

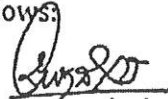
Proceedings of the Technical Committee Meeting held on 18/02/2019 in the
Board Room, KUIDFC, Bangalore.

Members Present as per Annexure

Subject No.1: Up-scaling of 24x7 Water Supply Scheme to Belagavi city - reg.

In the beginning, the Chairman welcomed all the members & Consultants. He has briefed about the upscaling project for water supply scheme to the three cities- Belagavi, Kalburagi and Hubballi Dharwad. Chairman has brought to the notice of the committee members about the formation of the Technical Committee and their mandate and the background of the project comprising Belagavi, Kalaburagi and Hubballi-Dharwad.

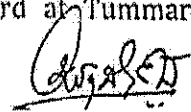
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20/02/19 ✓
- a) TC committee proceedings held on 29.11.2014 was briefed. 24x7 water supply to Hubballi-Dharwad was awarded to M/s. Ranhill Utilities Sdn. Bhd. (Malaysia) Z&AP, Antonaropoulos SA (Greece) IL &FS Water Ltd. (India) under PBMC contract. However, because of the failure in taking over the project by the Operator the contract was terminated. At the same time, providing 24x7 water supply to Belagavi and Kalaburagi were tendered but could not be awarded to the agency due to poor response / high percentage by the bidders. Because of the failure of PBMC model Department / Government has decided to change the structure from PBMC to DBOT contract.
 - b) The GOK have issued vide GO No. UDD/278/PRJ/2018 dated 22.10.2018 and accorded its sanction to take up the project on DBOT model with estimated cost of Rs. 427 crores, Rs. 489 crores and Rs. 763 crores for Belagavi, Kalaburagi and Hubballi-Dharwad respectively.
 - c) The ULB have authorized KUIDFC to implement the scheme
 - d) In 2012 M/s. TCE have prepared the project report for all the 3 cities. The updation of the project report and cost was also entrusted to M/s. TCE, as desired by the World Bank.
 - e) In the DBOT model the project is proposed to be implemented in 12 year period, of which Design Build period is 5 years with O&M of 7 years, called sustaining period.
 - f) Presently KUWS&DB is maintaining the water supply schemes to all the three cities. The operator is expected to take up the O& M of the existing water supply scheme within six months from the date of agreement and he has to maintain the scheme for next 11½ years. He has explained the DBOT model considered in all the three cities.
 - g) The chairman has also indicated that the project cost worked out, may vary from the actual bids depending on risk perception by the bidder.
 - h) Intended Socio Economical Benefits of the Scheme are as follows:



- i. Overall Improvement and increase in Bulk Water Supply
- ii. Assured continuous pressurised water supply with minimum residual pressure of 7.0 m
- iii. Reduction in distribution losses (UFW)
- iv. No storage is required at consumer end and reduction in wastage of water
- v. Energy savings at consumer end
- vi. Improvement in water quality thus less chances of water borne diseases
- vii. Decrease in per capita consumption
- viii. Improvement in school attendance thus increase in literacy rate
- ix. Efforts for fetching of water by women will help in gender discrimination and facilitation of earnings
- x. Improvement in collection efficiency

M/s. TCE have presented the proposal for all the three cities on the following lines.

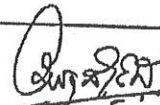
- Project Background
 - Existing water supply system
 - Population projection and water demand estimation
 - Design parameters adopted for the scheme
 - Demand - Gap analysis and requirement for the horizon years 2031, 2041 and 2053
 - Proposals of the new schemes
 - Design of feeder main and distribution system
 - Capital cost estimate and O&M estimate
 - Performance of demo zones
 - Socio economical benefits of the scheme
- a) Under KUWASIP, water supply scheme to Belagavi City in 10 wards (6 full wards and 4 partial wards) is completed during 2008 and successfully functioning. Based on the experience of successful demo zones, it is proposed to extend 24x7 water supply scheme to the entire city.
 - b) The Consultants have explained the sources of water considered are Hidkal and Rakkasakoppa reservoirs.
 - c) The population of the city is 4,88,157 as per 2011 census. There are 58 revenue wards in the city. There are 67,813 house service connections. Presently 109.90 MLD water is being supplied from both the sources.
 - d) 54.45 MLD of water is being pumped from Rakkasakoppa reservoir with gravity main of 15.29 km of 1100 mm dia PSC pipe lines and 3.28 km 1000 mm dia DI pumping main to 68.20 MLD WTP at Laxmitech. Pure water is being pumped to service reservoirs & distribution system.
 - e) 54.54 MLD of water is drawn from Hidkal reservoir with three stage pumping one at Jackwell, second one at Kundargi and third at Tummaraguddi upto



