



MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

Policy Note 2014 - 2015

Demand No.34

Thiru. S.P. VELUMANI
Minister for Municipal Administration,
Rural Development, Law, Courts and Prisons

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Government of Tamil Nadu
2014

6. Tamil Nadu Water Supply and Drainage Board

Tamil Nadu Water Supply and Drainage Board was formed as a statutory body on 14.04.1971 with the objective of providing protected water supply to the Rural and Urban population as well as Under Ground Sewerage Schemes to the urban local bodies in Tamil Nadu excluding Chennai Corporation. The Board office at Chennai is headed by the Managing Director supported by Technical, Financial and Administrative Wings. At present, the TWAD Board has four Chief Engineers with Headquarters at Vellore, Thanjavur, Coimbatore and Madurai and one Project Chief Engineer at Dharmapuri.

6.1 Activities of TWAD Board

- a. Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes in Rural and Urban areas.

- b. Operation and Maintenance of Combined Water Supply Schemes.
- c. Water Quality Monitoring and Surveillance Programme.
- d. Sustainability of Drinking Water Sources.
- e. Training Activities.

6.2 Rural Water Supply Programme

The Government of India considering that 40 lpcd has been the norm over the last 40 years, as an interim measure has enhanced the service level to 55 lpcd for the 12th Five year Plan. By 2017, it is targeted that at least 50% of Rural Population in the Country shall have access to 55 lpcd within their household premises or within 100 metres radius (and within 10 metres elevation in hilly areas) from their households.

Water Supply schemes to Rural Habitations is implemented based on surveys to assess the gap between current supply and the service standard. Rural Water Supply Schemes

are being implemented with State Government Funds under the Minimum Needs Programme (MNP) and with the Central Government Funds under the National Rural Drinking Water Programme (NRDWP).

The Rural water supply includes implementation of Individual Power Pump schemes for the prioritized Rural Habitations involving creation of water source (borewell/open well), construction of Service Reservoir and laying of pipe line for transmission and distribution. When the beneficiary is an individual local body, the scheme is handed over to the local body for maintenance on completion of the scheme and when the scheme is meant for more than one local body, the scheme is maintained by TWAD Board. Besides providing water supply schemes to rural habitations, TWAD Board is also implementing schemes to provide water supply to Government Schools, Anganwadis,

Government Hostels and Primary Health Centres in rural areas.

In Tamil Nadu, as on 01.04.2013, there are 98,179 rural habitations. Out of this, 76,704 habitations are fully covered with water supply at 40 lpcd and 21,475 habitations are partially covered, including 540 Quality affected habitations. During 2013-14, 5,705 habitations have been fully covered with water supply at 55 lpcd including 245 Quality affected habitations. Apart from this 8,414 partially covered habitations (including 295 quality affected habitations) have been taken up in the ongoing Combined Water Supply Schemes. It is proposed to cover the remaining 7,356 partially covered rural habitations in the coming years.

6.3. Rural Water Supply during 2013-14

During 2013-14, **6,000** partially covered Rural Habitations have been taken up at a cost of **₹1,190.72 Crore** and 5,705 Rural

Habitations have so far been covered. The details are given below:

| Sl. No. | Description | Habitations covered |
|--------------|--|---------------------|
| 1 | Coverage through Individual Power Pump Schemes | 4,391 |
| 2 | Coverage of Quality Affected Habitations | 245 |
| 3 | Coverage through Combined Water Supply Schemes | 1,069 |
| Total | | 5,705 |

The remaining 295 Quality Affected Habitations which are proposed to be covered in Major Combined Water Supply Scheme in Nagapattinam District will be completed during the current financial year.

6.4 Rural Water Supply Programme for 2014-15

During the year 2014-15, **4,805** Rural habitations are proposed to be covered through Individual Power Pump Schemes and Combined

Water Supply Schemes at a cost of **₹831.83 Crore**. The details are as below.

| Sl. No. | Description | No. of Habitations to be covered |
|--------------|--|----------------------------------|
| 1 | Coverage through Individual Power Pump Schemes | 1,510 |
| 2 | Coverage through Combined Water Supply Schemes | 3,295 |
| Total | | 4,805 |

6.5 Source Sustainability

Besides implementation of water supply schemes, TWAD Board has taken measures to augment ground water sources towards source sustainability by creating recharge structures such as check dam, recharge shafts, percolation ponds etc., under the Government of India and State Government Assisted Programmes.

During 2011-12 and 2012-13, 1,628 Recharge Structures have been constructed at a cost of **₹93.42 Crore**. During 2013-14, **1,039 Recharge Structures** were taken up and

completed at a cost of **₹78.68 crore**. During the year 2014-15, it is proposed to take up **680 Recharge Structures** at an estimated cost of **₹56.14 crore**.

6.6 Combined Water Supply Schemes

In order to provide sustainable and potable water supply to the public, TWAD Board formulates and implements Combined Water Supply Schemes in coastal, quality affected and needy areas by combining more than one local body and based on common source of water supply viz., Rivers, Dams and Reservoirs. Combined Water Supply Schemes are implemented by TWAD Board benefitting both urban and rural local bodies.

During 2013-14, **43 such schemes** were under implementation at an estimated cost of **₹910.62 crore** to benefit **33.60 lakh** people with financial assistance from the Minimum Needs Programme (MNP), the National Rural

Drinking Water Programme (NRDWP), Jawaharlal Nehru National Urban Renewal Mission (JnNURM)/ Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT).

