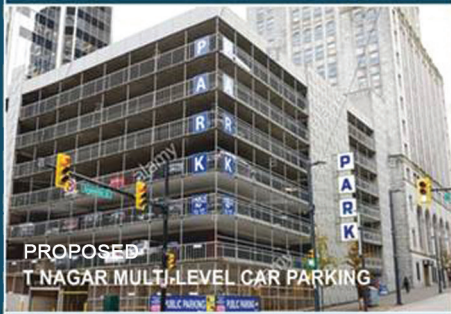




PROPOSED COIMBATORE LAKE IMPROVEMENT



PROPOSED T NAGAR MULTI-LEVEL CAR PARKING



PROPOSED T NAGAR PEDESTRIAN PLAZA



PROPOSED SALEM RIVER FRONT DEVELOPMENT

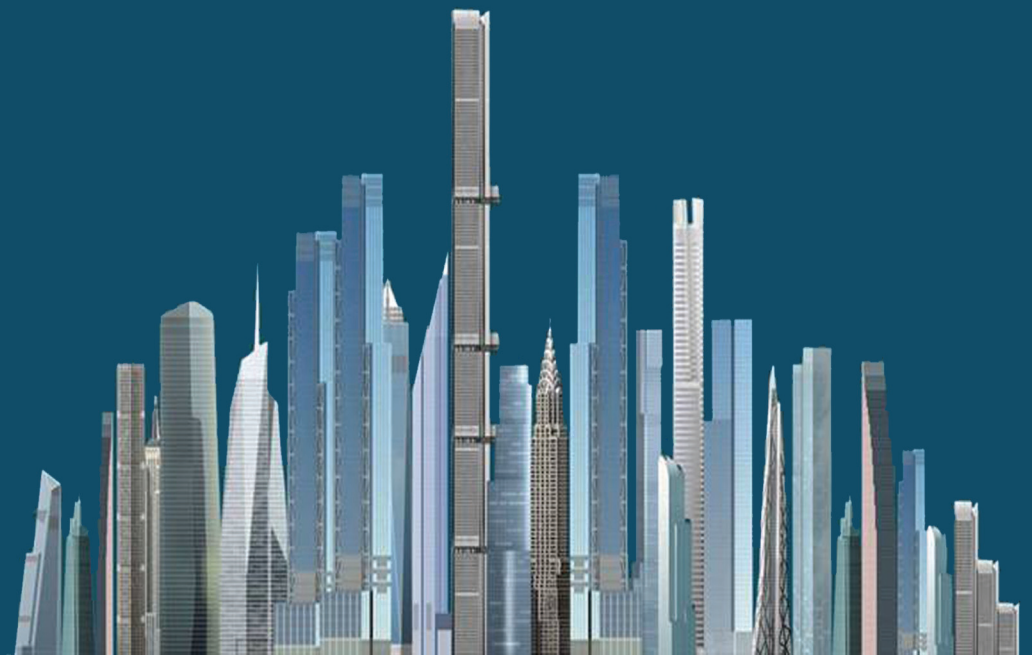


MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

POLICY NOTE 2018-2019
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, 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. The Board was constituted in 14.04.1971. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water Supply Department as Chairman. The Managing Director is Chief Executive Officer, supported by technical, financial and administrative wings. There are four Chief Engineers at Regional level with headquarters in Vellore, Thanjavur, Coimbatore and Madurai.

6.1 Functions of TWAD Board

- Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes.
- Operation and Maintenance of Combined Water Supply Schemes.
- Water Quality Monitoring and Surveillance Programme.
- Ensuring Sustainability of Drinking Water Sources.
- Training activities.

6.2 Rural Water Supply Programme

The norm for Rural Water Supply as per National Rural Drinking Water Programme (NRDWP) guidelines have been enhanced, by the Government of India from 40 LPCD to the service level of 55 LPCD.

Combined Water Supply Schemes (CWSS) are being implemented in Rural areas 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 (NABARD).

The schemes are handed over to the local body for maintenance on completion, when the beneficiary is an individual local body. TWAD Board takes up the maintenance of the scheme, if it serves 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 are partially covered.

During 2017-18, 2,435 partially covered habitations have been taken up for full coverage with water supply.

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.

A total of 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, Tamil Nadu Water Supply and Drainage Board

(TWAD) formulates and implements Combined Water Supply Schemes (CWSS) in coastal, water quality affected and needy areas covering 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.

6.4.1 Major Combined Water Supply Schemes

During the year 2017-18, 5 major combined water supply schemes have been completed to supply 151.63 MLD of water, at an estimate cost of ₹ 1824.20 crore, benefiting 34.50 lakh people.

