



Municipal Administration and Water Supply Department

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Government of Tamilnadu

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VII. TAMIL NADU WATER SUPPLY AND DRAINAGE BOARD

Provision of safe drinking Water and Sanitation facility to every house hold is the foremost priority of the Government of Tamil Nadu. Tamil Nadu Water Supply and Drainage Board was established for providing protected water supply and sanitation facilities to Urban and Rural areas, with an organizational structure of four Chief Engineers head quartered at Vellore, Coimbatore, Madurai and Thanjavur. The Board Office at Chennai is headed by the Managing Director and supported by Technical, Financial and Administrative wings. An exclusive project management unit has been created at Chennai to monitor and Co-ordinate the Hogenakkal Water Supply and Fluorosis Mitigation Project. A project implementation unit with a Chief Engineer with supporting staff and Project Management Consultants has also been stationed at Dharmapuri. TWAD Board has a committed work force of technical and supporting staff in all the districts across the State.

Functions :

1. Planning, Investigation, Design, Implementation & Commissioning of
 - Rural Water Supply Schemes
 - Urban Water Supply Schemes
 - Combined Water Supply Schemes including Major Projects.
 - Under Ground Sewerage Schemes.

2. Operation and Maintenance of Combined Water Supply Schemes

3. Water Quality Monitoring & Surveillance Programme

4. IEC and HRD activities through Communication Capacity Development Unit

Norms for providing drinking water supply is as follows:

a. Rural water supply : 40 litres per capita per day

b. Urban Water Supply :

Town Panchayats - 70 litres per capita per day

Municipal Towns - 90 litres per capita per day

Corporation - 110 litres per capita per day

Rural Water Supply Programme :

Rural Water Supply schemes are being implemented with state funds under Minimum Needs Programme and central funds under National Rural Drinking Water Programme (NRDWP). The Government of India has issued modified guidelines under the NRDWP in order to provide drinking water security to every household in rural India. To achieve the goals in the water and sanitation sectors, a State Level Water and Sanitation Mission (SWSM) was formed in Tamil Nadu for the effective implementation of works under the NRDWP, in accordance with the guidelines issued by the Government of India.

TWAD Board is also providing Water Supply to the Government Schools, Anganwadis and BC/MBC Hostels in rural areas under Special Programme.

The present Water Supply status of rural habitations in Tamil Nadu is as follows:

Total habitations	-	93,699
Fully covered (40 LPCD and above)	-	86,679
Partially covered (10 to 39 LPCD)	-	7,020

Proposal for 2011-12

The funds to a tune of **Rs. 367 Crore** is available under **NRDWP** and **Rs.802.03 Crore** have been provided under State funds for 2011-12.

As per NRDWP guidelines, the allocation of central assistance under NRDWP is subject to matching provision by the State under State sector MNP for certain components of NRDWP. The component wise percentage of allocation Under NRDWP fund is as below.

Component wise allocation of NRDWP fund

Sl. No.	Component	% of allocation	Funding Pattern Central : State
1	Coverage of Habitations (inclusive of Schools and public places)	75	50:50
2	Coverage of quality affected habitations		

3	Sustainability measures	10	100% central
4	O &M of existing schemes	10	50:50
5	Support Activities	5	100% central
	Total	100	

7,020 partially covered Rural habitations have been taken up and it has been proposed to complete Water supply Schemes in 6,000 Rural Habitations during 2011-12.

Sl. No.	Description	No. of habitations to be covered
	Taken up Habitations	
1	Coverage through improvements in CWSS under maintenance (Source Augmentation, Providing Boosters, Sumps and OHT)	5,588
2	Coverage through IPP SC/ST Habitations	338
3	Coverage of Quality affected Habitations	77
4	Coverage through CWSS under implementation	966
5	Habitations taken up under Special approval given during 2010-11	51
	Total	7,020

For sustainability of sources, recharge structures are constructed in close proximity to the drinking Water Supply Head works.

During the current year it has been proposed to take up 703 Recharge structures at a cost of Rs.38.00 crore, under 100% NRDWP sustainability component.

