

Mini DPR for

“Flood Mitigation and Augmentation of Drinking Water Supply to Chennai City with Resilient to Climate Change

Approx Estimate : Rs 0.00 Crore (Nil Cost) with Revenue Generation of Rs.367.00/- crore.

(Alternative to the proposed Sixth Reservoir in Kovalam Basin @ Rs.350 crore.)

Prepared by

- **Er.K.Nagarajan, BE,**
Former Special Chief Engineer, TNPWD
- **Er.N.Kailasapathy, BE, PG Dip RS,**
Former Joint Chief Engineer, TNPWD
- **Er.Dr.A.Veerappan**
ME (Struct), Ph.D, FIE, MICI, Dip LL & AL,
Former Special Chief Engineer, TNPWD



Tamilnadu PWD Senior Engineers Association

1c/36, Valluvar Road, TSD Nagar, Arumbakkam, Chennai – 600 106.

Contact : ((M) : 72000 79289 / (M) : 94444 04774)

Email id : tanseapwd@gmail.com

Mini DPR:

“Flood Mitigation and Augmentation of Drinking Water Supply to Chennai City with Resilient to Climate Change”

1.0. Introduction:-

Chennai City is nowadays affected by ‘**Recurrent Floods**’ caused due to erratic Rainfall which occurs at short duration with high intensity. (upto 475mm in a single day) It is very imperative to protect Chennai City from recurrent flooding. The Chennai City also has **Drinking water Problem** as the available quantum of Water could not cater to the needs of not only the present demand but also future demand as on 2035. Hence it is very much important to take up ‘Short-term and Long-term ‘measures both for flood mitigation works to avoid recurring flooding and to augment the Drinking Water supply in Chennai City.

At present, five Reservoirs viz., **Cholavaram, Poondi, Red hills, Kannankottai-Thervaikandigai, Chembarambakkam and Veeranam** with a combined capacity of 13.222 TMC. cater to the needs of drinking water requirements of Chennai City as against the annual demand of drinking water demand projected in 2035 will be about 20TMC with the projected population growth. Hence, with an aim to bridge the gap between present water demand and supply rate and to mitigate recurrent flooding, this proposal of **“Flood Mitigation and Augmentation of Drinking Water Supply to Chennai City with Resilient to Climate Change ”**has been formulated by **TNPWD Senior Engineer Association.**

The objective of the proposal is primarily flood mitigation and rainwater conservation for deficit years in and around Chennai City along with bridging the gap between supply and demand in respect of Chennai City Water Supply.

This proposal is prepared to address the above two issues by enhancing the storage capacities of existing selected water bodies (Tanks) in South Chennai region which are now maintained by ‘**Water Resources Department**’ including improving the conveyance efficiency which will augment the Water Resources as part of ‘**Supply side Water Management**’

1.1. Background

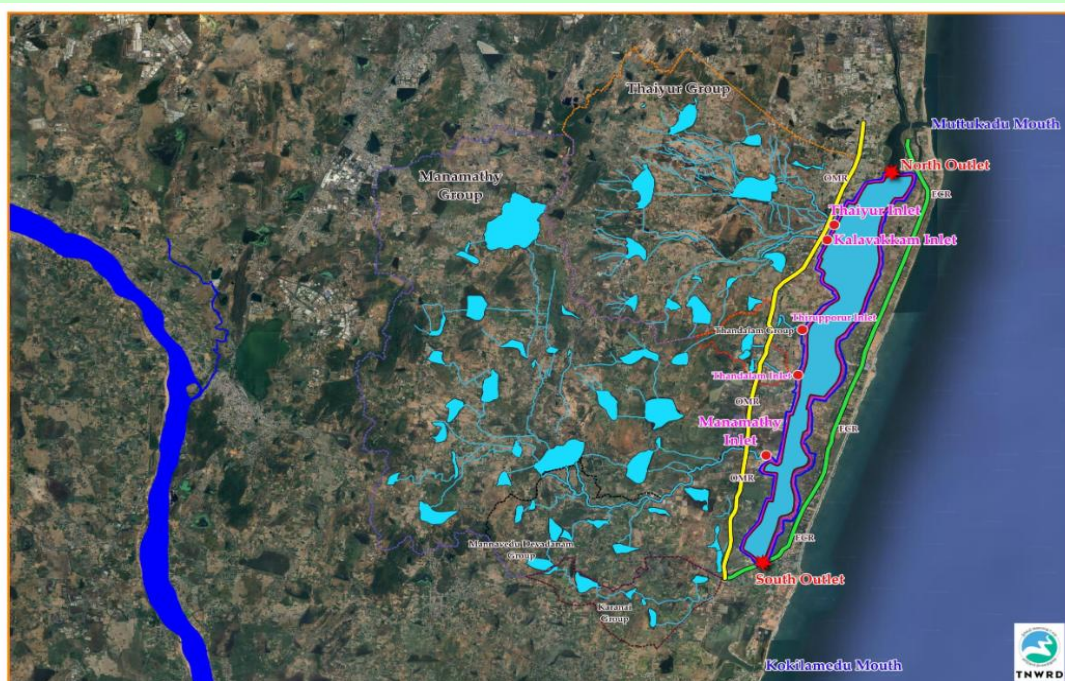
During the Tamilnadu Assembly Budget Session 2025-2026, it was announced by Honourable Finance Minister, Govt. of Tamil Nadu Thiru. Thangam Thennarasu on Friday 14th March 2025, that a **new reservoir** will be built in the **Kovalam sub-basin** near Chennai covering 4,375 acres at an estimated cost of **Rs350 Crores** to augment the drinking water supply for the Chennai City. This will be the sixth reservoir of Chennai with 1.60 TMC capacity. *The project is expected to provide additional drinking water supply of 170 MLD to Chennai, City from this proposed Reservoir.*

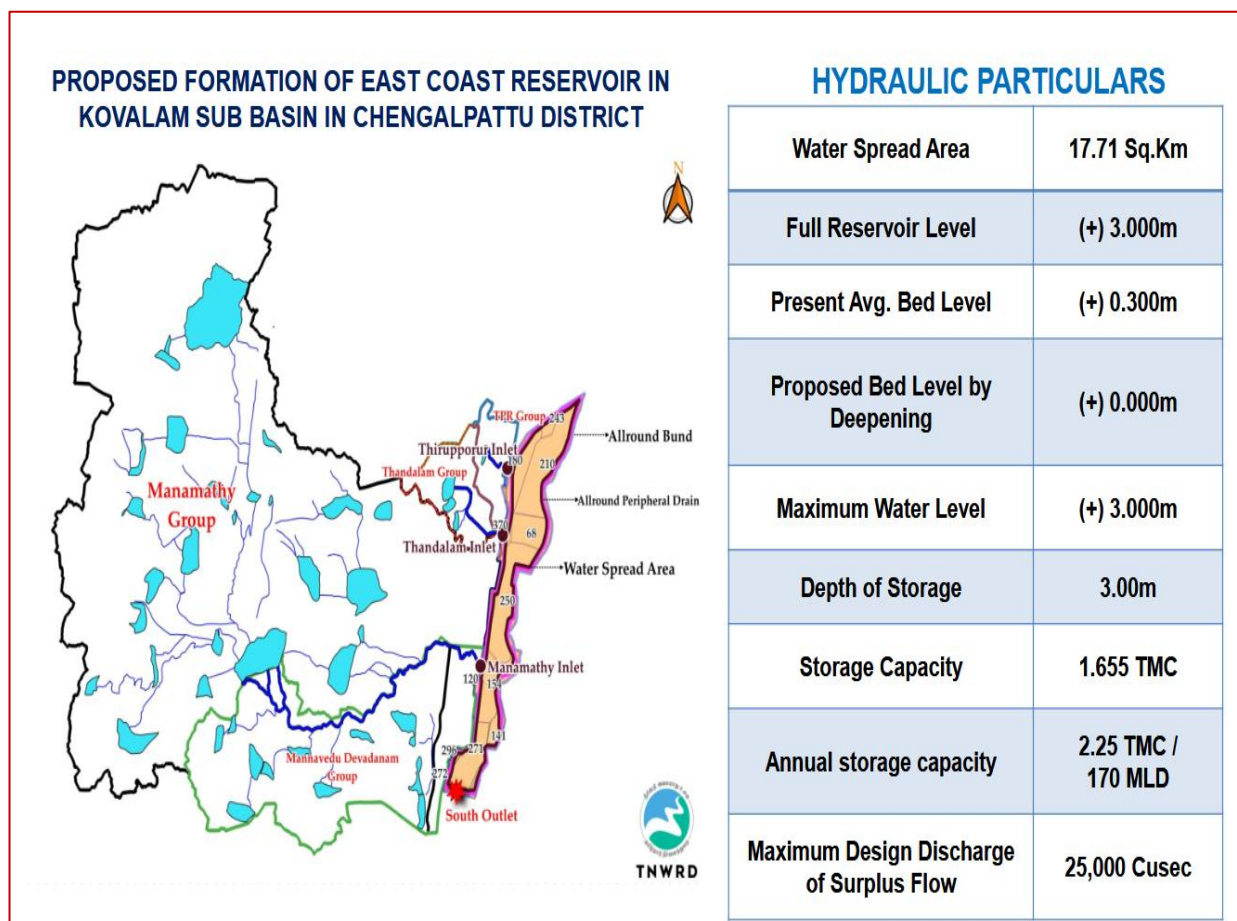
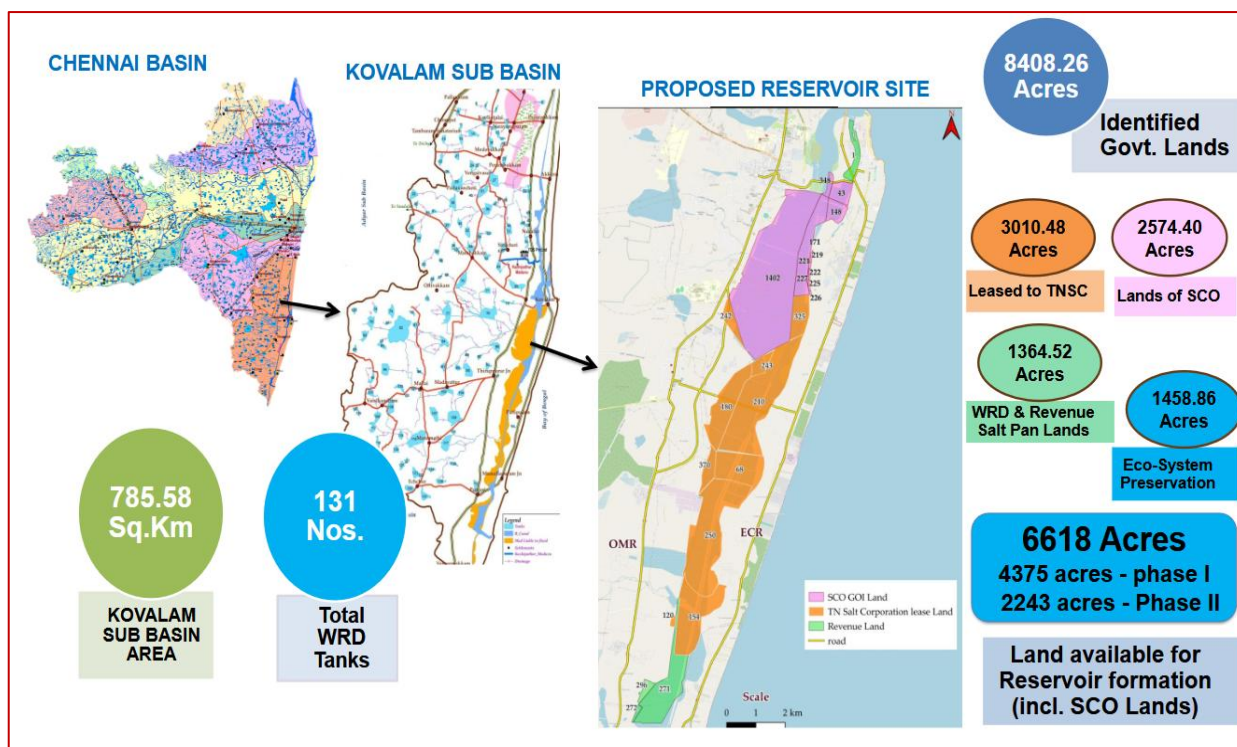
The reservoir, which will utilise a portion of floodwater collected in the tanks situated in Kovalam Basin during the monsoon, will come up on land already available with the government between Old Mamallapuram Road and East Coast Road in Tiruporur taluk, Chengalpattu district.

