are nearing completion.

- Under TURIP 2019-20, 20 nos of road works were taken up at an estimated cost of ₹10 crore and all works are to be commenced.
- Under Smart City Mission, 28 works have been taken up for implementation at an estimated cost of ₹929.10 crore and these are under various stages of implementation.
- It is proposed to widen and construct two way railway over bridges at Salai road near Kottai Railway Station at an estimated cost of ₹60 crore by utilizing the Town & Country Planning fund and General Fund.
- In order to reduce the quantum of garbages dumping in Ariyamangalam Compost yard and to produce manure from Bio-degradable waste, Micro compost plants were constructed in

31 locations. Further, it is proposed to construct 17 nos of Micro Compost Plants at an estimated cost of ₹8.87 crore

2.16.3. Madurai Corporation

Madurai Corporation was upgraded from Municipality to Corporation on 01.05.1971. As per 2011 census, the population is 15,61,129. The Corporation consists of 100 wards with an extent of 147.99 Sq. Km with an annual income of ₹ 438.28 crore.

During the year 2019-20, the following projects were taken up for implementation:-

- Under Smart City Mission, 18 works at a cost of ₹981.38 crore have been sanctioned and these are under various stages of implementation.
- For the implementation of the decentralized solid waste management at ward level in Madurai Corporation works have been taken up for

construction of 23 Micro Composting Centres at a cost of ₹18.99 crore and all are under progress.

- The roads in the city area which were laid five years back have been identified for improvement and B.T. works and Paver Block roads to a length of 51.85 Kms, have been sanctioned at an estimated cost of ₹25.56 crore under Tamil Nadu Urban Road Infrastructure programme.
- Construction of 54 quarters for permanent sanitary workers employed in Madurai Corporation at an estimated cost of ₹5crore at M.M.C. Colony is under progress
- It is proposed to take up a dedicated Water Supply Scheme from Mullai Periyar River as water source at an estimated cost of ₹1020 crore under AMRUT scheme.

2.16.4. Tirunelveli Corporation

Tirunelveli Municipality has been upgraded as Corporation on 01.06.1994. As per 2011 census, the population is 4,74,838. The Corporation

consists of 55 wards with an extent of 108.65 Sq.km. The average annual income is ₹206.25 crore.

During 2019-20, the following projects were taken up for implementation:-

- Water Supply Improvement Scheme in Ariyanayakipuram Dam catchment area at an estimated cost of ₹ 230 Crore has been sanctioned and under KfW and this project is being executed by TWAD Board.
- The implementation of UGD Scheme-Phase II for the uncovered areas of Tirunelveli Corporation under AMRUT (2016-17) at an estimated cost of ₹ 289.01 crore and for Phase III at an estimated cost of ₹ 440.19 crore have been taken under the financial assistance of Asian Development Bank and AMRUT. The works are in progress.

- Under Smart City Mission, an amount of ₹ 990.34 crore was allotted for execution of 52 works and all are in various stages of implementation.

2.16.5. Salem Corporation

Salem Corporation was constituted on 01.06.1994. The population as per 2011 census is 8,34,792. The extent is 91.34 sq. km. with 60 wards. The average annual income is ₹211.72 Crore.

During the Year 2019-2020 the following projects were taken up for implementation:-

- An amount of ₹35.32 crore has been sanctioned to restore the 42 road works to a length of 67.332 km under IUDM 2019-20.
- Under 14th Central Finance Commission Grant (CFC) Fund 2019-2020 restoration of

104 damaged roads at an estimated cost of ₹ 21.27 crore to a length of 36.40 km roads which are damaged due to implementation of Water Supply, Under Ground Sewerage System & Natural Calamities are taken up for implementation.

- Salem Corporation has been declared as open defecation free town by Ministry of Housing and Urban Affairs (MoHUA).
- Under Smart City Mission, 64 works such as, Conversion of all Sodium vapour lamps into LED lights, Establish Solar Power plants, Nehru Kalaiyaramam improvement works, Construction of Multilevel car parking and Bus stand developmental works at an estimated cost of ₹971.57 crore have been taken up and are under various stages of implementation.

2.16.6. Erode Corporation

As per 2011 census, the population of Erode City Municipal Corporation is 4,98,121 and the extent is 109.52 Sq. Km with 60 wards. The average annual income of this corporation is ₹204.37 Crore.

During the year 2019-20, the following projects have been taken up for implementation.

- 23 projects at a cost of ₹916.08 crore have been sanctioned under Smart City Mission. In this all the works are under various stages of implementation.
- Under AMRUT 2015-16, dedicated Water Supply Scheme from Urachikottai at an estimated cost of ₹484.45 crore has been taken up and it is executed by TWAD Board.
- Under IUDM, 9 package of road restoration works have been taken up to a length of

41.940 km at a cost of ₹38.84 crore and all works are under various stages of progress.

- Under KfW fund, Underground Sewerage Scheme has been taken up at an estimated cost of ₹209.22 crore and the work has been completed and put into public use.
- Under TURIP, 4 packages of road works have been taken up to a length of 12.32 K.m with an allotted amount of ₹10 crore. The works are in various stages of implementation.
- The roads damaged due to execution of UGSS& Water Supply projects and due to natural calamities to a length of 34.71 km have been taken up for restoration in 14 packages by utilizing the 14th CFC grant. All works are in various stages of implementation.

2.16.7. Tiruppur Corporation

Tiruppur Municipality was upgraded as Corporation on 01.01.2008 and the population as per 2011 census is 8,77,778. The extent of area is 159.35 sq.km and the average annual income is ₹232.42 crore.

During the year 2019-20, the following projects have been taken up for implementation: -

- Under Smart City Mission, 26 Works were taken up at an estimated cost of ₹948.14 crore and all the works are in various stages of implementation.
- Water supply improvement works at a cost of ₹250.00 Crore have been taken up under AMRUT 2015-16 for implementation and the work is nearing completion.
- New Water Supply Scheme at an estimated cost of ₹ 1063.51 crore have been taken up under AMRUT 2017-20 for implementation and the works are in progress.

- Providing Underground Sewerage system to the left out areas at a project cost of ₹604.05 Crore have been taken up under AMRUT 2017-20 for implementation and the works are in various stages of implementation.
- For the New Water supply and Underground sewerage schemes taken up under AMRUT 2017-20 financial assistance from Asian Development Bank has also been obtained.
- 9 Packages of road works were taken up to a total cost of ₹ 40 Crore under the scheme of TURIP 2019-20. All works are under progress.
- An amount of ₹11.20 crore has been sanctioned for construction of 16 Micro Compost Centres under Swachh Bharat Mission 2018-19 and the works are in progress.

2.16.8 Vellore Corporation

Vellore City Municipal Corporation consists of 60 wards with geographical area of 87.915 sq.km. The population of the city is 5,04,079 as per 2011 census. The average annual income is ₹ 99.73 crore.

During the year 2019-20, the following projects have been taken up for implementation: -

- In the Second round of Smart City competition, the Vellore City has been selected to be developed as Smart City. Vellore Fort and its surroundings with 12 wards were taken for Area Based Development (ABD).
- Under Smart City Mission, 32 works at a cost of ₹888.98 crore have been sanctioned and the works are in various stages of implementation.

- Water Supply Improvement Scheme has been taken up under AMRUT 2015-16 at a cost of ₹ 240.92 crore and the work is being executed by TWAD Board.
- Under AMRUT 2016-2017, Underground Sewerage Scheme Phase II, to the added areas and omitted areas of Vellore Corporation has been taken up for implementation at a cost of ₹ 343.69 crore and in phase III at an estimated cost of ₹ 293.77 crore with financial assistance from Asian Development Bank. The works are in progress.
- Vellore Corporation has been declared as open defecation free town.
- Construction of 2 shelters for Urban Homeless have been completed under National Urban Livelihood Mission at an estimated cost of ₹ 0.83 Crore and put into use.

- ₹2.50 crore has been sanctioned for the construction of Sanitary Workers Quarters under O&M Gap Filling fund.

2.16.9. Thanjavur Corporation

Thanjavur Special Grade Municipality was upgraded as City Municipal Corporation on 19.02.2014. The total area of Thanjavur Corporation is 128.02 Sq.Km and population as per Census 2011 is 3,51,655 and the annual income is ₹ 60.17 crore.

During the Year 2019-20 the following works have been taken up for implementation:-

- Under Smart City Mission, 48 No's of Projects at an estimated cost of ₹ 951.68 crore in various sectors such as tourism development, green space, economic development, urban transport, water supply, sewerage and Roads/non-motorized

transport (NMT) are taken up for implementation and the works are under various stages of implementation.

- Under NUHM 2017-18, 4 works were taken up at an estimated cost of ₹2 crore.
- Thanjavur City Municipal Corporation is declared as Open Defecation Free City.
- Under TURIP 2018-19 at an estimated cost of 15.25 crore, 40 road works have been taken up and are under various stages of implementation.
- Under CGF Scheme 2017-18, construction of office building was taken up at an estimated cost of ₹6.50 crore and work is in progress.
- Under CGF Scheme 2017-18 construction of Marikulam Gasifier Crematorium was taken up at an estimated cost of ₹1 crore and works are nearing completion.

2.16.10. Dindigul Corporation

Dindigul Municipality was upgraded as Corporation on 19.02.2014. The population as per 2011 census is 2,07,225 and the extent is 14.01 sq. km. The average annual income is ₹56.30 crore.

During the year 2019-20, the following works have been taken up for implementation:-

- Dindigul Corporation has been declared as open defecation free city.
- Under Tamil Nadu Urban road Infrastructure Development Programme 2019-2020, a sum of ₹5 crore has been sanctioned for restoration of roads to a length of 7.761 km and all the works are in various stages of implementation.
- Road improvement works to a length of 25.846 km at an estimated cost of ₹10 crore

works are being executed by utilizing 14th Finance Commission Grant 2019-2020 and works are under various stages of implementation.

- Under Swachh Bharat Mission 2018-19, removal of legacy waste dumped in the existing dumpsite in Murugabavanam, Palani Road through Bio Mining Process at an estimated cost of ₹13.16 crore has been accorded and the work is under progress.

2.16.11. Thoothukudi Corporation

Thoothukudi Corporation was constituted on 05.08.2008. The population of this Corporation as per 2011 census is 3,72,408 and the extent is 90.66 sq. km. The average annual income is ₹116.25 crore.

During the Year 2019-20, the following projects were taken up for implementation:-

- Under TURIP 2019-20, ₹15.10 crore has been allotted for restoration of 40 road works of 26.07 km for damaged roads in 3 packages due to the implementation of WSIS, UGSS and due to natural calamities and the works are under progress.
- An amount of ₹ 9.93 crore has been allotted from 14th Central Finance Commission Grant for restoration of 14.45 km damaged roads due to the implementation of WSIS and due to natural calamities. 34 road works have been taken up and all are under various stages of implementation.
- Storm Water Drains in Thoothukudi Corporation area have been provided at a cost of ₹ 96.12 crore with the financial assistance under World Bank assisted TNSUDP. The works have been taken up in 6 packages and all works are under progress.

- Under Smart City Mission 47 Nos of various works have been taken up at an estimated cost of ₹ 866.41 crore and all the works are in various stages of implementation
- Thoothukudi City Municipal Corporation has been declared as Open Defecation City.

2.16.12. Hosur Corporation

Hosur Corporation was upgraded on 01.03.2019. The population as per 2011 census is 2,45,354. The Corporation consists of 45 wards with an extent of 72.41 sq km and the average annual income is ₹100.95 crore.

During the year 2019-20, the following projects were taken up for implementation:

- ❖ Water supply improvement works to a project cost of ₹87.91 crore have been taken up under AMRUT 2015-16 for implementation and the works are nearing completion.

- ❖ ₹6.65 crore has been sanctioned for the removal of Legacy waste by Bio mining process at Dasepalli Compost Yard Under Swatch Bharat Mission-Solid Waste Management 2018-19 scheme. The work is under Progress.
- ❖ Road works are taken up to a project cost of ₹7.00 crore under TURIP 2019-20. Works are under progress.
- ❖ ₹7.48 crore has been sanctioned for the Road Rejuvenation Works from 14 CFC Grant (2019-20).

2.16.13. Nagercoil Corporation

Nagercoil Corporation was upgraded on 01.03.2019. The population as per 2011 census is 2,60,315. The Corporation consists of 52 wards with an extent of 49.10 sq km and the average annual income is ₹ 59.56 Crore.

During the year 2019-20, the following projects were taken up for implementation:

- ❖ Water supply improvement works at a cost of ₹251.43 crore have been taken up under AMRUT and with financial assistance of TNSUDP for implementation and the works are in progress
- ❖ Underground sewerage scheme work at a project cost of ₹ 76.04 crore have been taken up under UIDSSMT and the works are under progress.
- ❖ ₹ 10.07 Crore has been sanctioned for the removal of legacy waste by Bio mining process at Valampurivilai Compost Yard under Swatch Bharat Mission-Solid Waste Management 2018-2019 scheme. Works are under Progress.

- ❖ The Road Improvement works taken up at a cost of ₹ 1.00 crore to a length of 2.14 Km under TURIP 2019-20 and all works are under progress.
- ❖ ₹ 5.00 crore has been sanctioned for the construction of new office building under CGF 2018-19. The work is under progress.

2.16.14. Avadi Corporation

Avadi City Municipal Corporation was upgraded from special grade Municipality to Corporation on 17.06.2019. The population as per 2011 census is 3,44,721. This Corporation consists of 48 wards with an extent of 65 sq.km. The annual income is ₹ 100.70 crore.

During the year 2019-20, the following projects were taken up for implementation:

- ❖ ₹ 4.25 crore has been sanctioned for the removal of legacy waste by Bio-mining process at sekkadu compost yard under

SBM – SWM 2018-19 scheme. The work is under progress.

- ❖ ₹ 0.25 crore has been sanctioned for the construction of Material / Resource Recovery centre at Sekkadu compost yard under SWM component of SBM for the year 2018-19. The work is under progress.
- ❖ 7 packages of road work was taken up to a project cost of ₹25.00 Crore under TURIP 2019-2020. Works are under progress.
- ❖ An estimate cost of ₹ 27.30 crore has been sanctioned for the construction of storm water drain works in 5 packages under IUDM 2018-19. The works are under progress.
- ❖ 49 road works have been taken up at a project cost of ₹ 10.75 crore under the financial assistance of 14th CFC 2019-20.

2.17. Honourable Chief Minister's best ULB Award

Hon'ble Chief Minister Award is being given by the Hon'ble Chief Minister during the Independence Day to the best performing Municipal Corporation and Municipalities every year from the year 2012-13 onwards.

One Corporation and three Municipalities are awarded 1st, 2nd and 3rd prize every year for the best performance. The cash prize for best Corporation is ₹25 lakh and cash prize for 1st, 2nd and 3rd prize is ₹ 15 lakh, ₹10 lakh and ₹5 lakh respectively to Municipalities.

For the year 2019-20, the Salem Corporation was awarded the best among the Corporations and Dharmapuri, Vedaranyam and Aranthangi Municipalities were awarded first, second and third respectively among the Municipalities.

The Hon'ble Chief Minister distributed the cash prizes and citation to the urban local bodies during the 2019 Independence Day celebrations.

2.18. National Level Central Government Awards in 2019

Coimbatore and Vellore Corporations are the Winners of India Smart Cities Awards contest 2019 under Project Award Category.

Erode Corporation has been recognized for best performance in implementation of Smart Cities Mission among the Round 4 cities.

3. Greater Chennai Corporation

The Corporation of Chennai, which is the oldest Municipal Institution in the Country and the second oldest in the world was established on 29th September 1688. The area of Greater Chennai Corporation is 426 Sq.Km. and as per 2011 census, the population of this Corporation is 67.27 lakh.

For administrative convenience, this Corporation has been reorganized into 15 zones having 200 divisions. These 15 Zones are categorized into 3 Regions.

3.1. Special Projects

3.1.1. Smart City

- Under Chennai Smart City initiative, so far, 18 works have been completed at a cost of ₹ 130.94 crore and 20 works are under execution at an estimated cost of ₹589.65 crore

- The most important Smart City Project, Pedestrian Plaza at Theyagaraya Road was completed and inaugurated by Honourable Chief Minister of Tamil Nadu on 13.11.2019 and put into public use.
- Further, other important works like Smart Class Rooms in 28 Chennai Corporation Schools, 15 temple tanks, installing solar rooftop in Greater Chennai Corporation buildings, Cycle Sharing System, creation of Sensory Park for the differently abled persons, creation of Traffic Park and formation of vertical Gardens around the piers of Grade separators in Gopathi Narayana road were completed and are opened to public.

3.1.2. Comprehensive Integrated Parking Management Project in Chennai

Implementation of 'Comprehensive Integrated Parking Management Project' in

Chennai city will be taken up by creating underground parking facilities, multi-level parking facilities to accommodate two lakh four wheelers and two lakh two wheelers. Feasible locations have been identified. Selection of Consultant is in progress for preparation of Detailed Project Report for the above Project.

3.1.3. Intelligent Transport Systems Project - ITS (JICA Fund)

The Chennai Metropolitan Area Intelligent Transport Systems Installation Project is being taken up at a cost of ₹660 crore with loan assistance of ₹465 crore from JICA along with GoTN share of ₹195 crore to install efficient Traffic Information Systems (TIS), Traffic Management Systems (TMS) and Bus Systems (BS). Administrative Sanction was accorded by Government vide G.O.(2D) No 89, MA&WS (M.C.1) Department, dated 27.11.2018

Consultants have been selected for monitoring the work of preparing DPR, bid processing, implementation and supervision for installation of Chennai Metropolitan Area Intelligent Transport System.

3.1.4. Nirbhaya Fund

Safe City Project for Women's Safety in public places in Chennai is being taken up at a cost of ₹ 425.06 crore with GoI share of ₹ 255.04 crore and GoTN share of ₹ 170.02 crore. Administrative Sanction was accorded by Government vide G.O.(2D) No. 86 MA&WS (M.C.1) Department, dated 20.11.2018.

This project is being implemented by Greater Chennai Corporation, Greater Chennai Police, Metro Transport Corporation and Social welfare Department. 45 numbers of women and child police patrol vehicles have been procured and in operation by Greater Chennai Police.

3.2. Chennai Mega City Development Mission

With a view to achieving the vision of developing Chennai as a world class city with infrastructure built to international standards, the late Honourable Chief Minister of Tamilnadu Amma announced a path breaking scheme, namely Chennai Mega City Development Mission. From 2011 to 2016, integrated roads, storm water drains, footpaths and street lights works were completed at a cost of ₹ 1451.74 crore.

3.3. Road Maintenance Programmes

3.3.1. Bus Route Roads

The Greater Chennai Corporation maintains 471 Bus Route Roads to a length of 387 km. The up keeping of bus route roads is taken up with the grants provided under Tamil Nadu Urban Road Infrastructure and CMCDM Scheme.

To monitor, execute and to assure quality and to certify for the payments of all the bus

route road works, reputed Project Management Consultants are engaged.

All the bus route roads have been milled to ensure that the height of the road do not increase. Sophisticated machines are used to relay the road to ensure smooth riding surface. Three layers have been laid namely profile correction (CAMBER), strengthening layer (Dense Bituminous Macadam) and wearing layer (Bituminous Concrete).

All the Bus Route Roads are paved with 9 meter (30 Feet) electronic sensor road laying paving machines to give the best finish and riding quality. The quality of all roads has been checked in 5 different levels.

All the finished roads are painted with thermoplastic reflective lane marking and studs for the safety of the road users and for lane discipline. All other road improvements namely providing tree grating, watertable, silt catch pit,

speed breaker and signage board are taken up to give an enhanced riding performance on par with the best roads laid anywhere.

By following the same procedure, during the financial year 2019-20, 204 road improvement works to a length of 51.83 km at an estimate cost of ₹ 70 crore are under progress.

3.3.2. Interior Roads

The Greater Chennai Corporation maintains 33,374 interior roads to a length of 5,525 km. The Interior road works are being executed by the Greater Chennai Corporation using the grants of Government under TURIP and CMCDM schemes.

During the financial year 2018-19, 3782 road works to a length of 591.90 km at an estimate cost of ₹ 320.85 crore were taken up and 95% works completed. The balance works will be completed by the end of March 2020.

During the financial year 2019-20, 1497 road works to a length of 229.16 km at an estimate cost of ₹ 153.69 crore are under progress. All the works will be completed by May 2020.

3.4. Non Motorised Transport policy and Road Safety works

3.4.1.Promotion of Non-Motorised Transport

Greater Chennai Corporation is the first Municipal Corporation in India to adopt and implement Non-Motorised Transport (NMT) Policy. Greater Chennai Corporation have undertaken a project for widening the footpaths from 5 feet to 10 feet to implement Non Motorised transport which will reduce Pedestrian-vehicle conflict, pollution and traffic congestion. To ensure the safety of pedestrians, especially the vulnerable sections of the society such as elderly, women, children, students and differently-abled, the Corporation has completed footpath improvement

works along 107 Bus Route Roads to a length of 170 Km at an estimate amount ₹ 118.17 crore.

Under TURIP 2019-20 scheme, 60 Pedestrian friendly footpath to a length of 93.86 Km works at an estimated cost of ₹ 96.87 crores are under progress.

For the first time, 101 pedestrian friendly footpaths for the benefit of pedestrians and differently-abled persons were constructed. The road junctions are connected with table top crossings which also acts as speed breakers.

Further, ramps to the building entrances wherever necessary are provided for free movement of vehicles. To provide obstruction free footpath, the junction boxes, transformers and other structures of service utility departments which acts as hindrances are shifted to the edge of the footpath. To avoid parking or riding of vehicles in footpaths, cement concrete bollards are being fixed across the footpath.

Footpath so far constructed has brought wide appreciation from all the quarters. These footpaths were verified by the Disability Rights Alliance (DRA) Group and they complimented and welcomed this initiative of Greater Chennai Corporation.

Greater Chennai Corporation has received 5 National level awards and one International award for this project.

The Institute for Transportation and Development Policy (ITDP) has given a street design for various types of roads with provision of differently-abled friendly footpaths maintaining a uniform carriage-way width of 3.75 m for each lane in order to maintain the alignment of the road with varying footpath size which will have provision for parking bays wherever the additional spaces are available. It is being adopted in all bus route roads.

3.5. Parks and Playfields

3.5.1. Park

Greater Chennai Corporation maintains 669 parks, 99 centre medians, 99 traffic island parks and 163 road side parks for the benefit of general public.

Works under implementation

- New irrigation systems like water sprinklers have been installed for watering the plants so as to provide effective and efficient maintenance of lawns in parks.
- During the last three financial years, 31 new parks were created at an estimated cost of ₹37.32 crore under the Capital fund.
- It has been proposed to create 4 new parks at an estimated cost of ₹6.56 crore for the financial year 2019-20 under the Capital fund. Out of 4 works, 2 works are under progress and the remaining 2 works will be taken up shortly.

- Further, during the year 2020-21, finalizing the tender for the scheme for creation of 55 new parks and 2 modern play fields at an estimated cost of ₹ 52.23 crore is in process. The works will be commenced shortly. The green space of Chennai Corporation would be raised to a great extent after completion of above works.
- Sewage Treatment Plants (STP) have been installed in 11 Parks of Greater Chennai Corporation for watering the green spaces.
- Under the Tamil Nadu Pollution Control Board deposit fund during the financial year 2018-19, Amma Eco Park was newly formed at an estimated cost of ₹ 2 crore.
- During the last financial year 2018-19, 23,000 tree saplings of native trees were planted at an estimated cost of ₹ 5.29 crore.

- In the year 2019-20, it is proposed to plant 50,000 tree saplings in Chennai city which would enhance the green coverage. So far, around 25,000 tree saplings have been planted and the remaining plantation work is under progress.

3.5.2. Play-field

Greater Chennai Corporation is maintaining play grounds, children play fields, Gym buildings, indoor stadium, swimming pools, tennis court, skating rinks, badminton courts, outdoor shuttle courts, volley ball court, Football court, Basket ball court, Hockey field, Boxing, Kabaddi courts, cricket courts, Throw ball court of 872 different playfields which are located at various parts of Chennai city. These infrastructure facilities are put into use effectively. The sports people from the neighbourhood communities are getting benefitted.

- During the last three financial years, the up-gradation of infrastructure facilities has been carried out in 3 playgrounds at an estimated cost of ₹ 4.54 crore.
- In the year 2019-20, it is proposed to upgrade 3 Chennai school play grounds under TUFIDCO's CSR fund at an estimated cost of ₹ 97 lakh.
- Recently, in order to streamline the procedure of day to day maintenance of playfields in an effective manner as per SDAT norms, about 38 Tennis Courts, 19 Badminton Courts and 16 Skating Rinks were outsourced on revenue sharing model for a maintenance period of 5 years. This would also help in maintaining the playfields at high standards without any additional expenditure to Greater Chennai Corporation.

3.5.3. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

One of the important thrust areas of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is to develop green spaces and parks with special provision for children and senior citizens - friendly components. This would enable to increase the amenity value of cities. The funding pattern involves 50% and 20% share by Central, State Government and remaining 30% share by Urban Local Body respectively.

