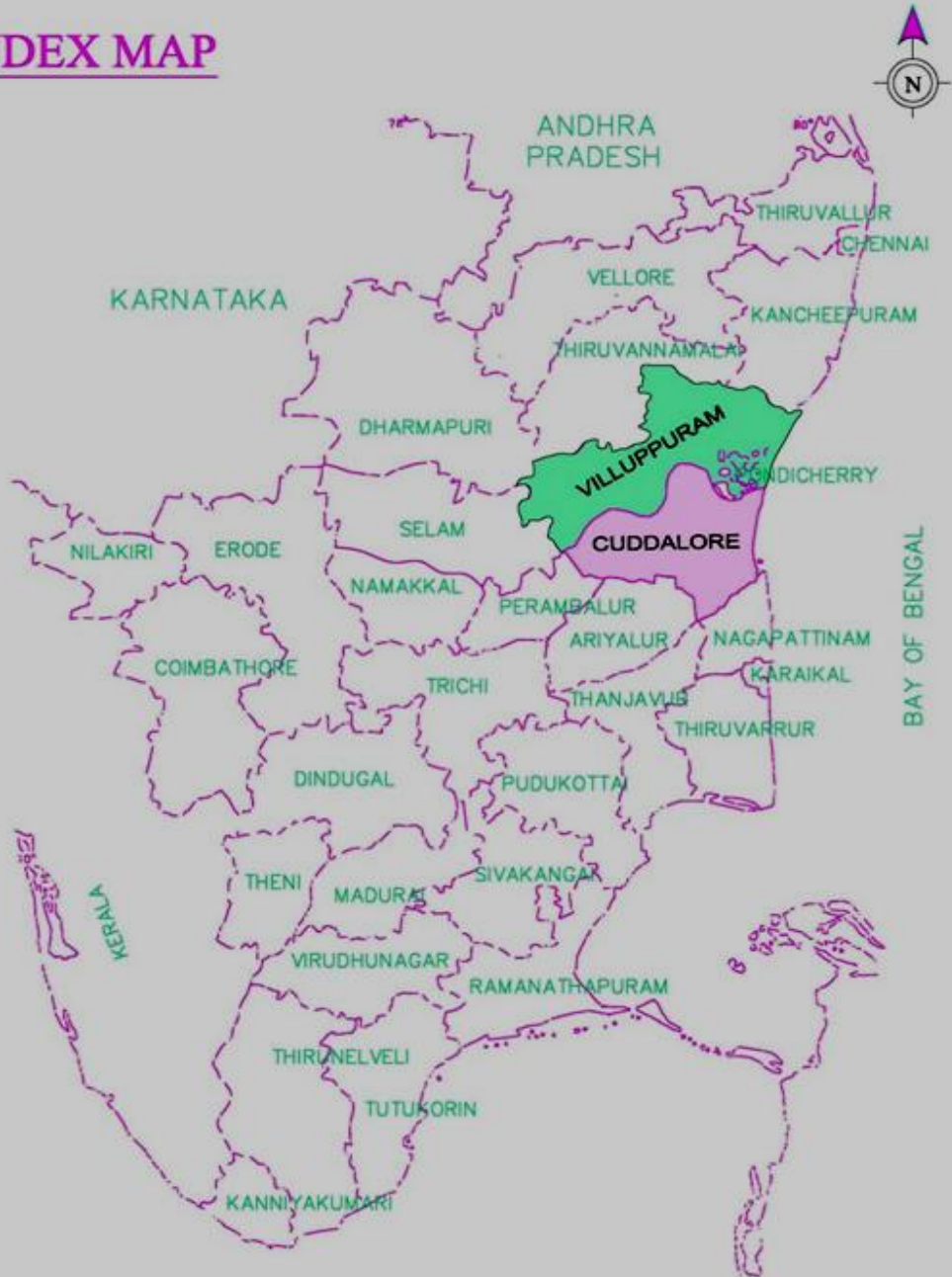
