



MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT



**POLICY NOTE
2017-2018**

DEMAND NO. 34

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

6. Tamil Nadu Water Supply and Drainage Board

Government of Tamil Nadu, with the objective of providing protected water supply as well as Under Ground Sewerage Schemes to the local bodies in Tamil Nadu excluding Chennai Corporation constituted Tamil Nadu Water Supply and Drainage Board as a statutory body on 14.04.1971. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water Supply Department as Chairman and 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. There is one Project Chief Engineer at Dharmapuri.

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 Activities.

6.2 Rural Water Supply Programme

The norm for Rural Water Supply has been enhanced, by the Government of India from 40 lpcd to the service level of 55 lpcd for the 12th Five year Plan.

Based on the surveys to assess the gap between current supply and the service standard, Water Supply Schemes are implemented for Rural Habitations. Rural Water

Supply Schemes are being implemented with State Government Funds under the Minimum Needs Programme, Government of India assistance under the National Rural Drinking Water Programme and financial assistance from National Bank for Agriculture and Rural Development.

Rural Habitations are provided with Water supply by implementing Combined Water Supply Schemes. 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 scheme, if it is meant for more than one local body.

There are 1,00,018 rural habitations in Tamil Nadu. Out of this, 93,463 habitations are fully covered with water supply at 40 lpcd and the balance 6,555 habitations including 295 Quality affected habitations are partially covered.

3,269 Partially Covered habitations including Quality affected habitations have been taken up for full coverage with water supply at 55 lpcd during 2016-17 and 2,769 habitations have been completed.

6.3 Sustainability of Sources

In addition to implementation of water supply schemes, measures have been taken to augment ground water sources for source sustainability by creating recharge structures such as check dams, recharge shafts, percolation ponds under Government of India and State Government Assisted Programmes.

3,348 Recharge Structures have been constructed by TWAD Board at a cost of ₹228.24 Crore since 2011-12 .

6.4 Combined Water Supply Schemes

With the objective of providing sustainable and potable water supply to the public, TWAD Board formulates and implements Combined Water Supply Schemes in coastal, quality affected and needy areas for more than one local body with common source of water supply viz., Rivers, Dams and Reservoirs. Combined Water Supply Schemes implemented by TWAD Board are for the benefit of both urban and rural local bodies.

24 Combined Water Supply schemes have been taken and these are under various stages at an estimated cost of ₹901.33 crore to benefit 22.71 lakh people. Out of these two Combined Water Supply Schemes (CWSS), have been completed at an estimated cost of ₹54.66 crore, benefiting 1.00 lakh people. These schemes are implemented with financial assistance from the Minimum Needs Programme, National Bank for

Agriculture and Rural Development, the National Rural Drinking Water Programme, Urban Infrastructure Development Scheme for Small and Medium Towns.

The details of various schemes taken up are given below:

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
1.	Augmentation of water supply to 185 habitations in 9 village panchayats of Karamadai union in Coimbatore District	42.94	0.81	Completed
2.	CWSS to 88 habitations in Karapadi and 5 other Village Panchayats, in Bhavanisagar and Nambiyur Unions in Erode District.	11.72	0.19	Completed
3.	CWSS to 158 Rural habitations in Gudimangalam and Udumalaipettai union in Trippur District	54.14	1.23	98%
4.	CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District	26.06	1.09	95%
5.	CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in	91.40	2.00	95%

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
	Erode and Tiruppur District.			
6.	CWSS to 60 Quality affected and 59 way side habitations in Kattumannarkoil Union and Lalpettai Town Panchayat in Cuddalore District	18.16	0.60	93%
7.	CWSS to 100 habitations in Koodanukulam and 12 other Village Panchayats in Radhapuram and Valliyoor Unions situated around Koodankulam Nuclear Power Plant in Tirunelveli District	68.10	0.88	92%
8.	CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu - Myiladum parai Union in Theni District	2.65	0.07	85%
9.	CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.48	78%

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
10.	CWSS to Mulligur and 54 rural habitations in Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	0.30	73%
11.	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil unions in Tirunelveli District	31.32	1.56	72%
12.	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations in Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	1.55	70%
13.	CWSS to 248 rural habitations in Kovilpatti (Part), Kayathar (Part), Ottapirdaram (part), Vilathikulam (part) and Pudur (Part) unions in Thoothukudi District	94.04	1.25	64%
14.	CWSS to 170 Rural Habitations in Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.13	63%