During the financial years 2015-16, 2016-17, 2017-20 and under the AMRUT reform incentive fund (2017-18), 55 new parks were created at an estimated cost of ₹ 37.74 crore. Also as part of reform initiative, for the financial year 2018-19 ₹ 1.50 crore has been allocated to GCC under AMRUT reform incentive fund, wherein for 3 park works are proposed to be taken up.

3.6. Street Lights

The primary role of the Electrical Department is to provide uniform street lighting in all the bus route roads and interior roads of Greater Chennai Corporation areas.

When Chennai Corporation area was expanded, the added areas have also been provided with energy saving LED street lights with basic infrastructure of new street lamps, underground cables as has been in the Core city areas.

Now the Greater Chennai Corporation is maintaining 2,85,828 street lights. All are energy saving LED lights. Greater Chennai Corporation is one of the few Municipal Corporations in the country that has provided 100% energy saving LED street lights. Due to this, Current consumption charges have been reduced from ₹ 6 Crore per annum to ₹ 3.5 crore per annum. Hence ₹ 2.50 crore is saved per month and this resulted in a total savings of ₹ 30 crore per year

towards the electricity consumption charges for street lights. The Hon'ble Chief Minister of Tamil Nadu has inaugurated the project on 27.02.2019.

To conserve Energy, Hon'ble Chief Minister of Tamil Nadu has inaugurated the project of installation of Solar Roof Top Plants in all Greater Chennai Corporation Buildings on 14.08.2019. Based on this, solar roof top plants in 662 Buildings with a capacity generation of 3.064 MWp have been installed under Chennai Smart City Limited at a cost of ₹ 24.03 Crore. This provides savings of ₹ 3 crore per year towards current consumption charges.

In the extended areas, newly developed places are being provided with 2441 number of new street lamp posts with energy saving LED street lights at an estimated cost of ₹ 15.20 Crore under CMCDM 2019-20 Scheme.

In order to improve the quality of lighting in core city areas, the rusted/short post and

damaged underground cables are being replaced with 10015 new street lamp post and 131.96 km of underground cables at an estimated cost of ₹ 44.31 Crore under 2019-20 O & M (GFF).

To monitor 100% functioning of street lights, Remote Group Monitoring System is in progress at an estimated cost of ₹41.50 Crore under Nirbhaya and CGF 2019-20 with the existing 7,077 street light feeder pillar boxes. This will enable to address the non burning of street lights at quicker pace.

3.7. Solid Waste Management

In Greater Chennai Corporation the average of 5100 MT per day quantity of Solid Waste garbage is collected and it has been transferred to landfill site at Perungudi and Kodungaiyur.

At present, the Solid Waste Management activities are being carried out in 12 Zones by Greater Chennai Corporation and the remaining 3 Zones through private agencies in Greater

Chennai Corporation. In future, these works will be carried out in Zone 4, 5, 6 and 8 through Greater Chennai Corporation and the remaining 11 Zones through private agencies.

3.7.1. Primary Collection

To implement the Solid Waste Management Rules – 2016, door to door collection of garbage has been achieved in 94 % of households by Greater Chennai Corporation. For this activity 5,388 Tricycles and 434 Battery operated vehicles are utilized.

8 tractor driven Beach Sand Cleaning Machines have been procured from Foreign Countries and deployed to clean the Marina Beach and Elliots Beach sandy area to remove the waste in Greater Chennai Corporation limit.

3.7.2. Source Segregation

Special attention has been paid to source segregation and handling the waste by Greater Chennai Corporation.

3.7.3. Secondary Collection and Transportation

Presently, secondary collection of Solid Waste is carried out scientifically and C & D waste is disposed by deploying compacting mechanism fitted 660 Machines, Vehicles and Machineries. The solid waste is transported to transfer station / Kodungaiyur and Perungudi landfill by these vehicles as per transportation plan and it is monitored through GPS system.

3.7.4. De-Centralized processing units

In order to reduce the burden on the landfill, Greater Chennai Corporation has established de-centralised processing units like composting and Bio-Methanization plant.

3.7.4.1. Wet Waste

At present in all the Zones 550 MT quantity of bio-degradable waste is being processed by following methods of waste processing:

- 161 Compost units
- 2 vermi compost units
- 38 Bio-Methanisation plants
- 5 Waste to Energy plants using BARC technology
- 1,378 well ring composting
- 202 old unused sintex tanks for processing compost
- In GCC parks 582 mulch pits and 31 earthen pits are being used for processing of greenery and other biodegradable waste and 69 MT of capacity is being fed.

- Work is under progress for processing of 50 TPD of Wet waste to produce Bio CNG at CAP site, Zone 8.
- To reduce the Bio-degradable Wet Waste going to Landfill site, the Greater Chennai Corporation has proposed to install Bio-CNG plants in 3 locations with a capacity of each 100 MT per day and also tender has been called for installation of another 3 nos of Bio-CNG plants in various locations.
- Works are under progress for installation of plant for processing of waste from garden garbage and tender coconut shell of 400 MT per day in 5 locations.
- Tender has been called for setting up windrow composting processing facility at a capacity of each 50MT wet waste per day in 2 locations at Madhavaram.

3.7.4.2. Dry Waste

- 74 Resource Recovery Centres and 110 Material Recovery Facilities are under operation in GCC for segregation of waste and from there recyclable waste are being sent to recyclers.
- At present the dry waste processed is around 229 MT per day.
- Non recyclable dry waste processed through incineration with a capacity of 10 MT per day at Manali in Zone II is under operation.
- Installation of plant for dry waste incineration with a capacity of 50 MT per day in Kodungaiyur at Zone IV is under progress.
- Tender has been called for installation of incineration plants for dry waste with a

capacity of each 100 MT per day in 6 locations.

- Work order has been issued for installation of plants for processing of C&D waste with capacity of 400 MT per day in Kodungaiyur and Perungudi.
- Tender has been called for utilising the non recyclable combustible Municipal dry waste in cement factories as a fuel.
- Tender has been called for Establishment of 20 MT Fuel Manufacturing plants at Madhavaram and Sholinganallur by Pyrolysis method utilizing the plastic waste.

3.7.5. Bio-Mining

- Work is in progress for processing of 37,510 cu.m solid waste at Pallikaranai old dump yard in Zone 14 through bio-mining process at an estimated cost of

₹ 2.48 crore. Work will be completed by June 2020.

- Work is in progress for processing of 86,122 cu.m solid waste at Athipet old dump yard in Zone 7 through bio-mining process at an estimated cost of ₹5.69 Crore. Work will be completed by December 2020.
- Work is in progress for processing of 1,25,635 cu.m solid waste at Sathankadu old dump yard in Zone 1 through bio-mining process at an estimated cost of ₹ 9.98 Crore. Work will be completed by December 2021.
- Totally 37.89 acres of land will be recovered after Bio-mining.

3.7.6. Ban on One time use and throw away Plastics

The Greater Chennai Corporation has implemented the G.O.(Ms)No.84, Environment and Forest Department, dated 25.06.2018 banning the one time use and throwaway plastics irrespective of thickness w.e.f 01.01.2019. So far, 316.81 MT plastics were seized and fine amount of ₹ 1.18 crore had been collected.

3.7.7. Swachh Bharath Mission

Greater Chennai Corporation has been declared as Open Defecation Free. Corporation has constructed 1,436 community toilet seats and 6,636 Individual Household Toilets (IHHL). Greater Chennai Corporation has been re-certified as Open Defecation Free (ODF) on 23.11.2019.

To improve the Solid Waste Management services in Greater Chennai Corporation, 2,305 nos of Tricycle, 31,406 nos of Tricycle bins,

13,183 nos of Compactor bins 2,775 nos of Rotomac bins were procured under the Swachh Bharath Mission Fund.

24 nos of Heavy machineries and 411 nos of Battery operated vehicles have been purchased by Greater Chennai Corporation under the Swachh Bharath Mission Fund.

3.8. Storm Water Drains

Greater Chennai Corporation is maintaining Storm water drain network to a total length of 2,071 km comprising 8,835 Storm Water Drain structures to meet extreme weather events floods and for preventing stagnation of water.

In extended areas of Greater Chennai Corporation to be resilient against extreme floods by making rain water storage infrastructure and for preventing inundation of rain water, late Hon'ble Chief Minister Amma has made 110 announcement about the construction of an Integrated Storm Water Drain network in 4 basins

viz. Kosasthalaiyar, Coovum, Adyar and Kovalam basin for the length of 1,069 kms at a project cost of ₹ 4,034 crore.

Construction of Integrated Storm Water Drain in Adyar and Cooum basins have been taken up under World Bank funding at a project cost of ₹ 1,387 crore for a length of 406 km in Ambattur, Valasaravakkam and Alandur areas and all the works have been completed, which has been appreciated by the World bank committee.

Also, in the financial year 2018-19, Government of Tamil Nadu has issued orders for taking up storm water drain works at 359 locations at a cost of ₹ 290 crore under CMCDM fund and at 121 locations at a cost of ₹ 150 crore under Smart City fund, in which 95% of works have been completed.

Due to rapid execution of above schemes in Chennai City, eventhough heavy down pour had taken place on 19.09.2019, 18.10.2019 and

01.12.2019 of 104mm, 132mm and 112mm respectively, it is pertinent to note that there was no major stagnation of rain water in the City. This was appreciated by people.

In the next phase, Construction of Integrated Storm Water Drain in Kovalam Basin, to a length of 360 km at a cost of ₹1,714 crore under (KfW) German Development Bank funding was approved by Central Government and agreement signed on 03.03.2020 with Government of Tamilnadu and Greater Chennai Corporation for implementation of the project. The preliminary works will be commenced before June 2020 and will be completed within 3 years. On completion of this project, about 10 lakh people of Alandur, Perungudi and Sholinaganallur zones will be benefitted.

Construction of Integrated Storm Water Drain in Kosasthalaiyar Basin, to a length of 765 km at an Estimated cost of ₹2,518 crore is to be taken up under funding from Asian Development

Bank (ADB). The preliminary works will be commenced before June 2020 and will be completed within 3 years. On completion of this project, 33 lakh people of Thiruvottiyur, Manali, Madhavaram, Ambattur and Kolathur zones will be benefitted.

3.8.1. Rejuvenation of Water Bodies

The late Hon'ble former Chief Minister "Amma" has announced in the floor of Assembly "Sustainable Water Security Mission" in the year 2015 for restoration and rejuvenation of water bodies and temple tanks. Based on this Greater Chennai Corporation has taken up 210 water bodies in which rejuvenation works of 86 water bodies have been completed and that of 97 water bodies works are in progress. For the remaining 27 water bodies the works will be taken up after getting funds tied up.

Further, 3.50 lakh houses were verified with reference to installation of rain water harvesting

structures provided. In addition 45,000 houses have installed new rain water harvesting structures and 2,500 sunken wells have been provided in the entire Greater Chennai Corporation. Also, more than 200 damaged community wells have been restored.

It is significant that the Government with the new innovative strategies has risen the ground water level in Chennai City to 12 to 15 feet after the 2019 monsoon. This has been confirmed by the Water Security Mission of Government of India. The Greater Chennai Corporation has become one of the pioneer Corporations in this aspect.

3.8.2. Rejuvenation of Water Ways(Canals)

Greater Chennai Corporation is maintaining 30 water ways (canals) to a length of 48 kms. For removal of Water Hyacinth, Rank Vegetation and floating material using one modern Amphibian vehicle is used in major canals and three Robotic

Multipurpose Excavators are used in minor canals. All the canals are being cleaned twice in a year ensuring free flow of rain water in the canals.

Greater Chennai Corporation has issued work order for procurement of one more Amphibian vehicle at a cost of ₹ 7.50 crore, one Robotic Multipurpose Excavator at a cost ₹ 6.50 crore for cleaning of the canals, 7 super suckers with recycler machines at a cost of ₹ 36.40 crore and 3 Mini amphibian vehicles at a cost of ₹ 5.10 crore for desilting and cleaning of the canals.

3.8.3. Providing Trash Arrestors in Storm Water Drain Outfalls

The restoration of water bodies are carried out for meeting the climatic changes. In this scenario, Greater Chennai Corporation has taken initiatives for providing trash arrestors at the storm water drain outfalls in the river to prevent garbage floating trash entering into the river. So far, 75 trash arrestors have been installed at

various locations which prevents the floating trash and hyacinth from entering into the river and then to the sea.

3.9. Bridges

Greater Chennai Corporation (Bridges Department) maintains 14 Flyovers, 12 Railway over bridges, 16 Railway subways and 5 Pedestrian Subways at important Bus Route Roads, 4 Foot Over Bridges and 232 small Bridges in totally 283 locations.

During the year 2019-20, totally 24 works at an estimated cost of ₹ 288.27 Crores were taken up and are in various stages as under:

8 works including construction of one flyover in Kolathur-Villivakkam LC -1, 3 Bridges across Puzhal lake Surplus Canal are in progress.

Following 14 works are also proposed to be taken up:

- One Skywalk with Escalators from Mambalam Railway Station to T.Nagar Bus Terminus.
- Providing Dynamic Lightings in existing Flyovers/Subways.
- Providing Vertical Garden around the piers of the existing Flyovers with STP (7 works).
- Construction of additional bridge across Coovum River at Arunachalam Road.
- Construction of Steel Foot Over Bridge across Nungambakkam Subway and
- 3 Retrofitting and Rehabilitation works of the existing bridges Viz., Parthasarathy bridge, Vaidyanathan bridge and Meenambal Road bridge.

For 2 works viz., Demolition and Reconstruction of Bridge across Otteri Nullah at Stephenson Road, construction of approach ramps

in ROB at Elephant Gate Road, tenders have been called.

During the year 2018-19, 9 works at an estimated cost of ₹ 3.08 crore were completed and 3 works at an estimated cost of ₹ 10.08 crores are in progress.

During the year 2017-18, 8 works at an estimated cost of ₹ 3.10 crores were completed.

3.10.Education Department

கேடில் விழுச்செல்வம் கல்வி யொருவற்கு
மாடல்ல மற்றை யவை - (திருக்குறள்)

Learning is the indestructible and significant wealth Others are not true wealth – (Thirukkural).

As the saying goes, 'EDUCATION' is the prime treasure which exists without any destruction. This treasured Education is excellently given by "Greater Chennai Corporation Education Department".

Under the Greater Chennai Corporation, 281 schools, i.e., 119 Primary Schools, 92 Middle Schools, 38 High Schools and 32 Higher Secondary Schools are functioning.

Greater Chennai Corporation sanctions Scholarships throughout the course for study every year for the students to encourage and pursue higher studies in Medicine, Engineering and many other streams. In the academic year 2018-19, Scholarships for higher studies were given to 300 students at the cost of ₹ 53 Lakh. All the students of Std IX to XII are being provided with Cost - free uniforms and all the students in the Kinder- Garten sections are being provided with Cost free uniforms, Note -Books and stainless steel water bottles at the cost of ₹ 3.21 crore.

In order to increase the enrolment of students in Chennai Schools and to enhance the quality of Education, the Montessori -Teaching

Methodology has been brought into practice. In the Kinder - Garten sections, 73 teachers were given Montessori training and learning materials were given to 31 Chennai Schools of which 66 class rooms were equipped at the cost of ₹ 60.36 lakh.

Chennai Smart City Limited, through CITIIS challenge scheme is in progress in 46 schools to be transformed as 'Model and Smart schools'.

Breakfast Scheme for students of Chennai schools are being organised by the NGO "Akshaya Patra" in Thiruvanmiyur , Velachery and Adyar. This Scheme was inaugurated by Honourable Governor of Tamil Nadu at Chennai Higher Secondary School, Thiruvanmiyur on 25.02.2019 and 5,000 students are being benefitted by this scheme.

In 2019-20, 'The Akshaya Patra Scheme' is proposed to extend for 25,000 students as beneficiaries.

Every year, 'Wings to Fly Scheme' conducts three stage competitions for Chennai School students. The winners of the final stage were taken to foreign countries as a part of Educational Tour.

Regarding the psychological problems among students, an awareness training programme were given to 211 teachers of Chennai Primary and Middle Schools to solve the issues among the students. To enhance their leadership qualities 281 Headmasters of Chennai Schools were given 'Leadership Development Training Programme' in collaboration with Anna Institute of Management.

Every year the students who appear for Std X,XI and XII Public Examinations, are provided with 'Sundal' daily in the evenings, at a cost of ₹ 95.62 lakh per year to avoid tiredness, to create interest in studies and it serves as a nutritious food.

In order to pertain, technology-based education in Chennai Schools, 84 Smart-Class Rooms and 28 Advanced Smart-Class rooms have been installed and well used by the students periodically in Middle, High and Higher Secondary Schools. Moreover, to improve the General Knowledge of the students, the Newspapers are supplied daily to all 281 schools at the cost of ₹ 27.48 lakh.

Every year for students who have successfully completed Std X Public Examination in Chennai Schools, Education Department selects 50 of them based on their marks for an Educational National Tour at the cost of ₹ 9.11 lakh.

In the Public Examination 2018- 19, Std XII students scored 90.49 pass percentage and 4 Chennai Higher Secondary schools have attained 100% pass. In Std X Public Examination the

students scored 92.44 pass percentage and 21 schools have attained 100% pass.

The Commissioner, Greater Chennai Corporation meets Chennai school students every month titled 'Coffee with Commissioner'. The students participate in a joyful manner.

3.11. Amma Kudineer

The "Amma Kudineer Scheme" was implemented in the year 2016 as per the announcement made by the late Honorable Chief Minister of Tamil Nadu. This scheme envisaged providing treated reverse osmosis water to the poor people at no cost of ₹ 5.30 Crore and are in operation. Under this scheme, till date 36.58 crore litres of water has been dispensed to public. On an average, 8000 liters of water are being dispensed from each plant daily.

3.12. Amma Unavagam

The late Hon'ble Chief Minister has inaugurated "Amma Unavagam" to provide hygienic food at a subsidized price to benefit the poor and needy people.

In the Greater Chennai Corporation, 407 Amma Unavagams have been started so far and they are running successfully. Amma Unavagams provide one idly for Rupee-1, pongal for ₹ 5, variety rice (Sambar Rice, Curry Leaves Rice and Lemon Rice) for ₹ 5 and curd rice for ₹ 3 in the morning and, 2 chapathis with dhal for ₹ 3 in the evenings.

From inception of the project to till date, 67.70 crore Idlis, 22.44 crore packets of variety rice and 31.60 crore chapathis have been served through Amma Unavagams. About 3.5 lakh poor people are benefitted every day by the Amma Unavagams.

Being an innovative and model social welfare programme run by Greater Chennai Corporation, neighbouring states like Andhra Pradesh, Telangana and Karnataka have started implementing this scheme.

Hon'ble Chief Minister has inaugurated a programme on 04.03.2019 for providing free food for thrice a day for the construction workers registered with Tamil Nadu construction workers welfare board. A total of 65,712 workers have been benefited upto 29.02.2020 under this scheme.

3.13. National Urban Health Mission

Under National Urban Health Mission 140 Urban Primary Health Centers (UPHCs) and 16 Urban Community Health Centres are functioning.

The UPHCs provide Health care for communicable and non- communicable diseases, ante-natal, post-natal, child health care and basic diagnostic investigations. The Urban Community

Health Centres provide medical facilities as in sub district hospitals.

Under the National Urban Health Mission, services like providing of medical staff, medical equipments, special medical camps, Urban Health Nutritious Day, Quality Assurance, office expenses, Patient Welfare Society, Mahalir Arokyia Samiti and Infrastructure etc., are being offered.

Under NUHM 34 new UPHC's have been approved, out of which 28 have been completed and remaining 6 are in progress. Out of 9 new Urban Community Health Centres approved for new construction, 5 have been completed and 4 are under progress. The construction of new building of Shenoy nagar Maternity Hospital at a cost of ₹ 8.44 crore is under progress.

The NUHM has sanctioned ₹ 2.52 Crore for establishing 3 Dialysis centers. One center is functioning at Perungudi UCHC Zone 14. Further, Thiruvotriyur UCHC Zone 1 and Chinna Porur UCHC have been established.

The GCC has established 36 polyclinics in 2017-18 for providing treatment for various diseases for the people living in slums. These clinics are functioning from Monday to Saturday between 4.30 pm to 8.30pm.

3.14. AYUSH Clinics

The GCC has established three Ayush Clinics (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy) in Zone – 4, 10 and 13 and are running successfully. Since March 2016, every day on an average, 200 out-patients are being treated. So far, 7,30,000 patients have been treated in these Clinics.

3.15. Veterinary Medicine:

3.15.1. Birth Control Programme for stray dogs

The stray dogs are being caught based on specific complaints. These dogs are sterilized as per the Animal Birth Control (Dogs) Rules, 2001

and immunized against rabies, marked and then released at the same area from where they were caught. As a special programme in 2016, to achieve "Rabies free Chennai", mass immunization programme against rabies and ectoparasit for 68,877 stray dogs has been successfully conducted. 13,587 stray dogs have been sterilized during the financial year 2018-19.

3.15.2 Slaughter House

Greater Chennai Corporation is running slaughter houses at Perambur, Villivakkam, Saidapet and Kallikuppam for providing clean and whole some meat to the public.

3.16. Shelters for Urban Homeless

The GCC runs 51 centres out of which 38 shelters are for urban homeless and 13 are for attendants of the in-patients in Govt. Hospitals (special shelters). All these shelters are being run in co-ordination with Non-Governmental Organizations.

The GCC facilitates various activities with line departments for providing social entitlements to the inmates of Shelters. So far, a total of 10,150 homeless people and 32,733 attendants of in-patients have been benefitted in these shelters. At present 1,879 beneficiaries are staying in these shelters.

3.17. Birth and Death Registration:

Greater Chennai Corporation has made the facility of down loading the Birth & Death certificates online for the convenience of the general public at free of cost. From the initiation of this online service, 2,17,37,415 birth certificates and 51,79,875 death certificates have been downloaded by the public through the website of Greater Chennai Corporation.

3.18. Vector Control Activities

The Greater Chennai Corporation controls Vector borne diseases caused by Mosquitoes through Anti larvae mosquitoes and Anti adult

mosquito activities. The Greater Chennai Corporation has engaged 3,314 workers for vector control activities.

The GCC has undertaken Anti adult mosquito activities i.e. fogging operations through 44 vehicle mounted fogging machines and 247 hand held fogging machines and 22 mini fogging machines.

In addition, 395 hand held spraying machines and 16 power sprayers are used to spray larvicides in storm water drains, open drains and canals. Gambusia fishes are being inducted in water bodies to control larvae mosquito breeding.

4. Directorate of Town Panchayats

Tamil Nadu is one of the State having Town Panchayat as an transitional Urban Local Body between Village Panchayats and Urban Municipalities, invoking the provisions laid down in Article 243Q (1) (a) of Constitution of India. These transitional bodies are the economical hub for the adjoining rural areas and catering for both rural villages and urban cities. Considering the importance of this institution, former Chief Minister Dr.M.G.Ramachandran had created the new department for Town Panchayats in the year 1981.

There are 528 Town Panchayats in the State at present. Directorate of Town Panchayats is the Administrative Head Office of the Town Panchayats. Town Panchayats are governed by Tamil Nadu District Municipalities Act 1920.

528 Town Panchayats consist of 8288 wards for administrative convenience. The total population of 528 Town Panchayats as per the 2011 census is 80,74,608 in which male population is 40,21,289 and female population is 40,53,319.

As per G.O.(Ms)No. 142, Municipal Administration and Water Supply Department, dated 21.11.2014, Town Panchayats are classified into 4 grades based on their annual income as detailed below:-

Grade	Annual Income	No. of Town Panchayats
Special Grade	Exceeding ₹ 200 Lakh	64
Selection Grade	Exceeding ₹ 100 Lakh but not exceeding ₹ 200 Lakh	202
Grade- I	Exceeding ₹ 50 Lakh but not exceeding ₹ 100 Lakh	200
Grade-II	Below ₹ 50 Lakh	62
	Total	528

4.1. Functions and Core Services

Town Panchayats are entrusted with a wide range of responsibilities in providing civic services to the public, such as drinking water, street lights, sanitation, solid waste management, roads, drains and pavements, burial grounds and slaughter houses. Besides, Town Panchayats undertake construction and maintenance of bus stands, community halls, Markets, Commercial Complexes, Play Fields, Parking Lot etc., Issuing birth and death certificates, trade licenses, levy and collection of taxes, fees, user charges and approval of building plans are the other functions of the Town Panchayats.

4.2. Infrastructure Development

The State Government have introduced and implemented various schemes for the welfare of the people along with the financial assistance from Central Government and from external funding agencies, such as Integrated Urban

Development Mission (IUDM), Tamil Nadu Urban Infrastructure Project (TURIP), National Agricultural Bank for Rural Development (NABARD), Capital Grant Fund (CGF), Operation and Maintenance Gap Filling Fund (O&M), Special Area Development Programme(SADP), Housing for All (HFA), Swachh Bharat Mission (SBM), National Urban Livelihood Mission (NULM), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Heritage City Development and Augmentation Yojana (HRIDAY), Swadesh Dharshan etc.,

4.2.1. Integrated Urban Development Mission (IUDM)

Integrated Urban Development Mission (IUDM) has been launched by Hon'ble Amma, the former Chief Minister of Tamil Nadu during the year 2011 to improve the standards of basic infrastructures like roads and streets, drinking water, sewerage schemes, storm water drains, solid waste management, improvement of bus

stands and parking places etc., in an integrated manner.