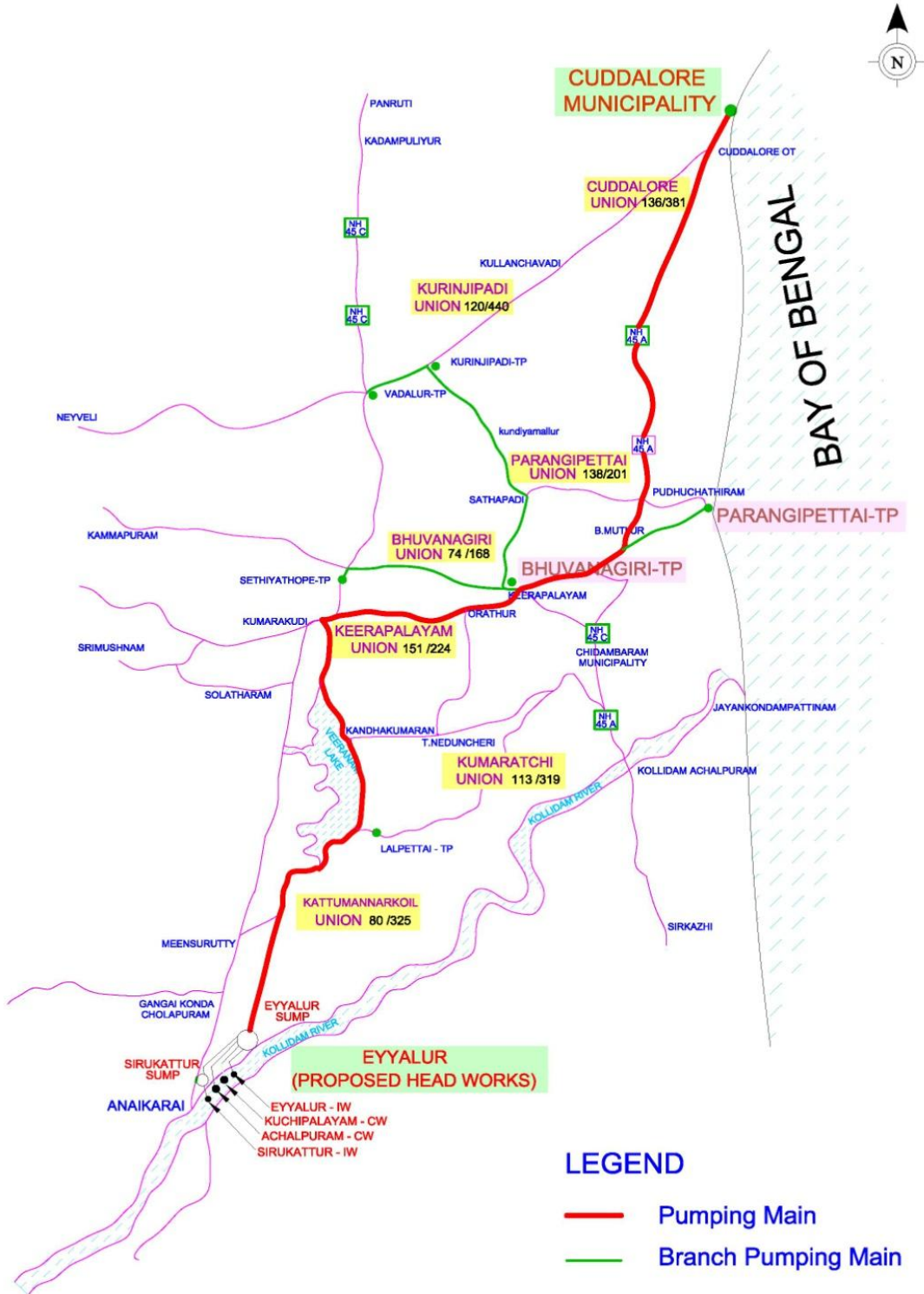