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
15.	CWSS to 1262 rural Habitations in Vellakoil, Mulanur, Dharapuram, Kundadam, Kangayam Unions in Tiruppur District and Chennimalai Union in Erode District - Phase -II	91.16	2.72	20%
16.	CWSS to Vadugapatti Tpt. & 57 Habs. in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni Dt. and Batlagundu Tpt. in Dindigul District.	45.70	0.92	18%
17.	CWSS to 253 Rural Habitations in Kulithalai and Thogamalai Unons in Karur District	52.75	0.69	Work commenced
18.	CWSS to 306 rural habitations in Perambalur, Veppan thattai and Alathur Unions, Arumbavur and Poolambadi Town Panchayats in Perambalur District	61.11	2.57	Trial run Water Supply effected in 306 habitations

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
19.	CWSS to 101 rural hubs in Thoppampatti Union in Dindigul District (under Vedasandur CWSS)	4.11	0.43	Trial run under progress and Water Supply effected to 57 habitations
20.	CWSS to 109 rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS)	4.08	0.59	Trial run under progress and Water Supply effected to 78 habitations
21.	CWSS to 201 rural habitations in Reddiarchatram Union in Dindigul District (under Vedasandur CWSS)	8.96	0.86	Trial run under progress and Water Supply effected to 94 habitations
22.	CWSS to 17 quality affected habitations and 69 Way Side Habitations in Parangipettai and Kumaratchi Unions of Cuddalore District and Kodiyampalayam habitation in Nagapattinam District	19.14	0.38	Tender Stage

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
23.	CWSS to 135 rural habitations in Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made in Natham CWSS in Dindigul District	46.32	0.29	Tender Stage
24.	CWSS to Kandamanur and 15 Rural habitations in Andipatti and Kadamalaikundu-Myladumparai Unions in Theni District	5.50	0.12	Tender Stage
	Total	901.33	22.71	

6.5 Major Combined Water Supply Schemes

CWSS to 1,751 Rural Habitations in Pudukottai District and Vallam Town Panchayat in Thanjavur District has been completed at an estimate cost of ₹315.70 crore, benefiting 7.63 lakh people during 2016-17. 10 Major Combined Water Supply Schemes are under implementation at an estimated cost of

₹2,572.56 crore to benefit 53.28 lakh people. These schemes are implemented with financial assistance from the Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Supply Programme (NRDWP), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Integrated Urban Development Mission (IUDM) and KfW.

The details of the schemes are given below:

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)	Physical progress in %
1.	CWSS to 1153 Rural Habitations and Peravurani, Adhirama-pattinam and Perumagalur Town Panchayats in Thanjavur District	495.70	7.00	95 %
2.	CWSS to 1766 Rural Habitations in Pudukottai District and 125 Habitations in Sivagangai District.	301.50	6.65	93 %

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)	Physical progress in %
3.	CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812 Rural Habitations in Cuddalore District	260.54	7.75	90%
4.	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.70	77%
5.	CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District	158.64	3.93	77%
6.	CWSS to Thondamuthur, 6 Town Panchayats and 134 Rural Habitations in Coimbatore District	130.46	1.83	76%
7.	CWSS to Natham, 2 Town Panchayats & 1276 Rural Habitations in Dindigul District (with bulk provision to 2 Town Panchayats & 354 Rural Habitations in Dindigul District & 135 Rural Habitations in Trichy District)	636.00	11.27	69 %
8.	CWSS to 755 Rural Habitations in Virudhunagar District	234.00	6.51	63%
9.	CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District	109.80	2.96	55%

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)	Physical progress in %
10.	CWSS to 293 rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68	3%
	Total	2572.56	53.28	

6.6 Revamping of Combined Water Supply Schemes

Revamping works are taken up for Combined Water Supply Schemes wherever there is a reduction in yield of sources or a decrease in the efficiency of pumpsets or damages to pipe lines and valves. These revamping works help to make the CWSS fully functional and enhance the supply to the designed level. 1,898 Revamping works were taken up during 2016-17 at a cost of ₹98.57 Crore under SMS/NRDWP/GoI National Calamity Fund / SDRF.