The following **9 Combined Water Supply Schemes**, have been completed at an estimated cost of **₹30.75 crore**, benefiting **3.10 lakh** people.

| Sl. No. | Name of scheme | Estimate amount (₹ in crore) | Population benefitted |
|---------|---|------------------------------|-----------------------|
| 1 | CWSS to Melmaiur and 12 other habitations in Kattankolathur Union of Kanchepuram District. | 0.98 | 7,357 |
| 2 | CWSS to Sumaithangi and 13 other habitations in Walajah Union of Vellore District. | 0.99 | 11,231 |
| 3 | CWSS to 79 habitations in Melpuram and Providing Treatment Plant for the 3 existing CWSS in Kanyakumari District. | 16.70 | 1,86,347 |
| 4 | CWSS to Manmangalam and 71 other habitations in Karur union of Karur District. | 2.38 | 24,232 |
| 5 | CWSS to Chithamur and 27 habitations in Anakkavur Union of Tiruvannamalai District. | 1.85 | 13,756 |
| 6 | CWSS to Korakkai & T.Endal (Quality affected habitations) and 11 Other wayside habitations in Mangalore union of Cuddalore District | 1.32 | 10,068 |
| 7 | CWSS to Padavedu and 46 other habitations in Polur Union of Tiruvannamalai District. | 3.03 | 17,445 |
| 8 | CWSS to 11 habitations in Thirupparaithurai Panchayat and one habitation in Perugamani Panchayat in Anthanallur Union of Trichy District. | 0.49 | 6,210 |
| 9 | CWSS to Thekkampatty and 31 other habitations in Karamadai Union of Coimbatore District. | 3.01 | 33,693 |
| | Total | 30.75 | 3,10,339 |

Further, the following **28 CWSS** at a cost of **₹ 695.49** crore to benefit a population of **27.18 lakh** are in progress.

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|--|------------------------------|----------------------|---|
| 1 | CWSS to Vedasandur, Palayam, Oddanchatram (now upgraded as Municipality) Kannivadi, Srirampuram Town Panchayats with bulk provision to 739 rural habitations in Dindigul District and 25 rural habitations in Karur District. (Phase -I) | 38.01 | 3.58 | Trial Run completed in the Pumping Main and Water Supply effected to Oddanchatram Municipality, Vedasandur and Kannivadi Town Panchayats. Water Supply will be effected to Srirampuram and Palayam Town Panchayats by September 2014. |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|---|------------------------------|----------------------|---|
| 2 | CWSS to 101 rural habitations in Thoppampatti Union (under Veda sandur CWSS in Dindigul District) | 4.11 | 0.43 | |
| 3 | CWSS to 235 habitations in Gujiliamparai, Veda sandur and Oddanchatram Unions in Dindigul District | 5.55 | 0.73 | |
| 4 | CWSS to 93 habitations in Oddanchatram union (under Veda sandur CWSS in Dindigul District) | 9.36 | 0.37 | The contractual and legal issues are being sorted out to put the schemes into beneficial use during March 2015. |
| 5 | CWSS to 109 rural habitations in Oddanchatram Union (under Veda sandur CWSS in Dindigul District) | 4.08 | 0.59 | |
| 6 | CWSS to 201 rural habitations in Reddiarchatram Union (under Veda sandur CWSS in Dindigul District) | 8.98 | 0.86 | |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|---|------------------------------|----------------------|---|
| 7 | CWSS to 254 Rural habitations in Vadamadurai and Vedasandur Unions Under Dindigul CWSS in Dindigul District | 9.91 | 2.58 | Trial run. Water supply effected to 223 Habitations |
| 8 | CWSS to 40 Habitations in Pallapalayam, Andankoil East, and Andankoil West Panchayats in Thanthoni Union of Karur District | 6.43 | 0.29 | 97% works completed |
| 9 | CWSS to 306 rural habitations in Perambalur, Veppanthattai, and Alathur Unions, Arumbavur and Poolambadi Town Panchayats in Perambalur District | 61.11 | 0.95 | 92% works completed. |
| 10 | CWSS to Koodappalli and 129 habitations of Musiri and Manachanallur Unions in Trichy District | 16.16 | 0.73 | 90% works completed. |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|---|------------------------------|----------------------|----------------------|
| 11 | CWSS to 116 Quality affected habitations of Kumbakonam and Thiruidaimaruthur Unions in Thanjavur District | 17.00 | 0.69 | 80% works completed. |
| 12 | CWSS to 6 Habitations of Keelanatham Panchayat in Tirunelveli District | 0.99 | 0.09 | 85% works completed. |
| 13 | CWSS to Udangudi Town Panchayat and 30 Habitations in Alwarthirunagari (Part), Thiruchendur (part), Sathankulam (part) and Udangudi (part) Unions in Thoothukudi District | 9.19 | 0.30 | 32% works completed. |
| 14 | CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District | 17.17 | 0.48 | 47% works completed. |
| 15 | CWSS to 34 Rural Habitations in Manur union and Palayamkottai Union in Tirunelveli District | 6.35 | 0.22 | 20% works completed. |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|---|------------------------------|----------------------|----------------------|
| 16 | CWSS to 170 Rural Habitations in Manur union (Part) and Palayamkottai Union(Part) in Tirunelveli District | 32.40 | 1.13 | 20% works completed. |
| 17 | Augmentation of Water supply to 147 Rural Habitations of Alangulam-Sankarankoil CWSS in Tirunelveli District | 31.32 | 1.56 | 15% works completed. |
| 18 | CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations in Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District | 46.55 | 1.55 | 15% works completed. |
| 19 | Providing Combined Water Supply Scheme to 248 rural habitations in Kovilpatti (Part), Kayathar (Part), Ottapidaram (part), Viliathikulam (part) and Pudur (Part) unions in Thoothukudi District | 94.04 | 1.25 | 15% works completed. |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|--|------------------------------|----------------------|----------------------|
| 20 | CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in Erode and Tiruppur Districts. | 91.40 | 3.95 | 5% works completed. |
| 21 | CWSS to 130 habitations in Perundurai and Chennimalai Unions in Erode District. | 14.94 | 0.29 | 15% works completed. |
| 22 | CWSS to 93 Habitations in Erode Union in Erode District | 11.30 | 0.47 | 10% works completed. |
| 23 | CWSS to Uthukuli Town Panchayat and 238 rural habitations in Uthukuli union in Tiruppur District | 27.57 | 0.63 | 15% works completed. |
| 24 | CWSS to 212 Rural Habitations in Andhanallur, Manikandam and Manapparai Unions with river Cauvery as source in Trichy District | 48.67 | 1.14 | 5% works completed. |