MAJOR CWSS TO CUDDALORE MUNICIPALITY, BHUVANAGIRI , PARANGIPETTAI TOWN PANCHAYATS & 812 RURAL HABITATIONS IN CUDDALORE DISTRICT - PHASE - I UNDER CWSS TO CUDDALORE , VIRUDHACHALAM, VILLUPURAM & TINDIVANAM MUNICIPALITIES, 13 TOWN PANCHAYATS & 3593 RURAL HABITATIONS OF 26 PANCHAYAT UNIONS IN CUDDALORE & VILLUPURAM DISTRICT WITH KOLLIDAM RIVER AS SOURCE.

## INDEX MAP



# MAJOR CWSS TO CUDDALORE MUNICIPALITY, 2 TOWN PANCHAYAT & 812 RURAL HABITATIONS IN CUDDALORE DISTRICT



<b>COMBINED WATER SUPPLY SCHEME TO CUDDALORE MUNICIPALITY, BHUVANAGIRI TOWN PANCHAYAT, PARANGIPETTAI TOWN PANCHAYAT AND 812 RURAL HABITATIONS IN CUDDALORE DISTRICT WITH RIVER KOLLIDAM AT EYYALUR AS SOURCE PHASE –I</b>				
<b>1</b>	<b>Name of Beneficiaries</b>	Municipality - Cuddalore Town Panchayat - Bhuvanagiri & Parangipettai Rural habitations - 812 Nos (QAH - 27 Nos, way side habs -785 Nos in cuddalore Dt (1. Keerapalayam union - 151 Nos 2. Bhuvanagiri - 74 Nos 3. Parangipettai - 138 Nos 4. Kurinjipadi - 120 Nos 5. Cuddalore - 136 Nos 6. Kattumannarkoil - 80 Nos 7. Kumaratchi - 113 Nos)		
<b>2</b>	<b>Population</b>	<b>Base year (2014)</b>	<b>Intermediate (2029)</b>	<b>Ultimate (2044)</b>
	Cuddalore Municipality	180400	215600	250700
	Bhuvanigiri T.P	22800	27200	31600
	Parangipettai T.P	23900	28600	33300
	Rural habitations	382942	421277	459535
		<b>610042</b>	<b>692677</b>	<b>775135</b>
<b>3</b>	<b>Requirement in mld</b>	<b>2014</b>	<b>2029</b>	<b>2044</b>
	Cuddalore Municipality ( (@ the rate of 135lpcd )	24.35	29.106	33.8445
	Bhuvanigiri T.P (@ the rate of 90lpcd )	2.05	2.45	2.84
	Parangipettai T.P (@ the rate of 90lpcd )	2.15	2.57	3.00
	Rural habitations (@ the rate of 40lpcd )	15.32	16.85	18.38
	<b>Total</b>	<b>43.87</b>	<b>50.98</b>	<b>58.07</b>
<b>4</b>	<b>Existing supply in mld</b>			

	Cuddalore Municipality	8.50		
	Bhuvanigiri T.P	1.63		
	Parangipettai T.P	1.72		
	Rural habitations (@ the rate of 20 lpcd for 785 way side habs )			
<b>5</b>	<b>Proposed Augmentation of local Sources to Cuddalore Municipality</b>	12.50 mld		
<b>6</b>	<b>Net demand in mld including 10% transmission loss and industrial demand for cuddalore municipality</b>			
	Cuddalore Municipality	3.35	8.11	12.84
	Bhuvanigiri T.P	0.42	0.82	1.21
	Parangipettai T.P	0.44	0.86	1.28
	Rural habitations (@ the rate of 20 lpcd for 785 way side habs )	8.18	8.82	9.45
	Rural habitations (@ the rate of 40 lpcd for 27 QAH )	0.36	0.39	0.43
	Industrial demand for cuddalore municipality	0.34	0.80	1.28
	<b>Sub Total I</b>	13.08	19.79	26.50
	<b>Total net demand including 10% transmission loss</b>	<b>14.39</b>	<b>21.77</b>	<b>29.15</b>
<b>7</b>	<b>Head works:</b>			
<b>a</b>	<b>Source</b>	Sub surface water from river Kollidam through		
<b>i)</b>		Collector well cum pump hpuse - 2Nos ( 6.0m dia 12m depth at Achalpuram & Kuchipalayam )		
<b>ii)</b>		Infiltration wells - 5Nos -4.5m dia 9m depth @ Eyyalur		
<b>iii)</b>		Infiltration wells - 5Nos -4.5m dia 11m depth @ Sirukattur		