The details of Revamping works are given below

Sl. No.	Category	No.of works	Amount (₹in Crore)
Under NRDWP / SMS			
1	Source Improvement	11	1.34
2	Replacement of pipeline	380	24.35
3	Replacement or overhauling of Pumpsets, Valves, Water meters.	217	11.08
Under GOI Natural Calamity/SMS			
4	Source Augmentation and allied works	642	30.63
Under SDRF / Drought Relief			
5	Erection of New Borewells, Rectification of Borewells and allied works.	238	20.00
Under Additional Drought Relief			
6	Source Restoration works, Replacement / Overhauling of Pumpsets, Cables.	410	11.17
	Total	1,898	98.57

6.7 Water Quality Surveillance and Monitoring

TWAD Board has established one State level water testing laboratory at Chennai, 31 District level and 51 sub district water testing laboratories all over Tamil Nadu to achieve the objective of ensuring safe drinking water supply to the public. Facilities for testing all the basic

chemical and bacteriological water quality parameters and for effective surveillance and monitoring of water supply sources in both Rural and Urban areas are available in these laboratories. Government of India have recognized the State level water testing laboratory at Chennai as State Referral Institute for Tamil Nadu.

NABL Accreditation (National Accreditation Board for Testing and Calibration Laboratories) has been obtained for the State level water testing laboratory, Chennai. 50,000 water samples have been tested in state and district laboratories during the year 2016-17. 12,524 Field water testing kits were supplied to the Panchayats. 10,000 grass root level functionaries were trained for using Field water testing kits.

It is proposed to further intensify the activities of the Lab during 2017-18 by testing

more samples, giving training to grass root level functionaries and supply of testing kits.

6.8 Drinking Water Safety Week Campaign

The Government of Tamil Nadu are conducting week long campaign on water safety to create awareness among the public on Water quality.

Drinking Water Safety Week Campaign has been conducted from 27.06.2016 to 03.07.2016. 31 District rallies, 385 Block rallies, 6,262 Grama Sabha meetings were conducted for creating water quality awareness. 3,000 Field water testing kits were given at free of cost to Panchayats. 26,374 Teachers and 13,187 pump operators were trained for water sample collection and testing during this campaign. About 2 lakh water samples were collected and tested.

6.9 Urban Stand Alone Water Supply Programme

TWAD Board functions as Project Implementation Agency for Stand Alone Water Supply Schemes to Urban Local bodies. These schemes are handed over to the respective Urban local bodies for maintenance on completion.

27 Water Supply Improvement Schemes have been taken up covering 2 Corporations, 15 Municipalities and 10 Town Panchayats for the benefit a population of 18.26 lakh, at a cost of ₹949.88 crore.

Further, Government of Tamil Nadu have accorded administrative sanction for the implementation of Water Supply Improvement Schemes to 9 urban local bodies (5 Corporations and 4 Municipalities) at a cost of ₹2,244.65 crore to benefit a population of ₹43.99 lakh, under State and GOI sponsored Atal Mission for

Rejuvenation and Urban Transformation (AMRUT) – 2015-16.

6.10 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. As on date, 553 Combined Water Supply Schemes covering 8 Corporations, 66 Municipalities, 324 Town Panchayats, 47,136 Rural Habitations and 532 Industries / Institutions, benefiting a population of 4.21 Crore are being maintained by TWAD Board.

Inspite of the prevailing drought conditions, an average of 1,440 MLD of water is supplied during June 2017 through these 553 Combined Water Supply Schemes to local bodies and Industries/Organisations as detailed below:

Sl. No.	Name of Beneficiary	No.of Beneficiary	Designed Quantity (in MLD)	Average Supplied Quantity in June 2017 (in MLD)
1	Corporations	8	265	137
2	Municipalities	66	264	162
3	Town Panchayats	324	334	263
4	Rural Habitations	47136	1066	859
5	Industries / Institutions/ Commercial Organisations	532	144	19
	Total	48066	2073	1440

During the year 2016-17, the Operation & Maintenance expenditure is ₹667.37 Crore and the Revenue collected through water charges is ₹269.84 Crore.

Government of Tamil Nadu have released ₹140.00 Crore during the year 2014-15, ₹207.11 Crore during the year 2015-16 and ₹103.79 Crore during the year 2016-17 as special grant to meet the gap between Income and Expenditure in Operation and Maintenance of CWSS.