| Sl. No | Name of Scheme | Estimate Amount (₹ in Crore) | Population (in Lakh) | Physical progress |
|--------|--|------------------------------|----------------------|--|
| 25 | CWSS to 327 Rural Habitations in Edapadi, Konganapuram and Magudanchavadi Unions of Salem District | 46.45 | 0.91 | 5% works completed. |
| 26 | Improving the existing CWSS to 43 and 45 habitations with River Tamirabarani as source to enhance the water supply to the existing beneficiaries and to provide water supply to 1196 Tsunami houses in Mappillai yoorani Panchayat in Thoothukudi District | 9.47 | 0.06 | 2% works completed. |
| 27 | CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District | 26.06 | 1.09 | Tender stage for replacing old pipes with new pipes. |
| 28 | CWSS to 23 Habitations of Painkulam Panchayat in Kanyakumari District. | 0.92 | 0.26 | 8% works completed. |
| | Total | 695.49 | 27.18 | |

The following 6 Combined Water Supply Schemes to benefit a population of 3.32 lakh at a total cost of ₹184.37 crore are under Tender Stage.

| Sl. No. | Name of Scheme | District | Estimate amount (₹ in crore) | Population (in lakh) |
|---------|--|--------------|------------------------------|----------------------|
| 1. | CWSS to Zamin Uthukuli Town Panchayat and 63 Rural Habitations | Coimbatore | 15.47 | 0.41 |
| 2. | CWSS to 158 Rural Habitations in Gudimangalam and Udumalaipettai Unions | Tiruppur | 54.14 | 1.23 |
| 3. | CWSS to Mulligur and 54 rural habitations in Mulligur, Italar and Nanjanadu Village Panchayats in Udhagamandalam union | The Nilgiris | 25.85 | 0.20 |
| 4. | CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu - Myiladumparai Unions | Theni | 2.65 | 0.81 |

| Sl. No. | Name of Scheme | District | Estimate amount (₹ in crore) | Population (in lakh) |
|---------|---|-------------|------------------------------|----------------------|
| 5. | CWSS to 60 quality affected and 59 wayside habitations in Kattumannarkoil Union and Lalpettai Town Panchayat | Cuddalore | 18.16 | 0.60 |
| 6. | CWSS to Koodankulam and 12 other VPs (100 Habitations) of Radhapuram and Valliyoor Unions situated around Koodankulam Nuclear Power Plant | Tirunelveli | 68.10 | 0.07 |
| | Total | | 184.37 | 3.32 |

6.7 Major Combined Water Supply Schemes

The following 14 Major Combined Water Supply Schemes at a total cost of ₹4,890.32 Crore are taken up for implementation to benefit a total population of 118.85 lakh and programmed to complete the schemes during 2014-15, 2015-16 and 2016-17.