Combined Water Supply Schemes

Combined Water Supply Schemes are being implemented where more than one local body, either rural or urban with a common source of water supply is involved with financial assistance under the Minimum Needs Programme, National Rural Drinking Water Programme and with funding from financial institutions like the World Bank, NABARD, UIDSSMT, JnNURM and ADB.

28 CWSS at an estimated cost of Rs.378.79 crore to benefit a population of 21.55lakh are under implementation across 15 Districts out of which **25 CWSS at a cost of Rs. 297.89 crore benefiting a population of 18.34 lakh are targeted for completion during 2011-12.**

Major Combined Water Supply Schemes :

The following 8 major Combined Water Supply Schemes for a total cost of Rs.3276.62 crore have been taken up and are under tender stage.

Sl No	Name of scheme	Estimate amount (Rs. in crore)	Population
1	CWSS to Melur and 2 Other Municipalities, 6 Town Panchayats and 1,430 Rural Habitations in 8 Unions of Madurai District and 1 Town Panchayat in Sivagangai District with River Cauvery as source	784.00	12,15,000
2	Augmentation of Water Supply to Palladam Municipality, 23 Town Panchayats and 965 Rural Habitations in 8 Unions of Coimbatore and Tiruppur Districts with Pillur Dam as source	224.92	9,88,000
3	CWSS to 7 Town Panchayats and 395 Rural Habitations in Virudhunagar District, with River Tamiraparani as source, near Mukkudal	173.00	3,84,000
4	CWSS to 755 Rural Habitations in Virudhunagar District with River Tamiraparani as source near Seevalaperi	234.00	5,43,000

5	CWSS to 637 Rural Habitations in Virudhunagar District with River Tamiraparani as source near Vallanadu	190.00	3,53,000
6	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Sirkali, Kollidam, Sembanarkoil and Myladuthurai Unions in Nagapattinam District with River Coleroon as source.	105.70	3,08,000
7	CWSS to Attur & Narasingapuram Municipalities, 20 Town Panchayats and 1345 Rural Habitations in 12 Unions of Salem District	270.00	10,37,000
8	CWSS to Vellore corporation, 11 Municipalities, 5 Town Panchayats and 944 Way side Rural Habitations of Vellore District with Cauvery as source	1295.00	18,68,000
	Total	3276.62	66,96,000

Urban Water Supply Programme :

The urban towns are provided with drinking water supply under assistance from Government of India under Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Urban Infrastructure

Development Schemes for Small and Medium Towns (UIDSSMT), World Bank assisted TNUDP-III, KfW, JICA, (Japan International Co-operation Agency) State MNP grant and contribution from Urban local bodies.

The present status of water supply in the urban towns in the state excluding Chennai Corporation is as below:

Corporations getting 110 lpcd and above	Corporations getting 70-109 lpcd	Corporations getting Less than 70 lpcd	Total
3	6	0	9

Municipalities getting 90 lpcd and above	Municipalities getting 50 – 89 lpcd	Municipalities getting Less than 50 lpcd	Total
45	92	13	150

Town Panchayats getting 70 lpcd and above	Town Panchayats getting 40 – 69 lpcd	Town Panchayats getting Less than 40 lpcd	Total
348	206	5	559

Schemes Under Implementation

Water supply Improvement Schemes to 46 towns including 7 Schemes funded by Kfw and 4 Schemes funded by JICA covering 19 Municipalities, 27 Town Panchayats at a cost of Rs.367.48 crore benefitting 14.75 lakh population are under implementation. It is programmed to complete during 2011-12 Water supply Improvement Schemes to 30 towns with 5.68 Lakh population covering 4 Municipalities and 26 Town Panchayats.

As stated above under KfW funding, the following Water Supply Improvement Schemes in 7 Municipalities at an estimated cost of Rs.165.33 crore benefitting a population of 3.61 lakh are taken up for implementation.

1. WSIS to Thiruvannamalai Municipality - Rs.36.66 crore
2. WSIS to Udhagamandalam Municipality - Rs.27.20 crore
3. WSIS to Kadayanallur Municipality - Rs.21.41 crore
4. WSIS to Pallipalayam Municipality - Rs.11.66 crore
5. WSIS to Inamkarur Municipality - Rs.18.57 crore
6. WSIS to Karur Municipality - Rs.24.67 crore
7. WSIS to Thanthoni Municipality - Rs.25.16 crore

Likewise under JICA funding, Water Supply Improvement Schemes in 4 Municipalities at an

estimated cost of Rs.62.29 crore benefiting a population of 2.38 lakhs are be taken up for implementation.