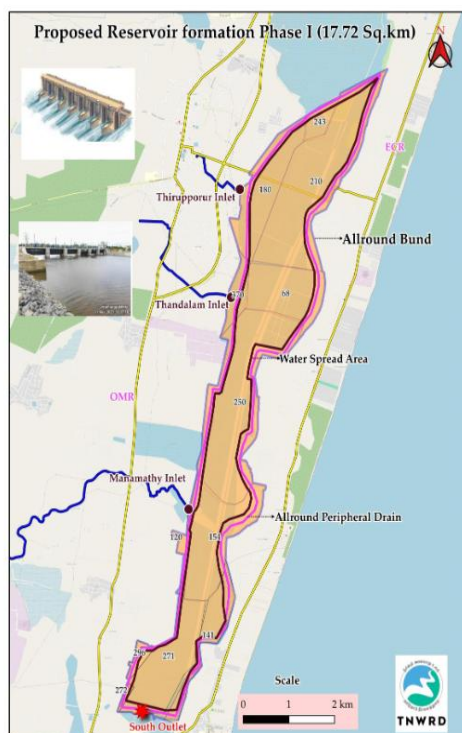
Proposed 'Construction of the Sixth Reservoir at Kovalam Sub-Basin:-

Salient Features:

The Kovalam sub-basin is located along the east coast and features isolated watersheds with their own drainage systems, with the Araniyar River being the major river flowing through it, and the Kovalam Creek serving as its outlet.

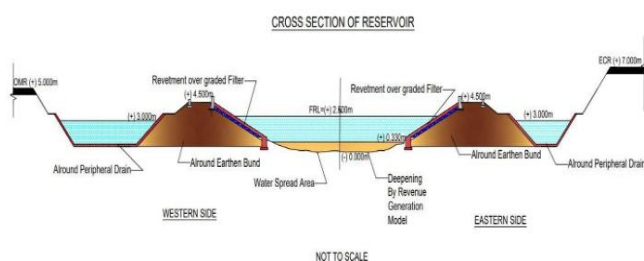






STRUCTURAL COMPONENTS OF THE PROPOSED RESERVOIR SYSTEM

- Formation of **Allround Earthen Bund** to create a Reservoir
- Construction of **Surplus Flood Regulator** at the South outlet (Kokilamedu Mouth)
- Construction of **Inlet Regulators** to regulate and by-pass the inflow
- Formation of **Western and Eastern Peripheral Drains** to safely drain the excess inflow and drain the localized runoff



Salient Features :-

- **The Reservoir will act as a Flood Buffer and avert Sea Water intrusion**
- Formation of All-round Earthen Bund to create a Reservoir Construction of Surplus Flood Regulator at the South outlet (Kokilamedu Mouth)
- Construction of Inlet Regulators to regulate and by-pass the inflow
- Formation of Western and Eastern Peripheral Drains to safely drain the excess inflow and drain the localized runoff
- **Hydraulic Particulars**
- Water Spread Area 17.71 Sq.Km
- Full Reservoir Level (+) 3.000m
- Present Avg. Bed Level (+) 0.300m
- Proposed Bed Level by Deepening (+) 0.000m
- Maximum Water Level (+) 3.000m
- Depth of Storage 3.00m
- Storage Capacity 1.655 TMC
- Annual storage capacity 2.25 TMC / 170 MLD
- Maximum Design Discharge of Surplus Flow 25,000 Cusecs

Water Quality and Geo-Morphological Characteristics: -

Water Quality: The water samples were taken on 02nd January, 2025 during which there is a fresh water flow across the entire flood plain. Hence the quality of water is not reflecting any brackish characteristics. However, natural flushing of the salt pan for a season will ensure the water quality within the potable standard.

Geomorphology: The soil was tested for 12 Nos. of Samples. Mostly **Silty Loam** at low lying area and **Clayey Silt**. The salt content present on the surface of the few active salt pans will be flushed and leached out in a season. The Regulators constructed will avert Sea Water intrusion and invasion.

(Independent Assessment and Report on improving Water Quality and Ground Water Recharge is requested from CMWSSB)

2. De-Merits of the Proposed "Formation of New Sixth Reservoir in Tiruporur Taluk of Chengalpattu District

It was concluded that the above proposal is not at all a viable one, considering the following points

On perusal of the Salient features at a glance, the following observations are made:-

- i) The proposed site for the Reservoir is a stretch of lengthy Coastal sheet of plain area (just like a 'Eanthal' (ஏந்தல்) in Sivagangai & Ramanathapuram Districts) with no valley formation which is essential for creation of any Reservoir. Narrow valleys with steep slopes are ideal for Reservoir Construction as they require less materials to create a large storage capacity. The surrounding topography dictates the potential water spread and the volume of water that can be impounded at a given height.

Considering these points the extent of site selected for the proposed Reservoir on Silty - clayey silty soil is not at all viable, economical with a lot of compromises. It is not an easy task to form a reservoir on a silty soil.