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in Lakh) | Physical progress in Per centage |
|---|--|----------------------------|----------------------|----------------------------------|
| Schemes to be completed during 2014-15 | | | | |
| 1 | Combined Water Supply Scheme to Melur and 2 Other Municipalities, 6 Town Panchayats and 1,430 Rural Habitations in 8 Unions of Madurai District and Singampunari Town Panchayat in Sivagangai District | 784.00 | 15.92 | 88 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in Lakh) | Physical progress in Per centage |
|--------|--|----------------------------|----------------------|----------------------------------|
| 2 | Augmentation of Water Supply to Palladam Municipality, 23 Town Panchayats and 965 Rural Habitations in 8 Unions of Coimbatore and Thiruppur Districts | 224.92 | 12.29 | 81 |
| 3 | Combined Water Supply Scheme to 7 Town Panchayats and 395 Rural Habitations in Virudhunagar District. | 173.00 | 4.82 | 88 |
| 4 | Combined Water Supply Scheme to 755 Rural Habitations in Virudhunagar District | 234.00 | 6.51 | 33 |
| 5 | Combined Water Supply Scheme to 637 Rural Habitations in Virudhunagar District | 190.00 | 4.24 | 88 |
| 6 | Combined Water Supply Scheme to 295 Quality affected Habitations and 315 wayside habitations in Sirkali, Kollidam, Sembanarkoil and Mayiladuthurai Unions in Nagapattinam District | 105.70 | 3.70 | 56 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in Lakh) | Physical progress in Per centage |
|--------|---|----------------------------|----------------------|----------------------------------|
| 7 | Combined Water Supply Scheme to Attur & Narasingapuram Municipalities, 20 Town Panchayats and 1,345 Rural Habitations in 12 Unions of Salem District. | 270.00 | 13.09 | 96 |
| 8 | Combined Water Supply Scheme to Vellore Corporation, 11 Municipalities, 5 Town Panchayats and 944 Wayside Rural Habitations of Vellore District. | 1,295.00 | 24.46 | 81 |
| | Sub Total-I | 3276.62 | 85.03 | |
| | Schemes to be completed during 2015-16 | | | |
| 9 | CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812 Rural Habitations in Cuddalore District | 260.54 | 7.75 | 13 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in Lakh) | Physical progress in Per centage |
|--------|---|----------------------------|----------------------|----------------------------------|
| 10 | CWSS to 1,751 Rural Habitations in Gandarvakottai, Pudukottai (Part), Viralimalai (Part), Kunnandarkoil (Part), Annavasal (Part), Aranthangi, Thiruvankulam, Karambakudi Unions in Pudukottai District and Vallam Town Panchayat in Thanjavur District | 315.70 | 7.63 | 18 |
| 11 | CWSS to 1,766 Rural Habitations in Pudukottai (Part), Viralimalai (Part), Kunnandarkoil (Part), Annavasal (Part), Ponnamaravathi, Thirumayam and Arimalam Unions in Pudukottai District and 125 habitations in S.Pudur and Sakkottai Unions of Sivagangai District. | 301.50 | 6.65 | 15 |
| 12 | CWSS to 1153 Rural Habitations in 9 unions and to Peravurani, Adhirama pattinam and Perumagalur Town Panchayats in Thanjavur District | 495.70 | 7.00 | 5 |
| | Sub Total-II | 1373.44 | 29.03 | |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in Lakh) | Physical progress in Per centage |
|---|--|----------------------------|----------------------|----------------------------------|
| Schemes to be completed during 2016-17 | | | | |
| 13 | CWSS to Thondamuthur, Pooluvapatty, Thenkarai, Vedapatti, Dhaliyur, Alandurai and Perur Town Panchayats and 134 rural habitations in Thondamuthur union of Coimbatore District | 130.46 | 1.83 | Tender stage |
| 14 | CWSS to Azhagiyapandipuram, 8 Town Panchayats, 246 habitations in Kanyakumari District | 109.80 | 2.96 | Tender stage |
| | Sub Total-III | 240.26 | 4.79 | |
| | Grand Total | 4890.32 | 118.85 | |

6.8 Revamping of Combined Water Supply Schemes

Revamping works are taken up in the age-old Combined Water Supply Schemes maintained by TWAD Board in which a reduction in yield of sources or a decrease in the efficiency of pumpsets and damages in pipe lines, valves due to road widening, etc. are encountered. These revamping works are carried out to make the CWSS fully functional and to enhance the supply to the designed level to the beneficiaries. During 2013-14, **627 revamping works** have been taken up under MNP/NRDWP Assistance at a **cost of ₹48.41crore and completed.**

The category wise works completed are as below.

| Sl. No. | Category | No. of works | Estimate cost (₹ in crore) |
|---------|--|--------------|----------------------------|
| 1 | Source Improvement | 20 | 2.63 |
| 2 | Booster Pumping Stations | 14 | 1.11 |
| 3 | Sumps | 16 | 1.66 |
| 4 | Replacement of aged Pumpsets | 105 | 5.30 |
| 5 | Valves | 73 | 3.26 |
| 6 | Replacement of dilapidated Over Head Tanks | 5 | 0.26 |
| 7 | Replacement of Pipelines damaged due to road widening | 287 | 24.54 |
| 8 | Providing Separate Power Feeder Mains/4 th Wire | 24 | 6.46 |
| 9 | Providing Surge Protection System | 2 | 0.05 |
| 10 | Providing Water Meter | 81 | 3.14 |
| | Total | 627 | 48.41 |

During 2014-15, **690 revamping works** will be taken up under MNP / NRDWP Assistance at a **cost of ₹133.85 crore.**

6.9 Special Programmes

Provision of safe drinking water to Government Schools, Anganwadis, Government

Hostels and Primary Health Centres is the avowed policy of the Government. The achievement under this programme during 2013-14 is as mentioned below:

- Water supply to **6,275** Anganwadis.
- Water Supply to **138** Government Schools in Rural Areas
- Water supply to **26** Government Hostels in Rural Areas.
- Water supply to **5** Primary Health Centres in Rural Areas.

Further under the Special Programme in the year 2014-15, it has been proposed to provide Water Supply to all the remaining uncovered Anganwadis, Government Schools and Primary Health Centres in Rural areas as follows.

- **578** Anganwadis
- **272** Government Schools in Rural Areas.
- **13** Primary Health Centres in Rural Areas.