Chandur Hillock GLR of total length 29.47 km PSC/MS transmission line. The raw water from Chandur Hillock reservoir is being supplied by gravity main to WTP at Basavanakolla and Laxmitek. The treated water from Basavanakolla WTP is being fed to service reservoirs & distribution system by gravity.

- f) The projected populations of the city are 702268, 817298 & 967221 for the years 2031, 2041 & 2053 respectively. The per Capita Supply considered is 135 lpcd with additional 15% losses. The requirement of Bulk Water Supply will be 26.57 MLD (pure water-10.05MLD & raw water-16.52 MLD). Accordingly, the raw water demand is worked out as 138.90 MLD, 157.40 MLD & 180.70 MLD respectively for the above period.
- g) Twenty two hours of pumping is considered in the present project proposal. Pure water feeder mains and distribution system are proposed for the year 2053. WTP is proposed for 2031 requirement. Service reservoirs are proposed for 2041 requirement, if the existing Service Reservoirs are not sufficient for 2031 requirement.
- h) The proposed works under the present scheme is replacement of existing Raw Water PSC pipeline with new 1168 mm (OD) 9.5 mm thick MS Pipeline from Hidkal for a length of 9.04 km. A new WTP of capacity 31 ML in 22 hours at Basavanakolla along with recycling of water and sludge drying beds is considered. 64.94 km of clear water transmission mains of MS/DI/HDPE material, 16 No. of ELSRs of capacity 0.5 ML to 2.0 ML of total capacity 19.50ML. 3 No. of GLRs, new clear water pumping stations at Udyambag, KPTCL & Ganeshpur along with replacement of pumping machinery at existing Malmaruthinagar with 900 km length of distribution network of DI/HDPE material, 85000 HSCs, SCADA system for monitoring, rehabilitation of raw water pumping station, WTPs, ELSRs, GLSRs, clear water pumping station at Malmaruthi are considered in the present estimate. A lumpsum provision for construction of weir across Ghataprabha River downstream of Hidkal dam is considered to head up the availability of the water near intake works. Crop compensation, cost of preparation of SDIP by the operator, additional barricading, environmental & social assessment, establishment of lab for quality control & testing, manpower deployment during DB period, training, supervision are considered in the project cost.
- i) The abstract of the cost estimate is as follows:

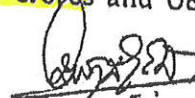
ABSTRACT OF ESTIMATED COST - BELAGAVI 24X7 UPSCALING PROJECT			
Sl No.	Items	Quantity / No / Capacity	Amount (Rs in Lakhs)
1	Raw Water Transmission Mains		
1.1	Replacement of Existing Raw Water PSC pipeline with new MS Pipeline for Hidkal Scheme	1168 mm dia.(OD) 9.5 mm wall thickness MS Pipeline of 9040 m length	2501.81
2	Raw Water Pumping Stations and GLRs		
2.1	Rehabilitation of Raw Water Pumping Stations at Hindalga and GLRs		599.26