6.11 Investigation and Preparation of Detailed Project Reports

6.11.1 Water Supply Schemes

34 Nos. of Water Supply Schemes at an estimated cost of ₹14,434.04 crore, to benefit a total population of 136.98 Lakh are under investigation during 2016-17, as detailed below:

Sl. No.	Description	No. of WSS	Beneficiaries	Population benefited (in lakh)	Estimated cost (₹ in crore)
1	Schemes sanctioned	6	8 Municipalities, 11 Town Panchayats & 643 Rural Habs	13.08	1257.74
2	Schemes in various stages of sanction.	9	5 Municipalities, 25 Town Panchayats & 4638 Rural Habs.	28.61	2944.12
3	Investigation/ DPR under preparation	19	2 Corporation, 10 Municipalities. 42 Town Panchayats & 14,173 Rural Habs	95.29	10232.18
	Total	34	2 Corporation, 23 Municipalities, 78 Town Panchayats & 19,454 Rural Habs	136.98	14434.04

6.11.2 New UGSS for Urban Local Bodies

Detailed Project Reports for providing Under Ground Sewerage Schemes in 5 Corporations and 5 Municipalities are prepared at a total cost of ₹2936.84 Crore during 2016-17 and are at various stages of approval.

6.11.3 Formation of Water Supply Grid between Chennai and Bangalore exclusively for Industrial needs

TWAD Board had carried out detailed investigation for Water Supply to meet out the industrial Water Supply needs and to encourage setting up of new industries along Chennai-Bangalore Industrial Corridor. 10,881 industries have been identified between Chennai and Hosur and grouped into 46 industrial clusters. Pre-Feasibility Report has been prepared to cater to the Water Supply needs of these industrial clusters.

Detailed Project Report for Ponneri and Hosur Industrial nodes are under preparation as Phase-I as advised by the Tamil Nadu Infrastructure Development Board (TNIDB).

Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) have been entrusted the works in respect of Ponneri Industrial node by the Government. TWAD Board has been requested to prepare Detailed Project report for Hosur node. Assesment of actual demand is under progress.

6.12 Under Ground Sewerage Schemes

Under Ground Sewerage Schemes in selected District Head Quarters and other towns are being implemented by TWAD Board.

636 Detailed Project Reports at an estimated cost of ₹20,820 Crore to provide UGSS to 3 Corporations, 117 Municipalities and 516 Town Panchayats are prepared by TWAD

Board taking into consideration the objective of the Government of Tamil Nadu to provide Under Ground Sewerage Scheme to all the Urban Local Bodies.

6.12.1 Status of the Under Ground Sewerage Schemes

Under Ground Sewerage Schemes to Perambalur (omitted areas), Ariyalur (omitted areas) and Krishnagiri Municipalities benefiting a population of 74,848 at an estimated cost of ₹50.25 Crore have been completed during the year 2016-17. 22 Under Ground Sewerage Schemes benefiting a population of 15.80 lakh at an estimated cost of ₹1260.49 Crore are in various stages of progress.

Further administrative approval has been accorded to provide Under Ground Sewerage Schemes to Thiruporur, Ponneri and Vallam Town Panchayats and Mettupalayam Municipality

benefiting a population of 1.45 lakh at an estimated cost of ₹222.99 crore.

6.12.2 Septage Management Projects

As a Pilot project, Septage Management project in Karunkuzhi Town Panchayat benefiting a population of 12,000 at an estimated cost of ₹4.93 crore is taken up and is in advanced stage of completion.

Based on the success of this Pilot Project in Karunkuzhi Town Panchayat, the possibility of extending this technology to other Town Panchayats with lesser population density will be examined.

6.13 Hydrogeological Activities

TWAD board extensively uses the state-of-art Technology for remote sensing and GIS (Geographical Information Systems) for Scientific Source Finding Activities and

identification of suitable locations for Recharge Structures.

Ministry of Drinking Water and Sanitation, Government of India had sanctioned the project on preparation of Ground water Prospect Maps (HGM Maps) and district-wise ATLAS for Tamil Nadu and accordingly these maps and ATLAS were prepared. Further, Ground Water Quality map for all Districts have also been prepared and draft water quality maps have been sent to National Remote Sensing Centre (NRSC), Hyderabad and GOI for final approval.