6.10 Water Quality Surveillance and Monitoring

In order to achieve the objective of ensuring safe water supply to the public, TWAD Board has established one State level, 31 District level and 51 sub division level laboratories. These laboratories have 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. It is pertinent to note that the State Level Laboratory is graded as an ISO 9001: 2008 certified Laboratory. This laboratory has been recognized as State Referral Institute for Tamil Nadu by the Government of India.

During the year 2013-14, 2.46 lakh rural drinking water samples have been tested in the laboratories. 12,524 Field water testing kits were supplied to the Panchayats. Further the State and District level laboratories were also

upgraded and 15,000 grass root level workers were trained. ₹13.47 Crore was incurred under the NRDWP for the above activities.

During 2014-15, it is proposed to test 2.46 lakh rural drinking water samples, upgradation of State & District level laboratories, supply of 12,524 Field water testing kits to panchayats (one kit per panchayat), supply of 4000 Field water testing kits to schools and 5000 Field water testing kits to Drinking Water Safety Week Campaign and impart training to 15,000 grass root level workers at a cost of ₹17.50 Crore under NRDWP.

6.11 Drinking water Safety Week Campaign

Considering the safety of ensuring the quality of drinking water, the Govt of TamilNadu have ordered for a week long campaign on water quality vide G.O.(D)

No.577 M.A.&W.S. (WS 2) Department, dated 21.11.2013. **The Hon'ble Chief Minister of Tamil Nadu has inaugurated the National Rural Drinking Water Awareness Week** campaign in Tamil Nadu on 19.02.2014.

Under this programme nearly 5.26 lakh samples in 11 Corporations, 124 Municipalities, 528 Town Panchayats & 12,524 panchayats (98,179 rural habitations) have been tested during February 2014 and quality mapping was done. Since this campaign has created a mass awareness among public on drinking water quality, this campaign will be conducted every year during pre and post monsoon period.

6.12 Urban Water Supply Programme

The Urban water supply include implementation of stand-alone water supply scheme to the urban local bodies involving creation of water source, construction of Service Reservoirs, laying of pipe line for

transmission and distribution according to the population. The maintenance of the urban water supply scheme is decided depending upon the number of beneficiary local bodies.

6.12.1 Urban stand alone Water Supply Improvement Schemes under Implementation

In the year 2013-2014, Water Supply Improvement Schemes were under implementation in 52 Urban local bodies covering 21 Municipalities and 31 Town Panchayats, to benefit a population of 18.65 lakh, at a total cost of **₹669.78 crore**. Out of which, the following Water Supply Improvement Schemes (WSIS) benefiting a population of **3.86 lakh** in **11 Towns** (3 Municipalities and 8 Town Panchayats) at an estimated cost of **₹90.01 crore** have been completed.

(₹ in Lakhs)

| Sl. No | Name of Town | District | Estimate cost | Population |
|----------------------------|-----------------------|-----------------|-----------------|-----------------|
| I. Municipalities | | | | |
| 1. | Tiruvanna malai | Tiruvanna malai | 3,666.00 | 1,49,500 |
| 2. | Devakkottai | Sivagangai | 832.00 | 40,497 |
| 3. | Kadayanallur | Tirunelveli | 2,141.00 | 75,612 |
| II. Town Panchayats | | | | |
| 4 | Aappakudal | Erode | 70.00 | 10,610 |
| 5 | Uppiliya puram | Trichy | 24.90 | 7,705 |
| 6 | Mettu palayam | Trichy | 16.18 | 7,550 |
| 7 | Vettaikaran pudur | Coimbatore | 54.55 | 17,392 |
| 8 | Melachokka nathapuram | Theni | 636.00 | 11,669 |
| 9 | Anthiyur | Erode | 324.00 | 21,086 |
| 10 | Thiruchendur | Tuticorin | 1,192.00 | 32,200 |
| 11 | Avalpoon thurai | Erode | 44.70 | 11,700 |
| | Total | | 9,001.33 | 3,85,521 |

The status of the **35 Urban** Stand alone Water Supply Improvement Schemes to benefit a population of **13.48 lakh** at a cost of **₹447.33 crore** is as below:

| Sl. No | Name of Town | Est. Cost (₹ In Crore) | Population (in Lakh) | Physical progress in percentage |
|-----------|-----------------------|---------------------------|-------------------------|------------------------------------|
| I. | Municipalities | | | |
| 1 | Mettur | 12.472 | 0.528 | 85 |
| 2 | Pallipalayam | 11.660 | 0.421 | 85 |
| 3 | Coonoor | 13.850 | 0.541 | 85 |
| 4 | Edappady | 18.520 | 0.602 | 85 |
| 5 | Palani | 21.600 | 0.795 | 50 |
| 6 | Thanthoni | 25.160 | 0.620 | 65 |
| 7 | Karur | 24.670 | 0.849 | 65 |
| 8 | Chidambaram | 7.170 | 0.621 | 72 |
| 9 | Udhagamandalam | 27.200 | 1.040 | 50 |
| 10 | Cumbum | 18.800 | 0.681 | 15 |
| 11 | Kovilpatti | 81.820 | 0.950 | 6 |
| 12 | Inam Karur | 18.570 | 0.820 | 50 |
| 13 | Anaiyur | 7.880 | 0.383 | 90 |
| 14 | Theni-Allinagaram | 68.830 | 0.994 | 5 |