1. WSIS to Palani Municipality - Rs.21.60 crore
2. WSIS to Coonur Municipality - Rs.13.85 crore -
3. WSIS to Edapadi Municipality - Rs.18.52 crore
4. WSIS to Devakottai Municipality - Rs. 8.32 crore

Under Ground Sewerage Schemes :

TWAD Board is implementing underground sewerage schemes in District Head Quarter Towns, Municipalities and Town Panchayats with financial assistance from World Bank under TNUDP-III, and KfW (German Fund). Government of India is also funding these schemes under JnNURM/UIDSSMT and National River Conservation Programme (NRCP),with Urban local bodies contribution.

Out of 31 District Head Quarter Towns (except Chennai)

- 7 Towns are completed (Tiruppur, Madurai, Trichy, Tirunelveli, Thanjavur, Karur and Udthagamandalam)
- 6 Towns are under implementation by urban localbody (Vellore, Dindigul, Salem, Erode, Coimbatore and Kancheepuram)

- 17 Towns are being implemented by TWAD Board (Cuddalore, Namakkal, Ramanathapuram, Thoothukudi, Virudhunagar, Pudukkottai, Sivagangai, Krishnagiri, Thiruvarur, Dharmapuri, Thiruvannamalai, Villupuram, Thiruvallur, Perambalur, Theni, Nagapattinam and Ariyalur.)
- 1 Town (Nagercoil) to be taken up (Pending for fund tie up)

It is programmed to complete 7 schemes (Cuddalore, Thiruvannamalai, Ramanathapuram, Pudukkottai, Namakkal, Dharmapuri and Villupuram) during 2011-12.

UGSS for other than District Head Quarter Towns:

- 2 Towns were completed (Mayiladuthurai, Inam Karur)
- 2 Towns under implementation by TWAD Board (Chinnamanur and Maraimalai Nagar)
- 1 Town is in Tender Stage (Udumalpet)

It is programmed to complete 2 schemes (Chinnamanur and Maraimalai Nagar) during 2011-12.

UGSS in Town Panchayats :

- 2 Towns (Mamallapuram and Tiruchendur) under implementation by TWAD Board

It is programmed to complete 1 scheme (Mamallapuram) during 2011-12.

Special Project :

HOGENAKKAL WATER SUPPLY AND FLUOROSIS MITIGATION PROJECT

Government of Tamil Nadu is implementing the Hogenakkal Water Supply and Fluorosis Mitigation Project with the aim to supply safe and potable drinking water to the fluoride affected people of Dharmapuri and Krishnagiri districts.

- Estimate cost - Rs 1928.80 Crore
- Annual maintenance Cost - Rs 63.67 Crore

Beneficiaries

- Municipalities -
 1. Dharmapuri
 2. Krishnagiri
 3. Hosur
- Town Panchayat - 17 Nos.
- Union - 18 Nos.
- Rural habitation - 6755 Nos.
- Population to be benefited - 29.80 Lakh

Funding

Loan agreement has been signed with JICA in Phase-I&II for Rs.1585.60 Crore. Further Rs.307.48 Crore under MNP funds and Rs.35.72 Crore under Local body share is allotted to provide safe and potable drinking water supply.

The works have been sliced into 5 Packages for prompt implementation.

Package I:

This package consists of Raw Water Intake, Water Treatment Plant, Transmission Main to a length of 11.161 km, Booster Pumping Station and Master Balancing Reservoir at Madam. 35% work has been completed. The balance works are in progress. The target date for completion of this Package is August 2012.

Package II:

This Package consists of Trunk Main from Master Balancing Reservoir at Madam to Uthangarai, Feeder Mains etc., to a length of 2,387 Km, covering 1,653 habitations in **5 unions** viz. Pennagaram, Nallampalli, Dharmapuri, Mathur and Uthangarai, **2 Town Panchayat** viz. Pennagaram and Uthangarai and **Dharmapuri Municipality**. The population to be benefited from this package is 8.40 lakh. 52% work has been completed. The balance works are in progress. The target for completion of work for this Package is June 2012.