8 Major Combined Water Supply Schemes are under various stages of implementation which on completion will supply 202.38 MLD of water to 31.24 lakh people. These schemes are implemented at an estimated cost of

₹ 1574.36 crore with the financial assistances from the Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Supply Programme (NRDWP), Urban Local Body (ULB) Contribution and World Bank TNSUDP.

The details of the major combined water supply schemes are as given below:

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population Covered (in lakh) |
|----------------|---|-----------------------------------|-------------------------------------|
| 1. | CWSS to 1153 Rural Habitations and Peravurani, Adhiramapattinam and Perumagalur Town Panchayats in Thanjavur District | 495.70 | 7.00 |
| 2. | CWSS to 1766 Rural Habitations in Pudukottai District and 125 Habitations in Sivagangai District. | 301.50 | 6.65 |

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population Covered (in lakh) |
|----------------|--|-----------------------------------|-------------------------------------|
| 3. | CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812 Rural Habitations in Cuddalore District | 260.54 | 7.75 |
| 4. | CWSS to Thondamuthur, 6 Town Panchayats and 134 Rural Habitations in Coimbatore District | 130.46 | 1.83 |
| 5. | 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 |
| 6. | CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District | 158.64 | 3.93 |
| 7. | CWSS to 755 Rural Habitations in Virudhunagar District | 234.00 | 6.51 |

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population Covered (in lakh) |
|----------------|--|-----------------------------------|-------------------------------------|
| 8. | CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District | 105.70 | 3.70 |
| 9. | CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District | 109.80 | 2.96 |
| 10. | CWSS to 293 rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District. | 140.22 | 1.68 |
| 11. | CWSS to Sankarankoil, Puliyankudi Municipalities, Thiruvankadam TP in Thirunelveli District and Rajapalayam, Sivakasi, Thiruthangal Municipalities in Virudhunagar District. | 543.20 | 6.20 |
| 12. | Combined Water Supply Scheme to Keeranur, Neikkarapatty Town panchayats and 253 Rural habitations in Dindigul District | 108.80 | 2.82 |

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population Covered (in lakh) |
|----------------|---|-----------------------------------|-------------------------------------|
| 13. | CWSS to Eraniel Town Panchayat and 319 Rural Habitations and Improvements to Padmanabapuram CWSS and kattathurai CWSS in kanyakumari District | 174.00 | 3.44 |
| | Total | 3398.96 | 65.74 |

Further, administrative approval has been accorded for ₹ 642.44 crore for the following 3 CWSS with NABARD financial assistance which are at tender stage.

1. CWSS to Annur and Mooperipalayam Town Panchayats in Coimbatore District and Avinashi Town Panchayat in Tiruppur District including bulk supply to 155 rural habitations of Palladam and Tiruppur Unions.

2. CWSS to Alampalayam, Padaveedu Town Panchayats and 669 rural habitations in Namakkal District and Sankagiri town panchayat in Salem district.

3. CWSS to Reddiarpatti and 63 rural habitations in Palayamkottai Union of Tirunelveli district.

6.4.2 Other Combined Water Supply Schemes

During the year 2017-18, 4 CWSS, have been completed and 4 CWSS are under trial run to supply 74.85 MLD of water at an estimate cost of ₹ 412.78 crore, benefiting 11.17 lakh people.

15 Combined Water Supply schemes are under various stages of implementation, which on completion will supply 65.79 MLD of water to 10.71 lakh people. These schemes are

implemented at an estimated cost of ₹ 443.39 crore with financial assistance from the Minimum Needs Programme, National Bank for Agriculture and Rural Development, the National Rural Drinking Water Programme.

The details of various schemes taken up are given below:

