



LAKE REJUVENATION - COIMBATORE



FRUIT MARKET - MADURAI



CYCLE SHARING - CHENNAI



SENSORY PARK - CHENNAI

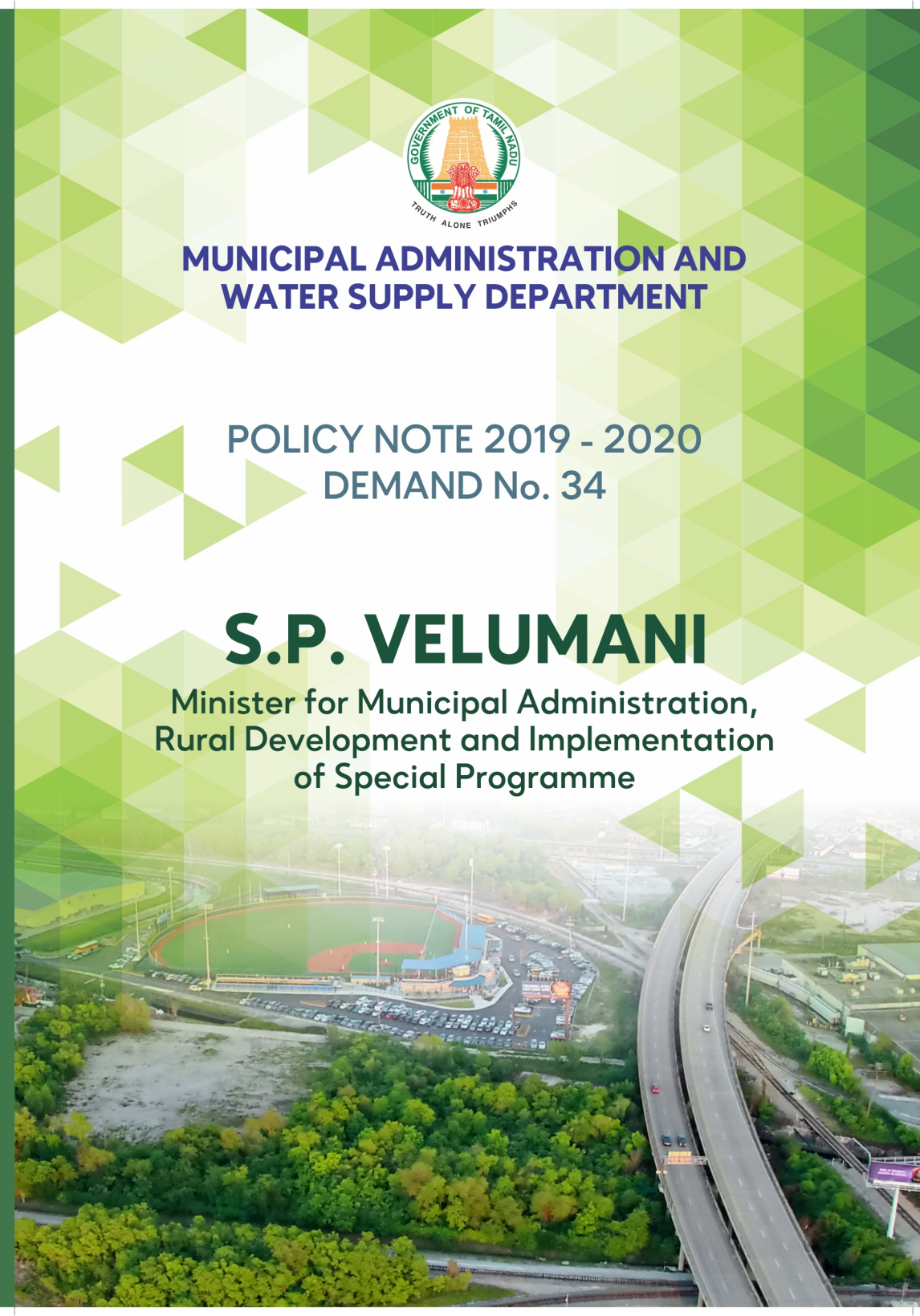


MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

**POLICY NOTE 2019 - 2020
DEMAND No. 34**

S.P. VELUMANI

**Minister for Municipal Administration,
Rural Development and Implementation
of Special Programme**



6. Tamil Nadu Water Supply and Drainage Board

Tamil Nadu Water Supply and Drainage Board is a statutory organization formed by Government of Tamil Nadu on the 14th day of April 1971 under an Act of the State Legislative Assembly. Its objective is to provide protected water supply as well as Under Ground Sewerage Schemes to the local bodies in Tamil Nadu excluding Chennai Corporation. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water supply Department as Chairman and the Managing Director is 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. Water Quality Monitoring and Surveillance Programme.