- ii) **The Geomorphology of the Reservoir** location is Silty Loam in low lying area and Clayey Silt. Presence of Salt Pans are also present in some places. The Low-lying nature and potential for High Ground Water Salinity, in coastal block like Tiruporur, would require thorough investigation. Also, this would require

studying the **Soil Permeability** for retaining stored water besides environmental displacement,namely '**Environmental Impact Assessment (EIA)**'

- iii) Sea Water Intrusion in Kovalam Sub-Basin can significantly affect the impounded water, as there is a higher risk of becoming Saline over time. There is a study report by Anna university which reports that sea water intrusion has taken place for a distance of 700m from the sea coast (2019). IITM indicated that sea water had intruded to a depth of 10m upto an extent of 2 Kilometer between Thiruvanniyur & Injampakkam in South Chennai (2019-2021). **High Salinity in the ground water and soil can affect the stability of the Reservoir's foundation and any associated structures due to corrosion of materials like concrete and steel**
- iv) To prevent or minimise Sea Water intrusion, into the Reservoir, more robust and potentially costly impermissible barriers might be required in its structural design. In this, Buckingham Canal passing through this sub-Basin may be rejuvenated by deepening (by desilting) so as to make it as a water barrier.
- v) **Water Quality: - In the proposed Reservoir Site,** the quality of water is not reflecting any brackish characteristics. However, continuous and intensive monitoring of the reservoir's Water quality will be crucial to detect sign's of increasing salinity. **It is always preferable to locate the Reservoir as far inland as feasible to minimise direct contact with saline water and intrusion pathways.**
- vi) In the specific context of proposed Reservoir in KovalamSub-Basin, given the existing evidence of seawater intrusion, the proposed Reservoir need to very carefully consider these factors through detailed Hydro-Geological Investigations, Salinity Assessments and robust structural Engineering Designs to ensure its long-Term Viability and minimise adverse impacts. Structural changes suggested by TNPWD Senior Engineers Association (Er.Dr.A.Veerappan) TNPWD Senior Engineers Association, on its part suggested the following structural changes to the WRD Engineers concerned so that the proposed construction of sixth Reservoir can be safe and cost effective by adopting advanced construction materials and technologies.

- With reference to the scheme PPT for the proposed 6th Reservoir in Kovalam basin at an estimated cost of Rs.350 Crore, the following structural modifications are suggested.
- i) Since the bund length is too long, it can be restricted to Thandalam inlet from North out (near Muttukkadu) by deleting upto South out (near Kokilamedu Mouth). However the inlet water from Manamathi inlet and south catchment can be transmitted to near Thandalam inlet reservoir by laying 2000mm dia NP₃ class RCC pipes, thereby storing all the water now contemplated. (1.655 TMC) and for compensating the total storage capacity, depth of storage of 3.00m may be increased to 5.50m / 6.00m ; (The excavation is under Revenue generation model, no extra cost is involved).
- ii) In order to arrest the sea water intrusion, 8.00m depth – precast concrete sheet piles may be driven in the u/s side of bund at 30° inclination to the vertical.
- iii) The reservoir earth bund – 7.50m at top & 50m at bottom (at 6.00m depth) may be converted into RE wall (with Geogrid to improve the SBC of fine sandy soil) with 7.50m at top and 20m at bottom for reducing the cost of bund formation.
- iv) Since driving precast concrete sheet pile 8m depth in the u/s of reservoir, and the bund is formed by RE wall, there may not be any seepage from the reservoir and hence the provision of seepage drains around the bund is not necessary and hence may be deleted.
- v) For draining flood water into Muttukkadu Mouth and Kokilamedu Mouth, again NP₃ class RC Pipes may be adopted instead of open earthen channel which requires constant upkeep and maintenance.
- Due to the increased storage depth of 6m (from 3m) it is presumed that Phase II project in SCO land (2243 acres) will not be required

5.4.6 Design discharge by concrete pipes

By considering $q = av$, where a – area of cross section of pipes ($\pi D^2/4$) (m^2), v - velocity of flow (m/sec) and assuming 10% losses during transport.
Note: 100 Cusecs = 2.832 Cumecs (m^3/sec)

Table 5.7 Design discharge by Concrete Pipes

Dia (D) of Concrete Pipe mm	$q = av = \text{discharge } m^3/sec \text{ with a velocity of } 2 \text{ m/sec (assumed)}$	Expected actual q Discharge at 90% efficiency
2000 dia	6.28 Cumecs (222 cusecs)	200 cusecs
1600 dia	4.00 Cumecs (141 cusecs)	125 cusecs
1500 dia	3.53 Cumecs (125 cusecs)	100 cusecs
1200 dia	2.26 Cumecs (80 cusecs)	75 cusecs
1000 dia	1.57 Cumecs (55 cusecs)	50 cusecs
800 dia	1.00 Cumecs (35 cusec)	30 cusecs
600 dia	0.565 Cumecs (20 cusecs)	15 cusecs
300 dia	0.1414 Cumecs (5 cusecs)	4.5 cusecs

The schematic open reservoir and reservoir bund with RE wall are shown in Figure 5.15 and Figure 5.16.

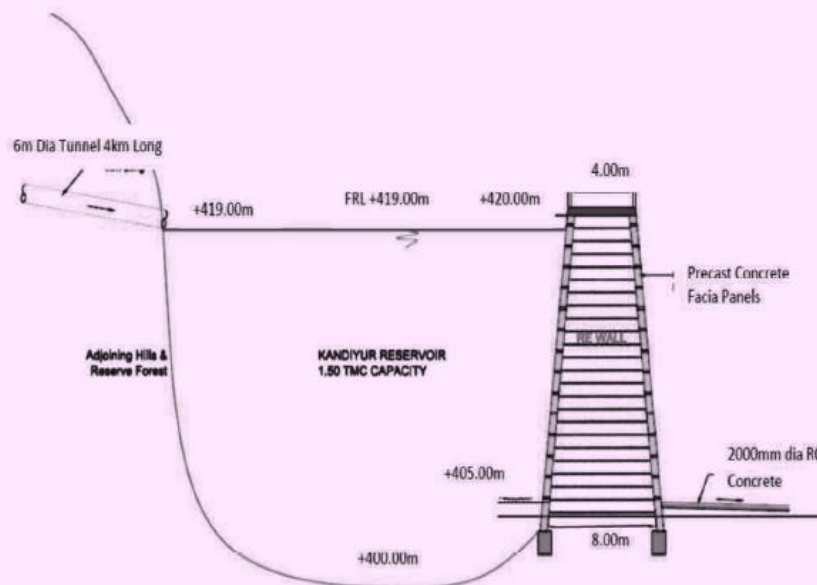


Figure 5.15 Schematic Section of Reservoir and RE Wall

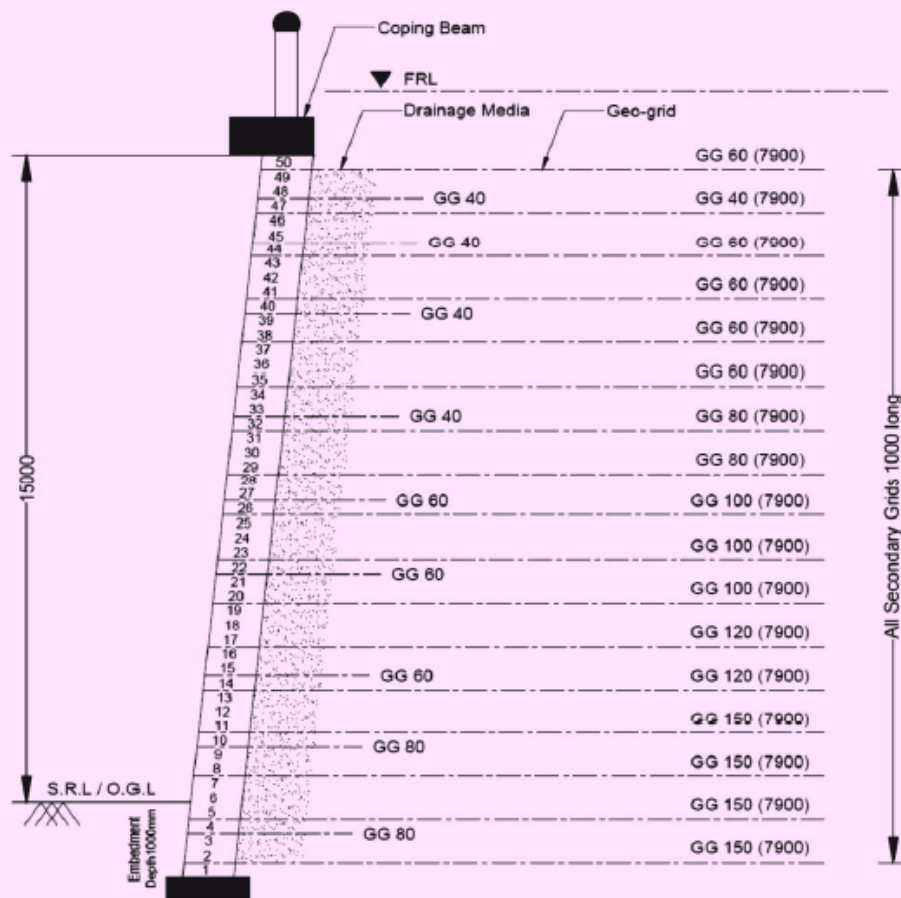


Figure 5.16 Reinforced Earth Wall Design Section

- In short, considering the above factors, the proposed Reservoir in Kovalam Sub-Basin of Tiruporur Taluk is not at all a viable proposal and hence the following **Alternative proposal** is prepared to address the “Flood Mitigation as well as Augmentation of Water Resources to Chennai City Drinking Water Supply and Resilient to Climate Change”.

3. Cost-Effective Proposal by TNPWD Senior Engineers Association

Considering the above de-merits of the above proposal of NEW Reservoir, a technically more viable and feasible proposal is the need of the hour and this proposal is now formulated and proposed here, with an aim of augmenting the Drinking Water Supply by increasing the Storage Capacities of the selected WRD Tanks through ‘De-Silting’ which in turn will enable the ‘Rejuvenation and Revival of

the Water Bodies. Apart from this, desilting in the Water Spread area of the respective tanks to an extent of 25% of the area is also proposed. This is part of 'Supply Side Management. The main aim of this proposal is to **catch the rain where it occurs** in the existing WRD Tanks (Drought Proofing), **thereby preventing flood** waters entering in the GCC & CMA area besides creating additional storage of water in those tanks which can be beneficially used for augmenting Chennai City drinking water.