3	Water Treatment Plants (WTPs)		
3.1	Proposed WTP at Basavankolla	1 no of 34 MLD (31 ML output in 22 hours)	865.00
3.2	Interconnection of Pipelines for proposed WTP at Basavankolla	(a) Inlet Pipe to WTP aerator (b) Outlet Pipe to WTP filter to clear water GLR (c) Pipeline from Clear Water GLR outlet to clear water transmission main	47.92
3.3	Rehabilitation of WTP at Laxmitek including Sludge Drying bed and Sludge Storage Tank	3 WTP units / total capacity of 68.2 MLD	410.50
3.4	Sludge Drying bed and Sludge Storage Tank for WTP - Basavanakolla		29.53
4	Clear Water Transmission Mains		
4.1	Proposed Clear Water Transmission Mains from WTPs to different Service Reservoirs	HDPE, DI and MS - 65 km length	7408.66
5	Service Reservoirs - ELSRs		
5.1	Proposed ELSRs	16 Nos (capacity 5 to 20 LL)	3340.12
5.2	Demolition of ELSR	1 No.	1.50
5.3	Major Rehabilitation of ELSRs Lumpsum	3 Nos.	150.00
5.4	Minor Rehabilitation of ELSRs	4 Nos.	51.60
6	GLSRs and Sump		
6.1	Proposed Sump @ Ganeshpur, Udyambag and KPTCL for distribution to ELSR	3 Nos 0.6, 0.8 & 0.35 ML	261.18
6.2	Rehabilitation of GLSRs	5 Nos (based on location)	211.97
7	Clear Water Pumping Stations		
7.1	Proposed Clear Water Pumping Station at Udyambag, KPTCL, Ganeshpura	3 No	219.13
7.2	Rehabilitation of Clear Water Pumping Station at Malmaruthi	1 Nos	23.56
8	Distribution Network		
9	House Service Connections (HSC)	900 km length	15057.18
10	SCADA System	85000 nos	7811.92
10.1	Civil room	6 no. of Operator rooms at GLSRs and CCC	42.00
10.2	DMA Pressure Transmitters	74 DMA (One point near outlet of DMA and 2 points for Average Zonal Pressure and Critical Pressure Point)	1453.44
10.3	SCADA Equipment		203.57
10.4	Customer Care Center building	5 Nos customer service building	61.99
11	DI Sluice valves, DI Butterfly valves and Specials at Inlet & Outlet- ELSRs & GLSRs		183.71

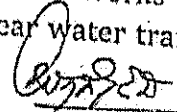
12	Construction of Weir at Hidkal Reservoir	LS	538.00
13	Crop compensation to farmers Right of Access (ROA) for laying of Raw Water Pipeline	Total infrastructure Cost	41473.56
		Provisional amount	50.00
14	Preparation of DPR by the Operator including Survey, Geotechnical investigation, Water Sample test, other surveys etc.		171.20
15	Barricading cost and other necessary components		30.37
	a) Environmental & Social Assessment includes ESMP		115.38
16	Cost towards Establishment of laboratory for material Quality Control testing	LS	20.00
17	Capital Works Manpower Deployment Charges (55% of the total cost of this component)		818.99
18	Cost towards training, supervision, other safety measures, landscaping, miscellaneous, contingency and rounding off	Provisional amount	20.50
Total Project Cost			42700.00

- j) KUWS&DB have taken up linked investment for the project of replacement of existing pump-sets from Hidkal to Tummaraguddi to increase the raw water pumping to 81.72 MLD.
- k) However, it was also brought to the notice of the committee, the feasibility of pumping water directly to Tummaraguddi avoiding Kundargi pumping station under consideration of the Board which is also a suggestion from the WB technical team.
- l) The Chairman has also requested KUWS&DB to examine the feasibility of providing additional pumps in both Jackewell and Tummaraguddi pumping stations to accommodate for pumping additional water during distress in Rakkasakoppa reservoir as desired by World Bank Technical Team.
- m) The Chief Engineer, KUWS&DB, Kalaburagi has suggested to consider daily 20 hours of pumping instead of 22 hours. However, other members have felt that daily 22 hours pumping as considered in the project report is reasonable, it was approved to adopt the same for all the three schemes. Keeping in view of that the scheme is designed for 2041 and the present necessity.
- n) The Chief Engineer, Kalaburagi has suggested to examine for inclusion of V-wire type filter back wash instead HDPE pipes in all three towns for proposed WTPs and in case of rehabilitation.
- o) After detailed discussions, the committee have agreed for the technical clearance of the project report with capital cost of Rs. 427 crores and O&M cost of Rs. 280.08 crores for 11½ years