- d. Ensuring Sustainability of Drinking Water Sources.
- e. Training.

6.2 Water Supply Programme

Water Supply Schemes for the rural habitations and urban towns are provided through rural individual Power Pump schemes and Urban Stand-alone water supply schemes for single beneficiary local body and through Combined Water Supply Schemes for more than one rural habitation and urban town beneficiaries with a common water source.

The schemes are handed over to the local body for maintenance on completion, when the beneficiary is an individual local body. TWAD Board maintains the schemes when the beneficiaries are more than one local body.

The norms for Rural Water Supply as per NRDWP guidelines has been enhanced, by the Government of India from 40 lpcd to the service level of 55 lpcd.

There are 1,00,018 rural habitations in Tamil Nadu as on 01.04.2018. Out of this, 95,691

Habitations are fully covered with water supply at 40 lpcd and the balance 4,327 Habitations are partially covered.

During the year 2018-19, 2,310 partially covered habitations have been taken up for full coverage with water supply. Out of this, water supply has been effected to 1642 habitations. Works are under progress in balance habitations.

For the year 2019-20 it is proposed to cover 655 partially covered habitations for full coverage through ongoing Combined Water Supply Schemes and IPP Schemes. It is also proposed to take up new individual Power Pump schemes to cover 455 open defecation free (ODF) partially covered habitations fully in 5 Districts, and to take up 2 CWSS in Karur District to cover 282 partially covered Habitations.

6.2.1 Rural Individual Power Pump schemes

During the year 2018-19, 223 Individual Power Pump Schemes at an estimated cost of ₹ 31.04 Crore to benefit 223 Partially covered habitations in 8 Districts were taken up for implementation and are at various stages of execution. These works are proposed to be completed by 2019-20.

Individual Power Pump schemes are implemented with Government of India funding under National Rural Drinking Water Programme and equal matching share of fund from the State Government.

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.

5 Urban Stand-alone water supply schemes covering 2 Municipalities and 3 Town Panchayats have been completed to supply 41.43 MLD of potable water at an estimated cost of ₹ 142.29 crore, benefiting 4.32 lakh people during the year 2018-19.

Further, 11 schemes covering 2 Corporations and 9 Municipalities are under various stages of implementation at an estimated cost of ₹ 984.19 crore which on completion will supply

236.86 MLD of water to benefit 20.22 lakh people. Also, tender has been called to execute schemes in 2 Municipalities at an estimated cost of ₹ 103.97 crore to benefit 0.95 lakh people.

These schemes are implemented with the financial assistance from Minimum Needs Programme (MNP), 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) and Tamilnadu Sustainable Urban Development Project (TNSUDP).

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

Sl. No	District	Name of Schemes	Estimate Cost (₹ in crore)	Population benefitted (in Lakh)
Schemes Completed During 2018-19				
1.	Theni	WSIS to Theni-Allinagaram Municipality.	68.83	1.66
2.	Nilgiris	WSIS to Udhagamandalam Municipality.	27.20	1.37

Sl. No	District	Name of Schemes	Estimate Cost (₹ in crore)	Population benefitted (in Lakh)
3.	Trichy	WSIS to Musiri Town Panchayat.	21.07	0.40
4.	Theni	WSIS to Andipatti Town Panchayat.	14.59	0.56
5.	Nilgiris	WSIS to Kothagiri Town Panchayat.	10.60	0.33
		Sub Total-I	142.29	4.32
Schemes Under Progress				
1.	Thirunelveli	WSIS to Thirunelveli Corporation	230.00	6.88
2.	Namakkal	WSIS to Namakkal Municipality.	185.24	1.84
3.	Coimbatore	WSIS to 3 Added areas viz., Koundampalayam, Vadavalli and Veerakeralam in Coimbatore Corporation.	108.16	3.59