<b>b</b>	<b>Hours of pumping</b>	20 hrs
<b>c</b>	<b>Pumpsets</b>	4946 lpm x 22m - 35 HP Turbine P'set - 2 Nos at Kuchipalayam 4978 lpm x 23m - 35 HP Turbine p'set - 2 Nos at Achalpuram
		822 lpm x 22m - 10HP Submersible-10Nos for 5 Nos of Infiltration wells at Eyyalur
		822 lpm x 21m - 10HP Submersible-10Nos for 5 Nos of Infiltration wells at Sirukattur
		4110 lpm x 14m - 17.50 HP Turbine P'set - 2Nos at Sirukattur sump
		9072 lpm x 33m - 90HP Turbine P'set - 3Nos at Common sump@Eyyalur.
<b>d</b>	<b>Connecting Main</b>	At Eyyalur - 150mm CI D/F - 2360 m At Kuchipalayam - 350mm DI K7 - 750m 350mm CI D/F - 300m At Achalpuram - 350mm DI K7- 1325m - 350mm CI D/F - 550m At Sirukattur - 150mm CI D/F - 3400m - 350mm DI K7 - 3400m <b>Total - 12085 m</b>
<b>e</b>	<b>Sump @ Head works</b>	At Eyyalur -14.6LL-1No At Sirukattur – 3.30LL 1No.
<b>f</b>	<b>Pumproom</b>	At Eyyalur -20x10 m -1No At Sirukattur - 9 x 6m - 1 No
<b>g</b>	<b>PumpRoom</b>	6x4m - 2 Nos ( 1No.@ Kuchipalayam & 1No. @ Achalpuram)
<b>h</b>	<b>Intake well cum pump house</b>	10m dia - 1 No at Eyyalur and 6.0m dia -1 No.at Sirukattur for accommodating Turbine P'sets
<b>8.(i)</b>	<b>Intermediate Booster Sump</b>	1No. 10.45LL @ B.Mutlur

ii)	<b>Intake well cum pump house</b>	10m dia - 1 No for accommodating Turbine P'sets
v)	<b>Transformer</b>	630 KVA
vi)	<b>Pumpsets</b>	5942 lpm x 46m - 80 HP Turbine P'set - 3 Nos
		173 lpm x 20m - Submersible P'set -2 Nos
		134 lpm x 15m - Submersible P'set -2 Nos
		197 lpm x 10m - Submersible P'set -2 Nos
<b>9</b>	<b>Pumping, Branch Pumping &amp; feeder mains</b>	
a)	<b>Pumping main</b>	
i)	<b>Frm HW to Mutlur Booster sump</b>	711mm MS pipe 6.30mm Thickness - 42498m 600mm DI K7 CL - - 7952 m <b>Total - 50450</b> <b>m</b>
ii)	<b>Frm Mutlur Booster sump to Kondur sump</b>	600mm DI K7 - 16663m 500mm DI K7 - 13552m 450mm DI K7 - 3835 m 400mm DI K7 - 2087 m 200mm DI K7 - 2790 m <b>Total - 38927 m</b>
b)	<b>Branch Pumping Main</b>	