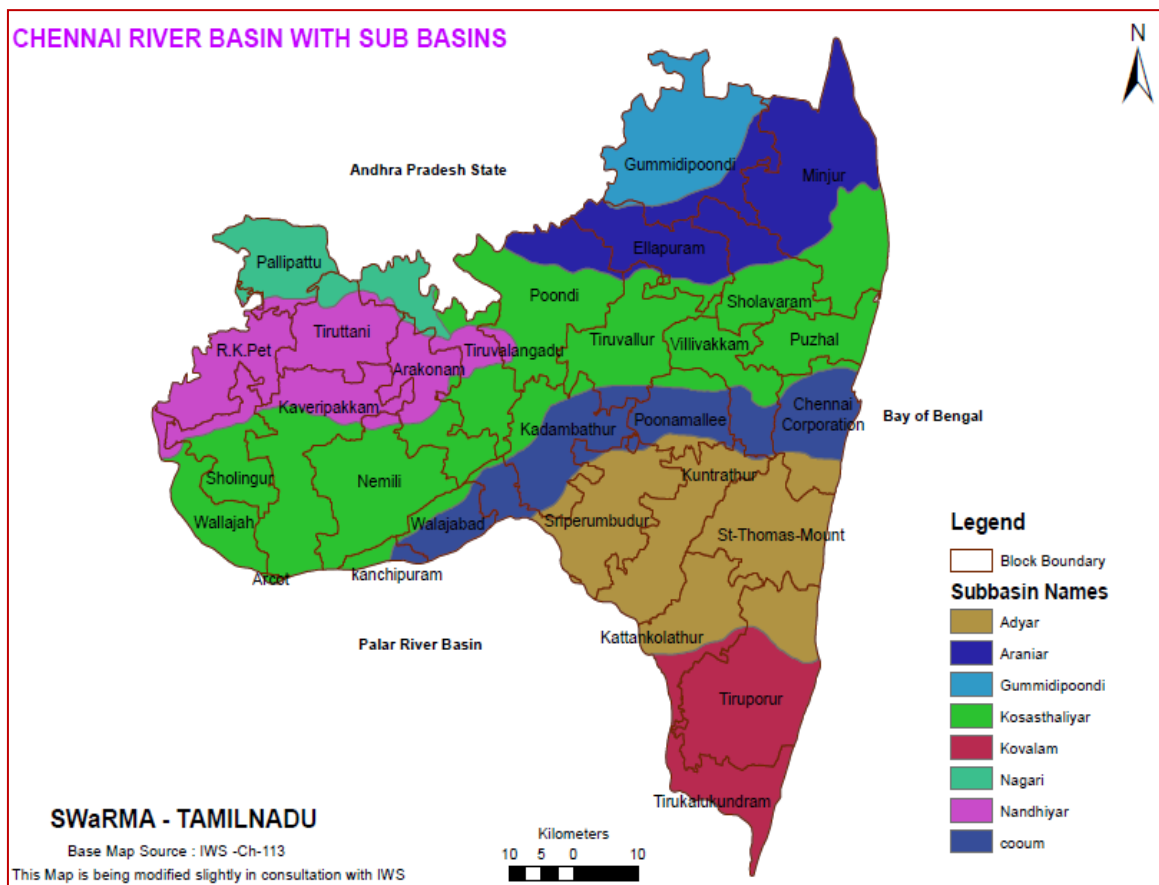
'Drought Proofing' is the need of the Hour.

Effective and judicious utilisation of available Water Resources is a viable, economic alternative instead of adopting a policy of "**Construct, Neglect & Construct**", it is prudent to go in for sustainable solutions to mitigate the problem of augmenting the Water Resources for Chennai City Water Supply

3.1. Our proposal contemplates '**increasing the Storage Capacities of Selected Tanks in Chengalpattu Taluk (62 WRD Tanks), Tambaram Taluk (12 WRD Tanks) & Kovalam Sub-Basin (25 Nos) Tiruporur Taluk of Chengalpattu District - Total 99 Nos by De-Silting to an extent of 25% and ensuring effective utilisation of stored water in the Tanks optimally**' is proposed. Also, to augment additional water Resources, deepening in the water Spread area to an extent of 25% of the Water spread area is also proposed. (Annexure - 1,2 &3)

The WRD Tanks selected for 'De-Silting pertaining to Chengalpattu Taluk, Tambaram Taluk of Chengalpattu District were already included in the Schedule of Tanks supplying Water to Chennai City in our pamphlet TANSEA- (சென்னைப் பெருமழை - வெள்ளச் சேதங்கள் - ஓர் அறிவியல் - பொறியியல் அலசல் - பிப்ரவரி 2024)

Apart from the above Tanks, 25 Tanks situated in the Kovalam Sub-Basin are also selected for desilting to augment additional Water storage

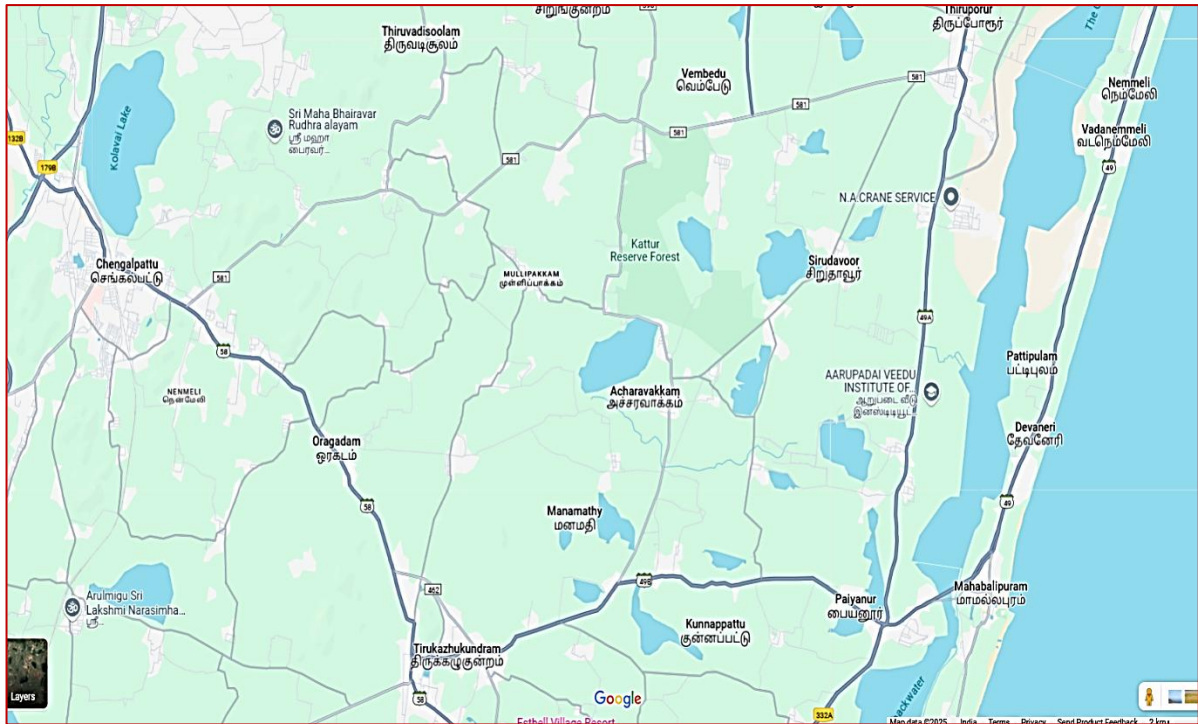


Chengalpattu District

Chengalpattu district came into existence on 29.11.2019, when it was carved out of the erstwhile Kancheepuram district. Chengalpattu district being part of the Kancheepuram district until recently and being in close geographical proximity to the city of Kancheepuram

Annual Average Rainfall Data

SL. No.	District	Annual Average Rainfall in mm
1	Chennai	1281.50
2	Tiruvallur	1182.50
3	Kancheepuram	1263.50
4	Chengalpattu	1263.50



4. GIST of the Alternate Cost-Effective Proposal by

TNPWD Senior Engineers Association

It is proposed to take up selected 99 Tanks as shown above for desilting to an extent of 25% and to increase the storage capacities of the selected 99 Tanks for augmenting the Resources to supplement the Chennai City Water supply

Sl. No	Name of Taluk	No. of Tanks Selected	Storage capacity of the Tank		Water Spread Area in Ha		Additional Storage by desilting 25 % of its Storage Capacity In Mcft	Additional Storage by desilting 25% of Water Spread Area by 1m depth	
			MCM	Mcft	100%	25%		In MCM	In MCft
1	Chengalpattu	62	53.90	1903.46	4377.63	1094.41	475.87	10.94	386.34
2	Tamparam	12	4.13	145.85	2993.00	748.25	36.46	7.48	264.15
3	Tirupurur Taluk (Kovalam Sub-Basin)	25	19.26	680.15	6688.70	1672.18	170.04	16.72	590.45
	Total	99	77.29	2729.46	14059.33	3514.84	682.37	35.14	1240.95

Cost Estimate of the Alternative Proposal by TANSEA

Sl. No.	Description	No.of Tanks	Total Storage Capacities in Mcft	Rate per 1Cft	Amount in Rupees (in Crores)
1	Desilting up to 25% of Storage Capacities	99	682.37	Rs.1.76	120.00
2	Desilting up to 1 Metre depth of 25% Water Spread Area of 3510.84 Ha (or)35.10 MCM (or)1239.52	99	1240.95	Rs.1.76	218.41
	Total		1923.32 =54.46 Mm ³		Rs.338.41 crores

Note : As per 2024 -2025 schedule of Rates of TNPWD – W0085, the rate of desilting (earthwork excavation) is given as Rs.57.59 + 4.51 = Rs.62.10/m³. =Rs.1.76 per cft or Rs.1.76 x 10⁹ per 1 Mcft

- In Government order No.70 Water Resources (S1) dt 26-07-2024, accepted the selling the desilted earth at a rate of (average) Rs.3000/m³ as revenue of generation – to the stake holders of NH, SH & RERA. (which is in the very higher order)

Let us do some homework to arrive at the reasonable rate of desilted quantity by Revenue Generation model.