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|--|-----------------------------------|-----------------------------|
| 1. | CWSS to 306 rural habitations in Perambalur, Veppanthattai and Alathur Unions, Arumbavur and Poolambadi Town Panchayats in Perambalur District | 61.11 | 2.57 |
| 2. | CWSS to 158 Rural habitations in Gudimangalam and Udumalaipettai union in Tiruppur District | 54.14 | 1.23 |
| 3. | CWSS to 100 habitations in Koodanukulam and 12 other Village Panchayats | 68.10 | 0.88 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|---|-----------------------------------|-----------------------------|
| | in Radhapuram and Valliyoor Unions situated around Koodankulam Nuclear Power Plant in Tirunelveli District | | |
| 4. | CWSS to 60 Quality affected and 59 way side habitations in Kattumannarkoil Union and Lalpettai Town Panchayat in Cuddalore District | 18.16 | 0.60 |
| 5. | CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in Erode and Tiruppur District. | 91.40 | 2.00 |
| 6. | CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu, Myiladam parai Union in Theni District | 2.65 | 0.07 |
| 7. | CWSS to 1262 rural Habitations in Vellakoil, Mulanur, Dharapuram, Kundadam, Kangayam Unions in Tiruppur | 91.16 | 2.72 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|--|-----------------------------------|-----------------------------|
| | District and Chennimalai Union in Erode District - Phase -II | | |
| 8. | CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District | 26.06 | 1.09 |
| 9. | CWSS to Kandamanur and 15 Rural habitations in Andipatti and Kadamalaikundu-Myiladumparai Unions in Theni District | 5.50 | 0.12 |
| 10. | CWSS to 109 rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS) | 4.08 | 0.59 |
| 11. | CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District | 17.17 | 0.48 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|---|-----------------------------------|-----------------------------|
| 12. | CWSS to Mulligur and 54 rural habitations in Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District. | 25.85 | 0.30 |
| 13. | Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil unions in Tirunelveli District | 31.32 | 1.56 |
| 14. | 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. | CWSS to 170 Rural Habitations in Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District | 32.40 | 1.13 |
| 16. | CWSS to 101 rural habitations in Thoppampatti Union in Dindigul District (under Vedasandur CWSS) | 4.11 | 0.43 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|--|-----------------------------------|-----------------------------|
| 17. | CWSS to 201 rural habitations in Reddiarchatram Union in Dindigul District (under Vedasandur CWSS) | 8.96 | 0.86 |
| 18. | 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 |
| 19. | CWSS to Vadugapatti Town Panchayat & 57 Habitations in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni District and Batlagundu Town Panchayat in Dindigul District. | 45.70 | 0.92 |
| 20. | CWSS to 253 Rural Habitations in Kulithalai and Thogamalai Union in Karur District | 52.75 | 0.69 |

| Sl. No | Name of Scheme | Estimate Cost (₹ in crore) | Population (in lakh) |
|---------------|--|-----------------------------------|-----------------------------|
| 21. | CWSS to 17 quality affected habitations and 69 Way Side Habitations in Parangipettai and Kumaratchi Unions of Cuddalore District andKodiyampalayam habitation in Nagapattinam District | 19.14 | 0.38 |
| 22. | 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 |
| 23. | CWSS to 51 habitations in Konganapuram & Edapady unions by augmenting the existing CWSS to 327 habitations in Salem District utilizing the existing HW, WTP Booster stations. | 9.50 | 0.09 |
| | Total | 856.17 | 21.80 |

6.5 Urban Stand Alone Water Supply Programme

For Stand Alone Water Supply Scheme, TWAD Board functions as a project implementation agency to corporations, municipalities and town Panchayats. The schemes are handed over to the respective urban local bodies for maintenance on completion.

During the year 2017-18, 8 urban stand-alone water supply schemes covering 5 municipalities and 3 town Panchayats at an estimated cost of ₹ 127.61 crore have been completed to supply 86.71 MLD of water benefiting 5.80 lakh people. 14 schemes covering 2 Corporations, 9 Municipalities and 3 Town Panchayats, are under various stages of implementation which on completion will supply 257.65 MLD of water to 22.28 lakh people.

These schemes are executed at a cost of ₹ 969.10 crores.

6.6 Atal Mission For Rejuvenation And Urban Transformation (AMRUT) Projects

Projects have been taken in 3 phases covering water supply and underground drains schemes for the years 2015-2016, 2016-17 and 2017-20 as given below:

6.6.1 State Annual Action Plan: (SAAP-I - 2015-16)

8 Water Supply Schemes at an estimate cost of ₹ 1907.09 crore are under implementation to benefit 57.13 lakh people. Further, one underground sewerage scheme is under implementation at an estimated cost of ₹ 23.32 crore to benefit 0.19 lakh people. These schemes are implemented with financial assistance from Central, State Government, 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).

The details of the schemes are given below:

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population covered (in lakh) |
|----------------|---|-----------------------------------|-------------------------------------|
| 1 | Improvement of Water supply Distribution system to Ambur Municipality in Vellore District | 50.90 | 1.82 |
| 2 | Dedicated Water supply scheme to Erode Corporation. | 484.45 | 9.05 |
| 3 | Improvement of Water supply Distribution System to Tiruppur Municipality | 250.00 | 19.50 |
| 4 | Improvement of Water supply Distribution system to Vellore Corporation in Vellore District. | 234.93 | 9.20 |