Package III :

This Package consists of branch Trunk Main from Trunk Main to Package-II, Feeder Main etc., to a length of 1,572 Km. covering 1,083 habitations in **three unions** viz., Morappur, Harur and Papireddypatti, **5 Town Panchayats** viz., B. Mallapuram, Harur, Kadathur, Kambainallur and Pappireddypatti. The population to be benefited from this Package is 4.40 lakh. 19% work has been completed. The balance works are in progress. The target for completion of work for this Package is December 2012.

Package IV:

This Package consists of Pumping Main from Common Booster Station at Moongilpatti to a length of 3,107 km. covering 1,720 habitations in **5 unions** viz. Veppanapalli, Kelamangalam, Thalli, Sulagiri and Hosur, **3 Town Panchayats** viz., Mathagiri, Kelamangalam, Thenkanikottai and **Hosur Municipality**. The population to be benefited from this Package is 8.00 lakh. 33% work has been completed. The balance works are in progress. The target for completion of work for this Package is September 2012

Package V:

This Package consists of Trunk Main from Master Balancing Reservoir at Madam to Moongalpatti Sump and then Moongalpatti sump to Krishnagiri Feeder Mains etc., to a length of 2,950 Km. covering 2,299 habitations in **5 unions** viz. Palacode, Karimangalam, Bargur, Krishnagiri and

Kaveripattinam, 7 Town Panchayats viz., Karimangalam, Marandahalli, Palacode, Paparapatti, Bargur, Kaveripattinam, Nagojanahalli and **Krishnagiri Municipality**. The population to be benefited from this Package is 9.00 lakh. 10% work has been completed. The balance works are in progress. The target for completion of work for this Package is December 2012.

In overall **30%** Work has been Completed and an expenditure of **Rs. 525.69 Crore** has been incurred. The scheme is targeted for completion and put into beneficial use by **December 2012**.

Operation and Maintenance Works :

As per the policy of Government, the Combined Water Supply Schemes (CWSS) implemented in Tamil Nadu covering more than one Local Body is being maintained by TWAD Board. At present 507 CWSS covering 5 Corporations, 56 Municipalities, 270 Town Panchayats, 25741 rural Habitations and 422 institutions / Industries benefitting a population of 2.53 crore is maintained by TWAD Board.

Categories of CWSS based on no. of Habitations / Institutions served

- ❖ **2 nos. more than 1000 beneficiaries**
- ❖ **3 nos. 1000 to 750 beneficiaries**
- ❖ **3 nos. 750 to 500 beneficiaries**
- ❖ **13 nos. 500 to 250 beneficiaries**
- ❖ **34 nos. 250 to 100 beneficiaries**
- ❖ **452 nos. less than 100 beneficiaries**

Present Status:

❖ Full supply	-	283
❖ More than 50% supply	-	163
❖ Less than 50% supply	-	61

The following are the main reasons for shortfall in Water Supply under the CWSS maintained by TWAD Board.

- ❖ Inadequate sources
- ❖ Aged pump sets
- ❖ Damages in pipeline, valves due to road widening
- ❖ Inadequate power supply

Initiatives taken to overcome above constraints :

- Coverage of Habitations through improvements in **349 CWSS** maintained by TWAD Board to benefit **5588 Habitations** at a cost of **Rs.101.69 crore**.
- Augmentation of **33 sources**, providing **91 additional sumps** and **18** Booster stations in **89 CWSS** to benefit **1399 Habitations** at a cost of **Rs.15.89 crore**.
- Replacement of **185 pumpsets**, **587.02 Km** length of pipeline, **1159** Air valves and **183** Separate Power Feeder Main in **260 CWSS** to benefit **4189 Habitations** at a cost of **Rs.85.80 crore**.

Tsunami Relief Works :

Sanitation facilities to Permanent shelters with financial assistance from World Bank under ETRP.

