

PROCEEDINGS OF THE CHIEF EXECUTIVE OFFICER
KERALA INFRASTRUCTURE INVESTMENT FUND BOARD,
THIRUVANANTHAPURAM

Present : Dr. K. M. Abraham CFA

ORDER NO : WRD025-06-PA-01 Dated 13.11.2018

Sub:-KIIFB Project: TRAN 10: WRD025-06 - WSS to Ayyappankovil Panchayath in Idukki district - Approval and Sanction of funding – Orders Issued.

Read:-1. GO (Rt) No.34/2018/WRD dated 17.01.2018

2. Minutes of the 9th Executive Committee meeting of KIIFB held on 24/10/2018.

ORDER

In the Budget Speech 2017-18, Government had announced **Ayyappankovil Drinking Water Project in Idukki district** as a project funded by KIIFB. Administrative Sanction for the project has been accorded entrusting the execution of the work to the Kerala Water Authority [KWA], [Special Purpose Vehicle] vide Government Order read above.

The Detailed Project Report, subsequently submitted by the Kerala Water Authority [KWA], was verified for adherence to KIIFB stipulations and appraised for compliance, as per GO(Ms) No.315/16/Fin dated 08.08.2016 and found that the project satisfied all the technical and financial parameters insisted upon by KIIFB.

The Appraisal Report was placed in the 9th meeting of the KIIFB Executive Committee for its consideration and approval, abiding by the 29th Board Meeting's decision that funding approval up to and including Rs.100 crore in cases of Projects without revenue streams would be the prerogative of the Executive Committee.

Thus, the 9th Executive Committee that met on 24th October 2018, after considering the proposal and appraisal report approved the project. Accordingly, sanction is accorded for funding the project **TRAN-10: WRD025-06 - WSS to Ayyappankovil Panchayath in Idukki district**, approved vide Government Order read above, to be implemented by the Kerala Water Authority [KWA] [Special Purpose Vehicle]; limiting the proposed outlay to **Rs. 46.424 Crore (Rupees Forty-Six Crore Forty-Two Lakh and Forty Thousand Only)** against the original proposed of Rs.47.00 crore, with the following stipulations:

1. The tripartite agreement, as per KIIFB stipulations shall be entered into, after which Technical Sanction shall be mandatorily issued by the TS authority. The Technical sanction by competent authority is mandatory before schedules are added to the Tripartite agreement.
2. The detailed estimate submitted shall be reviewed by the TS authority considering the applicability and the correctness of items in Section 6 of DAR, the relevance of Cost Index and adherence of latest PRICE schedule. (GST shall be applicable as per the prevailing norms and conditions.)
3. The cost provisions for work alone shall be utilized for execution of work. The savings or

anticipated savings from LA, QC, demolition etc. shall not be re-appropriated for meeting expenditure of work proper.

4. While entrusting the maintenance activities to the contractor, it shall be ensured that the obligation under defect liability shall be performed without any additional cost. Hence no maintenance expenditure is considered under the original work.
5. The identified revenue streams if any shall be communicated while signing the tripartite agreement.
6. The required statutory clearances as applicable for the project shall be obtained as soon as the Technical Sanction is obtained and prior to the commencement of work.
7. The Detailed Appraisal Report of KIIFB of the project is appended for reference and it shall be taken into consideration by the TS Committee while according Technical Sanction to the Project.