Sl. No	District	Name of Schemes	Estimate Cost (₹ in crore)	Population benefitted (in Lakh)
4.	Nilgiris	CWSS to Coonoor Municipality, Wellington Military Station and Pasteur Institute of India.	95.30	0.59
5.	Thoothukudi	WSIS to Kovilpatti Municipality.	81.82	1.40
6.	Namakkal	WSIS to Thiruchengode Municipality.	81.22	1.50
7.	Theni	WSIS to Bodinayakanur Municipality.	76.15	0.76
8.	Villupuram	WSIS to Tindivanam Municipality.	52.45	0.92
9.	Dindigul	WSIS to Kodaikkanal Municipality.	46.31	0.57
10.	Karur	WSIS to Inam Karur Municipality.	18.57	1.45

Sl. No	District	Name of Schemes	Estimate Cost (₹ in crore)	Population benefitted (in Lakh)
11.	Madurai	WSIS to Anaiyur Municipality.	8.97	0.72
		Sub Total-II	984.19	20.22
Tender Process				
1.	Madurai	WSIS to Usilampatti Municipality.	73.03	0.64
2.	Kanyakumari	WSIS to Kuzhithurai Municipality.	30.94	0.31
		Sub Total-III	103.97	0.95
		Grand Total	1230.45	25.49

6.2.3 Major Combined Water Supply Schemes

During the year 2018-19, 3 major Combined Water Supply Schemes have been completed at an estimated cost of ₹ 498.34 Crore to supply 53.04 MLD of water, benefiting 12.79 lakh people. Further, 8 Major Combined Water Supply schemes are under various stages of implementation which on completion will supply 233.14 MLD of water to 33.38 lakh people at an estimated cost of ₹ 1940.48 crore. These schemes are implemented

with the financial assistance from Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Programme (NRDWP), State Matching Share (SMS), Urban Local Body Contribution (ULB), Deposits, World Bank TNSUDP (Tamilnadu Sustainable Urban Development Project), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Integrated Urban Development Mission(IUDM) 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)	Population (in Lakh)
Schemes Completed During 2018-19			
1.	CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District	158.64	3.42
2.	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.39

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)
3.	CWSS to 755 Rural Habitations in Virudhunagar District.	234.00	5.98
	Sub Total-I	498.34	12.79

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)
Schemes Under Progress			
1.	CWSS to Sankarankoil, Puliyanakudi Municipalities, Thiruvankadam Town Panchayat in Thirunelveli District and Rajapalayam, Sivakasi, Thiruthangal Municipalities in Virudhunagar District.	543.20	6.20
2.	CWSS to AlampalayamTP, Padaveedu TP including 669 Rural habitations in Pallipalayam and Tiruchengode Unions in Namakkal District and Sankari Town Panchayat in Salem District	399.46	6.61
3.	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 Unions in Tiruppur District.	241.00	4.20

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)
4.	CWSS to Perundurai and 7 other Town Panchayats including 547 wayside Rural Habitations in Erode and Tiruppur Districts	224.00	5.47
5.	CWSS to Eraniel Town Panchayat and 319 Rural Habitations and Improvements to Padmanabapuram CWSS and Kattathurai CWSS in Kanyakumari District	174.00	3.44
6.	CWSS to 293 Rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68
7.	CWSS to Azhagiypandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District.	109.80	2.96
8.	Combined Water Supply Scheme to Keeranur, Neikkarapatty Town Panchayats and 253 Rural Habitations in Dindigul District	108.80	2.82
	Sub Total-II	1940.48	33.38
	Grand Total	2438.82	46.17

6.2.4 Other Combined Water Supply Schemes

6 CWSS have been completed at an estimated cost of ₹ 87.49 crore to supply 14.69 MLD of water benefitting a population of 3.76 lakh during the year 2018-19.

26 Combined Water Supply Schemes are under various stages of implementation at an estimated cost of ₹ 748.57 crore which on completion will supply 93.49 MLD of water to 19.35 lakh people. Further, tenders have been called for to execute the 3 Combined Water Supply schemes at an estimated cost of ₹ 110.01 crore to benefit 1.68 lakh people.