Subject No.2: Upscaling of 24x7 Water Supply Scheme to Kalburgi city

- a) Under KUWASIP, water supply scheme to Kalburgi City in 11 wards (4 full wards and 7 partial wards) is completed during 2008 and successfully functioning. Based on the experience of successful demo zones, it is proposed to extend 24/7 water supply scheme to the entire city.
- b) The Consultants have explained that the sources of raw water considered are Bhima River and Bennithora River and Dam. The third source Bhosga is not considered, as it is not a reliable source and is almost dry as of now.
- c) The population of the city is 5,33,587 as per 2011 census. There are 55 revenue wards in the city, the water supply scheme is being maintained by KUWS&DB. There are 57,103 house service connections. Presently 71.20 MLD water is being supplied, from both the sources.
- d) 51.20 MLD of water is being drawn from Bhima river with transmission main of 19.20 km of 1118 mm dia MS pipe lines, upto Kotunur IPS and further 7.90 km of 914 mm dia MS pumping main upto Shor gumbaz WTP. 40 MLD WTP at Shorgumbaz & 11.20 MLD WTP at Kotnur and pure water feeder mains, Service reservoirs & distribution system are serving the population.
- e) 20.00 MLD of raw water is being pumped from Bennithora river head works located at Kurikotta through 10.50 km of 600 mm dia MS pipeline upto BP tank located at Salam Tekdi. Gravity main from the BPT to Old filter bed to a length of 9.70 km of 600 mm dia to WTP of 29.0 MLD capacity at Old filter bed. Clear water is fed through feeder mains to service reservoirs & distribution system.
- f) The projected populations of the city are 807232, 960318 & 1160034 for the years 2031, 2041 & 2053 respectively. The Per Capita Supply considered is 135 lpcd with additional 15% losses. The requirement of Bulk Water Supply will be 17.65 MLD. Accordingly, the raw water demand is worked out as 146.00 MLD, 170.20 MLD & 201.70 MLD respectively.
- g) Twenty two hours of pumping is considered in the present project proposal. Pure water feeder mains and distribution system are proposed for the year 2053. WTP is proposed for 2031 requirement. Service reservoirs are proposed for 2041 requirement, if the existing Service Reservoirs are not sufficient for 2031 requirement.
- h) The Consultant have explained that Bennithora reservoir source is considered in addition to the existing scheme from Bhima river as source. They have indicated that two options for head works are worked out, the first one was head works inside the reservoir and the second one is drawl of water from Right Bank canal. Considering the ease of construction and economical consideration and the second option is proposed. The details are also shared with the World Bank Technical Team.
- i) The proposed works under the scheme are Head works at Bennithroa reservoir RBC with necessary pumping machinery, Raw Water pumping main of 1342 mm dia MS pipe line of 10 mm thick of length 19.20 km from head works to WTP at Salam Tekdi, the WTP of capacity 51 ML in 22 hours, clear water transmission



from WTP to SRs of 31.24 km length of MS/DI/HDPE pipe lines, 11 No. of ELSRs of capacity 0.5 ML to 2.0 ML, 1 No. of GLRs, 2 nos of GLSR at Demozone & University, 2 nos of sump ,clear water pumping stations at Basavangar & Dhanagarwad, 883 km length of distribution network of DI/HDPE material, 82000 HSCs, SCADA system for monitoring, rehabilitation of raw water pumping stations, WTPs, ELSRs, GLSRs, 5 nos of clear water pumping stations, crop compensation, SDIP preparation by the operator, additional barricading, environmental & social assessment, establishment of lab for quality control testing, manpower deployment during DB period, LS provision for training, supervision etc.,

j) The abstract of the cost estimate is as follows.