Dr. K. M. Abraham CFA
Chief Executive Officer

To

The Secretary to Government, Water Resources Department
The Managing Director, Kerala Water Authority [KWA], Thiruvananthapuram
The Principal Secretary (Finance)
F&A Division, KIIFB
Inspection Authority (AIW/TIW), KIIFB
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ASST. PROJECT MANAGER



Defining the Future

DETAILED APPRAISAL REPORT

**DETAILED ENGINEERING REPORT FOR
WSS TO AYYAPPANKOVIL PANCHAYATH OF IDUKKI DISTRICT**

Rep No. AR-2018-TRAN10-WRD-025-06



1. SALIENT FEATURES

1.1 The project details in brief:

Name of Project	WSS to Ayyappankovil panchayath in Idukki District
District	Idukki
Project outlay	Rs. 47.50 Crore
Implementing Agency/SPV	Kerala Water Authority (KWA)
Report Prepared by	Kerala Water Authority (KWA) Project Division, Kattappana
Budget speech reference & budget provision	KIIFB Proposal 2017-2018, Rs. 25.00 Crore
Data reviewed	Detailed Engineering Report for the WSS to Ayyappankovil Panchayath in Idukki District
Source	Periyar River near Thonithady
Intake Structures	Near Thonithady
Raw water pump set	PART II - 275 HP Turbine pump set (2 Nos – 1 standby)
Water Treatment Plant (WTP)	Existing
Clear Water Pumping Main (CWPM)	PART 1 200 mm DI Pipe, 6034m (from TP sump to Edapookkalam) 200 mm DI pipe, 1200 m (from Edapookkalam to Kavanthy) 200 mm DI pipe, 2550 m (from Kavanthy to Udayagiri) 80 mm GI, 310m (from TP sump to Alady GLSR) PART II 80 mm GI – 1177 m (From sump to Nariyampara)
Clear water pump set	PART I 50 Hp (2 Nos), 10 Hp CF (2 Nos) (Sump at treatment plant) 60 Hp Centrifugal (2 Nos) (Sump at Edapookkalam) 45 Hp CF (2 Nos) (sump at Kavanthy) PART II 160 Hp (2 Nos), 10 Hp CF (Sump at Treatment plant) 40 Hp CF (2 Nos) (Sump at Kalthotty) 12.5 HP (at intermediate sump toward Mulakamedu & Kochuthovala)
Service Reservoirs	PART I 8.00 LL capacity GLSR at Alady 7.00 LL capacity GLSR at Udayagiri
Booster Sump cum pump house	PART I – 1.50 LL at Edapookkalam 1.50 LL at Kavanthy PART II - 1.00 LL at Nariyampara



Raw water Pump sets	PART II - RW VT pump set-275HP (2Nos) Centrifugal Pump set at WTP site -67HP- 2Nos
Transformers	PART II 500 KVA at Thonithady 315 KVA at TP Alady 160 KVA at Intermediate sump Nariyanpa 100 KVA at Kalthotty sump
Distribution System	PART I Zone VIII – 51558 m Zone IX – 36545 m

1.2 The proposal deals with the WSS to Ayyappankovil panchayath including the extension of the distribution system to the uncovered areas of Ayyappankovil Panchayath. The scheme is intended to provide water to meet the demand of three local bodies in Idukki district.

1.3 The project is proposed to meet the water demand of 3 panchayats – Ayyappankovil, Kattappana and Kanchiyar panchayaths.

1.4 The following scheme components are proposed:

1. Part I – Extension of Pipeline

- Clear water Pumping Mains (10,094.00 m)
 - 200 mm DI Pipe, 6034m (from TP sump to Edapookkalam)
 - 200 mm DI pipe, 1200 m (from Edapookkalam to Kavanthy)
 - 200 mm DI pipe, 2550 m (from Kavanthy to Udayagiri)
 - 80 mm GI, 310m (from TP sump to Alady GLSR)
- Distribution Mains (88,000.00 m): zone VIII (51.558 km), Zone IX (36.54km)
- Construction of two sumps cum booster pump:
 - 1.5 LL sump & 45 HP pump at Kavanthi
 - 1.5 LL sump & 60 HP pump at Edapookkalam
 - GLSR – 8 LL GLSR near WTP & 7.00 LL GLSR at Udhayagiri
- Clear Water Pump Sets –
 - 50 Hp (2 Nos), 10 Hp CF (2 Nos) (Sump at treatment plant)
 - 60 Hp Centrifugal (2 Nos) (Sump at Edapookkalam)
 - 45 Hp CF (2 Nos) (sump at Kavanthy)