These schemes are implemented with financial assistance from the Minimum Needs Programme, National Bank for Agriculture and Rural Development, National Rural Drinking Water Programme with State Matching Share, Local body contribution and deposits.

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

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
Schemes Completed During 2018-19			
1.	CWSS to Vadugapatti Town Panchayat & 57 Habs. in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni District and Batlagundu Town Panchayat in Dindigul District.	45.70	1.10
2.	CWSS to 201 Rural Habitations in Reddiarchatram Union in Dindigul District (under Vendasandur CWSS)	8.96	0.95
3.	CWSS to Kandamanur and 15 Rural Habitations in Andipatti and Kadamalaigundu-Myladum-parai Unons in Theni District	5.50	0.14
4.	CWSS to 101 Rural Habitations in Thoppampatti Union in Dindigul District (under Vendasandur CWSS)	4.11	0.47
5.	CWSS to 109 Rural Habitations in Oddanchatram Union in Dindigul District (under Vendasandur CWSS)	4.08	0.65
6.	CWSS to 17 Quality Affected Habitations and 69 Way Side Habitations of Parangipettai and Kumaratchi Unions of Cuddalore District and Kodyampalayam habitation in Nagapattinam District	19.14	0.45

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
	Sub Total-I	87.49	3.76
Schemes Under Progress			
1.	CWSS to 155 Rural Habitations in Palladam and Tiruppur Unions of Tiruppur District	99.24	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	1.50
3.	CWSS to 5 Town Panchayats and 318 Rural Habitations of Madathukkulam and Udumalpet Unions in Tiruppur District	85.75	4.06
4.	CWSS to 274 Rural Habitations of Thanthoni Union in Karur District	81.41	0.86
5.	CWSS to 253 Rural Habitations of Kulithalai and Thogamalai Unions in Karur District	52.75	0.91
6.	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations of Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	2.00

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
7.	CWSS to 135 Rural Habitations of Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made in Natham CWSS in Dindigul District	46.32	0.33
8.	CWSS to 170 Rural Habitations of Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.45
9.	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil Unions in Tirunelveli District	31.32	1.85
10.	CWSS to Reddiarpatti and 63 Rural Habitations of Palayamkottai Union in Tirunelveli District	28.71	0.57
11.	CWSS to Mulligur and 54 Rural Habitations of Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	0.32
12.	CWSS to 53 Rural Habitations of Gujiliamparai Union in Dindigul District	20.34	0.23
13.	CWSS to 63 Rural Habitations of Oddanchatram Union in Dindigul District	17.74	0.20

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
14.	CWSS to 90 Rural Habitations of Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.58
15.	CWSS to 84 Rural Habitations of Vedasandur Union in Dindigul District	12.77	0.42
16.	CWSS to 38 Rural Habitations of Reddiarchatram Union in Dindigul District	11.55	0.19
17.	CWSS to 51 Habitations in Konganapuram & Edapadi unions by augmenting the existing CWSS to 327 Habitations in Salem District utilising the existing HW, WTP Booster stations.	9.50	0.11
18.	CWSIS to 28 Habitations of Mathur Village Panchayat in Ammapettai Union of Erode District	5.52	0.08
19.	CWSS to 8 Rural Habitations around SIPCOT Industrial Complex in Thoothukudi District	6.40	0.08
20.	CWSIS to 30 Habitations of Patlur Village Panchayat in Ammapettai Union of Erode District	6.21	0.11
21.	CWSIS to 54 Habitations of Mylambadi Village Panchayat in Bhavani Union of Erode District	5.25	0.09

