Environmental Monitoring Report

Project Number: 43253-027
Semestral Report (January - June 2020)
March 2021

INDIA: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)

Appendices (PART C)

Prepared by Karnataka Urban Infrastructure Development and Finance Corporation, Government of Karnataka for the Asian Development Bank.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura, Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be improved water resource planning, monitoring and service delivery in 24x7 water supply for Puttur City. Project 2 will have 3 outputs: (i) UWSS and sanitation infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened. The IEE is based on an assessment of these components within the project area.

2 Need for Infrastructure Improvement in Puttur

At present, Puttur City meets its water supply requirement through surface source. River Kumaradhara is the main surface source of water supply to Puttur. A new vented dam was constructed under KUDCEMP with a storage capacity of 0.61 million cubic meter (MCM) and a storage spreading of 2,400 m upstream the vented dam. Existing water supply system is depicted in Figure 1.

3 The proposed subproject:

This subproject includes the following components:

(i) Replacement of two old pumps with new vertical turbine pumps in Jackwell at Nekkilady;
(ii) construction of 1.68 kilometer (km) of raw water pumping main (400 millimeter (mm) diameter) from Jackwell to water treatment plant (WTP) at Nekkilady;
(iii) construction of 12.42 km clear water main of 400 mm diameter from the proposed new Water Treatment Plant (WTP) at Nekkilday to ground level service reservoir (GLSR) at Tenkila;
(iv) construction of new WTP of capacity 8.7 million litres per day (MLD) at Nekkilady;
(v) replacement of clear water pumps in existing WTP at Nekkilady;
(vi) construction of 5.06 km of clear water feeder mains;
(vii) construction of six new overhead tanks (OHTs) – (a) 300 kiloliters (kl) capacity in Zone-2 at Mura Shantinagra, Padnur, (b) 100 kl in Zone-3 at Karmala near Microwave station, (c) 600 kl in Zone-4A at Darbe; (d) 250 kl in zone-5 at Lingadagudda, Kabaka, (e) 200 kl in Zone-6A at Balnad Helipad, and (f) 100 kl zone-8 at BalnadKelyadi, Vitla Road;
(viii) construction of two GLSRs - (a) 1,000 kl capacity at Seethigudda, and (b) 2,000 KL at Tenkila;
(ix) Intermediate pumping station at Tenkila; (x) booster pumping station at Balnad Helipad, (xi) 29 bulk water meters;
(x) 142.66 km of distribution network to cover 24x7 water supply to Puttur city for 8 zones; and

(xi) Replacement of 8,441 existing meters and providing new house service connections of 4,500 for un-covered households.