2. Part II - Balance Work of ongoing WSS



- Rearrangement of Pumping & gravity mains (16,607.00 m)
- Construction of check dam – check dam of height 1.8 m and 180 m length at 70m from downstream side of intake well
- Construction of GLSR at Udayagiri
- Booster pump house – 1 LL capacity at Nriyampara at a distance of 4830m from Kalthotty top
- Raw Water Pump sets – 275 HP VT pump set of 2 Nos at intake well (1 standby)
- Clear Water pump sets –
 - CG Type of 160 HP at TP sump to Kalthotty and intermediate sump Labbakada GLSR (2 Nos – 1 standby)
 - CG type of 10 HP at TP sump to Alady GLSR (2 Nos – 1 standby)
 - CG type 40HP at Kalthotty sump pump house for pumping towards Meppara GLSR (2 Nos – 1 standby)
 - CG type 50 HP at proposed intermediate sump towards Mulakamedu & Kochuthovala (2 Nos – 1 standby) and 12.5 HP CG pump towards Nariyampara GLSR
- Clear water pumping main – 80mm GI from intermediate sump to Nariyampara top for a length of 1177 m
- Pump Line Bridge – pipeline bridge of span 40 m with steel bridge over the waterway and RCC bridge over Kattappana river from Nariyampara booster towards Mulakamedu GLSR
- Transformers and substation

1.5 The estimated cost of the proposed project is 47.00 crore. The budget provision for the project is 25.00 Crore.

2. REQUIREMENT/ DEMAND ANALYSIS

2.1 The ongoing water supply covers only a few wards of the Ayyappankovil panchayath with its limited distribution system of 27 km against the road capacity of 180km. The highly deserving population of the elevated areas are not covered by the above scheme.



- 2.2 Due to the peculiar terrain, the water percolation to ground is lost as surface and subsurface runoff and hence faces acute water shortage before summer itself.
- 2.3 The RWSS to Marykulam & Chenninaykankudi covers only a few wards in low-level zones and is more than 25 years old whereby its components requiring complete rehabilitation.
- 2.4 Quality analysis certain habitations shows high iron content in water samples from the open wells whereas high TDS & iron in bore wells.
- 2.5 The new WSS will reduce overexploitation of groundwater in many parts of the project area.
- 2.6 The proposal, when implemented, will improve the standard of living of the citizens and will improve the health status by reducing waterborne diseases.

3. FUNCTIONAL DESIGN

- 3.1 The present scenario of the water supply scheme, the components and capacity of the scheme and the benefitted area of the scheme are detailed in the project.
- 3.2 Existing components are listed below:
 - Well cum raw water pump house at Thonithady (6.0 dia., 16m deep)
 - Raw water pumping main – 355.6 mm MS 1455 m and 350 mm DI K9 1370 m
 - Treatment plant at Alady Kurissumala (7 MLD capacity)
 - Ground level reservoir and sump cum booster pump house: -
 - Sump at T-plant 5.55 LL capacity
 - GLSR at Alady Kurissumala
 - Kalthotty booster PH – 1.84 LL
 - GLSR at Labbakkada – 2.46 LL
 - GLSR at Meppara – 2.46 LL
 - GLSR at neriyampara top – 1.00 LL
 - GLSR at Neriyampara bottom – 2.27 LL
 - GLSR at Mulakamedu – 4.37 LL
 - GLSR at Kochuthovala – 3.14 LL
 - Clear water pumping main: -
 - TP at GL tank at Alady : 350mm DI K9 – 310m
 - Sump at Kalthotty to GL tank at Labbakkada – 150mm DI K9 – 3115 m
 - Sump at Kalthotty to Meppara GLSR: 150mm DI K9 – 3192 m
 - Sump at Kalthotty to Nariyampara top: 300mm DI K9 – 6007m (to be rearranged)
 - Clear water gravity main: -