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
22.	CWSS to Deveripalli and 23 other Habitations of Hosur union in Krishnagiri District.	4.58	0.12
23.	CWSS to 20 rural Habitations of Vadamadurai Union in Dindigul District	3.62	0.04
24.	WSIS to Aranmanaipudur and 4 other Habitations of Theni Union in Theni District	1.67	0.15
25.	WSIS to Manjanaican Patty Village panchayat in Theni District	0.98	0.05
26.	CWSIS to Kodangipatti and 3 other Rural Habitations in Bodi union of Theni District	0.93	0.11
	Sub Total-II	748.57	19.35
Tender Process			
1.	CWSS to 138 Rural Habitations of Thottiyam Union in Trichy District	49.95	0.64
2.	CWSS to Sigaralapalli & 143 Habitations of Bargur Union in Krishnagiri District	31.82	0.41
3.	CWSS to Uthangarai TP & 50 other Habitations of Uthangarai Union in Krishnagiri District	28.24	0.63
	Sub Total-III	110.01	1.68
	Grand Total	946.07	24.79

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

Projects have been taken up for providing Water Supply and Under Ground Sewerage Schemes in 3 phases for the period 2015-16, 2016-17 and 2017-20.

Totally, 9 Water Supply Schemes at an estimated cost of ₹ 2556.39 crore are under implementation to benefit 89.92 lakh people. Further, 5 Under Ground Sewerage Schemes at an estimated cost of ₹ 813.47 crores are under implementation to benefit 9.82 lakh people.

These schemes are implemented with financial assistance under AMRUT from Central Government and also other sources of funds such as State Govt, ULB, 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	AMRUT Cost (₹ in crore)	Population (in Lakhs)
1.	Dedicated Water supply scheme to Erode Corporation.	484.45	9.05
2.	Improvement of Water Supply Distribution System to 8 Added Areas of Coimbatore Corporation	395.41	9.22
3.	Water Supply Improvement Scheme to Nagercoil Corporation	223.44	3.90
4.	Improvement of Water supply Distribution System to Tiruppur Corporation.	250.00	19.50
5.	Improvement of Water supply Distribution system to Vellore Corporation in Vellore District.	234.93	9.20
6.	Water Supply Improvement Scheme to Rajapalayam Municipality	180.05	2.15
7.	Improvement of Water supply Distribution System to Hosur Corporation (Phase-I)	87.91	2.29
8.	Improvement of Water supply Distribution system to Ambur Municipality in Vellore District	50.90	1.82
9.	WSIS to expanded Coimbatore Corporation including newly merged areas with River Bhavani as source – Pillur - III	649.30	32.79
	Total	2556.39	89.92

Sl. No.	Name of Scheme	AMRUT Cost (₹ in crore)	Population (in Lakh)
1.	UGSS to added areas Kurichi and Kuniyamuthur of Coimbatore Corporation	442.00	5.17
2.	UGSS to Rajapalayam Municipality	178.75	2.20
3.	UGSS to Ambur Municipality	129.07	1.83
4.	UGSS to Rameshwaram Municipality in Ramanathapuram District	40.33	0.43
5.	Under ground sewerage scheme to Velankanni Town Panchayat in Nagapattinam District	23.32	0.19
	Total	813.47	9.82

6.3 Operation and Maintenance of CWSS

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

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 maintained by TWAD Board at present.

An average of 1,869 Million Liters of water was supplied daily upto March 2019 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 upto March 2019 (in MLD)
1	Corporations	9	267	212
2	Municipalities	66	266	221
3	Town Panchayats	347	358	309
4	Rural Habitations	48,948	1107	1021
5	Industries / Institutions / Commercial Organisations	541	148	106
	Total	49,911	2146	1869 (87%)

- ₹ 244.09 crore have been sanctioned for the rejuvenation of 99 TWAD maintained age old (outlived) CWSS in order to make them function to its full capacity for another 15 years and programmed to be completed during 2019-20.

- ₹ 7.24 crore have been sanctioned for taking up of 79 works under SDRF funds for 2017-18 in 41 TWAD maintained CWSS to mitigate the water supply shortfall in the acute summer during the year 2018 and 50 works have been completed.
- ₹ 20.00 crore have been sanctioned for taking up of 246 works under SDRF funds for 2018-19 in 118 TWAD maintained CWSS to mitigate the water supply shortfall in the acute summer during the year 2019 and 111 works have been completed.

A minimum of 1,800 Million Liters of water supply per day is proposed till August 2019 through the actions taken above and as per the dam storage availability status.

Automatic Water Meters are also being installed in the schemes maintained by the Board for an amount of ₹ 27.00 Crore to monitor and reduce the water loss.