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population covered (in lakh) |
|----------------|--|-----------------------------------|-------------------------------------|
| 5. | Improvement of Water supply Distribution System to Hosur Municipality (Phase-I) | 87.91 | 2.29 |
| 6. | Improvement of Water Supply Distribution System to 8 Added Areas of Coimbatore Corporation | 395.41 | 9.22 |
| 7. | Water Supply Improvement Scheme to Nagercoil Municipality | 223.44 | 3.90 |
| 8. | Water Supply Improvement Scheme to Rajapalayam Municipality | 180.05 | 2.15 |
| 9. | Under ground sewerage scheme to Velankanni Town Panchayat in Nagapattinam District | 23.32 | 0.19 |
| | Total | 1930.41 | 57.3257.32 |

6.6.2 State Annual Action Plan: (SAAP-II-2016-17)

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population covered (in lakh) |
|---------|--|----------------------------|------------------------------|
| 1. | Under ground sewerage to Rameshwaram Municipality in Ramanathapuram District | 40.33 | 0.63 |
| 2. | UGSS to added areas Kurichi and Kuniyamuthur of Coimbatore Corporation | 442.00 | 5.17 |
| | Total | 482.33 | 5.80 |

6.6.3 State Annual Action Plan: (SAAP-III-2017-20)

| Sl. No. | Name of Scheme | Estimate Cost (₹ in crore) | Population covered (in lakh) |
|---------|--|----------------------------|------------------------------|
| 1 | UGSS to Rajapalayam Municipality | 178.75 | 2.20 |
| 2 | UGSS to Ambur Municipality | 129.07 | 1.72 |
| 3 | WSIS to expanded Coimbatore Corporation including newly merged areas with River bhavani as source – Pillur - III | 649.30 | 32.79 |
| | Total | 957.12 | 36.71 |

6.7 Operation and Maintenance of CWSS

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.

As on date, TWAD Board maintains 554 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.

An average of 1,803 MLD of water was supplied during April 2018 through these 554 Combined Water Supply Schemes to local bodies and Industry / organizations as detailed below:

| Sl. No. | Name of Beneficiary | No. of Beneficiaries | Designed Quantity (in MLD) | Average Supplied Quantity in April 2018 (in MLD) |
|----------------|----------------------------|-----------------------------|-----------------------------------|---|
| 1 | Corporations | 8 | 265 | 200 |
| 2 | Municipalities | 66 | 264 | 201 |
| 3 | Town Panchayats | 324 | 334 | 301 |

| Sl. No. | Name of Beneficiary | No. of Beneficiaries | Designed Quantity (in MLD) | Average Supplied Quantity in April 2018 (in MLD) |
|----------------|---|-----------------------------|-----------------------------------|---|
| 4 | Rural Habitations | 47136 | 1066 | 1011 |
| 5 | Industries / Institutions/ Commercial Organisations | 532 | 144 | 90 |
| | Total | 48066 | 2073 | 1803 |

During the year 2017-18, the Operation and Maintenance expenditure is ₹ 707.83 crore and the revenue collected through water charges is ₹ 449.79 crore.

Government of Tamil Nadu has 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 devolution grant to meet the gap between income and expenditure in the operation and maintenance of CWSS.

6.8 Revamping of Combined Water Supply Schemes

Revamping works have been taken up for Combined Water Supply Schemes (CWSS) wherever there is a reduction in yield of sources or a decrease in the efficiency of pumpsets or damages to pipe lines, valves, etc. These revamping works help to make the CWSS fully functional and enhance the supply status to the designed level. During 2017-18, 657 revamping works were taken up at a cost of ₹ 64.26 crore under NRDWP/SMS fund.

6.9 Water Quality Surveillance and Monitoring

At Chennai, TWAD Board has established state level water testing laboratory apart from 31 districts and 56 sub districts 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 has recognized the state level water testing laboratory at Chennai as “State Referral Institute for Tamil Nadu”.

Accreditation has been obtained from the National Accreditation Board for Testing and Calibration Laboratories (NABL) for the state level water testing laboratory, Chennai. Around 50,000 water samples have been tested in state and district laboratories and 1,68,000 water samples have been tested in sub district laboratories during the year 2017-18. Panchayats were supplied with 12,524 field water testing kits. 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 2018-19 by testing more samples, giving training to grass root level functionaries and supply of testing kits.

6.10 Hydro Geological Activities

The state-of-art Technology for remote sensing and Geographical Information Systems (GIS) are extensively utilized in Scientific Source Finding Activities for identification of sources for various water supply schemes implemented by TWAD Board and the identification of suitable locations for recharge structures to be taken up under Sustainability Component.

The project on Groundwater Prospect Maps (HGM Maps) sanctioned by the Ministry of Drinking Water and Sanitation, Government of India, has been taken up and district-wise Block ATLAS or Maps have been printed and the copies

(both hard & soft copies) will be shared to all line departments for field use.