| Sl. No | Name of Town | Est. Cost (₹ In Crore) | Population (in Lakh) | Physical progress in percentage |
|------------|------------------------------|---------------------------|-------------------------|------------------------------------|
| II. | Town Panchayats | | | |
| 15 | Nandhivaram- Guduvancheri | 2.800 | 0.441 | 100 |
| 16 | Periyane-gamam | 8.830 | 0.071 | 83 |
| 17 | Odayakulam | 0.963 | 0.134 | 87 |
| 18 | Suleeswaranpatti | 7.600 | 0.201 | 76 |
| 19 | Pathamadai | 0.900 | 0.166 | 25 |
| 20 | Mondaikadu | 0.284 | 0.133 | 90 |
| 21 | Alanganallur | 0.730 | 0.123 | 15 |
| 22 | Palamedu | 0.930 | 0.105 | 10 |
| 23 | Jagathala | 1.641 | 0.144 | 60 |
| 24 | Pandamangalam | 0.893 | 0.072 | 35 |
| 25 | Kunnathur | 0.348 | 0.087 | 30 |
| 26 | Nambiyur | 2.415 | 0.164 | 75 |
| 27 | Ayyampettai | 7.090 | 0.163 | 30 |
| 28 | Karamadai | 11.470 | 0.352 | 42 |

| Sl. No | Name of Town | Est. Cost (₹ In Crore) | Population (in Lakh) | Physical progress in percentage |
|--------|----------------|---------------------------|-------------------------|------------------------------------|
| 29 | Sholavandan | 5.530 | 0.226 | 25 |
| 30 | P.Velur | 2.530 | 0.250 | 2 |
| 31 | Dharasuram | 10.980 | 0.153 | 55 |
| 32 | hirunageswaram | 11.340 | 0.151 | 50 |
| 33 | Kottur | 1.410 | 0.266 | 45 |
| 34 | Thiruporur | 8.080 | 0.137 | 15 |
| 35 | Ammappettai | 2.360 | 0.097 | 30 |
| | Total | 447.326 | 13.481 | |

The following 6 Water Supply Improvement Schemes to benefit a population of 2.58 lakh, at a total cost of ₹132.43 crore are under tender stage.

| Sl. No | Name of town | District | Estimate cost (₹ in crore) | Population |
|------------|------------------------|-----------------|--------------------------------|-----------------|
| I. | Municipalities | | | |
| 1 | Tindivanam | Villupuram | 52.45 | 72,796 |
| 2 | Arani | Thiruvannamalai | 36.26 | 63,628 |
| 3 | Thiruvathipuram | Thiruvannamalai | 13.44 | 37,802 |
| 4 | Periakulam | Theni | 15.53 | 42,976 |
| II. | Town Panchayats | | | |
| 5 | Kothagiri | Nilgiris | 10.60 | 28,207 |
| 6 | Karunkuzhi | Kancheepuram | 4.15 | 12,485 |
| | Total | | 132.43 | 2,57,894 |

6.13 Hogenakkal Water Supply and Fluorosis Mitigation Project

6.13.1 Water Supply Component

The Successful Completion of the Hogenakkal Water Supply and Fluorosis Mitigation Project is a major achievement and a boon to the People living in the fluoride affected areas of Dharmapuri and Krishnagiri Districts. This project is meant to cover 3 Municipalities, 17 Town Panchayats and 6,755 Rural habitations in 18 Panchayat Unions in both the Districts to benefit a population of 33.87 Lakh (Census-2011) at an estimated cost of **₹1,928.80 Crore.** Subsequently, 961 new rural habitations were added to this Project and the total rural beneficiary will be 7716 habitations.

This project has been inaugurated by Hon'ble Chief Minister on 29.5.2013. Presently water supply has been given to 3 Municipalities,

16 Town Panchayats and 6008 Rural habitations benefiting a population of 29.50 lakhs. Water supply to 43 habitations with River Cauvery as source and the inaccessible 29 habitations located in deep reserve forest area with local sources, totalling 72 habitations have been already covered. On an average, 106 Million litres of water per day is being supplied under this project. Water supply to 42 habitations in Uthangarai Union near Samalpatti Railway crossing will be supplied shortly. Water supply to 122 habitations in Uthangarai & Mathur Unions, affected due to pipe laying works under Vellore CWSS and 131 habitations in Thally & Kelamangalam forest areas affected due to Forest permission to provide power supply connections, will be supplied by August 2014.

Water supply to 869 habitations in Bargur Union and Bargur town Panchayat which is delayed due to widening of National Highway,

96 habitations in Sitheri and Sittling hill areas of Pappireddypatti and Harur Union respectively in Dharmapuri District as well as the 376 new habitations taken up will be supplied by September 2014.

6.13.2 Fluorosis Mitigation Component

Fluorosis Mitigation Component is implemented on comprehensive three-pronged i.e., Hospitals, Schools and Community based approaches in coordination with Medical and Education Departments along with the District Administration to assess the level of incidence of Dental, Skeletal and Non-Skeletal fluorosis among the public in both Dharmapuri and Krishnagiri districts and to undertake mitigation measures through awareness and life style modification, nutritional supplementation and medical treatment.

All Government Doctors in both the Districts were trained to diagnose the fluorosis

among the patients and to prescribe preventive measures. School teachers were also trained. The prevalence of dental fluorosis among 4,24,047 students have been assessed and it was identified that 3% were severe and 10% were moderate.