ABSTRACT OF ESTIMATED COST - GULBARGA 24X7 UPSCALING PROJECT			
Sl. No.	Items	Qty/No/Capacity	Amount (Rs In Lakhs)
1	Intake Structures- (Off take from right bank canal of Bennithora Reservoir)		
1.1	Intake Structures within the dam of Bennithora - Civil Works		2127.00
1.1(a)	Intake Structures in the Right Bank Canal (RBC) of Bennithora - Civil Works (This option is considered in the estimate after thorough discussions considering pros & cons)		430.58
1.2	Pumping machineries and electromechanical equipments		913.09
2	Raw Water Transmission Mains		
2.1	Laying of proposed raw water transmission main from the proposed Jack well at Bennethora reservoir RBC to the proposed WTP at Salam Tekdi	1342 mm dia OD. 10 mm wall thickness MS Pipeline of 19200 m length	6418.91
3	Raw Water Pumping Stations		
3.1	Rehabilitation of Raw Water Pumping Station		616.00
4	Water Treatment Plants (WTPs)		
4.1	Proposed WTP at Salam Tekdi 51 ML (55 MLD in 22 hrs operation)	55 MLD	1345.92

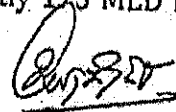
4.2	Interconnection of Pipelines for proposed WTP at Salam Tekdi	(a) Inlet Pipe to WTP aerator & BPT (b) Outlet Pipe to WTP filter to clear water GLR (c) Pipeline from Clear Water GLR outlet to clear water transmission main	36.16
4.3	Rehabilitation of WTP all three existing WTPs		725.50
5	Clear Water Transmission Mains		
5.1	Proposed Clear Water Transmission Mains from WTPs to different Service Reservoirs	HDPE, DI and MS - 31.24 km	4355.61
6	Service Reservoirs - ELSRs		
6.1	Proposed ELSRs	11 Nos.	2007
6.2	Demolition	4 Nos.	6.72
6.3	Rehabilitation of existing ELSRs	9 Nos.	173.5
7	GLSRs and Sump		
7.1	Proposed GLR, GLSR & Sump	(Including 1no. 5ML GLSR @ Salam Tekdi)	658.39
7.2	Rehabilitation of existing GLSRs	1 Nos.	16.55
8	Clear Water Pumping Stations		
8.1	Proposed Clear Water Pumping Stations	2 Nos.	88.04
8.2	Rehabilitation of Clear Water Pumping Stations	5 Nos.	110.65
9	Distribution Network	883 km	15841.43
10	House Service Connections (HSC)	82000 nos	7527.26
11	SCADA		
11.1	DMA pressure transmitters	115 nos	409.46
11.2	SCADA Equipment		2039.40
11.3	Customer Care Center building	5 Nos customer service building	61.99
12	DI Sluice valves, DI Butterfly valves and Specials at Inlet & Outlet - ELSRs & GLSRs		65.97
Total Infrastructure Cost			43848.18
13	Crop compensation to farmers - Right of Access (ROA) for laying of Raw Water Pipeline	Provisional amount	50.00
14	Preparation of DPR by the Operator including Survey, Geotechnical investigation, Water Sample test, other surveys etc.		150.81
15	Barricading cost and other necessary components		76.72

	a) Environmental & Social Assessment includes ESMP		153.47
16	Cost towards Establishment of laboratory for material Quality Control testing	LS	20.00
17	Capital Works Manpower Deployment Charges (55% of cost of this Item)		980.34
18	Cost towards training, supervision, other safety measures, landscaping, miscellaneous, contingency and rounding off	Lumpsum amount	20.50
TOTAL PROJECT COST			45300.0