I.	The total quantity of silt from desilting	= 1.923 TMC or 54.46 Mcu.m
II.	TNPWD Rate for earthwork excavation (2024 -2025)	= Rs.62.10/m ³
III.	TNPWD Rate for Quarry Dust (2024-2025)	= Rs.366.97 /m ³
	TNPWD Rate for Filling earth (2024-2025)	= Rs.187.17 /m ³
IV.	Average rate of Quarry Dust & Filling earth	= Rs.366.97 +Rs.187.17/2 m ³ =Rs.277.00 / m ³
V.	Let us reduce the rate of Quarry Dust & Filling earth under Revenue Generation by 40%	= ((-) Rs.110.80/m ³)
VI.	Then Average Selling price	=Rs.166.20/m ³
VII.	Then deduct the cost of earth excavation	= ((-)Rs.62.10/m ³)
VIII.	Net selling price of desilted earth	=Rs.104.10/m ³
IX.	By Revenue Generation for 54.46 Mm ³	=Rs.566.93 ≈ 567 crore
X.	Deduct Rs.100 crore towards strengthening of 99 tanks and another Rs.100 crore towards pumping the surplus water to the nearest pumping station	=Rs.567.00 – Rs.200.00 Crore
XI.	Net earning to the WRD / GOTN by implementing this alternate proposal	= Rs.367.00 crore

- If the above concept of Revenue generation is applied to the desilting of the above tanks for a quantity of 1923 Mcft (5,44,60,000 m³), it can fetch an amount of Rs.367.00, crore from which Rs.338.41 crore can be easily met, while there will be net income of Rs. 567 crore which can be better utilised for improving and strengthening of these 99 tanks at a cost of Rs.100 crore and another Rs.100 crore can be utilised to pump the flood surplus water from these tanks to nearest

Kottivakkam, South Chennai Pumping Station (8 KM). By this way, the drinking water capacity of Chennai City can be improved by another 1.923TMC ($682.37 + 1240.95 = 1.923$ TMC) without any financial burden to WRD and GOTN.

- In this connection, another 6.75 TMC of drinking water can be obtained by deepening 1.00m of Poondi, Puzhal and Chembarampakkam Reservoirs and desilting 507 tanks in Thiruvallur, Kancheepuram & Chengalpattu Districts. The total available drinking water for Chennai city will be about, 20TMC completely decommissioning the desalination projects already functioning and causing irreparable environmental degradation
- On the above grounds enumerated, the newly proposed **sixth reservoir in the Kovalam basin at an estimated cost of Rs.350 crore** also be dropped due to the demerits already detailed in this report.

Important Note :

It is abundantly clarified that the original storage capacity of each tank (99+507 tanks) is retained in these tanks for its needs. Only the additional storage capacity created by desilting and deepening alone is proposed to be utilised towards augmenting the drinking water supply to Chennai City.

Expected Outcome from TANSEA's Proposal: -

Additional Storage of 1923 TMC @ nil cost, if effective steps are taken by engaging stakeholders (Agencies of NH, SH & MDR and Builders) who need filling earth in this process and disposing the needed quantity to their purpose by **Revenue Generation model**.

Summary of the Proposal :

Creation of Additional Storage of 1.923TMC in Chengalpattu District by desilting 99 Tanks (Chengalpattu - 62 Nos and Tambaram-12 Nos & Kovalam Sub-Basin 25 Tiruporur Taluks of Chengalpattu District for Irrigation and Drinking Water Purposes.

- Total Cost of the Proposal = Rs.0.00 crore (Nil Cost) (by engaging Road & Building Agencies who need filling earth in this process and disposing the needed quantity to their purpose. (Revenue Generation as proposed in the desilting of Vaigai, Mettur, Pechipparai & Amaravathi Reservoirs - 4 Nos) in GO Ms No 70 WR (SI) dt 27-04-2024.

Merits of the Proposal

- ❖ Additional Storage of 1.923 TMC in 99 Irrigation Tanks from Chengalpattu (62 Nos), Tambaram (12 Nos) & Kovalam Sub-Basin (25 Nos) Tiruporur Taluks in Chengalpattu District of Tamil Nadu will serve as an additional Water Resources to cater the needs of Irrigation and Drinking Water supply.

Flood Mitigation

The proposal also prevents the flood damages occurring in CMA area frequently with a policy of “Prevention is better than cure”.

- ❖ Recharge to Ground Water increases the Water Table in the Open wells & Deep Bore wells which will cater the needs of both Human & Animal Drinking Water requirements in those areas.
- ❖ Long lasting – upkeep and maintenance cost will be minimised when the same will be entrusted to local Water Users Associations.

As per our proposals rain waters are harvested and get stored in the tanks (99+507 = 606 Tanks) where the rain occurs, thereby preventing the flood waters flowing into the Chennai City and causing loss of properties and lives every time. Catching the rain water where it occurs is the best method of preventing floods – (other artificial measures requires higher cost).

In addition, by pumping the flood surplus water to the nearby Reservoirs and Pumping stations, the additional drinking water supply to the tune of 8.67TMC (1.92 + 6.75 TMC) can be made available to Chennai City to meet its demand by 2035. The total estimated cost = Rs.0.00 crore (Nil cost)

Annexures :

1. List of WRD Tanks selected for Desilting (1.00m & above) - Chengalpattu Taluk, Chengalpattu District.
2. List of WRD Tanks (1.00m & above) selected for Desilting in Tambaram Taluk, Chengalpattu District.
3. List of WRD Tanks Selected in Kovalam Basin.
4. List of 507 Tanks Selected in Thiruvallur, Kancheepuram and Chengalpattu District