Under this scheme, a sum of ₹ 1,309.88 crore have been provided to Town Panchayats to carry out 6992 various infrastructure works like UGSS, Water supply and Storm Water Drain works from the years 2011-12 to 2016-17 and all the works were completed.

During the financial year 2018-19 & 2019-20, 953 works like road, water supply and storm water drain works were taken up to a tune of ₹ 753.40 crore and the works are in progress.

4.2.2. Capital Grant Fund

Infrastructure Gap Filling Fund (IGFF) had been renamed as Capital Grant Fund as per the 5th Finance Commission recommendation, and allocation of 15% of the aggregate devolution intended for ULBs.

Under this scheme, water supply works, Solid Waste Management, Storm Water Drain, Slaughter House, Crematorium, Community Hall, Shandy, Bus stand, Burial Ground Improvement and ULB Contribution to the water supply / UGS Scheme etc., were taken up and progress as detailed below.

Sl. No	Year	No. of works	Estimate cost (₹ in crore)
1	2011-12 to 17-18	881	506.14
2	2018 - 19	116	204.61
3	2019-20	331	163.40
	Total	1328	874.15

4.2.3. Operation and Maintenance Gap Filling Fund

The Operation and Maintenance Gap Filling Fund is allocated to the needy ULBs where the gap is noticed in maintaining the infrastructural facilities such as water supply, Under Ground Sewerage scheme and Payment dues to TWAD

Board for water charges and electricity consumption charges. The percentage of O&M Gap filling fund has been increased from 3% to 5% based on the recommendations of the 5th State Finance Commission from devolution grant. The details are as below:

S. No.	Year	No. of works	Estimate cost (₹ in crore)
1	2011-12 to 2017-18	694	184.63
2	2018-19	100	68.29
3	2019-20	44	66.61
Total		838	319.53

4.3. Roads

Black Topped Roads, Cement Concrete Roads, Paver Block Roads, Water Bound Macadam Roads, Gravel Roads and Earthen Roads are being maintained in Town Panchayats.

During the years 2011-2012 to 2019-20, improvements of roads have been taken up under various schemes to an outlay of ₹ 3358.19 crore.

4.3.1. National Bank for Agriculture and Rural Development (NABARD) – Rural Infrastructure Development Fund – (RIDF)

With the financial assistance from NABARD bank, various works, such as providing and improvement of roads, bridges, construction of sanitary complex, etc have been taken up and implemented. The details of the projects are as below.

Sl. No	Year	No. of works	Amount (₹ Crore)	Length (in Km)
1	2011-12 to 16-17	2459	761.51	1922.21
2	2017-18	167	130.00	268.28
3	2018-19	258	200.00	416.89
4	2019-20	216	200.70	373.91
Total		3100	1292.21	2981.29

4.3.2. Tamil Nadu Urban Road Infrastructure Project (TURIP)

The Government of Tamil Nadu, with a view to upgrading the urban roads, is implementing the Urban Road Infrastructure project since 2011-12 for formation / improvement of roads with storm water drains. The details of the projects taken up are as below.

SI No	Year	No. of works	Amount (₹ in Crore)	Length (in Km)
1	2011-12 to 2017-18	1771	469.16	1767.10
2	2018-19	276	253.74	458.79
3	2019-20	206	162.25	302.77
Total		2253	885.15	2528.66

4.4. Water Supply

The Government is giving top priority to provide and access to safe drinking water to all households in the Town Panchayats. The norms for drinking water supply in Town Panchayats

covered by UGSS is 135 LPCD and other Town Panchayats, which are not covered by UGSS is 70 LPCD. Accordingly, various measures are being taken to provide protected drinking water supply to the people.

Sl. No	LPCD	No. of TPs
1	Below 70	NIL
2	70 to 89	382
3	90 and above	146
	Total	528

51 Stand alone water supply schemes are maintained by Town Panchayats, 335 Town Panchayats are getting required drinking water from the combined water supply schemes maintained by TWAD Board and 142 Town Panchayats are maintaining their own local sources. Presently, 37 major combined water supply schemes are being executed by TWAD Board.

In order to improve the water supply situation, the Government has taken up various water supply schemes availing financial assistance under various Government Schemes, such as Integrated Urban Development Mission, Capital Grant Fund, Operation and Maintenance Gap Filling Fund, State Disaster Response Fund, Special Area Development Programme. From the year 2011-12 to 2019-20, 11,360 works like providing additional bore wells with hand pump, mini power pumps, rejuvenation of bore wells / infiltration wells, conversion of hand pump into mini power pumps and transportation of water through tanker lorries, provision of small water tanks, replacement of motors etc., were taken up at a total cost of ₹ 768.06 crore.

After implementation of the above schemes, the water supply level has been increased in Town Panchayats and the corresponding per capita supply is also increased as detailed below.

Sl. No.	Year	No of TPTs	Demand (in MLD)	Supply (in MLD)	Additional capacity (in MLD)
1	2017-18	528	611	728	117
2	2018-19	528	616	745	129
3	2019-20	528	620	760	140

The efforts taken up by this Department led no water crisis during last summer.

4.4.1. Water Bodies

Town Panchayats are maintaining 2,186 water bodies. 251 Water bodies are in good condition. 836 water bodies are restored under various schemes for the past 9 years and the remaining 1,048 water bodies are proposed to be taken up for restoration in a phased manner. At present, 51 Water Bodies are taken up for restoration / rejuvenation at an estimated cost of ₹ 28 Crore and works are under progress. After completion of the above works the storage capacity of the water bodies will be increased and the ground water level in surrounding areas will also be increased.

4.4.2. Chennai Rivers Restoration Trust (CRRT)

To prevent pollution of river Adyar in the jurisdiction of Chennai Metropolitan area, the Government had issued orders in G.O.Ms.No. 72, Municipal Administration and Water Supply (MC-1) Department, dated. 12.07.2017 to allot ₹ 41.73 crore to Kundrathur, Perungalathur and Thiruneermalai Town Panchayats and 8 rejuvenation works have been taken up and all are in progress at various stages.

4.4.3. River Stretches

In order to prevent the entry of sewage water let out into the river stretches and improving the water quality, 30 Town Panchayats have been identified. Out of which, 12 Town Panchayats are covered under proposed "NadanthaiVaazhi Cauvery project" which was announced by the Hon'ble Chief Minister and for remaining 18 Town Panchayats lying in Sarabanga, Tamiraparani, Vasista rivers stretches

and Cannadian Irrigation supply channel, DPR is under preparation by M/s Tamil Nadu Water Investment Company Limited, Chennai for mitigation of sewage mixing in rivers water.

4.4.4. Rain Water Harvesting

The Rain Water Harvesting Programme was a brainchild of Tamil Nadu Former Hon'ble Chief Minister Amma launched in the year 2001 and has created impressive impact in ground water recharging. Amendments made to Section 215 (a) of the Tamil Nadu District Municipalities Act, 1920 and Tamil Nadu Combined Development and Building Rules 2019, have made it mandatory to provide RWH structures in all new buildings. To consolidate the gains, measures have been taken up for rejuvenation of RWH structures created already in all buildings, besides creating new ones. Information, Education and Communication (IEC) activities will be continued in the Town

Panchayats to sensitize all the stake holders to sustain the momentum.

Total number of buildings in Town Panchayats is 26,58,433. Out of which 21,75,771 buildings are provided with Rain Water Harvesting structures as mentioned in the following table.

Sl. No	Type of Buildings	No. of Buildings	No. of Buildings having / renovated RWH Structures
1.	Government Buildings	14,957	14,420
2.	Residential Buildings	24,11,192	19,77,902
3.	Commercial Buildings	2,23,007	1,74,350
4.	Industrial Buildings	9,277	9,099
	Total	26,58,433	21,75,771

Continuous action is being taken to provide RWH facilities in the remaining buildings.

4.4.5. Tree Plantation

Trees are the constant source of oxygen, which is the source of life on our planet. Planting of trees saves water and bring rainfall.Hence, special initiatives have been taken for a massive “Tree plantation”.Many awareness programmes such as issuing of bit notices, campaigns, essay and drawing competitions in schools were conducted, Self Help Groups, Residents welfare associations were motivated. In July 2019, target has also been fixed for planting of 50,000 trees in every Town Panchayat and totally aimed to plant 2,64,10,000 trees. So far nearly 1.70 Crore saplings have been planted and remaining are in progress. Due to the awareness activities people have understood the importance of the planting trees and they are also eagerly participating in tree plantation.

4.5 Sanitation

4.5.1. Underground Sewerage System (UGSS)

Considering the importance of sanitation, Town Panchayats are implementing the under ground drainage system effectively. Under ground sewerage schemes were taken up in 15 Town Panchayats at a cost of ₹ 543.36 Crore. Out of which, 4 are completed and 11 are in various stages as detailed below.

4.5.1.1 Completed Projects:

Sl. No	Name of the District	Name of the Town Panchayat	Estimate Amount (₹ in crore)	STP capacity (MLD)	No of HSC's given	Sewage Inflow (MLD)	Sewage Outflow (MLD)
1	Kancheepuram	Mamallapuram	8.72	2.34	368	0.78	0.78
2	Thanjavur	Orathanadu	18.25	2.30	1108	0.90	0.90
3	Thoothukudi	Thiruchendur	14.48	3.90	86	1.00	1.00

4	Theni	Palanichettypatti	34.67	2.80	Action is being taken to issue HSC		
		Total	76.12	11.34	1562	2.68	2.68

4.5.1.2 Ongoing Projects :

Sl. No.	Name of the District	Name of the Town Panchayat	Estimate Amount(₹ in crore)	STP capacity (MLD)
1	Thiruvallur	Thirumazhisai	40.60	3.00
2	Villupuram	Ulundurpettai	38.67	3.15
3	Kancheepuram	SriPerumbudur	77.11	8.50
4	Nagapattianam	Velankanni	33.51	2.33
5	Kancheepuram	Thiruporur	42.00	4.02
6	Thiruvallur	Ponneri	54.78	6.52
7	Trichirapalli	Mannachanallur	30.11	6.41
8	Trichirapalli	S.Kannanur	19.45	
9	Thanjavur	Vallam	34.51	2.35
10	Erode	Perundurai	54.78	3.14
11	Theni	Melachokkanathapuram	41.72	2.40
		Total	467.24	41.82

4.5.2. Atal Mission for Rejuvenation and Urban Transformation(AMRUT)

Atal Mission for Rejuvenation and Urban Transformation has been launched by the Government of India on 25.06.2015, with the aim of providing infrastructure that has the direct link to the provision of better services to the citizens.

Under this scheme, Under ground Sewerage Scheme has been taken up in Velankanni Town Panchayat at an estimate cost of ₹ 33.51 Crore.The project is being executed through TWAD Board and works are nearing completion.

4.5.3. Septage Management Scheme

To regularize and monitor the handling of faecal sludge generated in Household septic tanks and considering the economical strain of small and medium towns to maintain UGSS and delay in execution, as an alternative scheme to UGSS, the Government have issued orders for implementation of Septage Management vide

G.O.(Ms.)No.106,Municipal Administration and Water Supply Department , dated 01.09.2014.

As a Pilot scheme, Septage Management project was taken up and completed at an estimated cost of ₹ 5.18 Crore in Karunkuzhi Town Panchayat, and functioning successfully.Many of the foreigners and officers from other states have also visited the town and appreciated the efforts taken by the Department.

Based on the excellent performance of the above scheme, Administrative Sanction has been accorded for providing Septage Management programme in 11 Town Panchayats namely Kunnathur, Kurumbalur, Pennadam, Alangayam, Seithur, Mudukulathur, Jalakandapuram, Pennagaram, Kaveripattinam, Alampalayam and Chengam vide G.O.Ms.No. 12, MA&WS (MA2) Department dated 21.01.2019 at a cost of ₹31.17 Crore under IUDM and works are under progress at various stages.

In addition, a cluster approach has been adopted to ensure optimum utilisation of Sewage Treatment Plants. During 2018-19, Septage Management Project is taken up in 58 Town Panchayats integrated with 52 Municipalities on cluster basis and works are under progress at various stages with a cost of ₹200 Crore.

Besides, Feecal Sludge Treatment Plant (FSTP) was taken up at an estimated cost of ₹2.02 crore with the aid of Bill & Melinda Gates foundation (BMGF) in Periyanaickenpalayam Town Panchayat in Coimbatore District and works completed.

4.5.4. Swachh Bharat Mission

To make Tamil Nadu as Open Defecation Free State, the Government have taken intensive steps to improve sanitation and to provide better environment to increase the energy and capacity of the public. Under Swachh Bharat Mission,

2,29,853 Individual House Hold Latrines, conversion of 7,794 Insanitary Latrines into Sanitary Latrines by dovetailing grant from Government of Tamil Nadu, were taken up and 100% works are completed. In respect of Community Toilets, 13,114 seats were taken up for construction and 98% works are completed and remaining seats are in progress.

Sl. No	Scheme	Target	Completed	Percentage
1	Construction of Individual House Hold Latrines	229853	229853	100%
2	Conversion of Insanitary Latrines to sanitary Latrines	7794	7794	100%
3	Construction of Community Toilet	13114	12798	98%

In all 528 Town Panchayats, 521 Town Panchayats have been declared as ODF Towns and the remaining 7 Town Panchayats proposal

are under scrutiny of the Quality Control Officers of Government of India.

4.5.5. Information, Education and Communication (IEC) Activities

For the effective Information, Education and Communication (IEC) activities to create awareness on cleanliness and sanitation, eradicate open defecation and to efficiently handle the segregated Bio wastes and recyclable wastes, 1382 Animators have been engaged through Swachh Bharath Mission in all Town Panchayats. In order to equip the Animators, skill development training programmes have also been conducted by the Directorate of Town Panchayats.

4.5.6. Solid Waste Management

Making clean and green towns are a splendid aim of our Government. One of the most serious issue arising out of the wave of rapid urbanization and change of lifestyle is the management of domestic and industrial solid wastes generated in

and around the Town Panchayats. Improving solid waste management system is an imminent challenge to the local bodies.

To regulate the same, as per Solid Waste Management Rules 2016, by-laws have been framed with due provisions for collecting user charges and imposing spot fines. Segregation of waste at source are being practiced in all Town Panchayats. As a result of the efforts taken in Solid Waste Management activities, 95% Door to door collection of waste and 88% source segregation are achieved in all the Town Panchayats. Steps have been taken to achieve 100% of Door to Door collection and Segregation at source.

At present, in all Town Panchayats, 1,032 MT organic waste, 850 MT in-organic waste and 218 MT silt and inert waste and totally 2,100 MT garbages are generated every day.

For the collection of solid waste and cleaning of streets, 12,086 SHG members and 7,006 sanitary workers are involved respectively. 1,382 Social Animators have been engaged in all Town Panchayats to create awareness among the people regarding solid waste management practices and sanitation.

Under Swachh Bharat Mission and Integrated Solid Waste Management scheme, a total no. of 4,828 works have been taken up from 2013-14 to 2019-20, at a total project cost of ₹330.02 crore. The works include door to door collection, transportation, segregation of waste at source, composting at resource recovery parks and Information, Education and Communication activities.

Awareness activities are being given to all stakeholders, to strictly follow the 5R principle (Refuse, Reduce, Reuse, Recycle and Recover) in solid waste management.

4.5.7. Home Composting

In order to minimize the quantity of solid waste disposed into landfill sites, Home Composting is being encouraged. At present, 12,583 households are practicing home composting. To expand this home composting practice, various awareness and training programmes have been conducted to self help groups and interested public.

4.5.8. Bio Mining of Legacy Waste

Reclamation of dump yard filled with legacy waste being carried out through bio mining process. Bio remediation of old and abandoned dump sites have been taken up in 44 Town Panchayats to remove approximately 5 lakh cubic metre of legacy waste through bio mining process at a total estimated cost of ₹ 32.72 Crore. Bio Mining works completed in Madukkur, Marakkanam, Perundurai Town Panchayats and 38,691.89 cubic metre of legacy waste were

cleared and 4.6 acres of land have been reclaimed. After completion of bio - mining works in the above 44 Town Panchayats, about 91.63 acres of land will be reclaimed. Center for Environmental Studies, Anna University Chennai has been engaged as Third Party inspection agency and for rendering Technical guidance in bio mining works.

4.5.9. Bio Methanation

Bio Methanation is the process of treating wet waste in closed vessels into a stable residue and generate methane-rich bio-gas. The bio-gas can be used as a source of renewable energy to produce electricity and Solid residue will be utilised as manure.

This technology has been implemented in 20 Town Panchayats. The energy generated is being used for burning of street lights and cooking purposes.

4.5.10. Battery Operated Vehicles

To increase the efficiency of door to door collection and to reduce the man power in Solid Waste Management, 1,005 Battery Operated Vehicles were procured to Town Panchayats under Swachh Bharat Mission and put into use.

4.5.11. Incinerators

Nasiyanur Town Panchayat in Erode District is not having sufficient land to carry out solid waste management activities. As a pilot project, incinerator was installed to handle the solid waste. The oxygen rotating technology (i.e. heat and gas by utilizing atmospheric oxygen) incinerates solid waste completely and burn into ash. No fossil fuel is required. Double layered wet scrubber diffuser, treats emission with water and release gases with negligible pollution. Emissions are as per norms.

As a new initiative, during the year 2019-20, orders have been placed to install the incinerators

in 10 Town Panchayats which are producing more than 5 tons of solid waste per day at an estimate cost of ₹4.50 crore to improve the solid Waste Management activities and to achieve the concept of **“no-waste towns”**. The works taken up are under progress at various stages. It has been planned to install incinerators in other Town Panchayats on cluster mode approach.

4.5.12. Pyrolysis Plants

Disposal of plastics is a major challenge. To overcome this issue, action was taken to install Pyrolysis plant on pilot basis. Pyrolysis is a great way of recycling waste plastics. Pyrolysis involves subjecting plastic to high temperature in the absence of oxygen. During Pyrolysis process, plastic breaks down into smaller molecules and pyrolysis oil and gas are produced. The pyrolysis oil can be used directly as fuel for boilers etc.,

During the year 2019-20, orders are placed to install Pyrolysis plant in 10 Town Panchayats,

at an estimated cost of ₹ 1.50 crore and works are under progress. More Town Panchayats will be installed with the above plants in the coming years.

4.5.13. Plastic Eradication

In order to make the State as 'Plastic Pollution Free', the Hon'ble Chief Minister of Tamil Nadu under Rule 110 has announced in the floor of the Assembly on 05.06.2018, imposing a ban on certain "Use and Throwaway plastics irrespective of thickness" with effect from 01.01.2019 vide G.O. (Ms.) No. 84, Environment and Forest Department, dated 25.06.2018.

Further, Government of Tamil Nadu, in exercise of the powers conferred under Section 5 of the Environment (Protection) Act, 1986 notified ban on manufacture, store, supply, transport, sale or distribution of "use and throwaway plastics" irrespective of thickness. Wide publicity was given for 14 types of banned plastic items.

From 01.01.2019 to 31.12.2019, 83,561 raids were conducted. 119 MT of plastic have been seized and ₹ 106 lakh collected as fine. From January 2020, 23,900 raids were conducted and 8.70 MT plastic have been seized and ₹ 14.40 lakh collected as fine for the usage of banned plastics in all Town Panchayats.

4.5.14. Smart Ward / Town Panchayat

Two wards in each Town Panchayat which are performing excellent in solid waste management and providing basic amenities have been selected as smart ward keeping in mind that these wards should be the training centre, visiting place and role model for other Town Panchayats. Based on the best performance of the smart wards, the public in other wards and other Town Panchayats will also get motivated to co-operate to implement the Solid Waste Management Rules and basic amenities.

Ponnampatti in Tiruchirapalli District, Uthiramerur in Kancheepuram District and Madukarai in Coimbatore District have been identified for performing best practices in Solid Waste Management. Similarly, during this year, 100 Town Panchayats will be identified as best performing Town Panchayats.

4.6. Street Lights

A total no. of 4,43,553 street lights are being maintained in 528 Town Panchayats which includes 1948 High mast lights, 1064 mercury lights, 28,815 sodium vapour lights, 2,34,659 Tube lights, 1,10,724 CFL, 2439 Solar lights and 63,904 LED lights. The average illumination of street lights in Town Panchayat is 98%. Steps are being taken to make it 100%. Action is also taken to replace the street lights by energy efficient LED lights in a phased manner.

4.7. 14th Central Finance Commission Grant

The 14th Finance Commission grant is allotted annually by the Government of India to the Town Panchayats since 2015-16. The funds are allotted under two components, viz., Basic Grant and Performance Grant. For the year 2018-19 a sum of ₹ 453.28 crore was released under basic grant. The above grant has been utilized towards payment of contribution to Water supply projects, UGSS projects, payment of Electricity consumption charges, payment of water charges, Solid Waste Management, Laying of Roads, footpaths, improvement of parks, playfields and burial grounds.

4.8. PMAY(U) - Housing for All (BLC)

In order to provide quality and safe concrete houses to the slum dwellers, Hon'ble Amma, the former Chief Minister of Tamil Nadu announced an ambitious goal of Slum Free Cities under VISION - 2023. Subsequently, 'Green Houses'

scheme has been launched in Town Panchayats, to convert Huts / Mud houses into Green Houses for the Economically Weaker Section families living in Town Panchayats. Further, the above scheme has been integrated with Housing for All (Urban) Mission scheme by Government of India.

Under Housing for All (Urban Mission scheme, Beneficiary Led construction) a total of 1,45,291 beneficiaries were identified with a financial assistance of ₹ 2.10 lakh per family (GoI Grant- ₹ 1.50 Lakh and GoTN Grant - ₹0.60 lakh) and in total an amount of ₹3051.11 crore has been allotted and approved by the Central Sanctioning and Monitoring Committee.

The Tamil Nadu Slum Clearance Board is the State Level Nodal Agency. So far, 39,612 units have been completed and remaining 1,05,679 units are in progress in various stages. So far ₹1292.71 crore has been released by the Tamil Nadu Slum Clearance Board and same has

been disbursed to the beneficiaries based on the Geo-tagging progress.

4.9. National Urban Livelihood Mission (NULM)

To implement the 'Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) in Town Panchyats, in the year 2017-18, 1 Normal Shelter for urban homeless and construction of 7 Special Shelters for the stay of attenders of inpatients in Government Hospitals in Town Panchayats at a total cost of ₹5.31 crore have been taken up and completed.

During 2018-19, construction of 27 Special shelters for Urban Homeless in 27 Town Panchayats at an estimated cost of ₹ 8.29 crore have been taken up, in which 11 shelters are completed and remaining 16 shelters are progress in various stages.

4.10. Swadesh Darshan Scheme

Government of India has launched the Swadesh Darshan Scheme with a view to developing theme based tourist circuits on the principles of high tourist value of all stakeholders to enrich tourist experience and enhance employment opportunities.

Under this Scheme, 13 works have been taken up at an estimate cost of ₹ 11.21 crore in Kanniyakumari and Ganapathipuram Town Panchayats and all the works completed. Further, in addition a sum of ₹ 3.81 crore has been sanctioned to take up 9 works in Kaniyakumari Town Panchayat and works are in progress. TamilNadu Tourism Development Corporation is the nodal agency.

4.11. Satellite Town

Sriperumbudur which is adjacent to Chennai and fastest growing town has been selected as Satellite Town and water supply, UGSS, solid

waste management works have been taken up at an estimated cost of ₹123.75 crore. The funding pattern is 80% from GOI, 10% from GOTN and 10% from ULB contribution. CMWSSB is the implementing agency and TUFIDCO is the Nodal Agency.

Sl. No.	Name of the work	Project Cost(₹in crore)
1	Solid Waste Management infrastructure	4.44
2	Comprehensive Water Supply Scheme	42.20
3	Comprehensive Sewerage Scheme	77.11
Total		123.75

4.12. Sustainable Development Goals (SDGs)

The Government of Tamil Nadu is giving highest priority in the implementation of Sustainable Development Goals before 2030 in this state.

For this, the Government have constituted 'Sustainable Development Goals Units' with the officials and Heads of Department of Municipal Administration and Water Supply Department vide G.O. (Ms). No. 15, Municipal Administration and Water Supply Department, dated 27.01.2020.

Providing universal & equitable access to safe and affordable drinking water, access to adequate and equitable sanitation and hygiene for all, to eliminate open defecation, Solid Waste Management by substantially reducing waste generation, Reuse of Waste Water by establishing waste water treatment plants for treatment of sewage before discharge into surface water bodies are the main goals. The Department is striving to achieve the goals within the time period through convergence of various schemes.