i)	<b>Frm HW to Mutlur Booster sump</b>	250mm DI K7 - 545 m 200 PVC 4 KSC - 2560 m 160 PVC 4 KSC - 1100 m 140 PVC 4 KSC - 7243 m 90 PVC 6 kSC - 3610 m 90 PVC 4 KSC - 655 m <b>Total - 15713 m</b>
ii)	<b>Frm Mutlur Booster sump to Kondur sump</b>	140 PVC 4 KSC - 5195 m 110 PVC 4 KSC - 1590 m 90 PVC 6 KSC - 1200 m 90 PVC 4 KSC - 15125 m <b>Total - 23110 m</b>
c)	<b>Feeder Mains</b>	
i)	<b>Frm HW to Mutlur Booster sump</b>	250mm DI K7 - 8520 m 200 PVC 4 KSC - 5150 m 160 PVC 4 KSC - 7098 m 140 PVC 4 KSC - 11073 m 110 PVC 4 kSC - 48298 m 90 PVC 4 KSC - 50393 m 75 PVC 4 KSC - 61851 m 63 PVC 4 KSC - 220120 m 50 PVC 6 KSC - 2120 m 150 GI - 30 m 125 GI - 105 m 100 GI - 420 m 80 GI - 659 m 65 GI - 885 m 50 GI - 2738 m <b>Total - 419460 m</b>
ii)	<b>Frm Mutlur Booster sump to Kondur sump</b>	160 PVC 4 KSC - 3400 m 140 PVC 4 KSC - 4498 m 110 PVC 4 kSC - 30391 m 90 PVC 4 KSC - 47536 m 75 PVC 4 KSC - 49717 m 63 PVC 4 KSC - 111971 m 50 PVC 6 KSC - 15m 125 GI - 114 m 100 GI - 957 m 80 GI - 1369 m 65 GI - 1205 m 50 GI - 2217 m <b>Total - 253390 m</b>

iii)	<b>Tapping sumps &amp; Group sumps</b>	Rural Beneficiaries - HW to Mutlur -29 Nos (0.1 LL - 3 Nos, 0.15 LL - 1 No,0.20-2 Nos, 0.35 LL - 1 No,0.4 LL- 1 No, 0.5LL-1No, 0.55LL-1No, 0.6LL-4Nos, 0.7LL-1No, 0.75 LL-2Nos, 0.9LL-1No,1.0LL-2Nos,1.05LL- 2Nos,1.10LL-1No,1.15LL -1No,1.25LL- 2Nos,1.75LL-1No,2.35LL-1No &2.55LL - 1 No)
		Rural Beneficiaries - Mutlur to Kondur - 29 Nos (0.1 LL - 3 Nos,0.15 LL - 4 Nos,0.20-1 No,0.25 LL - 1 No,0.4 LL- 1 No,0.5LL-1No,0.55 LL - 1No, 0.65LL- 1No,0.7LL-1No,0.75 LL - 2 Nos, 0.80 LL- 1No,0.85LL - 1 No,0.9LL-1No,0.95LL -1No, 1.0LL-3Nos,1.20LL-1No,1.60LL- 1No,1.7LL - 3Nos,3.65 LL- 1No
10	<b>Pumpsets</b> :	Rural Beneficiaries - HW to Mutlur - Submersible Pumpsets - -48 x 2 Nos (100% stand bye)
		Rural Beneficiaries - Mutlur to Kondur - Submersible Pumpsets - - 51 x 2 Nos (100% stand bye)

<b>11</b>	<b>Infrastructures to ULBs</b>	
<b>a)</b>	<b>Cuddalore Municipality</b>	
<b>i)</b>	<b>Tapping sump1</b>	Cuddalore Mpty - <b>O.T Municipal dispensary - 1.85 LL</b> Branch main - 350mm dia DI K7 - 1775 m O.W Submersible p'set - 1145 lpm x 21m - 12.50 HP-100% stand bye O.W Submersible p'set - 784 lpm x 22m - 7.50 HP - 100% stand bye Pump room - 6m x 4m Feeder mains to SRs: 250mm DI K7 - 438 m 200mm DI K7 - 12m 200mm OD PVC 4 KSC - 2659m 160mm OD PVC 4 KSC - 322m 140mm OD PVC 4 KSC - 903m 110mm OD PVC 4 KSC - 807m



		90mm OD PVC 4 KSC - 1000m 75mm OD PVC 4 KSC- 781m		
ii)	<b>Tapping sump2</b>	Cuddalore Mpty - Thirupathripuliyur <b>-1.75 LL</b> Branch main - 400mm dia DI K7 - 1400 m - 300mm dia DI K7 - 200m O.W Submersible p'set - 1791lpm x 23m - 20.0 HP- 100% stand bye Pump room - 4m x 3m <b>Feeder mains to SR:</b> 250mm DI K7 - 1445 m 200mm DI K7 - 15m		
iii)	<b>Tapping sump3</b>	Cuddalore Mpty - Manjakuppam <b>-3.55 LL sump cum pump house</b> Branch main - 400mm dia DI K7 - 100 m HSC centrifugal P'set - 2057 lpm x 24m - 25 HP- 100% stand bye HSC centrifugal P'set - 1654 lpm x 23m - 17.50HP- 100% stand bye Pump room - 9m x 6m <b>Feeder mains to SRs:</b> 250mm DI K7 - 4233 m 200mm DI K7 - 825m 160mm OD PVC 4 KSC - 900m 140mm OD PVC 4 KSC - 3839m 110mm OD PVC 4 KSC - 785m 90mm OD PVC 4 KSC - 2166m		
iv)	<b>Service Reservoirs</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>