371 diesel generators are kept ready to manage any power supply shortfall during summer period.

6.4 Water Quality Surveillance and Monitoring

TWAD Board has established one State level water testing laboratory at Chennai besides 31 District level and 56 sub division level water testing laboratories all over Tamil Nadu in order to achieve the objective of ensuring safe drinking water supply to the public. 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. This state level water testing laboratory at Chennai has been recognized as State Referral Institute for Tamil Nadu by the Government of India.

During the year 2018-19, 30,000 water samples have been tested in State and District laboratories with State funds. The State level water testing laboratory, Chennai has been upgraded to NABL accreditation (National Accreditation Board for Testing and Calibration Laboratories).

During 2019-20, it has been proposed to test around 5,100 water samples in the State level

laboratory, 1.02 lakh water sample in 31 District level laboratories and 1.68 lakh water samples in 56 Sub-division level laboratories for water quality monitoring and surveillance under the National Rural Drinking Water Programme.

During 2019-20, it is proposed to fabricate 1500 Field Test Kit (FTK) and conduct awareness programme to school children on testing of water quality in the field.

6.5 Hydro Geological Activities:

The Remote sensing and GIS (Geographical Information Systems) are extensively utilized in scientific source finding activities for 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.

The project on Ground Water Prospect Maps (Hydro Geo Morphological Maps) sanctioned by the Ministry of Drinking Water and Sanitation, Government of India had been taken up and District-wise Block ATLAS have been printed and the copies (both hard & soft copies) along with

water Quality maps (soft copies) are prepared and readily available for sharing with all the departments for their field use. It has taken up as a Research & Development project for Tamiraparani River Basin falling part of Tirunelveli and Thoothukudi Districts, under GOI funds, for the Sustainability of Drinking water sources for future water supply requirements.

The State Planning Commission has sanctioned a pilot project to TWAD Board on Conjunctive use of Ground and Surface water along with Rainwater Harvesting to ensure 24x7 water supply in Lagampalayam Village Panchayat of Nambiyur Union in Erode District. Under this project, each household will be provided with House Service Connection (HSC) and water meter will be fixed. O&M awareness training programme to the community of the Village Panchayat will be imparted for ensuring drinking water security.

TWAD Board has taken up Sustainable Water Security Mission ("SuWaSeM") for Tamil Nadu State to ensure water security to the Urban local bodies at a cost of ₹ 20.00 crore through various methods of rainwater harvesting. This project

is 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 of this mission.

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 and 4,16,352 points have been Geo tagged as on 31.03.2019. During the year 2019 - 20, 63,093 points (Sources and delivery points) are to be Geo tagged.

6.6 Under Ground Sewerage Schemes

TWAD Board is implementing Under Ground Sewerage Schemes in the District Head Quarters and other Towns on priority and need basis finalized by the Government.

In line with the objective of the Tamil Nadu Government to provide Under Ground Sewerage Scheme (UGSS) to all the Urban Local Bodies in a

phased manner, TWAD Board has prepared Master Plan comprising 636 Detailed Project Reports with a tentative cost of ₹ 20,820 Crore based on 2011-12 rates to provide UGSS to 5 Corporations, 115 Municipalities and 516 Town Panchayats.

6.6.1 Ongoing Under Ground Sewerage Schemes

Under Ground Sewerage Schemes to Bodinaickanur and Virudhunagar Municipalities have been completed at an estimated cost of ₹98.95 crore during the year 2018-19 to benefit a population of 1.88 lakh through which a overall quantity of 19.73 MLD of wastewater is available for reuse.

21 Under Ground Sewerage Schemes at an estimated cost of ₹ 1345.21 crore, to benefit a population of 18.40 lakh are in various stages of implementation through which on completion 166.99 MLD of wastewater will be available for reuse.