4.13. e-Governance in Town Panchayats

For rendering quick and better services to the urban citizens, 27 e-governance service modules have been identified. Administrative

sanction has been accorded vide G.O.(Ms). No. 110, MA&WS Department, dated. 01.11.2018 for customization of centralized web based software application and procurement of required hardware at an estimated cost of Rs.19.15 crore under Municipal e-Governance of TNSUDP and under process by National Informatics Centre.

4.14. Tamil Nadu Combined Development and Building Rules, 2019

In order to effectively implement and simplify procedure, the functions of urban planning including Town Planning and Regulation of Land use and Building Constructions, Tamil Nadu Combined Development and Building Rules 2019 have been notified vide G.O.(MS). No. 18, Municipal Administration and Water Supply Department, dated 04.02.2019. Further, powers have been delegated to local bodies by the Directorate of Town and Country Planning vide proceedings Roc. No.4367/2019 dated 24.09.2019. Accordingly, detailed instructions

have been issued to all Executive Officers, so as to adopt uniform procedures in all Town Panchayats.

4.15. Disaster Management Plan

As per the guidelines of Disaster Management and past experiences, detailed Disaster Management Plan has been prepared in all the Town Panchayats.

50 standard rescue teams with relief tools and materials have been formed for deployment in case of disaster. Precautionary measures by way of cleaning and desilting all the storm water drains, canals, culverts and the lead channels to the water courses in the Town Panchayats also carried out to face South-West and North-East Monsoon.

All relief operations and rehabilitation works in the affected Town Panchayats during Ockhi Cyclone in Kanniyakumari District and Gaja Cyclone in Thanjavur, Thiruvarur, Nagapatinam,

Tiruchirappalli and Pudukkottai District were carried out immediately by the rescue teams and restored normal life within 3 days which had been very much appreciated by the public.

4.16. Honourable Chief Minister Best Town Panchayat Award

With a view to motivate the Town Panchayats to achieve service level bench mark such as provision of sanitation, water supply, solid waste management and other urban services, during the year 2012-13, the Government had instituted "Hon'ble Chief Minister's Award" to the best performing three Town Panchayats with cash award of ₹10.00 lakh, ₹5.00 lakh and ₹ 3.00 lakh respectively.

For the year 2018-19, the Hon'ble Chief Minister has distributed first, second and third prizes with a citation to T. Kallupatti Town Panchayat in Madurai District, Nannilam Town

Panchayat in Thiruvarur District and Bhavani sagar Town Panchayat in Erode District respectively, during the Independence Day Celebrations in the year 2019.

4.17. VVIP Visit to Mamallapuram

The Hon'ble Prime Minister of India, **Shri. Narendra Modi** and Hon'ble President of People's Republic of China, **Shri. Xi Jinping**, visited the World famous and Historical Tourism City "Mamallapuram Town Panchayat" in Kancheepuram District in Tamil Nadu on 11.10.2019 and 12.10.2019. The visit of the VVIPs was scheduled in the short time. Infrastructure facilities and beautification works were taken up and completed in Mamallapuram Town Panchayat in a record time in a war footing manner. The works carried out by the Town Panchayat Administration was appreciated by one

and all and it was a occasion of pride for this department in having hosted an international event successfully under the leadership of Hon'ble Chief Minister.

5. Chennai Metropolitan Water Supply and Sewerage Board

The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) being established in the year 1978, is providing the services of supplying safe drinking water by assessing the present and future requirements and safe disposal of sewage in the Chennai Metropolitan Area as per CMWSS Board Act. CMWSSB is functioning with the vital responsibility for the planned infrastructure facilities to cater to the future requirements and to operate and implement the schemes with a future vision.

CMWSSB, through its 200 Depot Offices, is carrying out the services of providing safe drinking water and safe disposal of sewage generated within the Greater Chennai Corporation limit of 426 sq.km, covering the current population of 74.56 lakh (projected from

67.27 lakh as per 2011 census).Water is also being supplied by CMWSSB to some of the adjacent local bodies and bulk industrial consumers.

5.1. Sources of Drinking Water for Chennai City

The CMWSSB is fulfilling the requirements of drinking water in Chennai city through drawal of water from surface sources, desalination plants and ground water sources.

5.1.1. Ground water

From the aquifers at Tamaraipakkam, Poondi and the added areas, about 35 MLD of ground water is drawn from its sources and drinking water is being supplied to the public.

5.1.2. Surface Water Sources

The main surface water sources are the reservoirs of Poondi, Cholavaram, Redhills (Puzhal) and Chembarambakkam located near

Chennai city, the Veeranam lake in Cuddalore district which treats and supplies 180 MLD of water since 2004 and the Telugu Ganga Project.

As per the agreement under the Telugu Ganga Project between the Government of Tamil Nadu and Andhra Pradesh, 12 TMC of water per annum is to be drawn from Krishna River through Kandaleru reservoir to Chennai for its drinking water needs. From 28-09-2019 to 11-03-2020, 6,307 mcft has been received by CMWSSB.

Storage capacity of reservoirs supplying water to Chennai

Sl.No	Reservoir	Storage Capacity (in Mcft)
1	Poondi	3,231
2	Redhills (Puzhal)	3,300
3	Chembarambakkam	3,645
4	Cholavaram	1081
5	Veeranam	1,465
	Total	12,722

**Rainfall in the catchment areas of the
city reservoirs**

Year	Rainfall in mm		Difference in %
	Normal (30 years average)	Actual	
2012	1293.42	981.80	-24.09
2013	1297.50	1064.87	-17.93
2014	1286.21	1025.80	-20.25
2015	1273.17	2155.23	+69.28
2016	1308.05	837.00	-36.03
2017	1305.82	1388.00	+6.30
2018	1313.85	880.00	-33.01
2019	1307.75	1285.33	-1.71

5.1.3. Desalination Plants

As there are no perennial rivers in and around Chennai, for water storage, Chennai city is mainly dependent on the rainfall during monsoon. Whenever monsoon fails, it leads to acute shortage in the reservoir level and thereby affects water supply to the residents of Chennai. Considering the above facts, the late Hon'ble Chief Minister Amma with a future vision, announced in 2003-04, the proposal for setting up of desalination plants on Design, Build, Own, Operate and Transfer Basis (DBOOT) to meet out the growing water demand. Accordingly, the first desalination plant with a capacity of 100 MLD at Minjur was established by the Government and subsequently another plant of 100 MLD capacity at Nemmeli has been established and their operation currently play a major role in fulfilling the water supply requirements of Chennai city.

5.1.3.1. Desalination plant at Minjur

A 100 MLD (Million litres per day) desalination plant built on Design, Build, Own, Operate and Transfer (DBOOT) basis at Minjur is under operation since July 2010 and supplies water to the northern parts of Chennai city viz., Manali, Madhavaram, Ennore, Kathivakkam, Thiruvottiyur, Tondiarpet and Vyasarpadi benefiting a population of about 12 lakh.

5.1.3.2. Desalination plant at Nemmeli

The late Hon'ble Chief Minister Amma had inaugurated another 100 MLD desalination plant constructed in Nemmeli at a cost of ₹805.08 crore with full financial assistance from Government of India on 22.02.2013 and is under operation. 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 8 lakh.

During 2012-2014 and 2016-2019, the deficit monsoons in the catchment areas have increased the situation on relying on Desalination Plants and these plants have helped to ease the water supply situation in the city.

5.1.4. Operations and Maintenance of water supply

CMWSSB supplies potable water to the city through its water treatment plants having a total capacity of 1494 MLD which are located at Kilpauk, Redhills, Chembarambakkam, Surapattu and Vadakuthu and the Desalination Plants at Minjur and Nemmeli.

Operation & Maintenance of the water supply system have increased manifold since Board's inception in 1978 with pipelines for a

length of about 5256 km as it can be seen from the growth in providing services to 7,39,672 consumers now as against 1,16,000 consumers in the year 1978. During 2019-2020, 7823 new house service connections have been effected in Chennai City.

5.2. Water supply – New Schemes

After giving special attention to the newly included 42 local bodies with the Greater Chennai Corporation, CMWSSB has taken up various schemes for augmenting water supply to the unserved areas.

Accordingly, Water Supply schemes have been completed in 19 added areas viz. Thiruvottiyur, Kathivakkam, Ambattur, Maduravoyal, Valasaravakkam, Porur, Alandur, Meenambakkam, Injambakkam, Nandambakkam, Nolambur, Karambakkam, Ullagaram-Puzhuthivakkam, Sholinganallur, Karapakkam, Perungudi, Kottivakkam, Palavakkam and Mugalivakkam.

In 21 added areas namely Edayanchavadi, Sadayankuppam, Kadapakkam, Theeyambakkam, Vadaperumbakkam, Manali, Surapattu, Kathirvedu, Puthagaram, Puzhal, Chinnasekkadu, Madhavaram, Ramapuram, Manapakkam, Pallikaranai, Okkiyam-Thoraipakkam, Mathur, Jalladampettai, Madipakkam, Uthandi and Nerkundram (Balance works) Water supply schemes are under progress.

5.2.1. Another Desalination plant of 150 MLD capacity at Nemmeli

Consequent on the announcement made by the late Hon'ble Chief Minister Amma under Rule 110 on the floor of the Assembly that another 150 MLD capacity desalination plant will be set up at Nemmeli, foundation stone was laid by the Hon'ble Chief Minister on 27.06.2019 at a total project cost of ₹ 1259.38 crore and the work is under progress. This project is being implemented with grants under AMRUT and financial assistance from KfW (German funding agency).

Water produced from this plant will be supplied to the southern parts of Chennai city viz. Velachery, Alandur, St.Thomas Mount, Medavakkam, Kovilambakkam, Nanmangalam, Keelkattalai, Moovarasampettai, Sholinganallur, Ullagaram- Puzhuthivakkam, Madipakkam and IT corridor areas benefiting 10 lakh people.

5.2.2. Desalination plant of 400 MLD capacity at Perur at ECR, Chennai

The late Hon'ble Chief Minister Amma had also made an announcement under Rule 110, on the floor of the Assembly that a 400 MLD desalination Plant will be constructed at Perur along the East Coast Road in South Chennai.

Administrative sanction of ₹ 6,078.40 crore has been accorded by the Government for this project. The Japan International Cooperation Agency (JICA) has agreed to provide financial assistance of ₹ 4,267.70 crore. The balance will be met with suitable funding source by the

Government of Tamil Nadu. The Ministry of Environment, Forests and Climate Change has issued no objection certificate to Coastal Regulation Zone for implementation.

For this Project, M/s SMEC(Australia) -TCE-NJS consortium has been selected as Project Management Consultant and preparation of Conceptual design and bid documents are under progress.

Drinking Water from this scheme will be supplied to the areas of Chennai city and its surrounding areas like Tambaram, Pallavaram, Madambakkam, Sembakkam, Chitlapakkam, Peerkangaranai, Perungalathur, Thirneermalai, Kundrathur, Kattankulathur and Mangadu benefitting a population of about 22.97 lakh.

5.2.3. Laying second water transmission main from Chembarambakkam to Poonamallee bye-pass junction

Work on laying of second pipe line of 2000 mm dia for a length of 6.5 Km from Chembarambakkam Water Treatment Plant to Poonamallee bye-pass junction to convey the full quantity of 530 MLD of treated water from Chembarambakkam to the city, proposed at an estimated cost of ₹ 43.75 crore has been taken up and 75% of the work are completed and remaining works are expected to be completed by December 2020.

5.2.4. Water Supply Schemes under the Chennai Mega City Development Mission (CMCDM)

Chennai Mega City Development Mission was launched by the late Hon'ble Chief Minister Amma, to improve infrastructure and basic amenities in Chennai city with a special focus on the newly added areas. Under this scheme, the

works of laying of water supply lines in uncovered areas of slums, providing Underground Tanks and water filling points in newly added areas and replacement of choked water mains / PVC mains proposed during the year 2011-12 at a cost of ₹ 56.50 crore have been completed.

Among the water supply schemes proposed during the year 2012-13 works at Nolambur, Nandambakkam, Karambakkam, Injambakkam and Sholinganallur-Karambakkam have been completed at a cost of ₹ 102.56 crore. Further, works taken at a cost of ₹89.46 Crore at Ramapuram, Manappakkam, Okkiam-Thoraipakkam are under progress and expected to be completed by the end of 2020.

The water supply schemes proposed during the year 2013-14 at Kottivakkam, Perungudi, Palavakkam and Mugalivakkam have been completed at a cost of ₹ 126.39 crore. Further, the works proposed at a cost of ₹ 225.03 Crore at

Sadayankuppam, Edayanchavadi, Kadapakkam, Manali, Chinnasekkadu, Vadaperumbakkam, Theeyampakkam, Surapet, Kathirvedu, Puthagaram, Puzhal and Pallikaranai are under progress and expected to be completed by June 2020.

5.2.5. Replacement of damaged water mains in Chennai City under Infrastructure and Amenities Fund

In the core areas of Chennai city, the water distribution pipe lines are more than 30 years of old and have been identified for a length of about 914 km. Under various schemes, these pipes are being renewed periodically. In order to improve the distribution of water supply, the late Hon'ble Chief Minister Amma had announced the proposal for renewal of chocked up water mains, providing new water mains in left out streets and laying of feeder mains for a length of about 310 Km at a cost of ₹116.04 crore and all works are completed and put into for public use.

5.3. Sewerage services

In Chennai city, Chennai Metro Water Supply and Sewerage Board is providing sewerage services including collection, sewage treatment, reuse of treated water and power generation from Sewage Treatment Plants and disposal. The total capacity of all the Sewage Treatment Plants in Chennai is 727 MLD.

The sewage system in Chennai core city has been divided into 5 zones with independent Zonal collection system with pipelines for a length of about 4062 km. The sewage generated from houses and other buildings are collected through 273 sewage pumping stations and treated at 12 Sewage Treatment Plants before safe disposal/reuse.

5.3.1. Capacity of Sewage Treatment Plants

Sewage Treatment Plants of total capacity of 727 MLD are functioning in Kodungaiyur

(3 Units), Koyambedu (3 Units), Nesapakkam (3 units) and Perungudi (3 units).

5.3.2. Additional Sewage Treatment Plants

Thiruvottiyur (31 MLD), Sholinganallur I (18 MLD) & Sholinganallur-II (54 MLD) for a total capacity of 103 MLD were taken up at a cost of ₹ 126.01 crore. In this, Thiruvottiyur and Sholinganallur -I are completed and trial run is in progress. Regarding, Sholinganallur – II (54 MLD capacity) plant, the works are under progress and expected to be completed by August 2020 for public use.

5.3.3. Construction of New STPS and Renovation/ Improvement work of Old STPs

Based on the G.O. issued by the Central Pollution Control Board during 2017 amending the quality norms for the Sewage Water from the State STP letout into water ways. Government had accorded administrative sanction for the revised Detailed

Project Report at a cost of ₹ 636 crore for the renovation/ improvement of the existing STPs at Kodungaiyur, Koyambedu, Nesapakkam and Perungudi.

Permission has been obtained for the completion of the above work with the following funding pattern under AMRUT, TNIPP (phase-II) and CMCDM schemes implemented under Central, State Government funds.

AMRUT – GoI Fund	- ₹ 205.81 crore
AMRUT – GoTN Fund	- ₹ 127.20 crore
TNIPP (Phase-II)	- ₹ 192.10 crore
CMCDM(2019-2020)	- ₹ 110.89 crore
Total	- ₹ 636.00 crore

For the above works, work orders have been issued and process calculations for the preliminary work such as soil testing, land survey and constructing the labourers quarters have been completed and all the works are in progress

from 2020 January onwards. On completion of the above works, in addition to the increase in treatment capacity of the Board, letting of sewage into water ways will be prevented and thus protecting the environment.

5.3.4. Growing number of Consumers

The services of the Board with regard to sewage disposal have increased manifold since the formation of the Board in 1978. Also, it can be seen from the growth in providing services to 9,96,522 sewerage consumers now as against 1,14,000 consumers in the year 1978. During 2019-2020, 12,823 house sewer connections have been effected in Chennai City.

5.4. Sewage Disposal – New Schemes

Under Chennai Mega City Development Mission (CMCDM), CMWSSB is implementing underground sewerage schemes in the added areas of Chennai city, in order to improve the living standards with respect to Public health,

environment and sanitation of the 42 added areas on par with the core city. Underground Sewerage Schemes have been completed in 15 areas viz. Madhavaram, Valasaravakkam, Alandur, Meenambakkam, Maduravoyal, Nolambur, Surapattu, Puthagaram, Kathirvedu, Ullagaram-Puzhuthivakkam, Porur, Thiruvottiyur, Kathivakkam, Sholinganallur and Karapakkam. Further, Underground Sewerage Schemes (UGSS) are under progress in another 10 added areas namely, Ambattur, Pallikaranai, Ramapuram, Perungudi, Nerkundram, Mugalivakkam, Manali, Chinnasekkadu, Manapakkam and Karambakkam. Among this, works will be completed in Ambattur, Pallikaranai, Ramapuram and Perungudi by December 2020.

Detailed Project Reports (DPRs) have been prepared for 3 added areas viz. Edayanchavadi, Sadayankuppam, Kadappakkam. DPR for providing underground sewerage scheme for the

balance 14 added areas viz. Puzhal, Mathur, Theeyambakkam, Vadaperumpakkam, Nandambakkam, Kottivakkam, Palavakkam, Neelankarai, Madipakkam, Semmencherry, Uthandi, Jalladampettai, Injambakkam and Okkiyam Thoraipakkam are completed and bid documents are under preparation. After receipt of sufficient funds, tenders will be invited.

5.4.1. Sewerage works taken up under Chennai Mega City Development Mission (CMCDM)

Under this scheme, for the year 2011-2012, sewerage work is being carried out in major parts of Chennai for the estimated amount ₹132.55 crore. All the works are completed and put into for public use.

Further, the schemes proposed during 2012-13 viz., procurement of sewerage maintenance equipments at a value of ₹15.20 crore have been completed. UGSS works

at Kathivakkam, Sholinganallur-Karapakkam are completed at a cost of ₹ 197.05 crore. Work at Ramapuram is taken up at a cost of ₹ 48.50 Crore and the contract has been terminated for slow progress. Now, retender has been invited. All the works are to be completed by the mid of 2022.

Thiruvottiyur (AnnaiSivagami Nagar), Nolambur, Surapet, Puthagaram and Kathirvedu works were taken up at an estimated cost of ₹ 129.52 crore and completed and put into public use.

5.4.2. Works taken up under Tamil Nadu Urban Development Project – III (TNUDP- III)

Under TNUDP-III scheme, the works taken up at Madhavaram, Ambattur Phase I and Thiruvottriyur at a cost of ₹ 183.60 crore have been completed.

5.4.3. Works taken up under Tamil Nadu Investment Promotion Programme (TNIPP)

Construction of a new 54 MLD Sewage Treatment Plant at Sholinganallur has been taken up at a cost of ₹ 65.97 crore for treating the sewage generated from added areas located in the southern part of Chennai city with latest treatment technology along with provision for power generation. Work is under progress and all the works are planned to be completed in August 2020.

5.4.4. Mechanisation of sewer cleaning operations

In order to eradicate manual scavenging, the Board has mechanized the operation and maintenance of the sewerage system by procuring 119 Jet Rodding machines, 245 Desilting machines, 29 Jetting cum suction machines and 53 Super Sucker machines for effective maintenance of the sewer system.

5.4.5. Preventive maintenance of sewer system

CMWSSB is serving 9,96,522 consumers by maintaining sewer lines of 4062 km. CMWSSB has implemented preventive maintenance for its sewer network, in order to sustain the safe disposal of sewage generated in Chennai City. Further classifying the nature of complaints received then and there by the consumers and on that basis it maintains the sewer disposal by deploying suitable equipments.

5.4.6. Plugging of sewage outfalls

During the year 2012-13, it was proposed to plug 337 sewage outfalls at a cost of ₹ 300 Crore. Based on this, a scheme has been formulated so as to prevent untreated sewage from entering the City waterways and the sewage would be appropriately treated and disposed.

In phase-I, works for plugging 179 out of the 337 outfalls were taken up at a cost of

₹ 150.00 crore under Infrastructure and Amenities Fund and are expected to be completed shortly.

In phase-II, the works for plugging of balance 158 sewage outfalls at a cost of ₹ 163 crore are taken up under 7 packages. Out of these, works have been completed in 3 packages and works are under progress in 4 packages and are to be completed by June 2020.

5.4.7. Reuse of secondary treated water in Industries

From the Kodungaiyur Sewage Treatment Plant , about 28.53 MLD of Secondary treated sewage water is being supplied to M/s. Chennai Petroleum Corporation Ltd. & M/s. Madras Fertilizer Ltd. since 1989 and M/s. Manali Petro Products Ltd. since 2005. The revenue accrued to the Board is ₹18.88 crore for the year 2019-20.

5.4.7.1. Recycling of waste water

In India, Chennai City has become pioneer in the recycling of waste water. The late Hon'ble Chief Minister of Tamil Nadu Amma had announced on the floor of the Assembly that the Government would promote reuse of treated waste water for industrial purposes in place of fresh water to the Industries.

Recycling is the process of reusing treated waste water for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing and replenishing ground water basin (referred to as ground water recharge). Recycling offers additional financial savings and increase in water resource.

5.4.7.2. Setting up of TTRO Plant of 45 MLD capacity at Koyambedu

It has been proposed to supply Tertiary Treated water by constructing a 45 MLD capacity Tertiary Treatment Reverse Osmosis (TTRO) plant

at Koyambedu to meet out the requirements of Industries at Irungakattukottai / Sriperumbudur / Oragadam etc,. Accordingly, Government of Tamil Nadu have accorded administrative sanction for a sum of ₹ 486.21 crore. For this scheme, ₹ 231.50 crore has been received as loan under TNIPP and ₹ 208.82 crore has been sanctioned as grant from Government of India and Government of Tamil Nadu under AMRUT scheme. Works have been completed and the plant was inaugurated by Hon'ble Chief Minister of Tamil Nadu on 29.11.2019.

5.4.7.3. Setting up of TTRO Plant of 45 MLD capacity at Kodungaiyur

It has been proposed to construct another 45 MLD TTRO plant at Kodungaiyur at a cost of ₹ 348 crore to meet the requirements of Industries and Power plants in North Chennai. For this scheme, ₹ 229.50 crore has been received as loan at 60% and grant at 30% under TNSUDP and

₹ 118.67 crore has been sanctioned as grant from Government of India and Government of Tamil Nadu under AMRUT. Works were completed and innaugurated by Hon'ble Chief Minister of Tamil Nadu on 01.10.2019 and TTRO water is being supplied to the industries located in Manali-Ennore area.

After operation of these 2 plants in full swing, 20% of total Sewage generated in Chennai city would be recycled. With this, Tamil Nadu will be the State which recycles the waste water to the maximum in our Country.

5.5. Sustainable Water Security Mission

The late Hon'ble Chief Minister Amma had announced the "Sustainable Water Security Mission" to ensure sustained safe drinking water and to encourage sustained water management. Under this Mission, the works of installation and storage of water through Campus Rainwater Harvesting, Storm water harvesting and Campus

grey water recycling and restoration & rejuvenation of lakes had been completed. The main focus of this Mission is to implement the good practices of water management under trail basis so that it will be a model for the public to practice these in their premises itself.

5.6. Rainwater Harvesting

Tamil Nadu has been facing continuous failure of monsoon and consequent deficit of rainfall over the last few years. It is imperative to take adequate measures to meet the drinking water needs of the people in the state besides irrigation and domestic needs. In a State with scarce water resources, conservation of water is extremely important.

Rainwater harvesting is the process of storing rainwater in a proper way by preventing its wastage. As per this, storage of rainwater can be in the form of collection of water from the roof of the buildings and redirecting it to a deep pit (well,

shaft, or borehole), a tank with percolation or collected from dew or fog with proper equipments like nets or other tools. Such water stored from the tank can be utilized for gardening, livestock, irrigation, domestic use with proper treatment and to increase the ground water level.

Tamil Nadu is a pioneer State in implementing Rain Water Harvesting (RWH) programme in the Country. Tamil Nadu is the first and only State in India to make installation of RWH structures mandatory for both old and new buildings.

To ensure Water Security to the entire people of the State, under the direct and personal interest of the late Honourable Chief Minister Amma, began a multi-pronged strategy in August 2001. The objective was to implement RWH in all Government buildings and private buildings (individual house, commercial, residential and

industrial) in urban and rural areas. The campaign was first launched by CMWSSB in the year 2002 by the late Hon'ble Chief Minister Amma and now Chennai city has become a pioneer in rain water harvesting.

A communication strategy was designed by CMWSSB to increase awareness about the importance of Rain Water harvesting and to encourage consumers to build RWH structures. The aim of the Campaign is to create awareness among various stakeholders by using different communication methods. The campaign was first launched by CMWSSB in 2003 and is carried out every year in order to reap maximum benefits during monsoon by sensitizing the residents of Chennai City about rain water harvesting by issuing pamphlets, booklets, seminars and exhibitions and thus maintains the RWH structures in a proper manner.

Installation of Rain Water Harvesting structures has been made mandatory for all buildings irrespective of size and area for availing the new connections for water and sewer/renewal of old connections.