Research & Development project for Tamiraparani River Basin in Tirunelveli and Thoothukudi Districts for the Sustainability of Drinking water sources for future requirement has been taken up by TWAD Board at an estimated cost of ₹2.75 Crore for a period of 3 years. Automatic weather stations have been installed in 5 locations. Automatic water level

recorders have been installed in 10 locations and data are being collected and analysed. High resolution satellite imageries have been procured from NRSE, Hyderabad and the analysis completed.

In order to utilize the defunct Quarry as rain water harvesting cum water supply source, a feasibility study at a cost of ₹48.20 lakh has been taken up by TWAD Board in Kancheepuram and Villupuram Districts in Tamil Nadu. Study is completed in 6 defunct Quarries identified in Kancheepuram and Villupuram Districts.

The State Planning Commission has sanctioned a pilot project to TWAD Board at a cost of ₹99.00 lakh under Tamil Nadu Innovation Initiatives 2015-2016 on Conjunctive use of Ground and Surface Water along with Rain Water Harvesting to ensure 24x7 water supply in Lagampalayam Village Panchayat of Nambiyur union in Erode District. Under this project the

water balance in the Village Panchayat will be worked out by the Community to ascertain the stage of utilization. The drinking water security will be worked out based on the ground water potential available. A detailed plan will also be worked out with Community to ensure rainwater harvesting and to identify needy and unserved area for equitable distribution of water supply.

A detailed O & M plan to provide sustainable drinking water supply will be arrived. As part of achieving good health, hygiene and open defecation free clean environment, awareness on sanitation will be created. This will pave the way for achieving sustainable drinking water security.

Government have accorded Administrative Sanction for implementation of Sustainable Water Security Mission ("SuWaSeM") at a cost of ₹20.00 Crore. The main components of the programme are Roof top Rain water Harvesting

(RRWH), Campus RWH (RWH other than Roof area), Storm water harvesting, Restoration and rejuvenation of water bodies, Grey water recycling, Reduce & Reuse, Research activities and Community outreach. The scheme is proposed to be taken up in the urban areas other than Chennai. Tamil Nadu Water Supply and Drainage Board will be the nodal agency for the programme.

6.14 Material Testing Laboratory in TWAD Board

There are four Material Testing Laboratories functioning in the TWAD Board at Coimbatore, Madurai, Trichy and Tindivanam. ISO 9001:2008 certifications have been awarded to the Laboratories in Coimbatore and Madurai.

The laboratories are fully equipped with necessary machineries, equipments and instruments for conducting the parametric tests as per the procedures postulated in the relevant

Bureau of Indian Standards. The test facilities adorning the Laboratories include the following for quality and conformity to Indian Standards:

- ❖ Construction materials like Ordinary Portland cement, Sulphate Resistant Portland cement, steel rods, sand, coarse aggregates, bricks and concrete cubes.
- ❖ Filter media, Hollow blocks, Paver blocks.
- ❖ PVC Pipes, UPVC Pipes, HDPE pipes, GI pipes, DI pipes and Stoneware pipes.
- ❖ Mix design of concrete for the M30 grade
- ❖ Electric Cables.

The qualitative assessment of each project has been improved by testing the materials in the TWAD Board Lab. The materials received

from local bodies and private agencies are also tested for quality in these laboratories.

4,716 samples have been tested in the 4 laboratories during the financial year 2016-17.

6.15 Management Information System

To manage data flow relating to all schemes, Project Management, Financial Accounting, Human Resource, Billing Tamil Nadu Water Supply and Drainage Board has implemented TWAD Board integrated E-Governance System (TWAD NEST). Information about the physical and financial progress and performance of all water supply, sewerage and maintenance schemes and recharge structures are provided online. The quantity of water pumped from the Head works of various water supply schemes maintained by TWAD Board is uploaded daily and monitored through online.

For the purpose of planning and design in water supply distribution network, sewer network design and analysis, structural analysis. CAD softwares are used by TWAD Board.

For periodical review of works executed by TWAD Board all over the state, Head office, five Chief Engineers offices in Vellore, Madurai, Thanjavur, Coimbatore, Dharmapuri and four Superintending Engineers offices in Cuddalore, Trichy, Salem, Tirunelveli are interconnected through Video Conference (VC) System. TWAD Board is well equipped to monitor the functions and Schemes in an effective manner.