(எங்களின் பரப்புரைவெளியீடு-பிப்ரவரி 2024

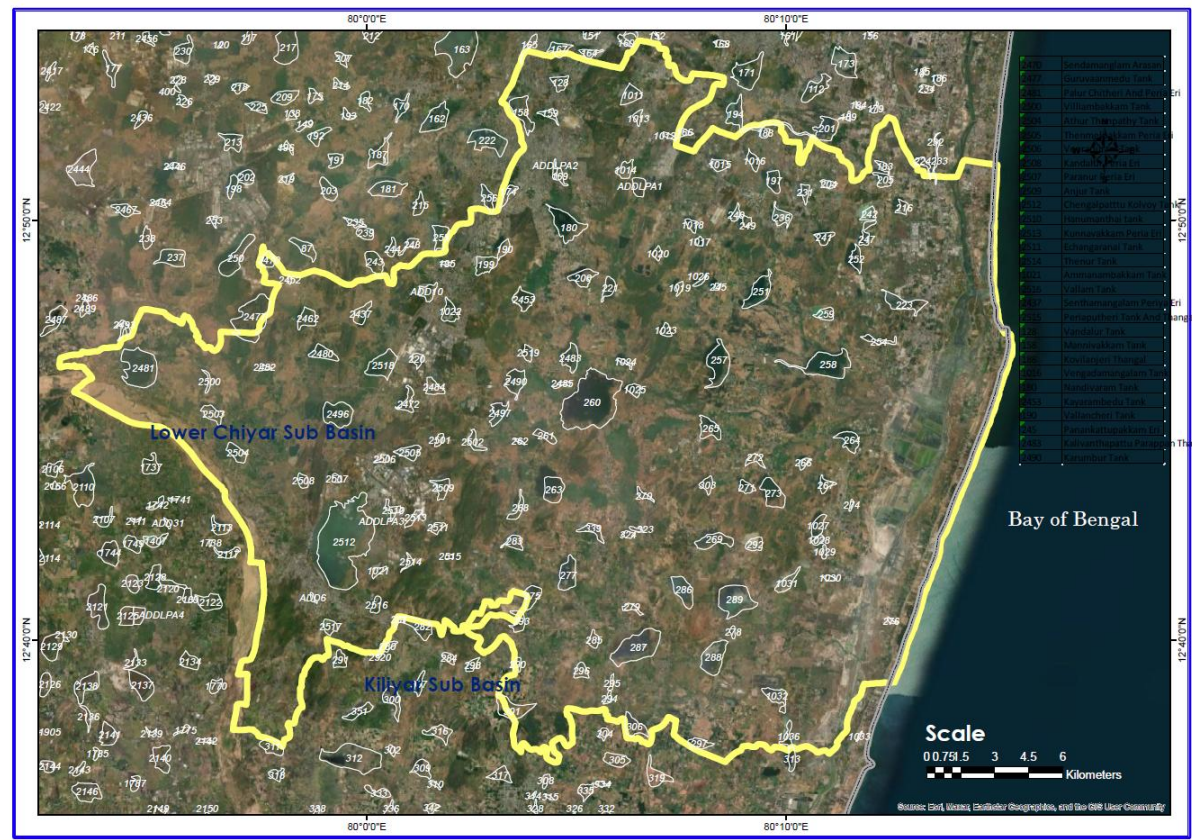
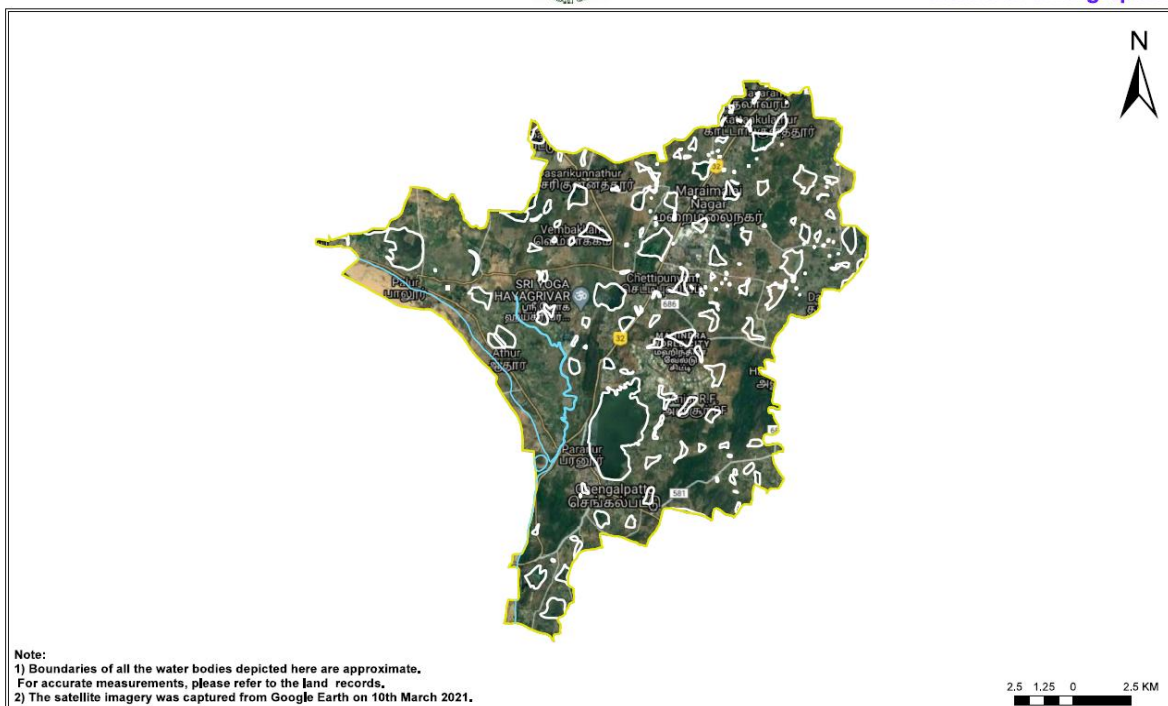
(சென்னைப் பெருமழை - வெள்ளச் சேதங்கள் - ஓர் அறிவியல் - பொறியியல் அலசல்)

Annexure 1 : List of WRD Tanks selected for Desilting (1.00m &above)- Chengalpattu Taluk-Chengalpattu District

Waterbodies



Taluk : Chengalpattu
District : Chengalpattu



S. No	Tank Name	Village	Taluk	Cap_M CM	Sto_Dep_m	Ayacut_ha	Catch_sqkm	Wat_Sp_r_ha
1	Vandalur Tank	Vandalur	Chengalpattu	0.12	1.68	54	3	10
2	Nedungundram Tank	Nedungundram	Chengalpattu	0.609	4.949584	333.45	3.64	39.95
3	Mannivakkam Tank	Mannivakkam	Chengalpattu	0.67	3.055	81.75	38.8	63
4	Kilampakkam Tank	Kilampakkam	Chengalpattu	0.29	3.16	40.84	1.45	92
5	Kolapakkam Tank	Kolapakkam	Chengalpattu	0.283	4.23	51.82	2.3552	23.23
6	Kovilanjeri Thangal	Kovilanjeri	Chengalpattu	0.09	1.82	42.91	0.78	220
7	Vengadamangalam Tank	Vengadamangalam	Chengalpattu	0.212374	2.74	111.69	1.3	24.15
8	Rathinamangalam Periya Tank	Rathinamangalam	Chengalpattu	0.156	2.12	70.82	9.344	22
9	Unamanjeri Big Tank	Unamanjeri	Chengalpattu	0.497	4.3	169.56	5.05	36.23
10	Urapakkam Tank	Urapakkam	Chengalpattu	0.26	3.5	0	4.77	58
11	Unamanjerichitheri	Unamanjeri	Chengalpattu	0.454	3.44	0	2.94	39.66
12	Guduvanchery Tank	Guduvanchery	Chengalpattu	0.25	2.76	61.92	12.95	19
13	Nandivaram Tank	Nandivaram	Chengalpattu	1.69	4.31	339.5	8.99	458
14	Nallambakkam Tank	Nallambakkam	Chengalpattu	0.252	3.43	134.82	3.84	20.6
15	Vallancheri Tank	Vallancheri	Chengalpattu	0.380012	3.66	145.28	8.42	32
16	Keerapakkam Tank	Keerapakkam	Chengalpattu	0.125442	2.53	57.46	1.38	15
17	Kattankolathur Tank	Kattankolathur	Chengalpattu	0.69	2.87	95.5	9.48	40
18	Potheri Tank	Potheri	Chengalpattu	0.730008	3.99	89.84	7.04	58
19	Perumattunallur Big Tank	Perumattunallur	Chengalpattu	2.06	1.86	58.68	4.32	93
20	Kannivakkam Tank	Kannivakkam	Chengalpattu	0.389923	4	57	2.54	40
21	Kayarambedu Tank	Kayarambedu	Chengalpattu	1.330042	1.35	172.8	5.05	98
22	Ninnakarai Tank	Ninnakarai	Chengalpattu	0.400117	4.55	49.78	2.18	48
23	Murugamangalam Peria Eri	Murugamangalam	Chengalpattu	0.124	2.98	40.87	1.7	13
24	Ammanambakkam Tank	Ammanambakkam	Chengalpattu	0.299875	3.31	33.22	1.29	28
25	Panankattupakkam Eri	Panankattupakkam	Chengalpattu	0.13	2.9	85.39	3.5	13
26	Gudalur Peria Eri	Gudalur	Chengalpattu	0.359907	3.72	50.59	1.19	28
27	KalivanthapattuParappanThangal	Kalivanthapattu	Chengalpattu	0.19	2.06	43	0.8	28
28	Kalvayarasaneri	Kalvayarasaneri	Chengalpattu	0.129	1.91	56.87	3.328	20.2
29	Kalvayarasaneri Big Tank	Kalvayarasaneri	Chengalpattu	0.449955	3.98	101.57	6.2976	34
30	Karumbur Tank	Karumbur	Chengalpattu	1.230084	4.3	109.26	5.7	89
31	KalivanthapattuAttari	Kalivanthapattu	Chengalpattu	0.56	3.08	74	3.91	54
32	Karunilam Tank	Karunilam	Chengalpattu	0.579929	3.07	110.07	3.39	55
33	Kondamangalam Tank	Kondamangalam	Chengalpattu	0.449955	4.03	94.7	2.38	34
34	Periaputheri Tank AndThangal	Periaputheri	Chengalpattu	7.330099	2.5	85.79	1.13	18.8
35	Sendamangalam Arasan	Sendamangalam	Chengalpattu	0.09	1.438656	27.21	1.27	24