In Chennai city, about 8,10,200 buildings are in existence with a total number of 8,75,672 RWH structures. During the year 2019-20, a total number of 14,700 rainwater harvesting structures were constructed while effecting new/ renewal of water and sewer connections. The benefits of installation of RWH structures is reassessed through selected 145 observation wells located in various parts of Chennai city so as to monitor the ground water level and water quality periodically. Due to effective implementation of RWH, observations show that there is a significant improvement in water level and water quality especially during every monsoon and the ground

water recharge potential is 2.85 TMC(Thousand Million Cubic).

As per the directions of Hon'ble Minister for Municipal Administration, Rural Development and Implementation of Special Programme during 2019, a Committee of officials from CMWSSB and GCC was constituted to intensify the implementation of RWH structures in 2 lakh buildings before August 31st 2019 in Chennai City. This Committee shall assist the residents to rejuvenate/restore the old rainwater harvesting structures in their buildings.

In Chennai City, inspection of RWH structures has been carried out in 3,14,780 buildings and ensured that 2,42,438 buildings had good rainwater harvesting structures. 24,981 buildings needs improvements and 29,056 buildings did not have rainwater harvesting structures. In addition to this 314 Community wells were rejuvenated during the year 2019.

The Prime Minister of India in his "Man Ki Baat" speech on 26th January 2020 appreciated the Rainwater Harvesting implementation in Tamil Nadu made as a people movement. The concept of converting borewells into RWH structures has made Tamil Nadu, a guide for making a new India with sustained drinking water source. The focus is to emphasize that saving every drop of water and storing rain water is each one's responsibility and to ensure the availability of safe drinking water through out the Country.

5.7 Drought Management

Due to low capacity of lakes in Chennai City's drinking water source and failure of North East Monsoon, water shortages and drought have continuously been a part of Chennai City's water supply history. As there are no perennial rivers in and around Chennai for water storage, Chennai city is mainly dependent on the rainfall during

monsoon. As a part of drought relief measure, CMWSSB has taken action to explore the new drinking water sources by following the conventional and non-conventional means.

5.7.1. Augmenting the surface water and ground water source in Veeranam

The Veeranam scheme has been designed to supply 180 MLD of treated water to Chennai city. Last year, in order to supply 180 MLD of treated water continuously without any interruption during drought, all the drinking water sources were maintained and properly implemented through Veeranam Scheme.

As a part of source augmentation of Veeranam water, 9 Nos. of 400mm dia, 240 m deep Bore wells were constructed in Gadilam & Paravanar Basin of Neyveli Aquifer using UPVC pipes to draw additional 10 MLD of water. Further, additional quantity of 15 MLD was pumped from Vadakuthu WTP by installation of new 240 HP

pump set. Up to 90 MLD was drawn from the Paravanar and Gadilam borewells.

5.7.1.1. Temporary drawal of 30 MLD of water directly from Wallajah lake

It was felt necessary to identify the new sources of drinking water to compensate the depletion of water storage in Veeranam lake. Accordingly, an additional 30 MLD of water was drawn directly from Wallajah lake through 400mm HDPE pipe line to Vadakuthu WTP for treatment. This work was executed within a short period of 10 days at a total cost of ₹ 70.14 lakh. The pumping operations were commenced on 20.08.2019 and a total of 220 ML of water was drawn by this arrangement till 29.08.2019 and supplied to people of Chennai City.

5.7.1.2. Hiring of private agricultural wells

Private agricultural bore wells with good yield were hired and the 110 MLD of water extracted from it was transmitted to the 300 MLD

capacity water Treatment plant at Redhills for distribution to the Chennai city.

5.7.1.3. Drinking Water Source through abandoned quarries

CMWSSB has been pioneer in utilizing the stagnant water in the abandoned quarries for drinking purposes after necessary treatment. The stagnant water in the abandoned quarries of Sikkarayapuram has been taken at the rate of 30 MLD for 3 months and sent to 530 MLD capacity WTP at Chembarambakkam and distributed to Chennai City. Pumping was carried out at the rate of 30ML per day for three months during the drought period.

Further, Metro water explored the possibilities of drawing water from Erumaiyur Quarry, Rettai Eri, Perumbakkam Lake and Ayanambakkam lakes. By providing special pumping facilities, 10 MLD of water from

Erumaiyur Quarry was pumped into Chembarambakkam Water Treatment Plant.

Decentralized Water source Augmentation with Onsite Treatment Plants including Conveyance System is being implemented to draw 30 MLD of water.

5.7.1.4. Transportation of water from Jolarpet to Chennai by Rail

5.50 ML of water was transported from Jolarpet Railway Station in 50 Wagons, each having a capacity of 55 KL at the rate of 2.75 ML per trip by making 2 trips in a day. By this arrangement, CMWSSB have transported 438 ML of water in 159 trips from Jolarpet to Chennai and distributed to the people of Chennai City.

5.8. New Schemes Under Implementation

5.8.1. Azhaithal Inaippu and Illanthorum Inaippu

Azhaithal Inaippu is a scheme has been announced by Hon'ble Chief Minister of Tamil Nadu for effecting sewer connections for the buildings with Ground +2 Floors or Stilt + 3 Floors in Chennai City. This is a scheme for effecting sewer connections to 1,11,237 premises in the newly added areas of Chennai City and in the core city which are illegally letting out sewage into nearby storm water drain/waterways.

As per this scheme, connections will be effected within 15 days from the date of request by the consumer without insisting any documents and pre remittance of payment. After effecting the connection, the consumers shall calculate the payment pertaining to connection charges to CMWSSB, IDC charges (if any), road cut restoration charges, material and labour cost, cost

of Rain Water Harvesting Structures (if applicable), etc., and provision has been made for the payment in one installment or in ten installments without interest within five years.

5.8.2. Sewer connections to all the premises

To mitigate the prevention of sewage outfalls into river Cooum, river Adyar and Buckingham canal, water ways in Chennai city, canals and storm water drains under Eco-restoration plan, CMWSSB is taking action to give sewer connection to all the premises in Chennai city which do not have sewer connection without insisting any documents. After effecting the connection, the consumer can pay the charges either as one time payment or 10 instalments in 5 years.

5.8.3. Works under Chennai Rivers Restoration Trust

The Tamil Nadu Government has formed the Chennai Rivers Restoration Trust with an avowed objective of improving the Eco restoration of

rivers and water ways of Chennai City. The CMWSSB with the coordination of CRRT is preparing mitigation proposals and implementing necessary schemes for the prevention of sewage outfalls into River Cooum, River Adyar and Buckingham Canal and all the connected drains. CMWSSB has taken up mitigation proposals in River Cooum and River Adyar at a cost of ₹ 186.19 crore and ₹ 123.19 crore respectively.

Now, as a part of various Eco-restoration plans for all the water bodies in Chennai, detailed project reports have been prepared for prevention, interception and diversion of sewage outfalls in Cooum, Adyar and Buckingham Canal and its associated drains. This proposal includes prevention / interception of sewage outfalls in North, Central and South Buckingham Canal and strengthening/ refurbishment of existing sewerage infrastructure of CMWSSB.

The Tamil Nadu Government has accorded in-principle approval for a total cost of ₹ 2,371 crore for this project and also had accorded administrative sanction for ₹ 1,001 crore under Phase I to carry out the works. The period of project is between 2020 and 2023.

5.8.4. Recharging of Dry Lakes in Urban Areas by Reuse/ Recycle of Waste Water

In order to fulfil the requirements of Chennai City through sustainable sources, works are under progress for installation of two Tertiary Treatment Ultra Filtration (TTUF) projects at Perungudi & Nesapakkam of 10 MLD capacity each.

Preparation of Detailed Project Report for using 260 mld of recycled waste water for recharging of lakes in and around Chennai has been taken up in association with IIT-Chennai and Department of Science & Technology, Government of India. The Detailed Project Report

under preparation will be completed in a phased manner. As a first step, for recharging of lakes in and around Perungudi, the DPR work for recycling of waste water in Perungudi will be completed. The DPR for other lakes and plants will be taken up in a continuous manner.

5.8.5. Sewer lorry services

Tenders for the procurement of 50 Sewer Lorries to collect the faecal sludge from the houses of added areas of Greater Chennai City at an affordable cost are under evaluation.

5.8.6. Ground Water Monitoring

In about 200 places in Chennai, real time online monitoring of ground water by the public, city wide ground water extraction Audit/ Inspection & details of Rain water Harvesting structures / Inspection to be undertaken.

5.8.7. Solar Energy Plants

To use Green House effects in treating drinking water and sewage water transmission and to reduce the power expenditure, action has been initiated to establish solar energy plants in the vacant lands of CMWSSB.

5.8.8. GIS Mapping

Action is being taken to obtain the RFP for implementing the improved Management and Maintenance scheme through the GIS platform for mapping the drinking water and sewerage Infrastructure facilities of the CMWSSB.

5.8.9. Rehabilitation of Manual Scavengers

Enumeration process of the manual scavengers of CMWSSB is under way for the Rehabilitation and Special training to them and to establish a Technical and Soft Skill Development Center for their children.

5.8.10. Upgradation of Quality Assurance Lab

Tenders for establishing NABL accredited drinking water testing laboratory at Kilpauk for Water Quality Assurance wing of CMWSSB are under evaluation.

5.9. Financial Position

The total revenue expenditure as per the Budget Estimate for the year 2019-20 is ₹ 1397.46 crore. The total income of the Board as per Budget Estimate 2019-2020 is ₹ 1197.94 crore. Of this, the income from Water Supply and Sewerage Tax is ₹ 226.59 crore, water and sewerage charges is ₹ 701.08 crore and other income is ₹ 57.49 crore. As per Budget Estimate 2019-2020, the Government of Tamil Nadu has sanctioned ₹ 175 crore as grant to the CMWSSB for the purchase of Desalination water from Minjur (O&M) and other purposes.

5.10. Grievance Redressal

In order to improve the services of the Board, to increase the transparency and speedy redressal of the consumer grievances, CMWSSB has taken the following steps:

5.10.1. 24x7 Complaints Registration & Monitoring System

A 24x7 complaint cell is functioning at CMWSSB Head Office, to receive the grievances of the consumers of all days of the week and register and monitor them. Consumers can register their complaints / grievances either in person or by dialling 044-45674567. At present, the existing number of telephone lines have been increased from 10 to 20. The registered complaints/ grievances are immediately transferred through online and also by SMS without any delay to the respective Depot Engineers to take immediate action.

On an average, 310 complaints are being registered daily in the complaint cell. The grievance redressal system has been revamped to make it user friendly. A separate consumer redressal section has been formed in the head office to serve the consumers.

5.10.2. Complaint redressal through website

Consumers can register their complaints online through the Board's website www.chennaietrowater.tn.gov.in. The registered complaints are forwarded to the respective Area Offices and the same are redressed as per Citizens' Charter norms.

5.10.3. Metro Water Mobile App

For the use of consumers, CMWSSB has introduced a mobile app '**Metro Water**'. This app has been designed in such a way that Public / Consumers can register their water related complaints to the concerned officers from any

place at any time through their smart mobile phones. This '**Metro Water**' app can be downloaded from google playstore.

Also, Public can upload their details such as name, mobile no., e-mail address once and can send images / Photographs related to water complaints if any, through their smart mobile phones and inform the status. Consumers are requested to provide the details while registering their complaints. After that, an exclusive complaint number will be generated and sent to the public through SMS. Public can view the status of their complaint through this Mobile App.

5.10.4. Open House Meeting

To improve the service delivery to the consumers of Chennai city, the Board conducts Open House Meetings in all the Area Offices between 10.00 A.M. and 1.00 P.M. on the 2nd Saturday of every month presided over by the

Senior Officers of the Board. The complaints / grievances / suggestions received during these meetings are attended immediately.

5.10.5. Chennai Smart City – Water Supply and Sewerage Improvement Works

The Ministry of Housing & Urban Affairs, Government of India had selected 100 cities throughout India for changing them into Smart Cities. Chennai City is one among the Smart Cities. Under Chennai Smart City, the following improvement works are proposed:

- 1) The work of installing 12708 AMR water meters at a cost of ₹ 9.50 crores to commercial establishment and intensive water usage establishments in Chennai city is under progress.
- 2) The work order to install controlling device by using smart cards in the 191 filling posts of 41 filling stations of CMWSSB and also to inspect

them online was issued at a cost of ₹ 11.75 crores and the work has been completed and in use.

5.11. Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a new, universal set of goals. It is a collection of targets, aim and indicators. This is expected to be utilized to frame their agendas and political policies in coordination with the UNO Member Countries over the next 15 years. India along with other countries had signed the declaration on 2030 Agenda for Sustainable Development Goals (SDGs) at the Sustainable Development Summit of the United Nations held in September 2015. SDGs are comprehensive and focussing on 5 Ps – People, Planet, Prosperity, Peace and Partnership.

On its current trajectory, India has already set for itself more ambitious target for implementation of SDGs in several areas of

economic progress and sustainability. The role of State Government is to design and implement the schemes in order to aim at achieving all the social and economic parameters of SDGs.

5.11.1. Goals and targets related to water supply and sanitation for all

Everyone on earth should have access to safe and affordable drinking water and that's the goal for 2030. While many people around the world get benefitted with safe drinking water and sanitation, still many others don't. Water scarcity affects more than 40% of people around the world and that number is projected to go even higher as a result of climatic change. If the present situation continues, by 2050 atleast 1 out of 4 persons are likely to be affected again and again by water scarcity. So, if we take a new path with more international co-operation, protecting wet lands and rivers, sharing water- treatment technologies and more, then it will help us to accomplish the Sustainable Development Goals.

Water Supply and Sanitation for all					
Water Supply (ULBs)				Sanitation (ULBs)	
Year	Population covered by protected water supply schemes(In lakh)	% of population cover	Per capita domestic consumption per day(LPCD)	Personal sanitation cover (Population covered by Latrines(In Lakh)	% of population cover
2012-13	47.52	70	122	48.86	72
2013-14	58.35	85	111	50.42	73
2014-15	58.86	85	83	50.76	73
2015-16	59.33	84	82	51.13	72
2016-17	59.80	84	116	51.46	72
2017-18	61.29	84	89	53.24	73
2018-19	70.82	96	92	66.70	91
2019-20	72.66	97	94	67.84	91
Projections					
2020-21	73.57	97	99	68.19	90
2021-22	74.50	98	101	69.50	94
2022-23	77.22	100	104	74.35	96
2023-24	78.03	100	109	75.11	96
2024-25	78.86	100	139	78.86	100

6. Tamil Nadu Water Supply and Drainage Board

Tamil Nadu Water Supply and Drainage Board was formed by the Government of Tamil Nadu under an Act of the State Legislative Assembly on the 14th day of April 1971, to exclusively function as a statutory body in providing protected water supply as well as implementing underground sewerage schemes to the Rural and Urban local bodies in Tamil Nadu excluding Chennai Corporation.

The Board is constituted with the Additional Chief Secretary to Government, Municipal Administration and Water supply Department as the Chairman and the Managing Director as the Chief Executive supported by Technical, Financial and Administrative Wings.

There are four Chief Engineers at Regional level with Headquarters at Vellore, Thanjavur, Coimbatore and Madurai.

6.1 Functions of TWAD Board

- a. Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes.
- b. Operation and Maintenance of Combined Water Supply Schemes.
- c. Monitoring the Quality of water supplied and conducting Surveillance Programme.
- d. Implementing measures towards Sustainability of Drinking Water Sources.
- e. Carrying out Communication and Capacity Development Activities.

6.2 Water Supply Programme

Water supply schemes, either new or improvement to the existing, are being formulated to the Rural Habitations as well as Urban Towns through Individual Stand-alone schemes and Combined Water Supply Schemes

depending on the availability of source, population benefitted and infrastructure required.

After execution of the schemes, they are handed over to the local body for further maintenance if the beneficiary is an individual local body whereas if the beneficiaries are more than one local body, TWAD Board maintains the schemes

6.2.1. Rural water supply programme

Until last year, Rural Water Supply schemes have been implemented with Government of India Grants under National Rural Drinking Water Programme with matching State Government Share and Minimum Needs Programme. The pro-rate of water supply to the Rural beneficiaries has been quantified in terms of litres per capita per day which according to the norms of NRDWP is 55 lpcd.

Now the Government of India have subsumed the NRDWP into a new programme named Jal Jeevan Mission (JJM) which has been launched with the objective of providing Functional Household Tap Connection (FHTC) to every Rural Household by 2024. The focus of this programme is on service delivery at Household level ie. water supply on regular basis in adequate quantity and of prescribed quality. Based on the above initiative, Tamil Nadu Government has proposed to take up water supply schemes to provide the prescribed quantity of water under this programme through FHTCs with public contribution.

The work of creating required infrastructure is to be taken up by TWAD Board and that of providing FHTC to the beneficiaries is to be taken up by the Rural Development and Panchayat Raj Department with combined efforts.

6.2.2. Urban Stand-alone Water Supply Programme

For Stand-alone Water Supply Scheme, TWAD Board functions as project implementation agency to Corporations, Municipalities and Town Panchayats. The Schemes are handed over to the respective Urban local bodies for maintenance on completion.

Financial support for Urban Water Supply schemes are provided by Integrated Urban Development Mission (IUDM), Tamil Nadu Urban Development Project –III (TNUDP-III), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), German Development Bank (KfW), Tamil Nadu Sustainable Urban Development Project (TNSUDP), Minimum Needs Programme and Capital Grant Fund.

During the year 2019-20, under Urban water supply programme, Water supply improvement scheme to Tindivanam Municipality has been

completed at an estimated cost of ₹ 52.45 crore, benefitting a population of 0.83 lakh.

Further 11 schemes covering 2 Corporations and 9 Municipalities which are targeted for completion over the years 2019-20 and 2020-21 are under various stages of implementation at an estimated cost of ₹ 1004.77 crore which on completion will supply 231.02 MLD of water to benefit 20.18 lakh people. Also, tender has been called for to execute schemes in 3 Municipalities namely Kuzhithurai, Thiruthani and Bodinayakkanur and Thenkarai Town Panchayat at an estimated cost of ₹ 180.16 crore to benefit a population of 1.45 lakh.

The details of the Urban Stand-alone Water Supply schemes are as given below:

Sl. No	District	Name of Scheme	Est. Cost(₹ In Crore)	Funding	Population benefitted (in Lakh)
Schemes Completed During 2019-20					
1	Villupuram	WSIS to Tindivanam Municipality.	52.45	UIDSSMT	0.83
		Sub Total-I	52.45		0.83
Schemes Under Progress					
1	Thirunelveli	WSIS to Thirunelveli Corporation	230.00	Kfw	6.88
2	Namakkal	WSIS to Namakkal Municipality.	185.24	TNSUDP	1.84
3	Coimbatore	WSIS to 3 Added areas viz., Koundampalayam, Vadavalli and Veerakeralam to Coimbatore Corporation.	108.16	Kfw	3.59
4	Nilgiris	CWSS to Coonor Municipality, Wellington Military Station and Pasteur Institute of India.	95.30	Kfw	0.59
5	Thoothukudi	WSIS to Kovilpatti Municipality.	81.82	UIDSSMT	1.40
6	Namakkal	WSIS to Thiruchengode Municipality.	81.22	IUDM	1.50
7	Theni	WSIS to Bodinayakanur Municipality.	76.15	Kfw	1.00
8	Dindigul	WSIS to Kodaikkanal	46.31	UIDSSMT	0.57

Sl. No	District	Name of Scheme	Est. Cost(₹ In Crore)	Funding	Population benefitted (in Lakh)
		Municipality.			
9	Karur	WSIS to Inam Karur Municipality.	18.57	Kfw	1.45
10	Madurai	WSIS to Anaiyur Municipality.	8.97	MNP	0.72
11	Madurai	WSIS to Usilampatti Municipality.	73.03	IUDM	0.64
		SubTotal-II	1004.77		20.18
Tender under Process					
1	Kanyakumari	WSIS to Kuzhithurai Municipality.	30.94	IUDM	0.31
2	Thiruvallur	WSIS to Thiruthani Municipality	109.68	IUDM&CGF	0.85
3	Theni	WSIS to Bodinayakanur Municipality (MullaiPeriyar)	30.00	CGF	--
4	Theni	WSIS to Thenkarai Town Panchayat	9.54	NABARD	0.29
		Sub Total-III	180.16		1.45
		Grand Total	1237.38		22.46

6.2.3. Major Combined Water Supply Schemes

Schemes costing more than ₹ 100 crore are categorized under Major Combined Water Supply

scheme. Due to the volume and extent of work in this type of schemes, the implementation is spread over a period of years.

8 Major Combined Water Supply schemes covering 6 Municipalities, 34 Town Panchayats and 2,382 Rural habitations in Dindigul, Kanniyakumari, Trichy, Erode, Tiruppur, Coimbatore, Namakkal, Salem, Tirunelveli and Virudhunagar Districts are under various stages of implementation at an estimated cost of ₹ 1940.48 crore which are targeted for completion over the years 2019-20 and 2020-21 and upon completion will supply 213.43 MLD of water to a population of 29.84lakh.

Apart from this, tenders have been received for CWSS to Aruppukottai, Sattur and Virudhunagar Municipalities in Virudhunagar District taken up at an estimated cost of ₹ 444.71 crore to benefit a population of 2.6 lakh and are under scrutiny.

These schemes are implemented with the financial assistance from Jal Jeevan Mission-JJM (erstwhile National Rural Drinking Water Programme –NRDWP), State Matching Share (SMS), Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), Urban Local Body Contribution (ULB), World Bank TNSUDP (Tamil Nadu Sustainable Urban Development Project), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Integrated Urban Development Mission (IUDM), HUDCO and German Development Bank (KfW).

The details of the Major Combined Water supply schemes are as given below:

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding	Population (in Lakh)
	Schemes Under Progress			
1	Combined Water Supply Scheme to Keeranur,	108.80	NABARD, MNP,	2.22

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding	Population (in Lakh)
	Neikkarapatty Town Panchayats and 253 Rural Habitations in Dindigul District		JJM	
2	CWSS to Sankarankoil, Puliyanakudi Municipalities, Thiruvankadam Town Panchayat in Thirunelveli District and Rajapalayam, Sivakasi, Thiruthangal Municipalities in Virudhunagar District.	543.20	Word Bank TNSUDP, , AMRUT, ULB Contribution	6.20
3	CWSS to AlampalayamTP ,Padaveedu TP including 669 Rural habitations in Pallipalayam and Tiruchengode Unions in Namakkal District and Sangagiri Town Panchayat in Salem District	399.46	NABARD, ULB Contribution under TP CGF& Rural CGF	6.61
4	CWSS to Annur and Mooperipalayam Town Panchayats in Coimbatore District, Avinashi Town Panchayat in Tiruppur District, Airforce Station, Sular and Bulk quantity to 155 Rural Habitations in Palladam and Tiruppur	241.00	NABARD, ULB Contribution under TPCGF& Rural CGF, Deposit	1.26

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding	Population (in Lakh)
	Unions in Tiruppur District.			
5	CWSS to Perundurai and 7 other Town Panchayats including 547 wayside Rural Habitations in Erode and Tiruppur Districts	224.00	NABARD, MNP, JJM	5.47
6	CWSS to Eraniel Town Panchayat and 319 Rural Habitations and Improvements to Padmanabapuram CWSS and Kattathurai CWSS in Kanyakumari District	174.00	NABARD, MNP, KfW, JJM	3.44
7	CWSS to 293 Rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	NABARD, MNP, JJM	1.68
8	CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District.	109.80	NRDWP, SMS, MNP(80), IUDM	2.96
	Sub Total-I	1940.48		29.84

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding	Population (in Lakh)
Tender under process				
1	CWSS to Aruppukottai, Sattur and Virudhunagar Municipalities in Virudhunagar District	444.71	IUDM/ HUDCO	2.60
	Sub Total-II	444.71		2.60
	Grand Total	2385.19		32.44

6.2.4. Other Combined Water Supply Schemes (Costing less than ₹100 crore)

During the year 2019-20, 9 Combined Water Supply Schemes covering 250 Habitations have been completed at an estimated cost of ₹59.53 crore to supply 5.38 MLD of safe potable water in Salem, Theni, Dindigul, Erode and Nilgris Districts, benefitting a population of 0.97 lakh.

Further, 23 Combined Water Supply schemes covering 7 Town Panchayats and 2,894 Rural

habitations in Tiruppur, Thoothukudi, Karur, Tirunelveli, Dindigul, Krishnagiri, Trichy, Coimbatore and Cuddalore Districts are under various stages of implementation at an estimated cost of ₹885.67 crore which on completion will supply designed quantity of 107.09 MLD (Ultimate stage) of potable water to a population of 21.50 lakh.

Apart from this, tenders have been received for 3 Combined water supply schemes covering 328 Rural habitations in Krishnagiri District and Tiruppur Districts at an estimated cost of ₹111.33 crore to benefit a population of 2.00 lakh and are under scrutiny.

These schemes are implemented with financial assistance from the Jal Jeevan Mission-JJM (erstwhile National Rural Drinking Water Programme –NRDWP), Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), NABARD State

Share, State Matching Share (SMS), Capital Grand Fund (CGF) and Deposits.