The details of the schemes are as given below:

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)
Schemes Completed during 2018-19			
1.	UGSS to Bodinaickanur Municipality	71.10	0.95
2.	UGSS to Virudhunagar Municipality	27.85	0.93
	Total	98.95	1.88
Schemes under progress			
1.	UGSS to Thoothukudi Corporation	85.00	3.00
2.	UGSS to Nagercoil Corporation	110.51	1.81
3.	UGSS to Sivagangai Municipality	31.30	0.82
4.	UGSS to Mettur Municipality	73.09	0.70
5.	UGSS to Arakkonam Municipality	95.52	1.09
6.	UGSS to Thirupathur Municipality	104.01	1.15
7.	UGSS to Rasipuram Municipality	55.42	0.69
8.	UGSS to Karaikudi Municipality	112.53	1.76

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)
9.	UGSS to Chidambaram Municipality	75.62	0.91
10.	UGSS to Sattur Municipality	37.66	0.40
11.	UGSS to Sathiyamangalam Mpty	54.26	0.54
12.	UGSS to Pollachi Municipality	109.62	1.08
13.	UGSS to Palanichettipatty TP	34.67	0.46
14.	UGSS to Ulundurpettai TP	38.67	0.37
15.	UGSS to Perunthurai Town Panchayat	54.78	0.45
16.	UGSS to Mettupalayam Municipality	91.70	0.84
17.	UGSS to Thiruporur Town Panchayat	42.00	0.63
18.	UGSS to Ponneri Town Panchayat	54.78	0.83
19.	UGSS to Vallam Town Panchayat	34.51	0.23
20.	UGSS to Manachanallur TP	30.11	0.43
21.	UGSS to S. Kannanur TP	19.45	0.21
	Total	1345.21	18.40

6.6.2 New Under Ground Sewerage Schemes for Urban Local Bodies:

Under Ground Sewerage proposal for Thoothukudi and Coimbatore Corporations prepared for uncovered areas at a total cost of ₹1442.92 Crore are at various stages of approval.

6.7 Investigation and Preparation of Detailed Project Reports

6.7.1 Water Supply Schemes:

TWAD Board has taken up investigation to prepare DPR for 42 Water Supply Schemes during 2018-19, at an estimated cost of ₹ 17931.12 crore, to benefit 154.15 Lakh population covering Coimbatore Corporation, 18 Municipalities, 66 Town Panchayats and 21710 Rural Habitations.

The present stage of the 42 schemes is as detailed below:-

Sl. No.	Description	No. of Water Supply schemes	Beneficiaries	Population benefited (in lakh)	Estimate cost (₹ in crore)
1	Schemes Sanctioned	14	1 Corporation 4 Municipalities, 6 Town Panchayats & 1421 Rural Habitations.	35	1464.51
2	Schemes in various stages of sanction.	11	6 Municipalities, 13 Town Panchayats & 2119 Rural Habitations.	16	2315.05
3	Investigation/ DPR Under preparation	17	8 Municipalities 47 Town Panchayats & 18170 Rural Habitations.	102	14151.56
	Total	42	1 Corporation, 18 Municipalities, 66 Town Panchayats & 21710 Rural Habitations.	154	17931.12

6.7.2 Desalination Plants:

TWAD Board prepared prefeasibility report to install Desalination Plants as permanent measure to enhance the Water supply level in all seasons, in rural and urban areas of Ramanathapuram and Thoothukudi Districts, based on the Announcement made by the Government.

Government has accorded Administrative Sanction for ₹ 1355 crore for setting up of Desalination Plants of 60 mld capacity each at Kuthiraimozhi in Ramanathapuram District and at Alanthalai in Thoothukudi District, to benefit a population of 3.03 Lakh in Ramanathapuram District and 6.88 Lakh in Thoothukudi District.

This proposal has been recommended to National Coastal Zone Management Authorities (NCMA)/MoEF& CC/GoI, New Delhi for clearance as per 'Coastal Regulation Zone Notification, 2011'. Revised Detailed Project Report for setting up of Desalination plant at Kuthiraimozhi in Ramanathapuram District at a cost of ₹ 670.00 Crore has been prepared and funding under scrutiny.

Also, investigation Works are proposed for installing a 98 mld capacity Desalination plant near Marakanam to meet out the water requirement of Villupuram & Tindivanam Municipalities, Marakanam & Vikravandi Town Panchyats and Rural Habitations in Vikravandi, Mailam, Marakanam, Vanur and Kanai Unions in Villupuram District.