Figure 1: Existing Water Supply System in Puttur

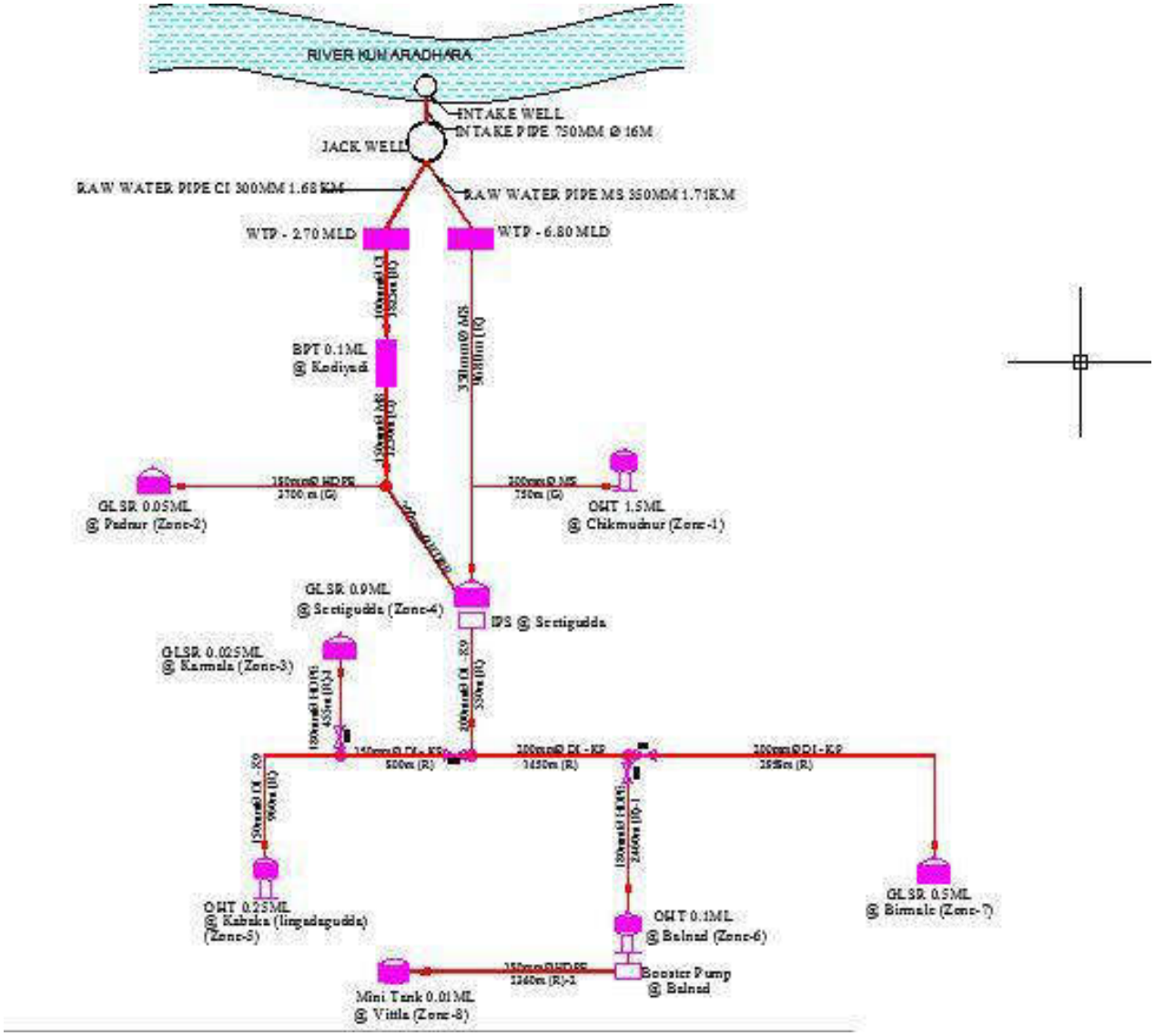


Table 1: Proposed Components for 24x7 Water Supply System

Infrastructure	Function	Description	Location
Raw water pumps in existing Jack well	Pumping of Raw water from Jack well Standby power supply arrangement for pumping	-Replacement of two old pumps with new vertical turbine pumps of capacity 335 m^3/h, 75 m head (1+1) Procurement of diesel generator of 500 kilovolt-ampere -(kVA)	Jack well site at Nekkilady Jack well site at Nekkilady
Raw water Transmission Main	Conveys raw water to WTP by pumping	1.68 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to WTP all along the existing road
Water Treatment Plant	Treats raw water to meet drinking water standards	New 8.7 MLD capacity WTP based on conventional treatment Process. The components Include Cascade Aerator Parshall flume Flash mixer Flocculators – 2 units Tube settlers – 2 units Rapid sand filters - 4 beds Chlorination system with safety measures Lime and alum mixing Tanks Clear water sump and pump house Backwash water recirculation and sludge management system (sludge collection, drying beds) – a combined system of adequate capacity for backwash and sludge management will be developed to cater to both new and existing WTPs. This component addresses the issues of concern identified in the environmental audit of existing WTP (Ref Corrective Action Plan, Table 8)	Nekkilady Adjacent to the existing WTP; sufficient land available within the existing WTP campus to accommodate the new WTP
Clear water Pumps in existing WTP	Pumps clear water to Service reservoirs	Replacement of old pumps within new pumps: 2 pump sets of capacity 325 m^3 /hour and 84 m head (1+1)	Pumps will be installed in the existing clear water pumping station at WTP, Nekkilady
Clear Water Transmission Main	Pumping of clear water from WTP (water treatment plant) to service reservoirs	12.42 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to Tenkila GLSR along the public roads within the road right of way
Clear water feeder main	Pumping of clear water from MBR to Service Reservoirs	5.06 km length 180 – 300 mm diameter DI /HDPE) pipes DI pipe of 300 mm diameter – 1.134 km DI Pipe of 200 mm diameter – 2.422 km	Laying of pipes underground along public roads within the ULB area