The details of various schemes taken up are as given below:

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
Schemes Completed During 2019-20- 9 Nos				
1	CWSS to Mulligur and 54 Rural Habitations of Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	MNP/ JJM	0.31
2	CWSS to 51 Habs in Konganapuram&Edapadi unions by augmenting the existing CWSS to 327 Habitations in Salem District utilising the existing HW, WTP Booster stations.	9.50	MNP/ JJM	0.10
3	CWSIS to 30 Habitations of Patlur Village Panchayat in Ammapettai Union of Erode District	6.21	MNP/ JJM	0.10

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
4	CWSIS to 28 Habitations of Mathur Village Panchayat in Ammapettai Union of Erode District	5.52	MNP/ JJM	0.07
5	CWSIS to 54 Habitations of Mylambadi Village Panchayat in Bhavani Union of Erode District	5.25	MNP/ JJM	0.09
6	CWSS to 20 rural Habitations of Vadamadurai Union in Dindigul District	3.62	MNP/ JJM	0.04
7	WSIS to Aranmanaipudur and 4 other Habitations of Theni Union in Theni District	1.67	MNP/ JJM	0.12
8	WSIS to Manjanaican Patty and 2 other Habitaions in Bodi Union in Theni District	0.98	MNP/ JJM	0.05
9	CWSIS to Kodangipatti and 3 other Rural Habitations in Bodi union of Theni District	0.93	MNP/ JJM	0.09
	Sub Total-I	59.53		0.97
Schemes Under Progress- 23 Nos				

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
1	CWSS to 155 Rural Habitations in Palladam and Tiruppur Unions of Tiruppur District	99.24	NABARD/ NABARD State Share/ JJM/	2.94
2	CWSS to 248 Rural Habitations in Kovilpatti (Part), Kayathar (Part), Ottapirdaram (part), Vilathikulam (part) and Pudur (Part) unions in Thoothukudi District	94.04	SMS/ JJM/	1.50
3	CWSS to 5 Town Panchayats and 318 Rural Habitations of Madathukkulam and Udumalpet Unions in Tiruppur District	85.75	NABARD/ NABARD State Share/ JJM	4.06
4	CWSS to 274 Rural Habitations of Thanthoni Union in Karur District	81.41	NABARD/ NABARD State Share/ JJM	0.86
5	Combined Water Supply Scheme to 212 rural habitations in Pollachi (South), Pollachi (North) and Kinathukadavu Unions in Coimbatore District	69.31	MNP/ JJM	0.85

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
6	CWSS to 253 Rural Habitations of Kulithalai and Thogamalai Unons in Karur District	52.75	NABARD/ MNP/ JJM	0.91
7	CWSS to 138 Rural Habitations of Thottiyam Union in Trichy District	49.95	NABARD/ NABARD State Share/JJM	0.64
8	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations of Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	SMS/ JJM	2.00
9	CWSS to 135 Rural Habitations of Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made inNatham CWSS in Dindigul District	46.32	NABARD/ MNP/ JJM	0.33
10	CWSS to 170 Rural Habitations of Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	SMS / JJM	1.45

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
11	CWSS to Sigaralapalli & 143 Habitations of Bargur Union in Krishnagiri District	31.82	NABARD/ NABARD State Share/ JJM	0.41
12	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil Unions in Tirunelveli District	31.32	SMS/ JJM	1.85
13	CWSS to Reddiarpatti & 63 Rural Habitations of Palayamkottai Union in Tirunelveli District	28.71	NABARD/ NABARD State Share/ Rural CGF/ JJM	0.57
14	CWSS to Uthangarai Town Panchayat & 50 other Habitations of Uthangarai Union in Krishnagiri District	28.24	NABARD/ NABARD State Share/ JJM	0.63
15	CWSS to 53 Rural Habitations of Gujiliamparai Union in Dindigul District	20.34	NABARD/ NABARD State Share/ JJM	0.23
16	CWSS to 63 Rural Habitations of Oddenchatram Union in Dindigul District	17.74	NABARD/ NABARD State Share/ JJM	0.20

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
17	CWSS to 90 Rural Habitations of Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	SMS/ JJM/	0.58
18	CWSS to 84 Rural Habitations of Vedasandur Union in Dindigul District	12.77	NABARD/ NABARD State Share / JJM	0.42
19	CWSS to 38 Rural Habitations of Reddiarchatram Union in Dindigul District	11.55	NABARD/ NABARD State Share/ JJM	0.19
20	Combined Water Supply Scheme to 17 habitations in Panruti and 18 habitations in Annagramam Union in Cuddalore district.	9.21	DEPOSIT	0.48
21	Combined Water Supply Scheme to Nagondapalli and 27 other habitations in Housur Union in Krishnagiri District	8.10	MNP/ JJM	0.20
22	CWSS to 8 Rural Habitations around SIPCOT Industrial Complex in Thoothukudi District	6.40	DEPOSIT	0.08

Sl. No.	Name of Scheme	Est. Cost(₹ In crore)	Funding	Population benefitted (in lakh)
23	CWSS to Deveripalli and 23 other Habitations of Hosur union in Krishnagiri District.	4.58	MNP/ JJM	0.12
	Sub Total-II	885.67		21.50
Tenderunder Process- 3 Nos				
1	Providing Combined Water Supply to Ennegollu & 122 other Habitations in Veppanapalli Union in Krishnagiri District.	31.00	MNP/ JJM	0.54
2	Providing Combined Water Supply to Velagalahalli & 39 other Habitations in Krishnagiri Union in Krishnagiri District.	9.90	MNP/ JJM	0.12
3	CWSS to 165 habtitations of Tiruppur union in Tiruppur district	70.43	NABARD/ NABARD State Share	1.34
	Sub Total-III	111.33		2.00
	Grand Total	1056.53		24.47

6.2.5. Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Projects

Under AMRUT scheme, 9 Water Supply and 5 Underground Sewerage Schemes have been taken up in 3 phases during the period 2015-16, 2016-17 and 2017-20.

6.2.5.1 Water supply schemes

During the year 2019-20, Improvement of Water supply Distribution system to Ambur Municipality in Thiruppathur District has been completed at an estimated cost of ₹ 50.90 crore benefitting a population of 1.53 lakh.

7 Water Supply Schemes in Erode, Tiruppur, Krishnagiri, Vellore, Coimbatore, Virudhunagar and Kanniyakumari Districts are under various stages of implementation at an estimated cost of ₹1910.88 crore which on completion will supply designed quantity of 219.64 MLD of potable water to a population of 55.31 lakh.

Further, tenders have been received in 3 packages for the WSIS to expanded Coimbatore Corporation including newly merged areas with River Bhavani as source – Pillur – III, at an estimated cost of ₹ 740.15 crore to benefit a population of 32.79 lakh. Work order has been issued for 1 package and tenders are under scrutiny for the other 2 packages.

Besides the funding from AMRUT, these schemes are implemented with financial assistance from Integrated Urban Development Mission (IUDM), World Bank assisted TNSUDP and German Funding Agency (KfW) assisted Sustainable Municipal Infrastructure Financing – Tamil Nadu (SMIF-TN-II-2) and Asian Development Bank.

The details of the schemes are as given below:

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding pattern	Population (in lakh)
Scheme completed during 2019-2020- 1 No.				
1	Improvement of Water supply Distribution system to AmburMunicipality in Tiruppathur District	50.90	AMRUT(GoI&GoTN), ULB	1.53
	Sub Total- I	50.90		1.53
Schemes under progress – 7 Nos.				
1	Dedicated Water supply scheme to Erode Corporation in Erode District.	484.45	AMRUT(GoI&GoTN), ULB	9.05
2	Improvement of Water supply Distribution System to Tiruppur Corporation in Tiruppur District.	250.00	AMRUT(GoI&GoTN), ULB	19.50
3	Improvement of Water supplyDistribution Systemto Hosur Corporation (Phase-I) in Krishnagiri District	87.91	AMRUT(GoI&GoTN), ULB	2.29
4	Improvement of Water supply Distribution system to Vellore Corporation in Vellore District.	234.93	AMRUT(GoI&GoTN), ULB	9.20

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding pattern	Population (in lakh)
5	Improvement of Water Supply Distribution System to 8 Added Areas of Coimbatore Corporation in Coimbatore District	409.33	AMRUT(GoI&GoTN), KFW, ULB	9.22
6	Water Supply Improvement Scheme to Rajapalayam Municipality in Virudhunagar District	192.83	AMRUT(GoI&GoTN), World bank TNSUDP Loan, PSGF Grant, ULB	2.15
7	Water Supply Improvement Scheme to Nagercoil Corporation in Kanyakumari District	251.43	AMRUT(GoI&GoTN), TNSUDP Loan, ULB	3.90
	Sub Total- II	1910.88		55.31
Scheme under Tender stage- 1 No.				
1	WSIS to expanded Coimbatore Corporation including newly merged areas with River Bhavani as source – Pillur – III in Coimbatore District	740.15	AMRUT(GoI&GoTN), ULB	32.79
	Sub Total- III	740.15		32.79
	Water supply Total	2701.93		89.63

6.2.5.2 Under Ground Sewerage Schemes under AMRUT

5 Underground Sewerage Schemes at an estimated cost of ₹1094 crore, to benefit a population of 9.82 lakh in Nagapattinam, Ramnad, Coimbatore, Virudhunagar & Tirupathur Districts are in various stages of implementation through which on completion 75.50 MLD of wastewater will be available for reuse.

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding pattern	Population (in Lakh)
Schemes under progress				
1	Under ground sewerage scheme to Velankanni Town Panchayat in Nagapattinam District	33.51	AMRUT(GoI&GoTN), IUDM&ULB	0.19
2	UGSS to Rameshwaram Municipality in Ramanathapuram District	52.60	AMRUT(GoI&GoTN), ULB	0.43
3	UGSS to Kurichi and Kuniyamuthur areas of Coimbatore	591.14	AMRUT(GoI&GoTN), ADB&ULB	5.17

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Funding pattern	Population (in Lakh)
	Corporation in Coimbatore District			
4	UGSS to Rajapalayam Municipality in Virudhunagar District	251.20	AMRUT(GoI&GoTN), ADB&ULB	2.20
5	UGSS to Ambur Municipality in Tiruppathur District	165.55	AMRUT(GoI&GoTN), ADB&ULB	1.83
	UGSS Total	1094.00		9.82

6.3. Operation and Maintenance of CWSS

Combined Water Supply Schemes covering more than one local body are being maintained by TWAD Board as per G.O. (Ms) No.84, Municipal Administration and Water Supply Department, dated 10.03.1994.

At present 556 Combined Water Supply Schemes covering 9 Corporations, 66 Municipalities, 347 Town Panchayats, 48,948 Rural Habitations and 541 Industries /

Institutions, benefiting a population of 4.23 Crore are being maintained by TWAD Board.

An average of 1,928 Million Liters of water was supplied daily through the above 556 CWSS to the local bodies and Industries/ Organisations as detailed below.

Sl. No.	Name of Beneficiary	No. of Beneficiary	Designed Quantity (in MLD)	Average Supplied Quantity (in MLD)
1	Corporations	9	265	209
2	Municipalities	66	268	210
3	Town Panchayats	347	358	323
4	Rural Habitations	48,948	1107	1072
5	Industries / Institutions /Commercial Organisations	541	148	114
	Total	49911	2146	1928 (90%)

- Out of 99 schemes taken up in the TWAD maintained age old (outlived) CWSS, in order

to make them function to its full capacity for another 15 years, works in 92 schemes have been completed and the works in remaining CWSS are to be completed during 2019-20.

- 618 No. of works, under SDRF funds sanctioned from 2017-18 to 2019-20, to mitigate the water supply shortfall in the TWAD maintained CWSS during acute summer have been completed.
- Automatic Water Meters are under installation in the schemes maintained by the Board for an amount of ₹26.06 Crore to monitor and reduce the water loss.
- 365 diesel generators are kept ready to manage any power supply shortfall during the ensuing summer.

6.4. Water Quality check and surveillance

TWAD Board has established one State level water testing laboratory at Chennai which has

been recognized as State Level Guide Test Lab for Tamil Nadu by the Government of India. In order to achieve the objective of ensuring safe drinking water supply to the people of the State, 31 District level and 56 sub division level water testing laboratories are functioning all over Tamil Nadu.

These laboratories have facilities for testing all the basic physical, chemical and bacteriological water quality parameters and for effective surveillance and monitoring of water supply sources in both Rural and Urban areas. The State level water testing laboratory, Chennai has been upgraded to NABL Accreditation (National Accreditation Board for Testing and Calibration Laboratories).

During the year 2019-20, 1,58,385 water samples have been tested in State and District laboratories with State funds.

For the year 2020-21, it has been proposed to test around 1 lakh water samples in State and District laboratories with State funds. It is also proposed to test 1.68 lakh water samples in the 56 Sub-division level laboratories for water quality monitoring and surveillance under Jal Jeevan Mission (JJM).

Further, during the year 2020-21, it is proposed to impart training for 12,525 basic servants for using Field Water Testing Kits. One source in each habitation is to be tested using FTK in village panchayat and for cross verification, 12,525 water samples are also proposed to be tested in District Water Testing lab and 250 water source samples are to be tested in State level laboratory, Chennai in the year 2020-21.

6.5 Hydro Geological Activities:

Identification of source of water supply, ensuring recharge of water source through water retaining structures and rain water harvesting play an important role in fulfilling the objective of

providing adequate and sustained water supply to the public.

TWAD Board uses scientific methods involving Remote Sensing and GIS (Geographical Information Systems) in identification of sources to various water supply schemes implemented by TWAD Board and identification of suitable locations for Recharge Structures to be taken up under Sustainability Component.

Further, District-wise Block ATLAS showing Ground water Prospects (both hard & soft copies) along with water Quality maps (soft copies) have been created by TWAD Board with funding from the Ministry of Drinking Water and Sanitation, Government of India and are readily available for sharing with all the departments for their field use.

During the year 2019-20, under Tamil Nadu Mineral Foundation Trust Fund, 3 nos. of Check Dam have been constructed in Ariyalur District at

an estimated cost of ₹60 lakh and 7 nos. of Check Dam have been constructed in Virudhunagar District at an estimated cost of ₹ 74.14 lakh towards source sustainability measures.

First time in the history of Tamil Nadu, a Government department, Tamil Nadu Water Supply and Drainage Board, joined hands with State Bank of India and Canara Bank by roping in their CSR funds along with the contribution from the employees of TWAD Board and people's participation had created rain water harvesting structures at Chinnapallikuppam and Anpoondi villages in Vellore district at a cost of ₹ 33.00lakh.

Anticipating the need of water for future generations and importance of implementing the Rainwater harvesting structures, the government employees shall execute rain water harvesting structures in their premises.

On completion of this project, it is observed that the water level has risen about 32 ft and 19 ft in Chinnapallikuppam and Anpoondi villages respectively. It is to be noted that, the improvement of quantity and quality of ground water had led to the development of socio-economic and ecosystem of the villages.

Further, realizing the necessity of this project all the press, media and television channels appreciated this work.

A motivated task of ensuring water security to the Urban Local Bodies through various methods of rainwater harvesting has been taken up by TWAD Board under Sustainable Water Security Mission ("SuWaSeM") at a cost of ₹ 20 crore. This project will be implemented through Commissionerate of Municipal Administration and Directorate of Town Panchayats with TWAD Board as the Nodal Agency for this mission for providing technical assistance on implementation.

During the year 2019-20, proposals for rainwater harvesting such as improvement of Ooranies, roof top rain water harvesting, recharge pits in 21 Districts have been approved for an amount of ₹ 6.37 crore.

Geo Tagging of drinking water assets such as water supply source, over head tank, School & Anganwadi water supply scheme in the IMIS website have been taken up from March 2017. During the year 2019-20, 63,093 points were taken up for Geo Tagging and 43830 points have been Geo tagged as on 31.12.2019. Remaining 19,263 points (Sources and delivery points) are to be Geo tagged.

6.6. Underground Sewerage Schemes other than AMRUT

In a phased manner, Under Ground Sewerage Schemes to the Urban Local Bodies are being implemented by TWAD Board on priority and need basis as finalized by the Government.

5 Underground Sewerage Schemes viz. UGSS to Arakkonam Municipality, Mettur Municipality, Chidambaram Municipality, Sivagangai Municipality and Palanichettipatti Town Panchayat have been completed at an estimated cost of ₹ 310.20 crore during the year 2019-2020 to benefit a population of 3.27 lakh through which an overall quantity of 32.60 MLD of waste water is available for reuse.

16 Under Ground Sewerage Schemes at an estimated cost of ₹ 1010.54 crore, to benefit a population of 14.42 lakh in Thoothukudi, Kanyakumari, Tirupatthur, Namakkal, Sivagangai, Virudhunagar, Erode, Coimbatore, Kallakkurichi, Chengalpattu, Thiruvallur, Thanjavur and Trichy Districts are in various stages of implementation through which on completion 107.38 MLD of waste water will be available for reuse.

Further, tenders have been called for to execute Underground Sewerage Scheme to added areas of Villupuram Municipality in Villupuram District and Melachokkanathapuram Town Panchayat in Theni District at an estimated cost of ₹ 304.72 crore to benefit a population of 0.96 lakh.

The details of the schemes are as given below:

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Fund allocation	Population (in lakh)
Schemes Completed during 2019-2020- 5 Nos.				
1	UGSS to Arakkonam Mpty	95.52	(UIDSSMT) (IUDM) (CGF) (ULB)	0.96
2	UGSS to Mettur Mpty	73.09	(UIDSSMT) (IUDM) (CGF) (ULB)	0.63
3	UGSS to Palanichettipatti Town Panchayat	34.67	(KfW) (IUDM) (CGF) (TURIF)	0.28
4	UGSS to Chidambaram Mpty	75.62	(UIDSSMT) (IUDM) (CGF) (ULB)	0.78

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Fund allocation	Population (in lakh)
5	UGSS to SivangaiMpty	31.30	(TNUDP-III) (IUDM) (CGF) (ULB) (IGFF)	0.62
	Sub Total- I	310.20		3.27
Schemes under progress- 16 Nos.				
1.	UGSS to Thoothukudi Corporation.	95.00	(TNUDP-III) (IUDM) (IGFF) (ULB)	3.00
2.	UGSS to Nagercoil Corporation.	76.04	(UIDSSMT) (IUDM) (CGF) (ULB)	1.81
3.	UGSS to Thirupathur Mpty	104.01	(UIDSSMT) (IUDM) (CGF) (ULB)	1.15
4.	UGSS to Rasipuram Mpty	55.42	(IUDM) (ULB)	0.69
5.	UGSS to Karaikudi Mpty	112.53	(KfW) (IUDM) (CGF)	1.76
6.	UGSS to Sattur Mpty	37.66	(UIDSSMT) (IUDM) (CGF) (ULB)	0.40
7.	UGSS to Sathiyamangalam Mpty	54.26	(IUDM)	0.54
8.	UGSS to Pollachi Mpty	109.62	(KfW)	1.08

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Fund allocation	Population (in lakh)
			(IUDM) (CGF) (ULB)	
9.	UGSS to Ulundurpettai TP	38.67	(KfW) (IUDM) (CGF)	0.37
10.	UGSS to Mettupalayam Mpty	91.70	(KfW) (IUDM) (ULB)	0.84
11.	UGSS to Perundurai TP	54.78	(KfW) (IUDM)	0.45
12.	UGSS to Thiruporur TP	42.00	(IUDM) (TNUDF) (CGF)	0.63
13.	UGSS to Ponneri TP	54.78	(IUDM) (TNUDF) (CGF)	0.83
14.	UGSS to Vallam TP	34.51	(IUDM) (CGF)	0.23
15.	UGSS to Manachanallur TP	30.11	(IUDM) (CGF)	0.43
16.	UGSS to S. Kannanur TP	19.45	KfW, (TNUDF) (CGF), (ULB)	0.21
	Sub Total- II	1010.54		14.42
Tender under process-2 Nos.				
1.	UGSS to Melachokkanathapuram Town Panchayat	41.72	CGF	0.26
2.	UGSS to added areas of Villupuram Municipality	263.00	IUDMN, HUDCO,	0.70

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Fund allocation	Population (in lakh)
			ULB	
	Sub Total- III	304.72		0.96
	Grand Total	1625.46		18.65

6.7. Investigation and Preparation of Detailed Project Reports

6.7.1. Water Supply Schemes

TWAD Board has prepared DPRs for 21 Water Supply Schemes during 2019-20 at a cost of ₹ 5067.24 crore benefitting a total population of 44.59 lakh.

Out of the 21 Schemes, sanction has been accorded to 14 Water Supply Schemes, covering 5 Municipalities, 2 Town panchayats and 2558 Rural Habitations, benefitting a population of 17.54 lakh at a total cost of ₹ 1468.26 crore. The DPRs for the balance 7 Schemes covering 1 corporation, 4 Municipalities, 27 Town Panchayats and 4700 Rural habitations benefitting a population of 27.05

lakh at an estimated cost of ₹ 3598.98 crore are in various stages of finalisation for sanction.

In addition to the above, DPR for 14 Water Supply Schemes to cover 6 Municipalities, 37 Town Panchayats and 14,425 Rural habitations benefitting a population of 78.91 lakh at a tentative Project cost of ₹ 11,788.85 crore are under preparation.

6.7.2. Underground Sewerage Schemes

TWAD Board is implementing Under Ground Sewerage Schemes in selected Towns based on the priority fixed by CMA, DTP and Government.

TWAD Board has prepared DPRs for 7 Underground Sewerage Schemes during 2019-20 at a cost of ₹ 2,714.05 crore benefitting a total population of 10.58 lakh. Out of the 7 Schemes, sanction has been accorded to 3 Schemes covering 2 Municipalities and 1 Town panchayat benefitting a population of 1.53 lakh at a total cost

of ₹ 572.72 crore. The DPRs for the balance 4 Schemes covering 3 Corporations, 1 Municipality, benefiting a population of 9.05 lakh at an estimated cost of ₹ 2,153.33 crore are in various stages of finalisation for sanction.

6.7.3. Desalination Plants

The Coastal Districts Ramanathapuram, Thoothukudi and Villupuram face water scarcity due to saline nature of the ground water, depletion of ground water and river sources due to failure of monsoon. As a permanent measure, the way forward to enhance the water supply to the required level in all seasons in Rural and Urban areas of these Districts is only with Sea Water Desalination.

Considering the existing scenario and based on the Announcement made by the Government, TWAD Board has prepared Detailed Project Reports at a cost of ₹ 3,041 Crore to install 60 MLDDesalination Plants each at Ramanathapuram

and Villupuram Districts including infrastructures for conveyance of the product water.

The population benefitted with the DSP at Ramanathapuram will be 3.14 Lakh in Ramanathapuram District and 3.21 Lakh in Thoothukudi District and with the DSP at Vilupuram will be 7.33 lakh in Villupuram District.

These Project are proposed to be implemented with External Loan Assistance (Asian Infrastructures Investment Bank) and the mobilization of funding is under process.

6.8. Research, Design, Training and Project Management Centre

Various activities on energy conservation, use of renewable source of power, water and energy audit, design strategies, water management are carried out in the Research, Design, Training and Project Management Centre. The details of the activities are listed below:

6.8.1. Energy conservation and savings in the Operation and Maintenance cost in Combined Water Supply Schemes (CWSS),

- Automation of the operation of Pump sets upto 5 HP duty,
- Installation of Maximum Demand Controller (MDC),
- Utilisation of Hydraulic Energy available in water pipe line to the maximum extent possible,

6.8.2. Hydro Power generation (Renewable green energy)

- Hydro Power Generation by utilizing the water power available in the pipe line.

6.8.3. Installation of Solar Power Plants

- Solar Power Plants – wherever area is available, Solar Power Plants are to be installed to promote renewable energy

for the operation of pump sets upto 5 HP duty.

6.8.4. Water Audit and Energy Audit,

- Assess and reduce Non-revenue water reduction,
- Assess energy consumption and reduction,

6.8.5. Validation of Design strategies of CWSS,

6.8.6. Performance evaluation of CWSS under O&M

6.8.7. Bringing out the Hand book on “Mechanical and Electrical Design of Pumping stations for urban water supply and Sewerage projects” is under preparation.

6.8.8. Design of projects by using advanced softwares viz. Water Gem, Sewer Gem and STAAD pro

6.8.9. Facilitation to disseminate the latest products available in the market suitable for the upcoming projects and recommend

them for inclusion in future Schedule of Rates.

6.9. Material Quality control Laboratory in TWAD Board

There are four material quality control laboratories functioning in TWAD Board at Coimbatore, Madurai, Trichy and Tindivanam. National Accreditation Board for Testing and Calibration Laboratories (NABL) certifications have been awarded to the Laboratories in Coimbatore and Madurai.

The field samples are tested routinely for its conformity to the required standards as per the procedures in the relevant Bureau of Indian Standards (BIS) prior to its usage at site. The laboratories equipped with suitable testing facilities expediently help in quality upgradation during execution. The materials received from local bodies and government organizations are also tested in these laboratories.

During the financial year 2019-20, 7,485 samples have been tested totally in the 4 laboratories.