100% household health survey on 6,54,551 households covering the present population of 30 lakh in both Dharmapuri and Krishnagiri districts was completed by engaging the Village Health Nurses and Village Voluntary members from NGOs. Analysis and assessment of health status regarding the prevalence of fluorosis shows that of the total population, 1.7% are affected by severe Dental Fluorosis, 5% affected by Moderate Dental Fluorosis, 0.9% affected by Skeletal Fluorosis and 1.5% affected by Non-Skeletal Fluorosis.

Micro nutrients tablets of 106 lakh numbers procured at a cost of **₹11.52 lakhs**

were supplied to the Public Health Centres and now distributed to the Fluorosis affected persons. 4 Ion meters with two electrodes and chemicals have been distributed for the 4 Government Hospitals in Dharmapuri and Krishnagiri Districts at a cost of **₹32.50 lakh.**

In the next phase, Medical intervention through corrective surgery for dental and skeletal Fluorosis case has been planned on all possible cases.

6.14 Operation and Maintenance of CWSS

The CWSS 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, 554 Combined Water Supply Schemes covering 7 Corporations, 53 Municipalities, 292 Town Panchayats, 33,338 Rural habitations and 586 Industries/Institutions, benefiting a population

of 3.22 crore are maintained by the TWAD Board.

At present, **1,494 MLD** of water is supplied through the above **554 Combined Water Supply Schemes**. The expenditure for the Operation & Maintenance during the year 2013-14 is **₹317.41 crore**. The Revenue collected through water charges is **₹197.51 crore**.

6.15 Part -II Schemes

6.15.1 Providing SCADA System for CWSS under Maintenance by TWAD Board

The Supervisory Control And Data Acquisition system (SCADA) is used to monitor and control the entire water works system consisting of pumping stations, treatment plants, control devices like valves and various other flow/ pressure monitoring and regulating facilities.

SCADA systems have been provided in 19 CWSS maintained by TWAD Board. Further one SCADA system taken up during 2013-14 for the CWSS to Nanguneri, Thisayanvilai and 344 Habitations in Tirunelveli District is under progress.

6.15.2 Construction of office building at Tirunelveli

Construction of office building at Tirunelveli has been sanctioned for ₹300.00 lakhs under Part-II scheme for the year 2013-14. The work is under progress and will be completed before the end of December 2014.

6.16 Investigation and Preparation of Detailed Project Reports for Water Supply Schemes

TWAD Board has prepared Detailed Project Reports for **45 Water Supply Schemes** during 2013-14 at a cost of ₹5053.29 Crore benefiting a total population of

68.50 lakh. Out of the above 45 Schemes, **19 Water Supply Schemes**, covering **3 Municipalities, 28 Town Panchayats and 5,121 Rural Habitations**, to benefit a population of **25.62 Lakh** were sanctioned at a total cost of **₹1,715.35 Crore**. Balance 26 schemes covering 3 Municipalities, 42 Town Panchayats and 6968 Rural habitations to benefit a population of 42.88 lakh at an estimated cost of **₹3,337.94 crore**, are in various stages of sanction.

In addition to the above, DPR for 10 water Supply Schemes to cover one Corporation, 11 Municipalities, 29 Town Panchayats and 5,682 Rural habitations to benefit a population of 52.88 lakh are under preparation.

6.16.1 Desalination Plant

As announced by the Hon'ble Chief Minister of Tamil Nadu in the Assembly during

2013-14 to install Desalination Plant of 100 MLD capacity each in Ramanathapuram and Thoothukudi Districts, Consultant has been fixed to conduct planning study and preparation of feasibility report and the study is in progress. Tentative cost of these projects is ₹3,500.00 Crore and the population to be benefitted is 24.03 Lakh.

6.17 Under Ground Sewerage Schemes

TWAD Board is implementing Under Ground Sewerage Schemes in selected District Head quarters and other than District Head quarter towns.

In line with the objective of the Tamil Nadu Government to provide Under Ground Sewerage Scheme to all the Urban local bodies, TWAD Board has prepared 636 **Detailed Project Reports** at an estimated cost of **₹20,820.00 Crore** to provide UGSS to 3

Corporations, 117 Municipalities and 516 Town panchayats.

6.17.1 UGSS for Municipalities

During 2013-14, Under Ground Sewerage Schemes for 13 Municipalities to benefit a population of 7.63 lakh have been sanctioned at a total Cost of ₹965.05 Crore. The details are as follows.

| SI No. | Name of Municipality | UGSS DPR Cost (₹ in crore) | Population | Present stage |
|--------|----------------------|----------------------------|-----------------|----------------------|
| 1 | Arakkonam | 95.52 | 82,600 | Tender stage |
| 2 | Thirupathur | 104.01 | 84,437 | |
| 3 | Chidambaram | 75.62 | 65,600 | |
| 4 | Periyakulam | 26.61 | 44,950 | |
| 5 | Sattur | 37.66 | 32,575 | |
| 6 | Mettur | 73.09 | 55,200 | |
| 7 | Bodinaickanur | 71.10 | 78,100 | |
| 8 | Jolarpet | 79.00 | 30,600 | Under Proof checking |
| 9 | Rameswaram | 41.35 | 48,120 | |
| 10 | Sathiya mangalam | 54.26 | 39,000 | |
| 11 | Karaikudi | 111.41 | 1,10,030 | |
| 12 | Kodaikkanal | 140.00 | 39,000 | |
| 13 | Rasipuram | 55.42 | 52,500 | |
| | Total | 965.05 | 7,62,712 | |

6.17.2 UGSS for Town Panchayats

During 2013-14, Detailed Project Report for providing UGSS to 28 Town Panchayats benefiting a population of 5.26 lakh, have been sanctioned at a total Cost of ₹811.69 Crore. Detailed Project Reports are under Proof Checking stage. Septage Management for smaller towns is also under consideration.