Infrastructure	Function	Description	Location
		DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km	
Water service reservoirs	Water storage for supply	Six OHTs and two GLSRs of RCC including compound walls at the selected sites: **OHT** 300KL for Zone-2 at Mura Shantinagra, Padnur 100KL for Zone-3 at Karmala near Microwave station 600KLfor Zone-4A at CTO, Darbe 250KLfor Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at,Balnad Kelyadi, Vitla Road1 **GLSR** 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila	**OHT** Existing within ULB Properties. No non-title users are present at these sites **GSLR** Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	Intermediate pumping station at Tenkila Pump capacities: 65m^3/h and 85 m head for zone 3 and 5 (1+1) 82 m^3/h and 33 m head for zone 4A, (1+1) 119 m^3/h and 100 m head for zone 6, 6A and 7, (1+1) Booster pumping station at Balnad Pump capacity 11 m^3/h and 80 m head (1+1)	Pumping station will be located within Tenkila GLSR site Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad
Distribution system	Supply of water from service reservoirs to consumers	142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes) 75 mm – 106.139 km 90 mm – 1.853 km 110 mm – 21.744 km 150 mm (DI) - 2.784 km 160 mm – 2.889 km 200 mm – 1.403 km	In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW

		250 mm – 0.362 km	

Infrastructure	Function	Description	Location
		250 mm (DI)- 4.916 km 280 mm – 0.570 km	
Bulk Water Meters	To record data of volume of flow to each Distribution System zones at desired time interval.	29 no.	Bulk meters will be fixed at strategic locations in the pipe line at Jack well point, WTP and service reservoir points
House Service Connections (HSC)	For each house connection will be provided with meters to supply water and record volume of water. W	4,500 new HSC connections 9226 replacement of existing domestic water meters	In 8 zones for all the houses within the city limits

CMC = City Municipal Council, m^3/h = cubic meter per hour, DI = ductile iron, GLSR = ground level service reservoir, HDPE = high density polyethylene, HSC = House Service Connections, IPS = Intermediate Pumping Stations, km = kilometer, m = meter, mm = millimeter, MLD = million liters per day, OHT = overhead tank, RCC = reinforced cement concrete, ROW = right-of-way, ULB = urban local body, WTP = water treatment plant.

4 Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur	**Name of the Contractor: Suez Civil Engineering services Pvt,LTD**
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Puttur	**Name of SE/EE/AE Of concerned division PIU** :-Mr.Shamath, AE
Date of monthly monitoring: 06/03/2020	**Name of Environment, Health And Safety (EHS) engineer :-** Mr.YAmruth

Table 2: Status of implementation Environmental Management Plan for Anticipated Impacts –Construction Stage - PUTTUR

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of Implementation
Environmental Management Plan (EMP) ImplementationTraining	Impacts on the environment, workers, and community due to improper implementation of EMP	**1)** Project manager and all key workers will be required toundergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational healthandsafety(OHS),corelabor laws, applicable environmental laws, etc.;and **2)** appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start ofwork	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDCSC)	(i) Certificate of Completion (Safeguards Compliance Orientation); (ii) Posting Certification Completion (iii) Posting of EMP at worksites	Cost of EMP Implementation Orientation Training to contractor is Responsibility Othercosts Responsibility	**1)** Spoil management submitted but it needs to be updated **2)** EHS Engineer appointed
Air Quality	Emissions from constructionvehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, Sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other constructionmaterials; **4)** Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dryweather; **5)** Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dustgeneration; **6)** Use tarpaulins to cover sand and other loose material when transported bytrucks; **7)** Clean wheels andundercarriage of vehicles prior to leaving construction site;and	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitiverecepters; (iii) Heavy equipment and machinery with air pollution (iv) Certification that vehicles are compliant with AirAct.	Cost forimplementation of mitigation measures responsibility	**3)** Complied **4)** Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Not complied **7)** Complied **8)** Complied

		8) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				
Surface water quality	Mobilization ofsettled silt materials , and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface waterquality.	**9)** Prepare and implement a spoils managementplanasthepartof the Construction ManagementPlan; **10)** Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plasticsheets; **11)** Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; **12)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacitybund;	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed alongtrenches leading to waterbodies; (iii) Records of surface water (iv) Effective ness of water management measures;and (v) No visible degradation to nearby drainages, nallahs or	Cost forimplementatio n of mitigation measures responsibility	**9)** Spoil management plan is submitted during preconstruction stage. Updation is to be done for construction stage **10)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity

		13) Dispose any wastes generated by installation of pipeline in designated sites;and **14)** Conduct surface quality inspection according to the Environmental Management Plan (EMP).		waterbodies due to civil works.		**13)** Complied **14)** Not complied
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, andpeople	**15)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatestpotential to generate noise are conducted during periods of the day whichwill result in leastdisturbance; **16)** Horns should not be used unless it is necessary to warn other road users or animals of the vehicle'sapproach; **17)** Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitivereceptor; **18)** Properly enclose the dismantling area with temporary noise barriers;and **19)** Maintainmaximumsoundlevels not exceeding 80 decibels(dbA) when measured at a distance of 10 m or more from thevehicle/s.	Construction Contractor	(i) Complaints from sensitivereceptors; (ii) Use of silencers in noise-producing equipment and sound barriers;and (iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).	Cost forimplementation of mitigation measures responsibility	**15)** Complied **16)** Complied **17)** Complied **18)** Complied **19)** Complied

Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removedconcrete, wood, packaging materials, empty	**20)** Prepare and implement spoils managementplan; **21)** Avoid stockpiling of excess excavatedsoils; **22)** Coordinate with Puttur CMCfor beneficial uses of excess excavated soils or immediately dispose to designatedareas;	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Worksite clear of hazardous wastes such as oil/fuel; and (iii) Worksite clear of any excess excavated earth,	Cost forimplementation of mitigation measures responsibility	**20)** Spoil management plan is prepared **(attached in annexture 3a july 2019 but updation is to be done)**and contractor agency following and found no surplus soil found in sites **21)** Complied **22)** Complied **(attached in annexture4september 2019)**
	containers, spoils, oils, lubricants, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	**23)** Recover used oil andlubricants andreuseorremovefromthe sites; **24)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designatedareas; **25)** Remove all wreckage, rubbish, or temporary structures which are no longer required;and **26)** Request PIU/PMDCSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance ofwork. C&Dmaterialsafterdismantling of theoldWTPandoldGLSRshallbe managedasperC&DRules2016,		and solid waste such as removedconcrete, wood, packaging materials, empty containers.		**23)** Used oil and lubricants not generated on site **24)** Complied **(attached in annexture4september 2019)** **25)** Complied **26)** No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.

Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	**27)** Obtain from PIU/PMDCSC the list of affected utilities and operators ifany; **28)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service;and **29)** The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.	Construction Contractor	Existing Utilities ContingencyPlan	Cost forimplementation of mitigation measures responsibility	**27)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at any section. **28)** Not complied **29)** Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented; (a) Minimize removal of vegetation and disallow cutting of trees;	Construction Contractor	PMU/PMDCSC to report in writing the no oftreescutand planted.	Cost forimplementation of mitigation measures responsibility	**30)** Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work
		b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department;and c) Plant two native trees for every one that is removed.				b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work c) Instructed contracting agency

Accessibility	Traffic problems and conflicts near project locations and haul road	**31)**Traffic Management Plan (TMP) should be part of the Construction Management Plan. **a)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of deliverysites; **b)** Schedule transport and hauling activities during non-peakhours; **c)** Locate entry and exit points in areas where there is low potential for trafficcongestion; **d)** Keep the site free from all unnecessaryobstructions; **e)** Drive vehicles in a considerate manner; **f)** Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peakhours; **g)** Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration ofconstruction works and contact numbers for concerns/complaints; **h)** Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum;and **i)** Provide pedestrian access inall the locations until normalcy is restored.	Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12); (ii) Complaints from sensitive receptors;and (iii) Number ofsignages placed at project location.	Cost forimplementation of mitigation measures responsibility	**31)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 3bjuly 2019 but updation is to be done)** **a)** **Not complied.** Instructed to prepare plan **b)** Complied **c)** Complied **d)** Complied **e)** Complied **f)** Instructed contracting agency to inform traffic department for temporary road diversionbefore two days start of the work. **g)** Complied **h)** Complied **i)** No such execution work found near any commercials or residential areas. But instructed contracting agency to provide pedestrian wherever required

Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**32)** Prepare and implement spoils managementplan; **33)** Leave spaces for access between mounds of soil; **34)** Provide walkways and metal sheets where required forpeople; **35)** Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **36)** Consult businesses and institutions regarding operating hours and factoring this in work schedules;and **37)** Provide sign boards for pedestrians to inform nature and duration of construction works and contact	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Spoils management plan;and (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost forimplementation of mitigation measures responsibility	**32)** Spoil management plan is prepared **(attached in annexture 3a july 2019 but updation is to be done)** **33)** Complied **34)** Complied **35)** Complied **36)** Complied **37)** Complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**38)** Employ local labor force to the maximum extent, if manpower is available; and **39)** Comply with core labor laws	Construction Contractor	(i) Employment records; and (ii) Compliance to core labor laws (See Appendix 2 of this IEE).	Cost forimplementation of mitigation measures responsibility	**38)** Register maintained by contractor attached as **Annexure – 4 in dec 2019** **39)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).

Occupational Health and Safety	Occupational hazards which can arise duringwork	**40)** Comply with all national, state and local core labor laws (See Appendix 2 of thisIEE); **41)** Develop and implement site- specific occupational health and safety (OHS) Plan, and include in the Construction Management plan. The OHS plan will include measures such as: (a)excluding public from the site; (b) ensuringall workers are provided with anduse	Construction Contractor	(i) Site-specific OHS Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage forworkers; (iv) Number of accidents; (v) Supplies of potable drinkingwater;	Cost forimplementation of mitigation measures responsibility	**40)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor. **41)** Contractor following Company EHS Policy-PPE'S provided by Contractor. **a)** **Complied** **b)** **Complied.** PPE'S provided by Contractor to workers and tool box training provided at site. **Annexure-4**
		personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; **42)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **43)** Provide medical insurance coverage forworkers; **44)** Secure all installations from unauthorized intrusion and accidentrisks; **45)** Provide supplies of potable drinkingwater; **46)** Provide clean eating areas where workers are not exposed to hazardous or		(vi) Clean eating areas where workers are not exposed to hazardous or noxioussubstances; (vii) record of health and safety orientation trainings; (viii) personalprotective equipment; (ix) % of moving equipment outfitted with audible back-up alarms; (x) permanent sign boards for hazardous areas such as		**c)** Complied **d)** Not complied **e)** Accident and incident register maintained **42)** Partially Complied. Instructed to keep first-aid box at each working sites separately **Annexure-4 in dec2019** **43)** Not complied **44)** Complied **45)** Complied **46)** Complied

		noxioussubstances; **47)** Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of workatthesite,personalprotective protection, and preventing injuring to fellowworkers; **48)** Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; **49)** Ensure the visibility of workers through their use of highvisibility		energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and (xi) Compliance to core labor laws (See Appendix 2 of this IEE).		**47)** Not complied. Instructed to Provide health and safety orientation training to all workers **48)** Not complied **49)** Complied **Annexure-1 in dec 2019**
		vests when working in or walking through heavy equipment operating areas; **50)** Ensure moving equipment is outfitted with audible back-up alarms; **51)**Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well knownto,andeasilyunderstood by workers, visitors, and the general public as appropriate;and **52)** Disallow worker exposure to noise level greater than 85 dBAfor				**50)** Complied **51)** Complied **52)** Workers not allowed to work more than 8 hours per day without hearing protection who are exposing to noise level greater than 85 dB. Recommended Contractor to use hearing protection Measures to workers

		adurationofmorethan8hoursper daywithouthearingprotection. The use of hearing protection shall be enforced actively.				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**53)** Plan routes to avoid times of peak-pedestrianactivities. **54)** Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps. **55)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or prematurefailure. **56)** Provide road signs and flag persons to warn of on-going trenchingactivities.	Construction Contractor	(i) Traffic Management Plan;and (ii) Complaints from sensitiverecepto rs.	Cost forimplementation of mitigation measures responsibility	**53)** Not complied **54)** Not complied **55)** Not complied **56)** Complied
Work Camps and worksites	Temporary air and noise pollution from machine operation,	**57)** Consult with PIU before locatingworkerscamps/sheds,and construction plants; as faras	Construction Contractor	(i) Complaints from sensitiverecepto rs;	Cost for implementation of mitigation measures	**57)** Complied Contractor informed to PIU office regarding labour campconstruction at mottetadka opposite NCRC but they not having letter from PIU.