TWAD Board has taken up a research and development project under the Government of India funds for Tamiraparani River Basin in Tirunelveli and Thoothukudi districts for the sustainability of drinking water sources for future requirement.

The State Planning Commission has sanctioned a pilot project to TWAD Board for 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, the water balance in the Village Panchayat has been worked out involving the community and drinking water security.

Sustainable Water Security Mission ("SuWaSeM") envisages all possibility rainwater

harvesting in the urban local bodies of the state. A sum of ₹ 20 crore has been released by Government of Tamil Nadu and it will be implemented through Commissionerate of Municipal Administration and Directorate of Town Panchayats. Tamil Nadu Water Supply and Drainage Board will be the nodal agency for the entire state.

TWAD Board has Geo tagged the drinking water assets like Water Supply Source, Over Head Tank, School Water Supply Scheme, Anganwadi Water Supply Scheme, nearly 95% completed in all the districts of Tamil Nadu except Chennai.

6.11 Under Ground Sewerage Schemes

TWAD Board implements Under Ground Sewerage Schemes (UGSS) in the selected district headquarters and other towns based on the priority fixed by CMA, DTP and Government.

Under Ground Sewerage Schemes to Periyakulam and Ariyalur Municipalities benefiting a population of 91,000 at an estimate cost of ₹ 54.10 crore have been completed during the year 2017-18 by which an overall quantity of 10 MLD of wastewater is available for reuse.

At an estimated cost of ₹ 1315.08 crore, 20 Under Ground Sewerage Schemes benefiting a population of 19.41 lakh are in various stages of progress and on completion 158.77 MLD of wastewater will be available for reuse.

Further, Under Ground Sewerage Schemes to Vallam, Manachanallur & S. Kannanur Town Panchayats benefiting a population of 0.64 lakh at an estimate cost of ₹ 84.07 crore is in tender stage.

6.11.1 Septage Management Projects

Septage Management in Karunkuzhi Town Panchayat benefiting a population of 58,000 at an estimate cost of ₹ 4.93 crore has been completed as a Pilot project. Detailed Project Report for Septage Management for other Town Panchayats are under preparation on priority basis based on the successful model of septage management piloted in Karunkuzhi Town Panchayat in Kancheepuram district.

6.12 Investigation and Preparation of Detailed Project Reports of Water Supply Schemes

TWAD Board has taken up the investigation and preparation of DPR for 32 water supply schemes with an estimate cost of ₹ 13,633.04 crore. The projects entail to benefit a population of 99.18 Lakh covering 1 Corporation, 14 Municipalities, 56 Town Panchayats and 17,339 rural habitations.

The details of the above 32 schemes are tabulated below:

| Sl. No. | Description | No. of WSSs | Beneficiaries | Population benefited (in lakh) | Estimate cost (₹ in crore) |
|----------------|--|--------------------|---|---------------------------------------|-----------------------------------|
| 1 | Schemes in various stages of sanction. | 22 | 1 Corporation 6 Municipalities, 35 Town Panchayat & 6029 Rural habitations. | 38.85 | 3667.84 |
| 2 | Investigation/ DPR Under preparation | 10 | 8 Municipalities. 21 Town Panchayat & 11310 Rural habitations. | 60.33 | 9965.80 |
| | Total | 32 | 1 Corporations, 14 Municipalities, 56 Town Panchayat & 17339 Rural habitations. | 99.18 | 13633.64 |

6.13 Quality control Laboratory in TWAD Board

There are four quality control 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 conformity assessment of field samples is evaluated routinely as per the procedures in the relevant Bureau of Indian Standards (BIS) prior to its usage at the site. The testing facilities adorning the laboratories expediently help in quality upgradation during execution. The materials received from local bodies and government organizations are also tested in these laboratories.

During the financial year 2017-18, 6,070 samples have been tested in the 4 laboratories.

6.14 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, Project Management, Financial Accounting, Human Resource and Billing.

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 data in maintenance schemes are being monitored through online.

Computer Aided Design Software for the design of water supply distribution network, sewer network design analysis and structural analysis are used for the purpose of optimum planning and design.

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

TWAD Board, Head office and four Chief Engineer's offices located in Vellore, Madurai, Thanjavur, Coimbatore and five Superintending Engineer's offices in Cuddalore, Trichy, Salem, Tirunelveli and Dharmapuri are interconnected through leased line TNSWAN connectivity for Video Conference (VC) enabling effective review of works executed by TWAD Board all over the state. This makes better coordination and effective monitoring of all the activities of the TWAD Board.

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