- GLSR at ALADY tp Kalthotty sump
 - 350 mm DI K9 - 305 m, 355.6 MS – 207m
 - 350 mm DI K9 – 5570 m, 300mm DI K9 – 1833m (to be rearranged)
- GL tank at Nariyampara top to Idukki Kavala: 250 mm DI K9 – 6830m (partly completed)
- Idukki Kavala to Kochuthovala GLSR: 125mm GI pipe – 3250m
- Idukki kavala to Mulakkaramed GLSR: 200mm DI K9 – 5030m
- GLSR at Nariyampara top to Nariyampara bottom GLSR: 150mm DI K9 – 1250m
- TS sump to existing tank at Marykulam: 65 mm GI – 3352m
- Distribution system
 - Zone I Ayyappankovil panchayath
 - Zone II, III Kachiyar panchayath
 - Zone IV Ayyappankovil panchayath
 - Zone V, VI, VII Kattappana panchayath

3.3 A CWSS covering Kattappana, Ayyappancovil and Kanchiyar Panchayaths sanctioned under ARP is under execution for an amount of Rs. 2314.00 Lakh.

3.4 The gauge details of Periyar river has been given to substantiate the source.

3.5 The water demand calculations of the proposed extensions is 2.678 MLD in 2019 and the ultimate demand is 3.087 MLD in the design year AD 2049.

3.6 The ongoing WSS is designed for a population of 1,12,000 in the year 2019 with an ultimate demand of 4.48 MLD at 40 lpcd.

3.7 The population of Ayyappankovil panchayat is 15611 in 2011 and a decadal growth of 4.91% is considered and the design life of 30 years.

3.8 The water demand for the proposed extension in the year 2019 is 2.678 MLD and the ultimate demand of 3.087 MLD in the design year 2019 at 100 lpcd

3.9 Details of land requirement including the extent of land, rate per cent, owner details, etc. are included in the report.

3.10 The service reservoir is designed for the ultimate period and the capacity of service reservoir is taken as 8 hrs. of daily demand.



3.11 The 8 LL GLSR is proposed in the 20 cents owned by KWA. For the booster pump house at Edapookkalam, 10 cents of land owned by Edapookkalam estate. The booster at Kavanthi is proposed at 15 cents which is Panchayath owned Puramboke land. The 7 LL GLSR at Udayagiri is proposed in 20 cents of privately-owned land. The 1.00 LL reservoir is proposed in 10 cents of privately-owned land.

3.12 Following points shall be speculated before TS:

- Water quality report is not attached to the report. Same shall be provided.

4. ENGINEERING DESIGN

4.1 The sizes and dimensions of various units have been determined as per the stipulations of CPHEEO water supply manual.

4.2 The following design calculations have been provided:

- Ultimate demand and population
- Design calculation of the service reservoirs and booster pump houses
- Design of raw water pump set
- Design of clear water pumping main and pump set
- Design calculations of pump sets for various pumping main
- Detailed hydraulic design calculations
- Economic size calculation for the distribution pipe
- Capacity of transformers
- Nodal analysis

4.3 The following drawings are provided in the report:

- Longitudinal Sections of pumping mains
- schematic diagrams
- Location sketch for the proposed GLSR and booster pump houses
- Preliminary drawings like plan, section & elevations of the proposed GLSR, OH tank and booster pump stations
- Preliminary drawings of valve chambers
- Preliminary drawings for waste water drain, protection wall & control room at Thonithady
- Preliminary drawings for footbridge at Thonithady



- Preliminary drawings for control room at T.P compound in Alady
- Preliminary drawings for Ramp, protection wall and latrine at Kalthotty clear water pump house
- Preliminary drawings for 1 LL capacity intermediate tank and pump house in at Nariyampara
- Preliminary drawings for pipeline bridge near Kattappana for laying 250mm DI K9 pipe
- Nodal diagrams for Part I and Part II

4.4 The following points shall be ensured before TS.

- The proposed layout plan and the details for the substations shall be included in the drawings.
- In the wake of the present severe flood, which engulfed most part of the state, the design parameters and calculations for the intake well, WTP and MFL conditions shall be reviewed prior to TS.