- k) However, the Chief Engineer, KUWS&DB, Kalaburgi has suggested to consider the first option of providing head works within the reservoir for facilitating drawl of water below the dead water storage and the availability of water throughout the year, in order to make the scheme sustainable.
- l) The Chief Engineer Kalburagi has informed the committee, that the construction of new ELSR at Godutai Nagar is started recently and the same may be incorporated in the existing distribution system. The committee instructed the consultant to incorporate in project report
- m) Further Chief Engineer, KUWS&DB, Kalaburagi has suggested to consider flow regulating valves in addition to pressure control valves to facilitate equitable distribution of water throughout the DMA. The committee recommended to examine the feasibility of adopting the same for all the three schemes.
- n) Chief Engineer, KUWS&DB, Kalaburagi has suggested to incorporate the treatment process to remove the colour in the treated water.
- o) After detailed discussions, the committee agreed for technical clearance with RBC as the drawl point of the project with capital cost of Rs. 453 crores and O&M cost of Rs. 289.23 crores for 11½ years.

Subject No. 3: Upscaling of Water Supply Scheme to Hubballi-Dharwad

- a) Under KUWASIP, water supply scheme to Hubballi-Dharwad City in 8 wards (6 full wards and 2 partial wards) is completed during 2008 and successfully functioning. Based on the experience of successful demo zones, it is proposed to extend 24/7 water supply scheme to the whole city.
- b) The Consultants have explained that the source of water considered are existing Renukasagar reservoir across Malaprabha river. The other source Neersagar is not considered, as it is not reliable and present it is dry.
- c) The population of the city is 9,43,788 as per 2011 census. There are 67 revenue wards in the city, the water supply scheme is being maintained by KUWS&DB. There are 1,54,438 house service connections. Presently 175 MLD raw water is being supplied, from the Renukasagar reservoir.



- d) 175 MLD of raw water is being drawn from Malaprabha reservoir with raw water transmission main of 29.20 km of 1168 mm dia & 965 mm dia MS pipe lines, from Saudatti head works upto Aminbhavi WTP of capacity 73.80 MLD & 68.00 MLD. The treated water is pumped to Dharwad & Hubballi with 813mm dia of 12 km CI/MS Steel cylinder RC pipe line & 1168 mm dia of 23 km MS pipe line length of pure water rising mains respectively. Further pure water will be drawn to 23 ELSRs & 38 GLSRs through pure water feeder mains, and further water will be distributed through existing distribution networks.
- e) The projected populations of the city are 1354085, 1580927 & 1877555 for the years 2031, 2041 & 2053 respectively. The Per Capita Supply considered is 135 lpcd with additional 15% losses. The requirement of Bulk Water Supply will be 23.98 MLD. Accordingly, the raw water demand is worked out as 242.94 MLD, 278.97 MLD & 326.08 MLD respectively.
- f) Twenty two hours of pumping is considered in the present project proposal. Pure water feeder mains and distribution system are proposed for the year 2053 if the new components are taken up. WTP is proposed for 2031 requirement. Service reservoirs are proposed for 2041 requirement, if the existing Service Reservoirs are not sufficient for 2031 requirement.
- g) The proposed works under the scheme are Intake well, connecting pipe line, pumping machinery at existing Jackwell cum Pump house, 1219 mm dia MS pipe line for a length of 29.20 km raw water rising main, 43.00 ML in 22 hours capacity new WTP at Amminbhavi, clear water pumping main of 1219 mm dia of length 19.20 km from WTP to Rayapur GLSR, 43 km of DI/MS clear water feeder mains, 10 ELSRs, 11 GLSRs, 1690 km length of distribution network of MS/DI/HDPE material, 145700 HSCs, SCADA system for monitoring, replacement of clear water pumping machinery to Dharwad, Rehabilitation WTPs, ELSRs, GLSRs, 1 no. of clear water pumping stations, crop compensation, SDIP preparation from the operator, additional barricading, environmental & social assessment, establishment of lab for quality control testing, manpower deployment during DB period, LS provision for training, supervision etc.,
- h) The abstract of the cost estimate is as follows.