The Government have sanctioned Rs. 30.00 core towards implementation of above scheme in 16 packages for Tsunami permanent shelters in Town Panchayat and Municipal areas of Six coastal Districts viz., Nagapattinam, Kanyakumari, Cuddalore, Villupuram, Thoothukudi and Kancheepuram under ETRP with World Bank Assistance. Out of 16 packages, works in 10 packages have been completed and balance 6 packages are programmed for completion by December 2011.

WATER SUPPLY SCHEMES UNDER INVESTIGATION

A. Detailed Project Reports for 33 Water Supply Schemes with River Sources benefiting 35 Town Panchayats and 3,250 Rural Habitations are being prepared at present. The total approximate cost of the Schemes will be Rs. 567.67 Crore benefiting a population of 18.94 Lakh.

B. Further, Investigation works are under progress for 15 Water Supply Schemes with River Sources benefiting 10 Town Panchayats and 4,468 Rural Habitations. The total approximate cost of the Schemes will be Rs.626.57 Crore benefiting a population of 20.73 Lakh.

Sanitation facilities to Government Hospitals

Providing sanitation facilities to 17 Government Hospitals have been taken up at an estimated cost of Rs. 16.52 crore. Out of these Schemes, 6 Schemes (Chidambaram, Tambaram, Hosur, Sholingar, Manaparai and Padmanabapuram) were completed and commissioned and the balance 11 Schemes are proposed to be completed by 31.10.2011.

Water quality monitoring and surveillance

In order to ensure quality of the water supplied by TWAD, one state level ISO 9001:2008 certified lab, recognised as state referral Institute for Tamil Nadu, 31 District Water Testing Laboratories and 51 Sub-divisional laboratories are now functioning under TWAD Board. Sources for IPP and CWSS are tested every year and the water quality data are entered in Government of India Web Site (Integrated Management Information system). During 2011-12 it is programmed to test 2.46 lakh water sources. Field water testing kits are supplied to the Panchayat Presidents to monitor the water quality in the field for which necessary training are also imparted. During 2011-12 it is programmed to supply field water testing kits to 2388 Panchayats.

Hydro-Geomorphological Maps

Department of Drinking Water Supply and Sanitation, Government of India have sanctioned a Project on Ground Water Prospects Map for the State of Tamil Nadu to TWAD Board for the

preparation and updation of existing Maps at an outlay of Rs.198.90 lakh.

TWAD Board has already prepared Hydro Geomorphological Maps based on Remote Sensing and GIS techniques, Taluk wise, Block wise for the entire Tamil Nadu, used by the field Hydrogeological personnel for source creation and identification of favourable sites for Recharge Structures.

The present Project on HGM Map for the State is to be prepared in Toposheet wise with information such as Geology, Geomorphology, Ground Water prospect zones, Quality of water available, Depth of source need to be drilled, locations for Artificial Recharge structures etc that are not available in the previous map prepared earlier by TWAD Board.

Thus in a nut shell the HGM map will guide the Field Geologist of TWAD to facilitate precise location of Drinking Water sources and Recharge Structures to ensure Drinking Water security to all Rural Water Supply Schemes fulfilling the commitments of both the State and Central governments.

Scientific Source Finding

In TWAD Board the source finding activities are being carried out purely based on scientific approach by way of deploying advanced techniques such as Remote sensing, GIS, and also by systematic geo-physical exploration.

Approach Shift

To begin with TWAD Board was providing Hand pump and piped water supply schemes through Bore wells/ Open well sources. In view of un-sustainability of the bore well sources in the long run in terms of its deterioration in quantity and quality owing to various reasons it has become necessary to switch over to sustainable and reliable qualitative Drinking Water Sources. Considering the above factors, water supply schemes are being designed with River Water as the main source. Due to possible clubbing of viable Urban and Rural Habitations enroute, Combined Water Supply Schemes have become popular as an economic and sustainable model in the long run.

Keeping this in view, the Government have now taken a policy to implement Major CWSS with Perennial Rivers such as Cauvery and Tamiraparani as sources of water supply to cater to the needs of Major Towns and for even Remotely located Rural Habitations, since they are environmentally safe and sustainable. In view of the growing commitments to the drinking water sector, Government have also been contemplating installation of Desalination plants.