5. O&M STRATEGY

5.1 The operation and maintenance charges are proposed to be met from the revenue collection.

5.2 The periodic and shutdown maintenance is proposed to be done by the PH division, Edappal, KWA.

6. FINANCIAL ESTIMATES & COST PROJECTIONS

6.1 Estimate of the project is based on DSR-2016, with a cost index of 37.25%. The general abstract and the detailed estimate of the proposal is provided in the report.

6.2 Following are the different sub-projects:

PART I:



SPECIFICATION	ESTIMATED COST (In Lakh)	RECOMMENDED COST (In Lakh)	REMARKS
CIVIL WORKS			
Construction of 8.00 LL capacity GLSR at Alady	95.66	95.66	-
Construction of 7 LL GLSR at Udayagiri	88.65	88.65	-
Construction of 1.5 LL booster sump cum pump house at Kavanthi	59.26	59.26	-
Construction of 1.5 LL Booster pump house at Edapookkalam	51.27	51.27	-
PIPELINE WORKS			
Providing 200 mm DI K9 Pumping Main - Alady to Edapookkalam	261.46	261.46	-
Providing 200mm DI K9 Pumping Main - Edapookkalam to Kavanthi	58.38	58.38	-
Providing pumping main from booster 2 to GLSR at Udayagiri 200 mm DI 2550 m	101.14	101.14	-
Providing clear water pumping main from sump at TP to Alady Kurisumala 80 mm GI -310 m	4.59	4.59	-
Providing distribution system in zone VIII of Ayyappankovil 51558m	724.63	724.63	-
Providing distribution system in zone IX of Ayyappankovil- 36545 m	479.20	479.20	-
ELECTRO-MECHANICAL			
Clear water pump set at TP towards Edapookkalam 50 HP	16.00	16.00	-
Clear water pump set at TP towards Aldy GLSR 10 hp	7.00	7.00	-
Clear water pump set at booster 1- Apookkalam 60 HP	22.75	22.75	-
Clear water pump set at booster 2- Kavanthy 45 HP	17.50	17.50	-
Transformer & energization of pump houses @ 250 KYA at booster pump house at Kavanthy and Edapookkalam	40.00	40.00	-
Power allocation (OYEC and CD) charges and extension of three-phase line towards intermediate sump at Nariyanpara	10.00	10.00	-



Road Restoration	433.50	433.09	Unforeseen is excluded from KIIFB funding
Cost of Land	16.00	16.00	-
Investigation& Surveys	12.00	12.00	-
Round Off	1.42	-	LS round off is excluded
TOTAL	2500.00	2498.58	

PART II:

SPECIFICATION	ESTIMATED COST (In Lakh)	RECOMMENDED COST (In Lakh)	REMARK
CIVIL WORKS			
Control room at Raw water pump house at Thonithady	82.60	82.60	-
Control room at Treatment Plant site and approach road	77.50	77.50	-
Improvements at Kalthotty sump	19.10	19.10	-
Construction of Intermediate Pump house at Narianpara	16.00	16.00	-
Construction of Intermediate Sump at Nariyampara	18.80	18.80	-
Construction of Pipeline bridge at Kattappana	17.10	17.10	-
Check dam of 180. Length and 1.80 height	300.30	300.30	-
PIPELINE WORKS			
Supply and Laying 80mm GI pipe from Intermediate Sump at Nariyanpara to GLSR at Nariyanpara Top using 80 mm GI Pipe-1177 m	13.80	13.80	-
Wash water disposal arrangements at TP	38.20	38.20	-
Supply and Laying 350mm and 300 mm DI gravity main pipe from Alady GLSR to Kalthotty sump 7081 m (Re-arranging)	457.20	457.20	-