		0.30 LL - 1 No 1.00 LL - 4 Nos 2.00 LL - 5 Nos 4.54 LL - 1 No 6.00 LL - 2 Nos 10.00 LL - 1 Nos 11.35 LL - 1 No 12.00 LL - 1 No 15.00 LL - 3 Nos Total - 19 Nos	1.00 LL - 1 No 2.00 LL - 1 No Total - 2 Nos	21Nos
<b>v)</b>	<b>Distribution system</b>	<b>Existing</b>	<b>Proposed remodelling</b>	
		182.648 Km	76.187 Km	
<b>vi)</b>	<b>Improvements to existing system</b>			
<b>i)</b>	Rejuvenation of SRs	1.00 LL - 3 Nos, 2.00 LL - 1 No, 4.54 LL - 1 No, 10.00 LL - 1 No, <b>Total - 6 Nos</b>		
<b>ii)</b>	Providing generator to existing sump	<b>1. Ennikarantottam Tsunami Quarters I</b> 2. Ennikarantottam Tsunami Quarters II 3. Nehru Nagar 4. Sonankuppam 5. Devanampattinam		
<b>iii)</b>	<b>Improvements @ Thiruvanthipuram HW</b>	<b>A) NEW Components</b>		
		i) Bore well - 4 Nos (200mm dia and 150 m depth)		
		ii) Pump room 2.4m x 1.8 m - 4 Nos		
		iii) Submersible pumpset - 475 lpm x 124 m - 25 HP - 4 Nos		
		iv) Connecting main - 160mm OD PVC - 4734 m		
		v) New Iron removal plants - 4 Nos		
		vi) Collection sump - 1.15 LL		
		vii) Open well submersible pumpset - 1900 lpm x 12m - 12.50 HP		
		viii) Pump room 4m x 3m - 1 No		
		ix) Pumping main - 250mm DI K7 - 115m		

		x) Construction of compound wall - 50m x 30m
		xi) Branch pumping main to proposed 2.0 LL SR at Mariya Soosai Nagar - 160 PVC 4 KSC - 325 m
	<b>Improvements @ Thiruvanthipuram HW</b>	<b>B) Revamping of existing components</b>
		i) Additional Iron removal plants 3Nos for existing 3 Nos of Bore well
		ii) Connecting main - 150mm DI K7 - 412 m
		iii) Collection sump - 1.65 LL
		iv) Open well submersible pumpset - 2700 lpm x 12m - 15.0 HP
		v) Pump room 6m x 4m - 1 No
		vi) Pumping main - 300mm DI K7 - 115m
		vii) Replacement of existing 450mm PSC with 450mm DI K7 - 4660m
		<b>C) Rejuvenation works</b>
		i) Flushing of Ex BW s and reerection of pumpsets- 9 Nos
		ii) Replacement of existing submersible pumpsets - 6 Nos 900 lpm x 120 m - 50 HP- 4 Nos 475 lpm x 124 m - 12.50 HP- 2 Nos
		iii) Rejuvenation of existing Iron removal plant - 2 Nos
		iv) Replacment of Valves including construction of valve pits in existing gravity main - 31 Nos
iv)		<b>Improvements @ Capper Hills HW</b>
	i) Bore well - 3 Nos (200mm dia and 120 m depth)	
	ii) Pump room 2.4m x 1.8 m - 3 Nos	
	iii)Submersible pumpset - 600 lpm x 109 m - 30 HP - 3 Nos	