6.18 Status of the Underground Sewerage Schemes under implementation by TWAD Board

- **Underground Sewerage Schemes to Ramanathapuram, Thiruvannamalai, Dharmapuri, and Perambalur Municipalities to benefit a population of 2,94,744 at an estimated cost of ₹123.83 Crore are completed.**
- **19 Underground Sewerage Schemes to benefit a population of 15.63 lakh at an estimated cost of ₹786.71 Crore are under various stages of progress as shown below.**

| Sl. No. | Name of UGSS | Estimate Cost (₹ in crore) | Population benefited (in lakh) | Percentage of achievement | |
|---------|-----------------------------|----------------------------|--------------------------------|---------------------------|------------------------------|
| | | | | Collection System (CS) | Sewage Treatment Plant (STP) |
| 1 | Cuddalore Municipality | 65.14 | 1.59 | 99 | 99 |
| 2 | Pudukottai Municipality | 48.16 | 1.14 | 100 | 85 |
| 3 | Sivagangai Municipality | 23.40 | 0.40 | 95 | Stay order by NGT |
| 4 | Virudhunagar Municipality | 27.85 | 0.72 | 96 | 99 |
| 5 | Thiruvavarur Municipality | 53.07 | 0.56 | 100 | 99 |
| 6 | Thoothukudi Corporation | 95.00 | 2.89 | 97 | PPP Mode by Corporation |
| 7 | Nagapattinam Municipality | 79.31 | 0.93 | 98 | STP-I - 74 STP-II - 53 |
| 8 | Krishnagiri Municipality | 37.32 | 0.65 | 95 | 89 |
| 9 | Theni Municipality | 42.09 | 0.85 | 92 | 100 |
| 10 | Thiruvallur Municipality | 54.79 | 0.46 | 93 | 10 |
| 11 | Villupuram Municipality | 49.36 | 1.16 | 100 | STP-I - 99 STP-II - 99 |
| 12 | Ariyalur Municipality | 27.50 | 0.28 | 79 | 60 |
| 13 | Mamallapuram Town Panchayat | 6.08 | 0.12 | 100 | 93 |

| Sl. No. | Name of UGSS | Estimate Cost (₹ in crore) | Population benefited (in lakh) | Percentage of achievement | |
|--------------|---|----------------------------|--------------------------------|---------------------------|------------------------------|
| | | | | Collection System (CS) | Sewage Treatment Plant (STP) |
| 14 | Thiruchendur Town Panchayat | 14.48 | 0.29 | 85 | 65 |
| 15 | Nagercoil Municipality | 76.04 | 2.79 | 19 | Stay order by NGT |
| 16 | Orathanadu Town Panchayat | 18.25 | 0.10 | 65 | Works commenced |
| 17 | Udumalpet Municipality | 56.07 | 0.60 | 25 | 2 |
| 18 | Ariyalur Municipality (Omitted areas) | 3.30 | 0.03 | 15 | -- |
| 19 | Perambalur Municipality (Omitted areas) | 9.50 | 0.07 | 20 | -- |
| Total | | 786.71 | 15.63 | | |

6.19 Hydrogeological Activities

Scientific Source Finding Activities are carried out for identification of sources for providing Water Supply to the various schemes taken up and implemented by TWAD Board. The State of Art of Technology - Remote

Sensing and GIS (Geographical Information Systems) are extensively utilized in Scientific Source Finding Activities and identification of suitable locations for Recharge Structures to be taken up under Sustainability Component.

The Project on Ground Water Prospect Maps sanctioned by the Ministry of Drinking Water and Sanitation, Government of India has been taken up as District-wise ATLAS for Tamil Nadu and completed. Further, the District wise Groundwater Quality Maps are under preparation and will be completed during the year 2014-15. The HGM Maps have been sent to the field officers and also District Collectorate for source creation and for identification of Recharge Structures. The Feed-back of usage of HGM Maps is encouraging.

6.20 Management Information System

The Tamil Nadu Water Supply and Drainage Board has implemented TWAD Board

integrated E-Governance System (TWADNEST) to manage data flow relating to all the schemes, Project Management, Financial Accounting, Human Resource, 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 online.

Online e-tendering is being implemented in TWAD Board. CAD Software for the design of water distribution network and sewer network design analysis, Structural Analysis etc. are used for the purpose of optimum planning and design.

The TWADNEST is enhanced from time to time based on the current requirement of the Board. Further, the hardware required is also

well maintained and upgraded. This makes better co-ordination and effective monitoring of all the activities of the TWAD Board.

Online scheme progress monitoring and reporting through Mobile Phone (android) based web driven server based application is under implementation. Also an exclusive web based Water Quality sample data collection and test result entry application is launched for continuous monitoring of Water Quality for all Water Supply Scheme implemented by TWAD Board.