36	AppurAnjurThan gal	AppurAnjur	Chengalpattu	0.1	1.3	74.46	1.55	28
37	Guruvaanmedu Tank	Guruvaanmedu	Chengalpattu	3.45	2.98	146.09	33.36	349
38	Senthamangalam Periya Eri	Senthamangalam	Chengalpattu	0.18	2.59	58.68	1.55	18
39	Kolathur Tank	Kolathur	Chengalpattu	0.929925	5.28	101.98	4.14	62
40	Thirukkatchur Tank	Thirukkatchur	Chengalpattu	1.39	4.62	155.4	12.69	90
41	VenbakkamThan gal	Venbakkam	Chengalpattu	0.150079	2.8	40.87	1.09	17
42	PalurChitheri And Peria Eri	Palur	Chengalpattu	2.579948	6.47	1031	16.17	237.73
43	Sithamanur Tank	Sithamanur	Chengalpattu	0.12	3.15	45.73	2.08	38.8
44	Sengundram Tank	Sengundram	Chengalpattu	0.530091	3.775	61.51	3.42	42
45	Athur Vadapathy Tank	Athur	Chengalpattu	0.549913	2.85	281.25	2.07	76
46	Settipunniyam Tank	Settipunniyam	Chengalpattu	2.45	4.18	176.44	26.11	176
47	Katchadimangala m Peria Eri	Katchadimangalam	Chengalpattu	0.31	2.74	54.23	2.56	35.5
48	Athur Thenpathy Tank	Athur	Chengalpattu	0.169901	1.44	257.78	0.28	23.2
49	Thenmelpakkam Peria Eri	Thenmelpakkam	Chengalpattu	0.590123	3.75	95.9	6.76	47.7
50	Veerapuram Tank	Veerapuram	Chengalpattu	0.250038	3.11	45.32	7.38	24
51	Paranur Peria Eri	Paranur	Chengalpattu	0.229933	3.13	50.59	1.66	22
52	Kandalur Peria Eri	Kandalur	Chengalpattu	0.220022	2.33	40.87	1.76	24
53	Anjur Tank	Anjur Tank	Chengalpattu	0.600034	4.57	123.42	1.14	39
54	Hanumanthai tank	Hanumanthai	Chengalpattu	0.104	2.55	0	2.07	12
55	Kunnavakkam Peria Eri	Kunnavakkam	Chengalpattu	0.220022	2.53	32.92	4.3	25
56	Echangaranai Tank	Echangaranai	Chengalpattu	0.21	2.54	42.09	7.68	17.37
57	ChengalpatttuKol voy Tank	Chengalpatttu	Chengalpattu	13.500057	4.59	253.73	1.89	882
58	Thenur Tank	Thenur	Chengalpattu	0.139885	3.415	44.5	1.7	17.1
59	Ammanambakka m Tank	Ammanambakkam	Chengalpattu	0.299	2.14	44.11	2.816	11
60	Gundur	Chengalpatttu	Chengalpattu	0.17	2.7	45.35	2.59	12.16
61	Vallam Tank	Vallam	Chengalpattu	0.280054	4.54	69.6	2.64	27
62	Melamaiyur Tank	Melamaiyur	Chengalpattu	0.310069	2.86	60.7	2.12	35.25
				53.894816	198.51324	6566.48	329.0808	4377.63

Abstract

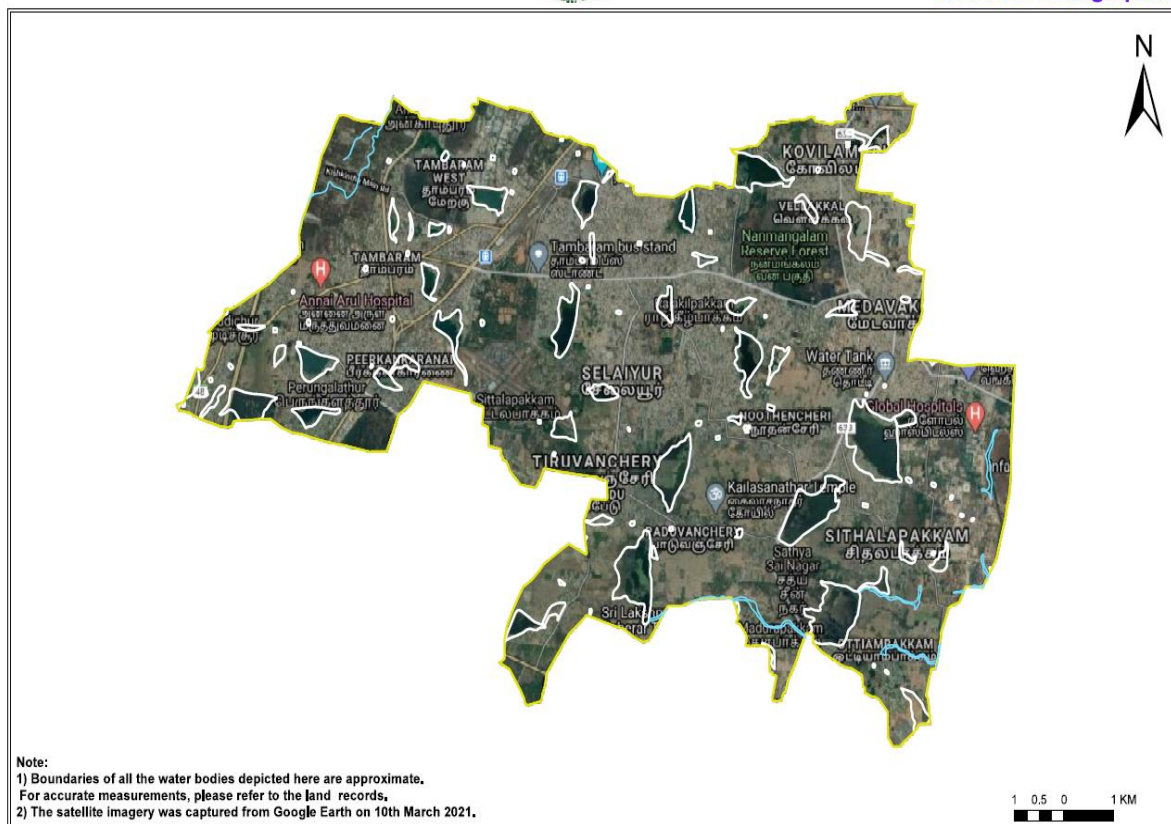
Sl.No	Name of Taluk	No. of Tanks	Storage Capacity		Water Spread Area in Ha
			In MCM	In MCft	
1	Chengalpattu	62	53.90	1903.46	4377.63

Annexure 2 :List of WRD Tanks (1.00m & above) selected for Desilting in Tambaram Taluk-Chengalpattu District

Waterbodies



Taluk : Tambaram
District : Chengalpattu



Sl. No	Tank_Name	Village	Taluk	Cap_ MCM	Sto_ Dep_m	Ayacut_ ha	Catch_ sqkm	Wat_ Spr_ha
1	Tambaram Peria Eri	Tambaram	Tambaram	0.14	2.65	43.43	0.36	294
2	Rajakeelpakkam Tank	Rajakeelpakkam	Tambaram	0.31	2.38	56.27	0.48	152
3	Selaiyur Tank	Selaiyur	Tambaram	0.46	2.79	138.06	1.4	9.5
4	Irumbuliyur Tank	Irumbuliyur	Tambaram	0.35	2.45	80.97	0.81	312
5	Vengaivasal Peria Eri	Vengaivasal	Tambaram	0.36	4.19	73.28	0.92	246
6	Perungalathur Chitheri	Perungalathur	Tambaram	0.53	3.04	122.67	1.32	488
7	Peerankaranai Eri	Peerankaranai	Tambaram	0.13	2.38	48.03	0.3	467
8	Thiruvancheri Tank	Thiruvancheri	Tambaram	0.21	2.69	63.97	0.75	108.5
9	Mudichur Peria Eri	Mudichur	Tambaram	0.58	4.28	80.16	2.15	302

10	Perungalathur Big Tank	Perungalathur	Tambaram	0.43	3.82	161	0.68	204
11	Agaramthen Tank	Agaramthen	Tambaram	0.47	3.46	135.63	17.91	370
12	Vengambakkam Tank	Vengambakkam	Tambaram	0.16	2.75	92.31	0.27	40
		Total		4.13	36.88	1095.78	27.35	2993

Abstract

Sl.No	Name of Taluk	No. of Tanks	Storage Capacity		Water Spread Area in Ha
			In MCM	In MCft	
1	Tambaram	12	4.13	145.85	2993

Annexure 3 : List of WRD Tanks Selected in Kovalam Basin

S. No	Tank_Name	Village	Taluk	District	Cap_ MCM	Sto_ Dep_ m	Ayacut_ ha	Catch_ sqkm	Wat_ Spr_ ha
1	Adambakkam Tank	Adambakkam	Alandur	Chengalpattu	0.08	0.91	100.5	0.4	160
2	Moovarasampattu Peria Eri	Moovarasampattu	Alandur	Chengalpattu	0.09	1.96	40.99	0.76	58
3	Madipakkam Tank	Madipakkam	Sholinganallur	Chengalpattu	0.33	3.63	386.2	0.18	185
4	Pallavaram Tank	Pallavaram	Alandur	Chengalpattu	0.18	3.23	214.3	1.03	68
5	Pallikkarantai Narayanaapuram Tank	Pallikkarantai	Sholinganallur	Chengalpattu	0.15	2.74	57.08	1.42	306
6	Nemelicheri Tank	Nemelicheri	Alandur	Chengalpattu	0.21	1.45	95.54	0.31	423
7	Kovilambakkam Tank	Kovilambakkam	Sholinganallur	Chengalpattu	0.09	2.42	46.56	1.26	374
8	Nanmagnalam Tank	Nanmagnalam	Alandur	Chengalpattu	0.28	3.65	106.5	5.7	7
9	Pallikkarantai Anai Tank	Pallikkarantai	Sholinganallur	Chengalpattu	0.21	2.11	98.38	0.44	259
10	Sembakkam Tank	Chitlapakkam	Alandur	Chengalpattu	0.25	2.38	61.94	4.37	26
11	Medavakkam Perai Eri	Medavakkam	Sholinganallur	Chengalpattu	0.69	8.48	80.57	0.55	370
12	Pallikkarantai Big Tank	Pallikkarantai	Sholinganallur	Chengalpattu	0.2	3.41	134.8	1.03	536
13	Medavakkam Kalleri	Medavakkam	Sholinganallur	Chengalpattu	0.28	1.63	259.1	0.12	560
14	Vengaivasal Peria Eri	Vengaivasal	Tambaram	Chengalpattu	0.36	4.19	73.28	0.92	246
15	Vengaivasal Chitheri	Vengaivasal	Tambaram	Chengalpattu	0.05	1.18	80.97	1.8	174
16	Perumbakkam Big Tank	Perumbakkam	Sholinganallur	Chengalpattu	0.74	3.28	229.2	9.25	227