6.10. Management Information System

The Tamil Nadu Water Supply and Drainage Board has its own integrated E-Governance System (TWADNEST) to manage the numerous data flow relating to all its Schemes, Project Management, Financial Accounting, Human Resource, Billing etc. Online information is provided for physical and financial progress and performance of all water supply and sewerage, maintenance schemes, recharge structures etc. The daily pumping quantity from the Head works of various water supply schemes maintained by TWAD Board is also uploaded and monitored through online.

The existing TWADNEST is proposed to be re-engineered with current technological

advancement. Further the existing hardware and software are maintained and upgraded.

As part of Business Reform Action Plan - GoTN, Ease of Doing business, submission of application for new water connection through online is made live.

6.11. Communication and Capacity Development Unit

In community based programmes, effective and creative communication plays a crucial role in their success. Communication and Capacity Development Unit (CCDU) is a part of the Water and Sanitation Support Organization (WSSO) which has been designed to support the Engineering Department by taking up software activities like Information, Education and Communication (IEC), Human Resource Development (HRD).

6.11.1. Communication and Capacity Development Unit Activities

6.11.1.1. IEC Activities

Awareness messages were advertised through LED Screens during (i) Athivaradar Festival in Kancheepuram District (ii) Karthigai Dheebam Festival at Tiruvannamalai where lakh of people visited during the Festival Period.

Awareness programmes are conducted to School Children and Teachers to test the quality of water using the Field Water Test Kit (FWTK).

6.11.1.2. HRD Activities

One day training programme is conducted for creating awareness to all Village Water Supply and Sanitation Committee (VWSC) members on Planning Monitoring and Managing Piped Water Supply Schemes (PWSS).

6.12. Sustainable Development Goal

“Access to clean water supply” is a significant factor in the Sustainable Management of Water and Sanitation (Goal 6) under sustainable Development Goal. The following indicators have been assigned for gauging the factor of access to clean water supply namely;

1. Percentage of population with piped water supply
2. Percentage of Households provided with water supply within their premises.

At present, the vision of the Government of India under the 'Jal Jeevan Mission' is to provide Functional Household Tap Connection to every Rural Household by the year 2024. Accordingly, action plan is being drawn out to carry out this task along with the Rural Development and Panchayat Raj Department which at present implements House Service Connections.

7. Tamil Nadu Urban Infrastructure Financial Services Limited

Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) was established as a Public Limited Company by the Government of Tamil Nadu with private sector participation. ICICI Bank Limited (ICICI), Housing Development Finance Corporation Limited (HDFC) and IL & FS Financial Services Limited (IL & FS), are the other shareholders. The authorized share capital of the company is ₹ 2 crore and the paid-up share capital is ₹ 1 crore, of which a sum of ₹ 49 lakh is contributed by the Government of Tamil Nadu.

TNUIFSL manages Tamil Nadu Urban Development Fund (TNUDF), Water and Sanitation Pooled Fund (WSPF) and other Government Grant Funds. The company provides a spectrum of solutions towards the development of urban infrastructure, right from concept to commissioning of the projects. The main tasks of

the company include project development, project appraisal, project structuring, resource mobilization and fund management. The company has been operating on profit since its establishment and dividends are declared & paid regularly.

7.1. Tamil Nadu Urban Development Fund (TNUDF)

Tamil Nadu Urban Development Fund (TNUDF) was established as a Trust by the Government of Tamil Nadu with private sector participation. The private sector participants are ICICI Bank Limited (ICICI), Housing Development Finance Corporation Limited (HDFC) and IL & FS Financial Services Limited (IL & FS).

The objective of TNUDF is to be a sustainable financial intermediary that enhances the flow of private capital to urban sector in the State of Tamil Nadu and facilitates urban local bodies to become capable and sustainable organizations,

sensitive to stakeholders in providing the highest quality of urban services.

TNUDF has a mission to contribute to the improvement in urban quality of life in Tamil Nadu by facilitating efficient urban infrastructure asset creation and provision of urban services through innovative project development, independent appraisal and sustainable financing”.

7.1.1. Objectives of TNUDF

The objectives of TNUDF are as follows:

- Finance urban infrastructure projects, which improve the living standards of the urban population.
- Facilitate private sector participation in infrastructure through joint ventures and public –private partnerships.
- Improve the financial management of urban local bodies and enable them to access debt finance from markets.

TNUDF provides financial assistance to Urban Local Bodies for implementation of basic service projects such as roads, bridges, storm water drains, sewerage & sanitation, water supply, solid waste management and commercially viable remunerative projects such as bus stands and market complexes.

TNUDF is managed by a corporate trustee viz., Tamil Nadu Urban Infrastructure Trustee Company Limited (TNUITCL). The fund is operated by a Fund Manager viz., the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).

The total corpus of the Fund is ₹ 199.60 crore, of which a sum of ₹ 142.91 crore has been contributed by Government of Tamil Nadu and a sum of ₹ 56.69 crore has been contributed by ICICI, HDFC and IL & FS to TNUDF.

7.2 External Aided Projects

TNUIFSL is operating three external lines of credit viz, the Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF-TN) Programs (Phase-II-Part-1 and Part-2) assisted by German Development Bank (KfW), Tamil Nadu Sustainable Urban Development Project (TNSUDP)assisted by the World Bank and Tamil Nadu Urban Flagship Investment Program (TNUFIP) Phase-I and Phase-II assisted by Asian Development Bank. Funds totaling to ₹ 12,537.06 crore are available under the above three lines of credit. The details are furnished below:

Size of External Lines of Credit

(₹ in crore)

Sl. No.	Components	TNSUDP	SMIF-TN		TNUFIP		Total
			Phase-II - Part 1	Phase-II - Part 2	Phase-I	Phase-II	
1	Loan to ULBs	1225.92	344.32	417.36	304.78	487.01	2779.39
2	Capital Grants to ULBs	1225.92	263.02	396.94	646.73	834.10	3366.71
3	Grant to Model Cities	389.48	0	0	0	0	389.48
4	Technical Assistance Grant / performance-based incentive	344.80	0	22.39	148.02	120.89	636.10
5	Incremental Administrative Cost and Tax	0	0	0	36.33	40.32	76.65
6	Bonds, Other Grants, ULB Contribution	644.88	0	40.70	1934.47	2668.68	5288.73
	Total	3831.00	607.34	877.39	3070.33	4151.00	12537.06

7.2.1.KfW (German Development Bank) assisted Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF – TN) Program

The Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF–TN) Program is assisted by KfW, the German funding agency. The objective of the Program is to contribute towards the improvement of environment and preservation of natural resources and the living conditions of the urban population. The Program has two phases (Phase-I and Phase-II). The Phase-I of the Program was completed in December 2015. The Phase–II Program has two parts i.e. Part -1 and 2.

The total outlay of SMIF–TN-Phase-II-Part-1 Program is ₹ 607.34 crore (Euro 80 million). The project implementation period of the Program is between December 2012 and June 2018. However, considering the progress of sub-projects, the Program has been extended upto

June 2020. This assistance will be provided both as loan and capital grant to the ULBs for implementing their urban infrastructure projects.

The total outlay of the SMIF-TN-Phase-II-Part-2 Program is ₹ 877.39 crore (Euro 107.75 million), of which ₹ 814.30 crore (Euro 100.00 million) will be provided both as loan and capital grant to ULBs for implementing their urban infrastructure projects. A sum of ₹ 22.39 crore (Euro 2.75 million) has been allotted for enhancing the technical capabilities of the ULBs. A sum of ₹ 40.70 crore (Euro 5.00 million) has been allotted as loan for Water and Sanitation Pooled Fund to facilitate the mobilization of resources from capital market by issue of Municipal Bonds. The project implementation period of the Program is between June 2014 and December 2019. However, considering the progress of sub-projects, extension has been sought up to December 2021 for completion of the Program.

The funding assistance of ₹ 1,421.64 crore has been committed for 35 sub-projects under the SMIF-TN-II-Part-1 and Part-2 Programs.

7.2.2. World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP)

The Tamil Nadu Sustainable Urban Development Project (TNSUDP) is assisted by World Bank. The objective of the Program is to improve urban services in participating Urban Local Bodies in a financially sustainable manner and to pilot improved urban management practices in selected cities.

The total outlay of TNSUDP is ₹ 3,831 crore (US\$ 600 million), of which the World Bank assistance is ₹ 2,554 crore (US \$ 400 million). The contribution of the State Government & other sources being ₹ 1,277 crore (US \$ 200 million). The project implementation period is between June 2015 and March 2022. The funding

assistance of ₹2,474.33 crore has been committed for 14 sub-projects under TNSUDP.

7.2.3 Tamil Nadu Urban Flagship Investment Program (TNUFIP) assisted by Asian Development Bank (ADB)

The Tamil Nadu Urban Flagship Investment Program (TNUFIP) is assisted by Asian Development Bank (ADB). It has three phases (Phase-I, Phase-II and Phase-III). The assistance from ADB is US\$ 502 million for all the three phases. The objective of the Program is to develop priority water supply, sewerage and drainage infrastructure located within strategic industrial corridors of Tamil Nadu, support innovative pilots, improve urban governance and strengthen the capacity of State and local institutions to enhance environmental sustainability, climate resilience and urban livability.

The total outlay of Phase-I is ₹ 3070.33 crore (US \$ 477.50 million) with ADB assistance of ₹ 1099.53 crore (US \$ 171.00 million). The contribution of the State Government & other sources being ₹ 1,970.80 crore (US \$ 306.50 million). The project implementation period is between November 2018 and December 2023. The funding assistance of ₹ 951.51 crore has been committed for 9 sub-projects under TNUFIP Phase-I.

The total outlay of Phase-II is ₹ 4151 crore (US \$ 593.00 million) with ADB assistance of ₹ 1442 crore (US \$ 206.00 million). The contribution of the State Government & other sources being ₹ 2709.00 crore (US \$ 387.00 million). The project implementation period is between December 2019 and June 2026. The funding assistance of ₹ 1321.11 crore has been committed for 6 sub-projects under TNUFIP Phase-II. The loan documents for the TNUFIP

Phase-II was executed on 2nd December 2019. Administrative sanction will be accorded for implementation of this project by the Government shortly.

The appraisal for the Phase-III of the program is to be taken up by ADB.

7.3. Water and Sanitation Pooled Fund (WSPF)

The Government of Tamil Nadu has created Water and Sanitation Pooled Fund (WSPF) as a Trust to cater to civic infrastructure needs like water and sanitation in small and medium towns by raising resources from capital markets. This Trust has been created as a not-for-profit entity.

The objectives of WSPF are:

- To provide financial assistance for setting up infrastructure projects,
- To mobilize resources from the capital market under pooled finance structure,
- To facilitate the participation of private sector in water and waste water sectors

through direct investment and public private partnership,

- To enable urban local bodies to access debt finance from markets and
- To act as the Nodal Agency on behalf of Central and / or State Government for water, sanitation and / or any other infrastructure projects.

A sum of ₹ 302.30 crore has been mobilized via taxable and tax-free bonds by WSPF as given below:

Sl.No.	Details	₹ crore
1	9.20%, 15 year Non-Convertible Redeemable Bonds Taxable bonds issued by pooling the requirements of 13 ULBs in the year 2002.	30.41
2	7.25%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme Tax free bonds (first tranche) issued by pooling	6.70

Sl.No.	Details	₹ crore
	the requirements of 7 ULBs under the Pooled Finance Development Fund (PFDF) scheme of Government of India in the year 2008.	
3	10.60%, 10 year Non-Convertible Redeemable Bonds Taxable bonds (first tranche) issued by pooling the requirements of 10 ULBs in the year 2012 under SMIF-TN Program	51.00
4	7.50%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme Tax free bonds (second tranche) issued by pooling the requirements of 7 ULBs under the PFDF scheme of Government of India in the year 2010.	83.19
5	8.71%, 10 year Non-	51.00

Sl.No.	Details	₹ crore
	Convertible Redeemable Bonds Taxable bonds (second tranche) issued by pooling the requirements of 10 ULBs in the year 2013 under SMIF-TN Program	
6	8.25%, 12 year Non-Convertible Redeemable Bonds Taxable bonds issued by pooling the requirements of 4 ULBs in the year 2017 under SMIF-TN-II-2 Program	80.00
	Total	302.30

The bonds under Sl.No. 1 to 3 have been fully redeemed.

7.4. Chennai Mega City Development Mission

The Chennai Mega City Development Mission (CMCDM) has been launched by Government to provide funds to Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board to implement various urban infrastructure and basic services projects like roads, storm water drains, street lighting, water supply and sanitation in Chennai and its suburban areas. The fund is provided through budgetary provision every year by the Government. The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) has been designated as the Nodal Agency for CMCDM. A sum of ₹ 2,500 crore has been allotted to implement the scheme 2011-12 to 2015-16. The scheme has been re-launched in the year 2018 and a sum of ₹ 1000 crore has been allotted to implement the scheme 2018-19 and 2019-20.

The capital grant assistance of ₹ 3499.63 crore as well as the technical grant assistance of ₹ 7.90 crore have been committed under this mission to implement projects costing ₹ 5577.04 crore. A sum of ₹ 2,391.59 crore has been disbursed to both Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board for consultancy and fees.

8. Chennai Rivers Restoration Trust

To enhance the ecological conditions of Rivers and Water Bodies and for the restoration activities, the Government of Tamil Nadu have formed the Chennai Rivers Restoration Trust (CRRT). Further, the Government have directed the Chennai Rivers Restoration Trust to carry out the primary functions of planning, coordinating and monitoring activities for the restoration of rivers and water bodies, viz., Cooum, Adyar, Kosasthalaiyar Rivers, the Buckingham Canal along with other smaller canals and water bodies in the Chennai Metropolitan Area. To achieve the goals set for it, Chennai Rivers Restoration Trust has taken up numerous initiatives by adopting an integrated approach by engaging various line departments in its eco-restoration projects.

8.1. Eco-Restoration of Adyar Creek (58 acres)

The Tamil Nadu Government has initiated the Adyar Creek and Estuary restoration with an extent of 358 acres. As a pioneering project, 58 acres of Adyar Creek has been taken up for restoration activities. Due to the continuous disposal of sewage, dumping of municipal solid waste and construction debris inside the Adyar Creek, the area had completely led to the severe degradation of surface and ground water quality and thereby led to the destruction of habitats of avian fauna, reptiles and fishes.

The Creek was infested with exotic species of *Prosopis juliflora*, mosquitoes and bad odour and thereby the nearer residents have kept themselves away from the area. The major restoration activities in Adyar Creek are as listed below:

- i) Increasing the water spread and tidal interaction area

- ii) Plantation of native plants such as Tropical Dry Evergreen Forest species, mangroves and its associates, reeds, etc.,
- iii) Landscaping for interactive environmental programmes

Adyar Eco-Park is now functioning as a centre for Environmental Education and Research. The Chennai Rivers Restoration Trust is continuously conducting awareness programmes on Environmental Education, particularly for the school students. Till the end of 29th February, 2020, total number of 97,525 students and 4,703 teachers from 1,164 schools have visited the eco-park and got the awareness on the concept of eco-restoration. Every year, with the CSR funds from the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), additional environmental education training classes/programmes are being taken up in Adyar Eco-Park.

The General Public are allowed in the afternoon on all Tuesdays, Thursdays and on both sessions on all Saturdays to get the awareness on Eco Restoration. Thus, between July, 2014 and February, 2020 a total of 16,399 general visitors have been benefitted by visiting the Eco-Park. Regular ecological and biodiversity monitoring is being taken up in order to assess the impact and success of the restoration activities. The restoration process of Adyar Eco-Park has to comply with Designated-Best-Use Class 'D', which, according to the Central Pollution Control Board guidelines, would allow propagation of wildlife and fisheries. The results indicate that the current water quality allows the propagation of wildlife and fisheries.

8.2. Eco-Restoration of Adyar Estuary (300 acres)

Adyar creek and estuary area (300 acres) was infested with exotic species like *Prosopis*

juliflora, with indiscriminate disposal of sewage, solid waste and debris, all of which had contributed to the severe degradation of the estuarine ecosystem and which subsequently resulted in the shrinking of the water spread area, reduced tidal interaction and degradation of biodiversity. In continuation of the restoration of Adyar Creek in 58 acres, an extent of 300 acres of Adyar creek, estuary, islets and mudflats were taken up for restoration under Phase-II in the year 2014.

Bund stabilization, removal of debris and plastics and other restoration activities have now enhanced the tidal interaction and increased the water spread in the degraded Creek and Estuary. Around 57,000 mangroves and 35,000 terrestrial saplings have been planted. All this has increased the bio-diversity of the Adyar Creek and Estuary eco-system.

Faunal Diversity in Adyar Creek and Estuary

58 Acres						358 Acres
Fauna	2014 -15	2015 -16	2016 -17	2017 -18	2018 -19	2019 -20
Molluscan	6	6	8	8	8	8
Crabs	9	9	9	13	13	13
Dragonflies	17	19	25	25	35	13
Butterflies	56	60	73	73	80	82
Other insects	-	-	-	52	55	55
Fishes	10	6	10	10	12	14
Amphibian	10	10	10	10	10	7
Reptiles	19	19	19	19	19	19
Birds	97	99	103	105	120	123
Mammals	15	16	16	16	16	16
Total	239	244	273	331	368	372

The Chennai River Restoration Trust has taken up the Integrated Cooum River Eco-Restoration Project and Adyar River Restoration and have incorporated the objective of Sustainable Development Goals No. 10 of River Program for restoration of Chennai Water Ways.

8.3. Integrated Cooum River Eco-Restoration Project

The Cooum River originates from the surplus course of Cooum tank in Tiruvallur District. It runs east for a distance of about 70 kilometres and confluences with the Bay of Bengal, south of Fort St. George, just downstream of Napier Bridge. The Detailed Project Report was prepared for the Eco-restoration plan, which covers the stretch from Paruthipattu check dam to the river mouth in the Bay of Bengal for a length of 32 Km with the major components proposed being interception and diversion of wastewater, solid waste management, river channel improvement, rehabilitation and resettlement, biodiversity management and river front development.

This eco-restoration river project will be implemented in three phases. The Government of Tamil Nadu accorded administrative sanction to

Chennai Rivers Restoration Trust for implementing Sixty (60) sub-projects committed at an estimated cost of ₹ 604.77 crore.

All the sub-projects have been commenced by the concerned departments and are under various stages of implementation. Fixing of boundary stones, desilting and formation of baby canal by Public Works Department, Solid waste removal, fencing, boom deployment, developing parks, cycle tracks and walkways by the Greater Chennai Corporation, Removal of solid waste, fencing and vegetation along the banks by Commissionerate of Municipal Administration and Directorate of Rural Development and Panchayat Raj in their respective areas, laying interceptor pipelines, installing modular sewage treatment plants and underground sewerage system (UGSS) by Chennai Metropolitan Water Supply and Sewerage Board, Resettlement & Rehabilitation of Project Affected Families (PAFs) by the Tamil

Nadu Slum Clearance Board. So far, 11,856 Project Affected Families (PAFs) living on the banks of the Cooum River have been resettled and rehabilitated.

As the nodal agency the Chennai Rivers Restoration Trust is entrusted with the effective implementation of the project. A Project Management Consultant (PMC) is monitoring the sub-projects being executed by line departments. CRRT is conducting regular community education programmes. The CRRT has obtained tenders for the works of plantation of native plants and mangrove vegetation on the river banks of Cooum and the work will be taken up shortly.

Thus, ₹ 245.48 crore has been disbursed to implementing agencies on the basis of work completion.

8.4. Adyar River Restoration from Origin to Mouth

Adyar River has been under heavy anthropogenic disturbance for a very long time and is highly degraded. Adyar River has its origin at Adhanur Lake near Guduvancheri. Surplus water from Chembarambakkam joins near Thiruneermalai giving it shape as a river and flows 42 km through the districts of Kancheepuram and Chennai. It confluences with the Bay of Bengal near Adyar. The eco-restoration plan for the stretch of the river from Adhanur lake to the river mouth has been prepared and the major components proposed are sewage management, solid waste management, river channel improvement, rehabilitation and resettlement, biodiversity management and river front development.

The Government has accorded Administrative Sanction of ₹ 555.46 crore vide G.O. (Ms.) No.72,

Municipal Administration & Water Supply (MC.1) Department, dated 12.07.2017 for the implementation of Adyar River Restoration from origin to the river mouth for a distance of 42 kms. These restoration activities are being carried out by the concerned line departments. 4,398 Project Affected Families (PAFs) those who were living on the banks of the Adyar River have thus far resettled and rehabilitated.

Coastal Regulation Zone (CRZ) Clearance have been obtained for 13 sub-projects which fall within CRZ area i.e., from river mouth to Saidapet bridge (0 - 7.5 km.) and works commenced.

Thus far, ₹ 42.31 crore has been disbursed to implementing agencies based on work completion.

8.5. Detailed Project Report for Restoration and Protection of Water bodies and Waterways

As part of the ongoing eco-restoration initiatives, the Government of Tamil Nadu during the Budget Speech 2020-2021 have announced that a sum of ₹ 5,439.76 crore will be spent for the restoration of Buckingham Canal and its drains and the drains of Cooum and Adyar by mitigating the pollution.

To rejuvenate the creek eco-system within Chennai Metropolitan Area, Detailed Project Reports are being prepared for Kovalam and Ennore Creek.

9. Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited (TUFIDCO)

For the Development of basic infrastructure facilities in the urban local bodies and to improve the standard of living, the Government of Tamil Nadu has created Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO) on 21.03.1990 under Companies Act, 1956. TUFIDCO provides financial and technical assistance to the Urban Local Bodies and parastatal agencies to implement urban infrastructure projects like water supply, sewerage, storm water drain, etc. under various schemes.

TUFIDCO is the Mission Directorate for Government of India's flagship programmes viz., Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT). Further, TUFIDCO is implementing the following schemes as a nodal agency.

1. Jawaharlal Nehru National Urban Renewal Mission – Urban Infrastructure and Governance (JnNURM-UIG),
2. Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT),
3. Urban Infrastructure Development Scheme for Satellite Towns (UIDSST),
4. Metropolitan Infrastructure Development Fund (MIDF) and
5. Integrated Urban Development Mission (IUDM).

TUFIDCO is also the Fund manager for the State Government funds viz., Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (OMGFF).

9.1 Smart Cities Mission:

Smart Cities Mission is a centrally sponsored flagship programme of Government of India, launched during June, 2015. Under this mission, the Government of India have selected 100 cities throughout India to develop as Smart Cities in which 11 cities are from Tamil Nadu viz., Chennai,

Coimbatore, Madurai, Thanjavur, Salem, Vellore, Tiruppur, Thoothukudi, Tirunelveli, Tiruchirappalli and Erode. Tamil Nadu got maximum number of cities selected under Smart Cities Mission at National level. The objective of smart city is to promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, and application of 'Smart' Solutions.

A Special Purpose Vehicle (SPV) was formed at city level in the form of a limited company to implement the smart city projects. The Central and the State Government will contribute ₹ 500 crore each per city to all the 11 Smart Cities as grant for implementing smart cities projects.

Under this mission, the following projects have been taken up.

(₹ in Crore)

SI No.	City	No. of Projects	Project Cost
1	Chennai	41	916.59
2	Coimbatore	51	1019.80
3	Madurai	14	969.38
4	Thanjavur	48	951.68
5	Salem	74	971.57
6	Vellore	35	904.48
7	Tiruppur	26	948.13
8	Tirunelveli	55	1002.35
9	Thoothukudi	47	871.46
10	Tiruchirappalli	26	926.24
11	Erode	23	948.21
	Total	440	10429.88

₹ 10,429.88 crore worth of 440 projects were sanctioned, of which 86 projects at a cost of ₹ 416.89 Crore have been completed, 229 projects at a cost of ₹ 6,781.21 crore are under execution and the remaining projects are under various stages of implementation.

9.2. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme was launched in June 2015 with the focus to establish infrastructure that could ensure adequate water supply, sewerage networks, Storm Water Drainage, Urban transport and development of green spaces and parks for urban transformation. 28 Cities / Towns (15 Municipal Corporations, 12 Municipalities and 1 Town Panchayat) are covered under AMRUT in the State.