Supply and Laying 300 mm DI pumping main pipe from Kalthotty sump to Narianpara top (Re-arranging)	328.40	328.40	-
Supply and Laying 250mm DI gravity main pipe from Narianpara top to Idukki kavala balance work (Balance -rearranging)	84.34	84.34	-
ELECTRO-MECHANICAL			
Raw water Pump Sets - 275HP at Thonthady	137.00	137.00	-
2 Clear Water Pumpsets			
160 HP pump at TP towards IS at Nariyampara & Kalthotty Sump and Lebbakada GLSR	111.00	111.00	-
At Kalthotty sump towards Meppara and lebbakkada GLSR 40 HP	20.00	20.00	-
At intermediate sump towards Nariampara top 12.5 HP	7.50	7.50	-
At intermediate sump towards Mulakamedu and Kochuthovala GLSR	37.00	37.00	-
Transformers			
750 KVA transformer - Thonithady	50.00	42.202	Unforeseen is excluded from KIIIFB funding -
750 KVA transformer - TP Alady	40.00	36.967	Unforeseen is excluded from KIIIFB funding -
250KVA transformer - IS Nariyampara	33.00	29.594	Unforeseen is excluded from KIIIFB funding -
160 KVA transformer - Kalthotty	30.00	27.655	Unforeseen is excluded from KIIIFB funding -
Road Restoration	111.60	111.60	-
Line Charging, Stabilization & Interconnection	80.00	80.00	-



Power Allocation & Line extension	50.00	50.00	-
Unforeseen	39.56	-	-
TOTAL	2200.00	2143.858	

Recommended Cost – **Rs. 46.424Crore**

6.3 Lumpsum round off is excluded from KIIIFB funding.

6.4 Road restoration charges are updated with revised PWD circular.

7. REVENUE STREAMS

7.1 The revenue from the project is expected to be generated by collecting water charges by the implementing agency.

7.2 Street fountains run by local self-governing bodies are also expected to fetch revenue for the proposal.

8. COST-BENEFIT ANALYSIS

8.1 The Cost-Benefit Analysis of the proposed project is worked out in detail with all the supporting primary and secondary data.

- Net present value (NPV) of costs – 6103.83
- Net present value (NPV) of Benefits – 1063.76
- Cost-Benefit Ratio (B/C) – 0.174

9. VALUE ENGINEERING OPTIONS

9.1 DI-K9 pipes are proposed to be used and this is based on the prevailing KWA policy.

10. IMPLEMENTATION SCHEDULE & WBS

10.1 The proposed duration for the project is 18 months from the date of administrative sanction.



10.2 The major problems or risks or hindrances in the project have been identified and suitable measures have been mentioned to reduce the effect on the schedule.

11. PROJECT MANAGEMENT ORGANIZATION STRATEGY

11.1 KWA is responsible for the design, construction, execution, operation and maintenance of water supply scheme.

11.2 The organizational chart and the hierarchy of the PMU proposed for the project by KWA shall be provided in the report.

11.3 The roles and responsibilities of the proposed project management unit shall be detailed in the report.

12. CONTRACT MANAGEMENT STRATEGY

12.1 The e-Tendering and e-Procurement system is implemented by KWA.

12.2 The various procedure involved in tendering and evaluation of the tenders are detailed in the report.

12.3 The Contracting methodology for the execution of the project (item rate, lump sum, design and execute, EPC etc); system followed in the bidding document and manuals of reference etc (PWD/CPWD/ FIDIC) & contract clause which may likely to lead to additional financial liability; if any, shall be mentioned in the report.

13. STATUTORY CLEARANCES

13.1 A clearance certificate from PWD and LSGD shall be attached for laying pipelines along the road.

14. ENVIRONMENTAL ASPECTS & SUSTAINABILITY

14.1 The report explains the positive and negative impacts of the project which are likely to occur.

14.2 The report identifies various environmental and social impacts associated with the projects and suitable mitigation measures have been suggested against the negative impacts identified.