	water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers.	possible located at least 200 m from residential areas; **58)** Minimize removal of vegetation and disallow cutting of trees; **59)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and otherrefuge; **60)** The camp site should be adequately drained to avoid the accumulation of stagnantwater; **61)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60-80LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; **62)** Provide separate facilities for men and women; sanitary facilities shall be properly buildand		(ii) Drinking water and sanitation facilities for employees.	responsibility	**58)** Removal of vegetation Minimize by selecting best alignment. **59)** Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area. **60)** Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area. **61)** Instructed contracting agency to provide drinking water as per the standards at camp **62)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **63)** Instructed contracting agency to provide

		well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or lesspersons; **63)** Train employees in the storage and handling of materials which can potentially cause soil contamination; **64)** Recover used oil and lubricants and reuse or remove from thesite; **65)** Manage solid waste according to the following preference hierarchy:reuse, recycling and disposal to designated areas;				training of solid and liquid materials handling at camp **64)** Instructed to contracting agency **65)** Complied
		66) Remove all wreckage, rubbish, or temporary structures which are no longerrequired; **67)** Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work;and **68)** The work camp details should be included in the Construction Management Plan.				**66)** Complied **67)** Construction work is in progress. **68)** Not complied

Social and Cultural Resources	Risk of archaeological chance finds	**69)** Create awareness among the workers and supervisors about the chance finds during excavation work; **70)** Stop work immediately if any finds are suspected to allow furtherinvestigation; **71)** Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ;and **72)** Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to thebuilding.	Construction Contractor	Records of chance finds	Cost forimplementation of mitigation measures responsibility	**69)** Till now no such suspected items found nor recorded **70)** Till now no such suspected items found nor recorded **71)** Till now no such archaeological items recorded **72)** No such damages recorded during the visit. But instructed to maintain if such damages happens.
Submission of EMP implementation report	Unsatisfactory compliance to EMP	**73)** Appointment of EHS Engineer to ensure EMP implementation;and **74)** Timelysubmissionofmonitoring reports includingpictures.	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost forimplementation of mitigation measures responsibility	**73)** EHS Engineer appointed **74)** Complied **Annexure-5in dec2019**

Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**75)** Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; **76)** All excavated roads shall be reinstated to originalcondition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to originalconditions; (ii) camp has been vacated and restored to	Cost forimplementation of mitigation measures responsibility	**75)** Complied **76)** No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage
		77) All disrupted utilitiesrestored; **78)** All affected structures rehabilitated/compensated; **79)** Theareathatpreviouslyhoused the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleanedup; **80)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall betop soiled and regressed using the guidelines set out in the revegetation specification that forms part of thisdocument; **81)** The contractor must arrange the cancellation of all temporary services;and **82)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-projectconditions before acceptance of work.		pre-project conditions; and (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.		**77)** If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **78)** Till now no structures affected **79)** Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **80)** Not complied **81)** Not complied **82)** Construction work is in progress

Conclusion:-

Construction stage is in progress. Health and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Proper safety measures like project information boards, safety sign boards, hard barricading and register books should be maintained at all work sites. Contractor has to submit Site Specific EMP of January, February and March 2020 with PIU letter, Puttur.

Recommendation:-

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)engineer		Complied
2.	Submission of Site specific EMP		Before start of Construction work Comply with in 7days
3.	Submission of monthly reports.	• Construction status or compliance report	Contractor has to submit Site specific EMP of January 2020 Comply with in 7 days
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	• List of utilities going to effect will be submitted to PIU	Before start of Construction work
5.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
6.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
7.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days
8.	Tree cutting/pruning permission; and	• If any of the tree is getting affected, it is to be noted in the survey and its permission has to be taken	Comply with in 7 days
9.	Compensatory tree plantation as part of the project.	NA	Identify Before start of Construction work and Compensate during Construction
10.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	Comply with in 7 days
11.	List of selected sites forconstruction work camps, hot mixplants, stockpileareas, storage areas,and disposal Areas.	• Location must be identified and marked on google map and consult with PIU and after joint inspection and with consideration of all given mitigation measure given.	Complied Attached as **Annexure –2 & 3 in may 2019.** Take site approval letter from PIU (for construction work camps, hot mix plants, stockpile areas, storage areas, and disposalareas.) Before start of Construction work