6.8 Research, Design, Training and Project Management Centre

The Hon'ble Minister of Municipal Administration & Rural Development and Implementation of Special Programme made an announcement on the floor of Assembly during the demand for the year 2018-19 that Research, Design, Training and Project Management Centre will be formed at Tamil Nadu Water Supply and Drainage Board, Head Office, Chennai.

Accordingly in order to strengthen and upgrade the arms of Tamil Nadu Water Supply and Drainage Board in Research, Design, Training and Project Management, RDT&PMC was formed to act as a "Centre of Excellence".

The Research, Development, Training and Project Management Centre unit takes up the following tasks.

- RDT & PMC Wing of TWAD Board is endowed with one Training Centre at Head Office, Chennai and three Sub Training Centres, one each at Coimbatore, Trichy and Madurai to equip, update & act as a platform to hone the skills.
- Conduct training in tie up with Premier Institutions like IIT, Madras & Anna Institute of Management, Chennai to upgrade Technical & Managerial skills using Application Software like Water Gem, Sewer Gem and STAAD Pro.
- Besides in-house training programs, Special technical training programs to other State Public Health Engineers of Odisha Water Supply & Sewerage Board and Govt. of Arunachal Pradesh has also been conducted.
- Standard type design and drawing for smaller capacities of OHTs up to 60000 litres

have been prepared, vetted by IIT, Madras and communicated to the field for adoption.

- Design and drawing for various components of septage management were prepared and DPRs for 12 Town Panchayats have been prepared.
- Existing Pipe Policy has been reviewed and new guideline for selection of pipes and pipe materials were approved by Board and communicated to field for its adoption in preparation of further Detailed Project Reports.
- Guideline for selection of pump sets is under preparation.
- Water Gem, Sewer Gem and STAAD pro softwares were purchased and installed in all the regional offices and the Head Office at Chennai. Training to field Engineers was also conducted to use the above software through IITM.
- Based on the request of the Tamil Nadu Public Works Department, consultancy

assignment for design of pumping main & allied works for transmission of surplus water from Kosasthalaiyar River to Veeraragava perumal Temple Tank in Tiruvallur has been taken up and completed.

- Facilitating presentation/ demonstration by various Government and private industries to disseminate the latest products available in the market suitable for the upcoming projects and recommend them for inclusion in future Schedule of Rates.
- Research on the efficiency of different duty pump sets connected parallel to the Pumping Main is under consideration.
- Training Program on "E-Tendering Online Bid Submission System" was conducted in order to implement E- Tendering Online Bid Submission System.
- Officers are being deputed regularly to participate in the Seminars, Exhibitions & National/ International level Conferences conducted by Premier Research Institutions

of Government/ recognized leading National and International institutions all over India.

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 conformity assessment of field samples is evaluated regularly as per the procedures in the relevant Bureau of Indian Standards (BIS) prior to its usage at site for all the works taken up by TWAD Board. The testing facilities adorning the laboratories expediently help in quality up gradation during execution. The materials received from local bodies and government organisations are also tested in these laboratories.

During the financial year 2018-19, 6,984 samples have been tested totally in the 4 laboratories.

6.10 Management Information System

Tamil Nadu Water Supply and Drainage Board has implemented integrated E-Governance System (TWADNEST) to manage data flow relating to all its schemes, financial accounting and human resources.

The TWADNEST is enhanced from time to time based on the current requirement of the Board. Further the existing hardware and software are maintained and upgraded.

Water GEM and Sewer GEM software are being utilized for designing latest water supply and sewerage projects.

Quality control in ongoing water supply and sewerage schemes are being monitored through web based online updation of scheme quality monitoring and quality assurance.

The daily pumping data in water supply schemes under the maintenance of TWAD Board are being monitored through online.

Mobile based online inspection monitoring system is implemented for effective inspection and monitoring of schemes. Further, a web based online monitoring system has been implemented for monitoring of material quality testing in regional laboratories.

TWAD Board, Head office and four Chief Engineers offices in Vellore, Madurai, Thanjavur, Coimbatore, and five Superintending Engineers offices in Cuddalore, Trichy, Salem, Tirunelveli and Dharmapuri are interconnected through leased line TNSWAN for effective review of works executed by TWAD Board. This makes coordination and monitoring of all the activities of the TWAD Board more effective.