15. QUALITY MANAGEMENT PLAN

15.1 KWA follows standard PWD procedures to ensure the quality of construction works.

15.2 The standards and other methods used in for quality control & assurance are detailed in the report.

16. RISK ASSESSMENT AND MITIGATION MEASURES

16.1 The risk associated with the project are identified as – Traffic obstruction, Road cutting permission & the operation of existing RWSS & public health with mitigation measures associated with the identified risks have been suggested.

17. REMARKS & INFERENCES

17.1 The DPRs contain brief introduction of current scenario of the WSS of the proposal and a detailed estimate for the project.

17.2 The requirement and demand analysis gave are specific to the project. A general description regarding the proposed location, population as per census 2011 etc. are described in the DPR.

17.3 The details of the proposed components, existing scheme, land requirement details etc. are mentioned in the report. The functional design is matching with the requirement and demand along with the standards.

17.4 The schematic diagram, LS of the transmission mains, cross section details of the OHSR etc. are provided. The points in the Engineering design (4.4) shall be ensured before TS.

17.5 The O& M strategy proposed in the report is satisfactory.

17.6 The detailed estimates are furnished in the report and seem satisfactory for the proposed projects. The unforeseen amount is eliminated from the estimate.

17.7 Possible revenue from the project is expected to be generated by collecting water charges & street fountain by the implementing Agency i.e.; KWA for water connections.

17.8 The CBR value for the proposal is 0.174. The investment criteria (CBR) meets the target standards but numerical values assigned to various benefit components are not supported with adequate primary or secondary data.



- 17.9 Considering the nature of the project, the value engineering options are minimal, and the suggestions made shall be taken into consideration, and the estimate seems to be reasonable.
- 17.10 The period of completion is realistic and the WBS is based on the rational sequencing of activities with most likely durations.
- 17.11 The project management organization plans seem satisfactory.
- 17.12 The contract management plans are acceptable provided the documents and procedures are not in conflict with any of the rules and regulations about public works execution prevailing in Govt of Kerala.
- 17.13 The environmental aspects & sustainability are acceptable for the present project.
- 17.14 Explanations regarding the statutory clearances are acceptable.
- 17.15 The quality management plans are acceptable.
- 17.16 The major risk during the execution of the project is identified and documented in the project.
- 17.17 In the wake of the present severe flood, which engulfed most part of the state, the design parameters and calculations for the intake well, WTP and MFL conditions shall be reviewed prior to TS.
- 17.18 The TS Committee shall ensure that the distribution systems for the said project are either included in this proposal or funds are made available for executing the distribution lines to end consumers before issuing TS for this work.

18. RECOMMENDATIONS AND SUGGESTIONS

- 18.1 The project may be considered for funding by KIIFB subject to the execution of the tripartite agreement.
- 18.2 Upon recasting of the estimate, considering the non-applicability of items mentioned in para 6 and other non-applicable cost components, the amount to be considered for sanction works out to be **Rs. 46.424 Crore.**



- 18.3 The detailed estimate submitted shall be reviewed by the TS authority considering the applicability and the correctness of items in 6 above, the relevance of Cost Index and adherence of latest PRICE schedule. (GST shall be applicable as per the prevailing norms and conditions.)
- 18.4 The Technical sanction by competent authority is mandatory before schedules are added to the Tripartite agreement.
- 18.5 The cost provisions for work alone shall be utilized for execution of work. The savings or anticipated savings from LA, QC, demolition etc. shall not be reappropriated for meeting expenditure of work proper.
- 18.6 While entrusting the maintenance activities to the contractor, it shall be ensured that the obligation under defect liability shall be performed without any additional cost. Hence no maintenance expenditure is considered under the original work.
- 18.7 The technical sanction may be issued by the SPV only after incorporating the suggestions indicated in this report and the compliance may be communicated to KIIFB prior to issuance of tenders.