SINo	Name of the ULBs	SINo	Name of the ULBs
1.	Greater Chennai Corporation	15.	Avadi Corporation
2.	Coimbatore Corporation	16.	Pallavapuram Municipality
3.	Madurai Corporation	17.	Tambaram Municipality
4.	Tiruchirappalli Corporation	18.	Cuddalore Municipality
5.	Salem Corporation	19.	Kancheepuram Municipality
6.	Tirunelveli Corporation	20.	Tiruvannamalai Municipality
7.	Tiruppur Corporation	21.	Kumbakonam Municipality
8.	Thoothukudi Corporation	22.	Rajapalayam Municipality
9.	Thanjavur Corporation	23.	Pudukottai Municipality
10.	Erode Corporation	24.	Ambur Municipality
11.	Vellore Corporation	25.	Karaikudi Municipality
12.	Dindigul Corporation	26.	Nagapattinam Municipality
13.	Nagercoil Corporation	27.	Rameswaram Municipality
14.	Hosur Corporation	28.	Velankanni Town Panchayat

9.2.1. Finance Pattern:

The AMRUT guidelines define the Government of India / State Government / ULB share for various projects depending upon the population of the Cities / Towns as follows:

Sl No	Population	Govt. of India Share – Grant	State Govt. Share – Grant	ULB's share
1	Cities with more than 10 lakh population	33.33%	20%	46.67%
2	Cities with below 10 lakh population	50%	20%	30%
3	Green space (all AMRUT cities)	50%	20%	30%

Based on the AMRUT guidelines, State Annual Action Plans for the year 2015-16, 2016-17 and 2017-20 were approved by Government of India. The approved project details are as follows:

State Annual Action Plan I (2015-16)

Sl. No.	Name of the Project	Project Cost (₹ in crore)
1	Improvement in Water Supply Distribution System in Ambur Municipality	50.90
2	Improvement of Water Supply Distribution System to Extended Areas (Thudiyalur, Vellaikinaru, Chinnavedampatti, Saravanampatti, Vilankurichi, Kalapatti, Kuniyamuthur & Kurichi) in Coimbatore Municipal Corporation	395.41
3	Dedicated Water Supply Scheme in Erode Municipal Corporation	484.45
4	Improvement of Water Supply Distribution System in Hosur Municipal Corporation	87.91
5	Water Supply Improvement Scheme in Nagercoil Municipal Corporation	223.44
6	Water Supply Improvement Scheme in Rajapalayam Municipality	180.05
7	Improvement of Water Supply in Thanjavur Municipal Corporation	48.14

Sl. No.	Name of the Project	Project Cost (₹ in crore)
8	Improvements to Water Supply Distribution System to the added areas in Tiruppur Municipal Corporation	250.00
9	Improvements to Water Supply Distribution System in Vellore Municipal Corporation	234.93
10	Water Supply Source Improvement Works to Velachery, Alandur, Ullagaram-Puzhuthivakkam, Medavakkam, Kovilambakkam, Nanmangalam and Moovarasampettai in Greater Chennai Corporation	954.00
11	Underground Sewerage Scheme in Velankanni Town Panchayat	23.32
12	45 MLD TTRO Plant – Kodungaiyur in Greater Chennai Corporation	223.91
13	Underground Sewerage Scheme for left out areas in Pallavapuram Municipality	25.37
14	Parks – 98 Nos (25 AMRUT Cities)	63.67
	Total	3,245.50

State Annual Action Plan II (2016-17)

Sl. No.	Name of the Project	Project Cost (₹ in Crore)
1	24 x 7 water supply in Coimbatore Municipal Corporation	506.04
2	Water supply scheme to added areas (Uthandi, Jalladampettai, Mathur, Madipakkam and Neelangarai) in Greater Chennai Corporation	184.11
3	Water supply Source Improvement in Greater Chennai Corporation	125.89
4	Distribution System Improvement in Kumbakonam Municipality	40.50
5	Underground Sewerage at Coimbatore Municipal Corporation	442.00
6	Underground Sewerage Scheme – Phase I in Vellore Municipal Corporation	248.26
7	Underground Sewerage Scheme - Phase II in Vellore Municipal Corporation	343.69
8	Underground Sewerage Scheme to Added	223.00

Sl. No.	Name of the Project	Project Cost (₹ in Crore)
	Areas (Manali, Chinnasekkadu, Karambakkam, Manapakkam) in Greater Chennai Corporation	
9	45 MLDTTRO Plant at Koyambedu in Greater Chennai Corporation	394.00
10	Underground Sewerage Scheme to left out areas in Kumbakonam Municipality	59.84
11	Underground Sewerage Scheme - Phase I in Tiruchirappalli Municipal Corporation	344.00
12	Underground Sewerage Scheme to Added Areas in Tirunelveli Municipal Corporation	289.01
13	Underground Sewerage Scheme Phase II in Tirunelveli Municipal Corporation	381.86
14	Underground Sewerage Scheme in Rameswaram Municipality	40.33
15	Parks – 157 Nos (25 AMRUT Cities)	77.95
	Total	3700.48

State Annual Action Plan III (2017-20)

Sl. No.	Name of the Project	Project Cost (₹ in Crore)
1	Pillur III Water supply in Coimbatore Municipal Corporation	649.30
2	Dedicated Water Supply Scheme in Madurai Municipal Corporation	1020.00
3	Water supply - Source Improvement in Tiruppur Municipal Corporation	992.94
4	Distribution System Improvement - Valasaravakkam in Greater Chennai Corporation	67.74
5	Underground Sewerage Scheme in Ambur Municipality	129.07
6	Underground Sewerage Scheme in Rajapalayam Municipality	178.75
7	Underground Sewerage Scheme in Tiruppur Municipal Corporation	525.92
8	Underground Sewerage Scheme in Greater Chennai Corporation	576.76
9	Underground Sewerage Scheme - Phase -II in Tiruchirappalli Municipal Corporation	264.12
10	Parks - 154 Nos (25 AMRUT Cities)	90.85
	Total	4495.45

Tamil Nadu has one of the highest allocations of funds under AMRUT in the country with 445 projects sanctioned at a cost of ₹ 11,441.43 Crore. Out of 445 projects, 415 projects at a cost of ₹ 998.04 Crores have been completed and the remaining 30 projects are under different stages of implementation.

9.3. Metropolitan Infrastructure Development Fund (MIDF)

The Mega City programme of Government of India aimed to create revolving fund to provide financial assistance to Urban Local Bodies for sanction of projects in Chennai Metropolitan Area on sustainable basis. Based on the guidelines, the Revolving Fund was created as Metropolitan Infrastructure Development Fund (MIDF).

34 projects at a cost of ₹ 4,342.65 crore have been taken up. Urban Local bodies / Parastatal Agencies have been sanctioned funds for the projects as soft loan under the scheme in which

the MIDF contribution is ₹ 1,156.47 crore. Out of 34 projects sanctioned, 29 projects have already been completed and the remaining 5 projects are under various stages of implementation.

9.4. Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) - Revolving Fund

The guidelines of UIDSSMT scheme mandates to create revolving fund to provide financial assistance to projects on sustainable basis. In line with the UIDSSMT guidelines, revolving fund was created by TUFIDCO and interest free loan was sanctioned to 99 ULBs for provision of internal plumbing to Water Supply and UGSS projects as tabulated below:

(₹in Cr.)

S.No.	Sector	No. of Municipalities / Corporations	UIDSSMT Revolving fund sanctioned
1.	Water Supply	73	169.58
2.	UGSS	26	193.22
	Total	99	362.80

The projects are under various stages of execution.

9.5. TUFIDCO Infrastructure Funding Scheme (TIFS)

TUFIDCO Infrastructure Funding Scheme (TIFS) was created by TUFIDCO to extend financial assistance to Urban Local Bodies and parastatal agencies. The maximum period of repayment is 10 years. The funding source for this scheme mainly comprise of Share Capital, Reserves & Surplus and loans from Banks.

9.6. Integrated Urban Development Mission (IUDM)

9.6.1. Phase I (FY 2011-2016)

Integrated Urban Development Mission, a Government of Tamil Nadu flagship programme was implemented for a period of 5 years i.e., from 2011-12 to 2016-17 (5 years). Basic infrastructure facilities like roads, drinking water supply, street lights, sewerage, storm water drains, sanitation, solid waste management, improvement of bus stands and parks in all Corporations (Except Chennai), Municipalities and Town Panchayats are being implemented under this scheme.

Out of the sanctioned 13,257 projects at a cost of ₹ 10,773.22 Crore (fully funded/partly funded), 13,214 projects have been completed and the remaining 43 projects are being implemented.

9.6.2. Phase II (FY 2018-19 onwards)

Considering the success of IUDM Phase I, the Government re-launched IUDM II during the year 2018-19 with the allocation of ₹ 750 Cr per year. Under IUDM II, basic infrastructure projects are taken up in Urban Local Bodies through out the State except Greater Chennai Corporation.

Under IUDM II, the following projects were sanctioned during 2018-19 and 2019-20.

(₹in Cr.)

S.no	Project	No.of work	Project cost	IUDM Share 18-19	IUDM Share 19-20
1	Road	1214	950.39	292.77	390.49
2	Drainage	597	186.31	94.51	63.96
3	Water Supply	66	2024.43	225.45	335.53
4	UGD	62	693.37	121.87	94.68
5	Park	3	9.50	-	8.53

S.no	Project	No.of work	Project cost	IUDM Share 18-19	IUDM Share 19-20
6	Shandy	1	1.40	-	1.12
7	Minor bridges	2	5.05	-	4.04
8	Bus stand	4	12.84	-	5.38
9	Street Lights	3	1.88	-	0.79
10	Septage	11	31.17	11.00	20.17
11	Solid Waste Management	1	8.57	-	7.71
12	Others	10	9.80	4.40	5.12
Total		1974	3934.71	750.00	937.51

Out of the sanctioned 1,974 projects, 89 projects have been completed and the remaining 1,885 projects are under implementation.

9.7 Fund Manager for the State Government Schemes

Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (O&MGFF) were

created to improve infrastructure facilities in Urban Local Bodies by the Government of Tamil Nadu. TUFIDCO has been appointed as Fund Manager for the above schemes.

During the year 2019-20, an amount of ₹ 568.15 crore has been released under CGF and ₹ 229.77 crore under O&MGFF based on the sanctions of the Government.

10. New Tiruppur Area Development Corporation Limited

In the year 1995, in order to cater the water supply and sewerage infrastructure needs of Tiruppur and adjacent areas and industries, New Tiruppur Area Development Corporation Limited (NTADCL) was formed by Government of Tamilnadu (GoTN) through the erstwhile Tamilnadu Corporation for Infrastructure Development (TACID). NTADCL was initially promoted as a Special Purpose Vehicle (SPV) and in June 2002, it was reorganized through Tamilnadu Water Investment Company Limited (TWIC) as promoter, which was formed with 54% equity of Infrastructure Leasing & Financial Services (IL&FS) and 46% equity of GoTN. This SPV (NTADCL) was established as the first Public Private Partnership (PPP) Water Supply and Sewerage project in India.

To implement a 185 million litre per day (MLD) water supply project expandable upto 250 MLD and 15 MLD Sewage Treatment Plant (STP) expandable upto 30 MLD, a Concession agreement was signed between the Government of Tamilnadu, Tirupur Municipality (now Corporation) and New Tirupur Area Development Corporation Limited. The project was implemented at a cost of ₹ 1,023 crore with contribution from 15 institutions towards equity of ₹ 322.70 crore, senior debt provided by a consortium of 19 banks and financial institutions to the tune of ₹ 613.80 crore and subordinate debt of ₹ 86.50 crore.

The project has been supplying 38.957 MLD of drinking water to Tirupur Corporation and 18.26 MLD of drinking water to 8 Village Panchayats and about 600 wayside rural habitations in 5 Panchayat Unions. The project also caters to the water supply requirements of a number of hosiery and related dyeing and

processing industries in and around Tiruppur. A domestic sewerage system in major parts of Tiruppur Corporation has also been completed and functioning with 15 MLD capacity, currently collecting up to 8 MLD of sewage from 15,246 sewer connections for treatment. Low cost sanitation facilities through 31 sanitary complexes have also been provided for the urban poor.

The closure of dyeing and bleaching industries due to Hon'ble Madras High Court Order dated 30.01.2011 had severely impacted the cross-subsidization model of the project. The subsequent introduction of common effluent treatment facilities resulting in the re-use of water, has substantially reduced the industrial demand for water in Tirupur since February 2011. As a result, NTADCL suffered severe loss of business thereby facing difficulties in meeting its debt service obligations to banks and financial institutions. The poor financial situation of New

Tiruppur Area Development Corporation Limited, resulting from low offtake of water by industries, was addressed in 2011-12 through a Corporate Debt Restructuring (CDR) package. The lenders rescheduled the debt, reduced the interest rate and converted 15 per cent of the debt into equity under the CDR. Further, GoTN infused equity share capital of ₹ 150 crore and assured to purchase up to 100 MLD of water additionally for domestic usage from the company. Presently, around 56MLD of water is being supplied additionally to Tiruppur Corporation and 9 MLD to wayside villages for domestic use.

In order to enable NTADCL to be commercially more viable, Government of Tamil Nadu has permitted the Company to expand its water supply infrastructure in selected areas outside Tiruppur Local Planning Area (TLPA). As a result, the Company could identify customers in Palladam in Tiruppur district and Perundurai in

Erode district. Apart from this, TWAD Board has implemented three schemes to cover 461 habitations under 68 Village Panchayats in Erode, Perundurai, Chennimalai and Uthukuli Panchayat Unions of Erode and Tiruppur Districts. These schemes are implemented in Konavaikal, Gangapuram, Vavikadai, Saralai, Perundurai, Vijayamangalam, Pallagoundanpalayam, Chengappalli, Sarkarperiapalayam and Agarhara periapalayam resulting in additional domestic consumption of around 9MLD. Hence 65 MLD of water is being supplied additionally for domestic usage in Tiruppur Corporation and wayside Villages. The industrial / institutional water supply is currently around 42 MLD and is gradually improving.

NTADCL was able to revive itself and turn profitable from the year 2015-16 onwards in view of assistance provided by the Government of Tamil Nadu in the form of equity capital infusion,

purchasing additional quantity of water of around 65 MLD by Tiruppur Corporation and other local bodies and the decision of allowing the company to meet the industrial demand outside the Tirupur Local Planning Area (TLPA) by increasing the project service area. With these supports from GoTN, NTADCL is making better cash accruals, thereby is able to prepay two years lenders' obligation in advance.

NTADCL has assisted Tiruppur Corporation in preparing a Detailed Project Report (DPR) to further augment the water supply and sewerage facilities in Tiruppur Corporation and these DPRs have been sanctioned as part of the AMRUT Scheme. Further, GoTN have engaged NTADCL as "Construction, Management and Supervision Consultant".

The recent defaults by the IL&FS group of companies and the takeover of management by a Board appointed by the Ministry of Corporate

Affairs, Government of India do not have an adverse impact on the functioning of NTADCL. As the Company being able to continue to function with its own resources, it has been placed in the “green” category. NTADCL is thus continuing to meet its obligations under the Concession Agreement and serve the people in and around Tiruppur.

11. Tamil Nadu Water Investment Company Limited

Tamil Nadu Water Investment Company Limited (TWIC) the first Public-Private Partnership (PPP) Company in water sector was promoted by Government of Tamil Nadu (GoTN) and Infrastructure Leasing and Financial Services Limited (IL&FS) in the year 2000. TWIC was formed as a Special Purpose Vehicle (SPV), under Companies Act, 1956 for the establishment of New Tiruppur Area Development Corporation Limited (NTADCL) which is engaged in Integrated Water Supply and Sewerage Project at Tiruppur at a cost of ₹ 1023 crore with a capacity of 185 MLD. TWIC holds 28.72% of the share capital in NTADCL. TWIC's expertise includes urban water and sewerage systems, desalination, industrial effluent management, recycling and facilitates in developing projects from concepts to implementation through a model aimed at reducing life cycle costs within a sustainable framework.

The Chairmanship of the company is held by Additional Chief Secretary – Municipal Administration and Water Supply Department Government of Tamil Nadu as Ex-Officio capacity. In addition, Principal Secretary-Environment and Forest Department, Special Secretary-Finance Department, Special Secretary-Industries Department of Government of Tamil Nadu and 4 Directors (Nominees) from IL&FS and 4 Independent Directors are on the Board of the Company.

The Government of Tamil Nadu under Section 16(f) of Tamil Nadu Transparency in Tenders Act, 1998 has exempted Tamil Nadu Water Investment Company Limited for the procurement of Consultancy and Financial Services vide Notification published in Tamil Nadu Government Gazette Extra ordinary issue dated 17-10-2017.

The company is currently doing the following projects in various Sectors:

11.1. Urban Water

- 1) Thanjavur City Municipal Corporation – Project Management Agency (PMA) for Implementation of water supply improvement scheme.
- 2) Thoothukudi City Municipal Corporation – PMA for preparation of Detailed Project Report (DPR), Bid Process Management and implementation supervision for Underground sewerage system and construction of Sewage Treatment Plant (STP) under smart city mission.
- 3) Kumbakonam Municipality – Project Management Consultant (PMC) for WS&UGDS.
- 4) District Metered Areas (DMA) – PMC for preparation of Detailed Project Report

(DPR) for implementation of DMA based water supply in 9 Corporations.

- 5) Thoothukudi City Municipal Corporation – PMC for water supply system and Non Revenue Water (NRW) reduction programme
- 6) Avadi City Municipal Corporation – PMC for preparation of DPR for balance places Underground Sewerage system.
- 7) Idappadi Municipality – PMC for preparation of DPR for water supply improvement scheme.
- 8) Trichy Smart City – PMC for preparation of DPR for water supply improvement ADB Smart city area.
- 9) Consortium of TWIC alongwith University of Kaiserslautern, Germany and M/s. Engineering Office – Scheer, Germany, M/s. Tandler.com, Germany and IIT,

Madras has been awarded a grant from Indo German Science & Technology Centre (IGSTC) for an R&D Project on "Smart and reliable water and wastewater infrastructure systems for the future cities of India and Germany (SMART & WISE).

- 10) Apart from the above, TWIC has obtained a prestigious order from CMWSSB for providing Consultancy Services (PMC) for Construction Management and Supervision including Third Party Inspection for the proposed 150 MLD Sea Water Reverse Osmosis Desalination Plant (SWRO) at Nemmeli and its product water conveyance pipeline.

11.2. Seawater Desalination

- 1) TWAD Board – Project Management Consultant (PMC) for preparation of DPR for implementation of 60 MLD desalination plant at Kuthiraimozhi in Ramnad District and Marakanam in Villupuram District.

- 2) SIPCOT- PMC for Feasibility studies and preparation of DPR and bid document for setting up 60 MLD Sea Water Reverse Osmosis Desalination at Mullakadu in Thoothukudi District and DPR preparation and bid documents for 20 MLD Desalination Plant at Cuddalore.
- 3) Gujarat Water Infrastructure Ltd – PMC for preparation of DPR for implementation of desalinations plants at various locations in Gujarat.
- 4) Gujarat Industrial Development Corporation-PMC for 100 MLD Desalination plant in Gujarat.
- 5) VOC Port Trust, Thoothukudi – PMC for preparation of DPR for setting up 5 MLD desalination plant.
- 6) Paradip Port Trust through National Institute of Ocean Technology (NIOT) –

PMC for preparation of DPR and bid document for 10 MLD desalination plant.

- 7) Kamarajar Port Trust through NIOT – DPR for 2 MLD Desalination.

11.3. Industrial Waste Water Management and Water Re-Use

- 1) Common Effluent Treatment Plants (CETPs) ZLD system – TWIC provides Operation & Maintenance services for 7 Zero Liquid Discharge (ZLD) at Arulpuram, Rayapuram, Murugampalayam, Chinnakarai, Kasipalayam, Kunnakalpalayam and Eastern CETPs.
- 2) Kanpur, Jajmau Tannery CETP – Project Engineer for establishment of 20 MLD CETP under the National Mission for Clean Ganga (NMCG) of the Ministry of Jal Sakthi, Government of India.
- 3) Panipet Textile Cluster – Project

Management Consultant (PMC) for Diagnostic study, Preparation of feasibility report and DPR for establishment of ZLD CETP

- 4) Telangana, Medak District – PMC for Preparation of feasibility report and DPR for establishment of CETP at Indrakaran Textile Park.
- 5) Rajasthan, Bithuja – PMA for preparation DPR and implementation supervision for establishment of Common caustic recovery pilot plant
- 6) Perundurai Textile Effluent Treatment Plant (ETP)- Project Management Agency (PMA) for upgradation of Rohini Textiles ETP and Operation and Maintenance agency of ETP
- 7) SIPCOT, Hosur–PMC for preparation of DPR and bid document for implementation of TTRO Plant for KPRO dam water at Hosur

- 8) TIDCO –PMC for Feasibility Study and preparation of DPR for implementation of combined water reuse system based on supply of secondary sewage and ZLD CETP for Perambalur Special Economic Zone
- 9) Consortium of TWIC along with RWT Aachen University, Germany and Eurofins, Germany and IIT, Madras has been awarded a grant from Indo German Science & Technology Centre (IGSTC) for an R&D Project on development of Fixed and Flow Capacitive Deionization Technology for possible application in ZLD CETPs in lieu of existing Thermal Evaporators.
- 10) TWIC in association with Adelphi Consult GmbH, Germany, has been engaged by Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ), Germany for Development of "Framework for reuse,

recycle and ZLD of waste water in India under the project “Sustainable Environment – friendly Industrial Production (SEIP) Phase 2” of GIZ together with Ministry of Environment, Forests & Climate Change (MoEFCC) and Central Pollution Control Board (CPCB).

11.4. CETP Projects under Integrated Processing Development Scheme (IPDS) of the GoI

- 1) Project Management Agency (PMA) for implementation of ZLD based CETPs at Kayadampatti, Sree Bhavani in Erode district.
- 2) PMA for implementation of Zero Liquid Discharge (ZLD) based CETP with CRMS at Textiles Dyeing Units at Perundurai SIPCOT and Green Environmental Association in Namakkal District.

- 3) PMA for implementation of Textile Processing Park with ZLD based CETP at Textiles Dyeing Units at Kumarapalayam Green Kavery Dyeing Cluster and Pasumai Cauvery in the Namakkal District.
- 4) Project Management Consultant (PMC) for implementation of ZLD based CETP at Virudhunagar, Kariyapatti village.

11.5. Water body rejuvenation and River Pollution abatement

- 1) Greater Chennai Corporation –Project Management Consultant (PMC) for preparation of DPR for Restoration and Rejuvenation of 60 Water Bodies in GCC area
- 2) Tamil Nadu Pollution Control Board - PMC for preparation of Feasibility Study and DPR for River Pollution Abatement in River Vaigai – Madurai City, River Bhavani - Mettupalayam town and River Cauvery –

Srirangam, Kumarapalayam & Pallipalayam
Towns

- 3) Directorate of Town Panchayats – PMC for preparation of DPR for River Pollution Abatement of 18 Town Panchayats in Tamil Nadu.
- 4) Directorate of Town Panchayats – PMC for preparation of DPR for Nallar River Pollution Abatement in Avinashi Town Panchayat in Tamil Nadu
- 5) Commissionerate of Municipal Administration – PMC for preparation of DPR for River Pollution Abatement of 9 Municipalities in Tamil Nadu.

11.6. Treated Waste Water Re-Use Policy for Tamil Nadu

TWIC studied in detail and formulated Waste water re-use policy for Government of Tamil Nadu through funding agency Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).

11.7. Training to Engineers from various ULBs

Government of Tamil Nadu/Commissionerate of Municipal Administration appointed TWIC for Capacity Building under World Bank funding, where 100 Municipal/Corporation Engineers from various ULBs have been trained both in India and Manila, Philippines. The Engineers have been certified by the accredited International body after necessary tests.

11.8. Government of India Projects

TWIC is partnering various projects and schemes of Government of India including the following,

- TWIC is Project Management Consultant (PMC) to Ministry of Textiles (MoT) for Integrated Processing Development Scheme (IPDS) for implementation of Textile Based CETPs in India.
- TWIC is Consultant to National Mission for Clean Ganga (NMCG), of the Ministry of Jal Sakthi, for preparation of DPR for setting up of CETPs for various Industrial clusters.

- TWIC is Joint Venture (JV) partner with NIOT (National Institute of Ocean Technology) for providing consultancy services for implementation of Sea Water Reverse Osmosis desalination plants for ports.
- TWIC is appointed as Domain Expert in the Expert Committee for monitoring/evaluation of Science and Engineering Research Board (SERB) in the Central Govt. scheme of *Uchhatar Avishkar Yojana*
- TWIC is appointed as Member of Domain Expert Group for project "Deployment Water Technologies" by CSIR, Department of Science & Technology, Govt. of India.

11.9. Disinvestment of Shares of Chennai Water Utility Company Ltd (CIWUCL)

SIPCOT had taken decision to implement 60 MLD desalination plant at Mullakadu in

Thoothukudi district by using the existing SPV of TWIC (set up jointly by TWIC and SIPCOT). In view of the same, the Board of TWIC had approved the sale of stake holding by TWIC in CIWUCL to SIPCOT. Necessary formalities are in process.

11.10. TWIC Turnover

The Company is hopeful of registering a record turnover of more than 50 crore in 2019-20 as against ₹ 46 crore achieved during the previous financial year 2018-19. The company is also hopeful of achieving higher targets in the coming years.

11.11. Payment to Government of Tamil Nadu

TWIC has paid ₹ 16.50 crore to Government of Tamil Nadu towards interest against loan sanctioned by GoTN.

11.12. Corporate Social Responsibility

TWIC as a part of Corporate Social Responsibility (CSR) provided funds to Greater Chennai Corporation to refurbish the Shelter run for men with psycho social needs homeless in Zone 9.

11.13. Manpower Strength

The Company has over 400 skilled Engineers having in depth knowledge in the areas of hydraulics, process, project management and Operation and Maintenance.

S.P. VELUMANI
Minister for Municipal Administration,
Rural Development and Implementation of
Special Programme