17	Sholinganallur Rettaikeni Tank	Sholinganallur	Sholinganallur	Chengalpattu	0.04	1.45	41.49	0.23	453
18	Sholinganallur Thamraikeni Thangal	Sholinganallur	Sholinganallur	Chengalpattu	0.33	1.36	101.2	0.35	1100
19	Ottiyambakkam Tank	Ottiyambakkam	Sholinganallur	Chengalpattu	0.4	2.36	182.2	9.93	217
20	Thaiyur Eri	Thaiyur	Thiruporur	Chengalpattu	2.24	4.17	436.7	40.72	166
21	Kondangi Eri	Kondangi	Thiruporur	Chengalpattu	8.16	5.17	618.8	39.32	474
22	Sembakkam Eri	Sembakkam	Thiruporur	Chengalpattu	0.65	3.135	89.44	4.25	62
23	Sirudavur Eri	Sirudavur	Thiruporur	Chengalpattu	2.29	4.13	416.6	22.58	212
24	Puzhuthivakkam Tank	Puzhuthivakkam	Madurantakam	Chengalpattu	0.17	1.082803	41.7	2.46	15.7
25	Chitlambakkam Tank	Chitlambakkam	Thirukalukundram	Chengalpattu	0.79	1.5	52.59	1.66	10
					19.26	71.0078	4047	151.04	6688.7

Sl.No	Name of Taluk	No. of Tanks	Storage Capacity		Water Spread Area in Ha
			In MCM	In MCft	
1	Kovalam Sub-Basin	25	19.26	680.15	6688.70

Abstract

List of Tanks Selected & their Storage Capacities

Sl. No	Name of Taluk	No. of Tanks Selected	Storage capacity of the Tank		Water Spread Area in Ha
			MCM	Mcft	
1	Chengalpattu	62	53.90	1903.46	4377.63
2	Tamparam	12	04.13	145.85	2993.00
3	Tiruporur Taluk (Kovalam Sub-Basin)	25	19.26	680.15	6688.70
	Total	99	77.29	2729.46	14059.33

GIST of the Alternate Cost-Effective Proposal by TNPWD Senior Engineers Association

It is proposed to take up selected 99 Tanks as shown above for desilting to an extent of 25% and to increase the storage capacities of the selected 99 Tanks for augmenting the Resources to supplement the Chennai City Water supply

Sl. No	Name of Taluk	No. of Tanks Selected	Storage capacity of the Tank	Additional Storage by desilting 25 % of its Storage Capacity In Mcft	Water Spread Area in Ha	Additional Storage by desilting 25% of Water Spread Area by 1m depth
--------	---------------	-----------------------	------------------------------	--	-------------------------	--

			MCM	Mcft	MCft	100%	25%	In MCM	In MCft
1	Chengalpattu	62	53.90	1903.46	475.87	4377.63	1094.41	10.94	386.34
2	Tambaram	12	4.13	145.85	36.46	2993.00	748.25	7.48	264.15
3	Tiruporur Taluk (Kovalam Sub-Basin	25	19.26	680.15	170.04	6688.70	1672.18	16.72	590.46
	Total	99	77.29	2729.46	682.37	14059.33	3514.84	35.14	1240.95

Additional Storages created by desilting selected 99 Tanks=682.37 Mcft (or) 0.682TMC

Additional Storages created by desilting Water Spread Areas of selected 99 Tanks=1240.95 Mcft (or) 1.241 TMC

Total Additional Storages Created by De-silting = (0.682+1.241) = 1.923TMC

Note :- The Velachery Lake is included in the Kovalam Sub-Basin. The Chennai Metropolitan Development Authority (CMDA) plans to start work on rejuvenating the lake after the Northeast monsoon. The initiative will increase the storage capacity by 22% (4.66Mcft) - (The Hindu Dated December 17, 2024)

Annexure 4 : List of 507 Tanks Selected in Thiruvallur, Kancheepuram and Chengalpattu District

List of Tanks Selected & their Storage Capacities				
Sl.No.	Name of Taluk	No. of Tanks selected	Storage Capacity of the Tank	
			MCM	MCft
1	Tiruvallore	127	67.436	2448,876
2	Ponneri	109	80.960	2859.030
3	Uttukkottai	68	39.330	1388.900
4	Chengalpattu	64	50.510	1783.920
5	Tambaram	12	04.130	145.850
6	Sriperumbudur	127	174.370	6155.450
	Total	507	416.736	14782.026
<i>Total Storage Capacities of the selected WRD Tanks +416.736 MCM (or) 14.782TMC (or) 15 TMC</i>				

Summary of the Proposal by TANSEA

➤ Creation of Additional Storages

i) Additional Storage of 3.75 TMC Created by desilting 507 Tanks in Six Taluks of Tiruvallore, Kancheepuram & Chengalpattu Districts for Irrigation and Drinking Water Purposes.

Cost of Desilting and Deepening by 1.00m - Rs. 500 Crores

ii) Additional Storage of 3 TMC Created by desilting Poondi, Puzhal & Chembarambakkam Tanks for Irrigation and Drinking Water Purposes

Cost of Desilting and Deepening by 1.00m -Rs. 300 Crores

தமிழ்நாடு பொதுப்பணித்துறை

முத்த பொறியாளர் சங்கப் பரப்புரை வெளியீடுகள்

❖ முல்லை பெரியாறு அணை சிக்கலுக்கு என்ன தான் தீர்வு?	ஏப்ரல் 2009
❖ முல்லை பெரியாறு அணையைக் காப்பாற்றுவோம்	மே 2012
❖ தேசிய நீர்க் கொள்கை	பிப்ரவரி 2013
❖ காவிரி நதிநீர் பங்கீடு: சிக்கல்களும் சரியான தீர்வுகளும்	ஜூலை 2013
❖ சேதுக் கால்வாய்த் திட்டம் எல்லோருக்கும் பயனளிக்கப் போகிறது	ஆகஸ்டு 2013
❖ காவிரிப் பாசனப் பகுதிகளைப் பாலைவனமாக்கும் மீத்தேன் எடுப்பு எதிர்ப்பு விளக்கக் கையேடு	ஆகஸ்டு 2014
❖ காவிரியின் குறுக்கே இரு அணைகள் கட்ட கர்நாடக அரசுக்கு உரிமை உண்டா?	டிசம்பர் 2014
❖ தமிழ்நாட்டில் முழு மது விலக்கு முடியுமா? முடியும் முடியும் நிச்சயமாக முடியும் !	ஆகஸ்டு 2015
❖ அத்திக்கடவு - அவிநாசி வெள்ள மிகை நீர் கொண்டு நிலத்தடி நீர் செறிவூட்டும் திட்டம் ஏன் கால தாமதம் ஆகிறது?	ஏப்ரல் 2016
❖ தமிழ்நாட்டு ஏரிகுளங்களை ஏன் ஆழப்படுத்தி முறையாகப் பராமரிக்க வேண்டும்?	ஏப்ரல் 2016
❖ காவிரி மேலாண்மை வாரியத்தை இந்திய அரசே (பாராளுமன்றத்திற்கு எடுத்துச் செல்லாமலே) அமைத்திட	நவம்பர் 2016
❖ தமிழ்நாட்டு நீர்வளங்கள்: தண்ணீர் தன்னிறைவுத் தமிழகம் சாத்தியமே!	அக்டோபர் 2017
❖ அத்திக்கடவு - அவிநாசி நிலத்தடி நீர் வழங்கும் திட்டம் - சிறந்த - செலவு குறைந்த மாற்றுத் திட்டம்	செப்டம்பர் 2018
❖ காவிரி-வைகை-குண்டாறு இணைப்புக் கால்வாய் திட்டம் - மாற்று குழாய் வழித்தடங்கள் 1 & 2	மார்ச் - 2021
❖ ஓய்வூதியம் மற்றும் ஓய்வூதியப் பயன்கள் - கையேடு	செப்டம்பர் 2021
❖ தமிழ்நாட்டுப் பாசனப் பரப்புரை - தாமிரபரணி வடிநிலம்	பிப்ரவரி 2022
❖ Paalaru – Thenpennai River Basins	செப்டம்பர் 2022
❖ Construction of Mettur Dam Systems - An Illustrative Treatise	சனவரி 2023
❖ Periyar Vaigai River System	ஜூன் 2023
❖ சென்னைப் பெருமழை - வெள்ளச் சேதங்கள் - ஓர் அறிவியல் - பொறியியல் அலசல்	பிப்ரவரி 2024

குறிப்பு : இவை அனைத்தையும் மின்னஞ்சலில் கேட்டும் பெறலாம்