Summary of cost estimates for 24X7 upscaling project - Hubballi Dharwad			
Sl No.	Items	Quantity / No / Capacity	Amount (Rs in Lakhs)
1	New Intake at Saudatti		
1.1	Civil works - proposed intake well and connecting pipeline coffer dam and other auxiliary works		713.81
1.2	Intake pipeline along with all allied works		325.83
2	Raw Water Transmission Mains		
2.1	Proposed Raw Water Transmission mains from Saudatti to Amminabhavi	1219mm dia MS pipe 10 mm thick for a length of 29.2 km	8841.45

2.2	Saddle supports for Back water crossing (550m)		124.97
3	New Raw Water Pumps at Saundatti with allied works		592.84
4	Water Treatment Plants (WTPs)		
4.1	Proposed WTP at Amminbhavi	1 no of 43 MLD	1791.14
4.2	Rehabilitation of WTP at Amminbhavi, clear water reservoirs, pumphouse & other auxiliary works	2 WTPs of capacities 73.8MLD & 68MLD, 2 nos. clear water reservoirs	66.94
4.3	Pumphouse construction for existing (back wash & sludge pumps) for both existing WTPs	Back wash from WTPs of 73.8 MLD & 68MLD	31.12
5	Clear Water Transmission Mains		
5.1	Proposed Clear Water Transmission Mains from WTPs to different Service Reservoirs	1219mm dia MS pipeline for a length of 19.2 km from Amminbhavi to Rayapur GLSR & other clear water mains for a length of 43 km dia ranging from 150mm to 864mm DI/MS pipes	9122.40
6	Service Reservoirs - ELSRs		
6.1	Proposed ELSRs	10 Nos (capacity 5 to 25 LL) Total capacity 12ML	2103.21
6.2	Rehabilitation of ELSRs	5 Nos	182.59
7	GLSRs		
7.1	Proposed GLSR	11 Nos of total capacity of 21.5ML	1719.16
7.2	Rehabilitation of GLSRs	8 Nos (based on location)	279.66
7.3	Rehabilitation of existing structures		518.92
8	Clear Water Pumping Stations		
8.1	Proposed Clear Water Pumping Station at Aminbhavi for Rayapur GLSR (Navanagar)	1 No	377.37
8.2	Replacement of existing clear water pumps and motors of Dharwad of 1404 HP along with allied works	3 Nos @ Amminbhavi	355.52
9	Distribution Network	1690 km length HDPE / DI / MS dia from 63mm to 711mm	30692.37
10	House Service Connections (HSC)	145700 nos	13403.59
11	SCADA System		
11.1	Civil room	1 no	43.73

11.2	As per equipment		26011.53
11.3	Customer Care Center Building	It has customer service building	236.64
12	Valves replacement at Retaining CHTs, GLSBs		140.66
		Total Infrastructure Cost	74353.45
13	Crop compensation to farmers Right of Access (ROA) for laying of Raw Water Pipeline	Insurance amount	35.92
14	Preparation of DPR by the Operation including Survey, Geotechnical investigation, Water Sample test, other surveys etc.		222.26
15	Barriering cost and other necessary components wherever additional requirements.		57.37
	a) Environmental & Social Assessment includes ESMP, RSA		200.00
16	Cost towards Establishment of laboratory for material Quality Control testing	LS	20.00
17	Capital Works Manpower Deployment Charges (55% of the total cost of this component)		1198.95
18	Cost towards training, supervision, other safety measures, landscaping, miscellaneous, contingency and rounding off	Provisional amount	210.00
		Total Project Cost	76300.00

- i) The Chief Engineer KUWS&DB, Dharwad has informed that the clear water pipe line from Amminbhavi WTP to Dharwad is having leakages problems frequently and the same will have to be addressed in the project report and he has also agreed to furnish the details of leakages. The committee have recommended to include replace suitable MS pipes where there are leakages in the pipe lines.
- ii) The committee have agreed for the technical clearance of the project report with capital cost of Rs. 763 crores and O&M cost of Rs. 444.81 crores for 11½ years.
- k) After detailed discussions, the committee have also suggested to go for exhaustive socio economic survey in all the three cities for assessing the impact of the project before and after the implementation.



(G.M. Madegowda)

Chief Engineer (KUWSMP) &
Chairman, Technical Committee (KUWSMP)