	<p>iv) Connecting main - 160mm OD PVC - 5300 m 150mm DI K7 - 24m BY pass main - 160mm OD PVC 4 KSC - 725 m 150mm DI K7 - 48m</p>
	<p>v) Construction of compound wall - 30m x 20m - 4 Nos</p>
	<p>vi) Iron removal plant - 1 No</p>
	<p>vii) Collection sump - 0.40 LL - 1 No</p>
	<p>vii) Open well submersible pumpset - 600 lpm x 25m - 7.50 HP</p>
	<p>viii) Branch pumping main to proposed 1.0 LL SR at Burgeespet - 110mm PVC 4 KSC - 20m</p>
	<p><b>B) Rejuvenation works</b></p>
	<p>i) Flushing of Ex BW s and reerection of pumpsets- 6 Nos</p>
	<p>ii) Replacement of existing submersible pumpsets - 6 Nos 600 lpm x 109 m - 30 HP- 6 Nos</p>
	<p>iii) Rejuvenation of existing Iron removal plant - 12 Nos</p>

<b>B)</b>	<b>Bhuvanagiri T.P</b>		
<b>i)</b>	<b>Tapping sump</b>	<p><b>Sump - 0.75 LL</b> O.W Submersible p'set - 746 lpm x 23m - 5HP- 100% stand bye Pump room - 4m x 3m <b>Sub branch main &amp; Feeder mains to SRs:</b> 200mm OD PVC 4 KSC - 30m 160mm OD PVC 4 KSC - 963m 140mm OD PVC 4 KSC - 1940m 110mm OD PVC 4 KSC - 172m 90mm OD PVC 4 KSC - 950m 63mm OD PVC 4 KSC - 5833m</p>	
<b>ii)</b>	<b>Service Reservoirs</b>	<b>Existing</b>	<p><b>Proposed</b></p> <p><b>Total</b></p>

		0.10 LL - 1 No 0.3 LL - 6 Nos 1.00 LL - 1 No 1.50 LL - 1 No Total - 9 Nos	2.00 LL - 1 No 4.00 LL - 1 No Total - 2 Nos	11Nos
<b>iii)</b>	<b>Distribution system</b>	<b>Existing</b>	<b>Proposed remodelling</b>	
		28.870 Km	9.193 Km	
<b>C)</b>	<b>Parangipettai T.P</b>			
<b>i)</b>	<b>Tapping sump</b>	<b>Sump - 5.55 LL</b> O.W Submersible p'set - 2217 lpm x 50m - 35HP- 100% stand by Pump room - 4m x 3m <b>Sub branch main &amp; Feeder mains to SRs:</b> 250mm DI K7 -5168 m 150mm DI K7 - 373m 200mm OD PVC 4 KSC - 1709m 160mm OD PVC 4 KSC - 2088m 140mm OD PVC 4 KSC - 430m 90mm OD PVC 4 KSC - 4091m 63mm OD PVC 4 KSC - 490m		
<b>ii)</b>	<b>Service Reservoirs</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
		0.3 LL - 1 No (Damaged) 1.00 LL - 5 Nos 3.0 LL - 1 No 4.0 LL - 1 No Total - 7 Nos	0.30 LL - 3 Nos	10 Nos
<b>iii)</b>	<b>Distribution system</b>	<b>Existing</b>	<b>Proposed remodelling</b>	
		28.935 Km	19.311 Km	
<b>D)</b>	<b>Rural Habitations</b>			
<b>i)</b>	<b>Service Reservoirs</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>

		0.10 LL - 207Nos 0.15 LL - 18 Nos 0.30 LL - 470Nos 0.60 LL - 146Nos 1.0 LL - 22Nos Total - 863 Nos	Nil	863 Nos
<b>ii)</b>	<b>Distribution system</b>	<b>Existing</b>	<b>Proposed</b>	
		1136.686 Km	Nil	
<b>11</b>	Installation cost Rs.	Rs.260.54 Crore		
<b>12</b>	Annual maintenance cost Rs.	Rs.6.00 Crore		
<b>13</b>	Cost per 1000 litres	Rs.29.10/-		
<b>14</b>	Per capita cost	Rs.4271/-		