12.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner has to be taken	Comply with in 15 days
13.	List of selected sites fordisposal	• Location must be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given. • If any private land is selected ,NOC from owner have to be taken	Debris disposal land location identified and Permission letter has been issued by PIU. **Attached as annexure 4 in September 2019.**
14.	List of approved quarrySites andSources of materials; and		Before start of Construction work
15.	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarrysites if necessary.		Before start of Construction work
16.	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
17.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on Google map	Draft copy shown and submitted attached as an **annexure 3a in August 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Debris disposal land location identified and Permission letter has been issued by PIU. **Attached as annexure 4 in September 2019.**
18.	Traffic management plan		Draft copy shown and submitted attached as **annexure 3bAugust 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Comply with in 7 days
19.	Environmental management plan		Draft copy shown and submitted attached as an **annexure 3c in August 2019 report but updation is to be done**and informed contractors to updateplan once construction phase starts Comply with in 7 days
20.	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be	Comply with in 7 days

		provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	
21.	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. **Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors**
22.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. **Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors**

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1

Status of Site Visit observations on 28thFebruary 2019

1	Project information board and sign boards must be provided at work site.		Provide project information board related to the particular project work and place at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand	Not complied

		 Latitude: 12.774197 Longitude: 75.186639 Elevation: 168.96m Accuracy: 3.2m Time: 02-28-2020 15:24 Note: OHT at karmala site, puttur		

2	Sign boards , barricading should be provided at work site		• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site. • Labour attendance register, labour wages register, grevienceredresal register and accident and incident register compulsory be at all work site. • Drinking Water can must be provided at all work site	• Not complied • Partially complied • Not complied

		 Latitude: 12.771951 Longitude: 75.213244 Elevation: 100.67m Accuracy: 7.5m Time: 02-28-2020 17:40 Note: 110mm dia Distribution line laying at zone 1, puttur Powered by NoteC		

3	Bunding of materials		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope	• Not complied

		 Latitude: 12.782042 Longitude: 75.17585 Elevation: 150.85m Accuracy: 3.2m Time: 02-28-2020 15:00 Note: OHT at padnoor site, puttur		

4	Scrap and materials storage at work locations	 	Instructed contracting agency to avoid scarp steel and other materials storage at works sites	• Not complied

5	Labour Camp at mottetadka site, puttur	 	Labour camp is properly maintained Toilets are provided to workers Drinking water tap connection provided at the camp	

		 	Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases	Not complied

6	PPEs for workers at work site		Workers wearing PPEs at works site	

		 Latitude: 12.782025 Longitude: 75.175763 Elevation: 142.79m Accuracy: 3.2m Time: 02-28-2020 15:02 Note: OHT at padnoor site, puttur		

Annexure 2

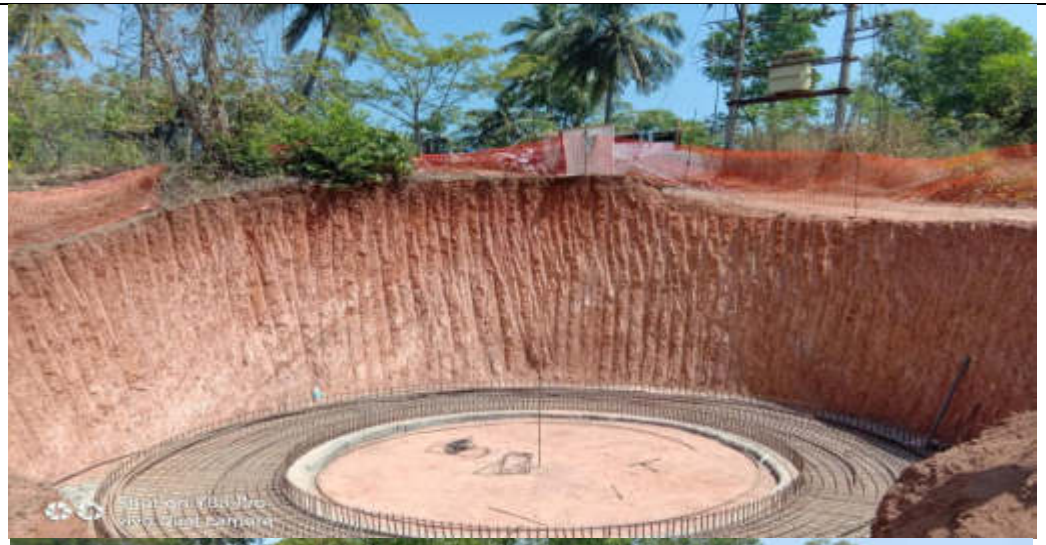
Site Visit observations on 22ndJanuary 2020

1	Project information board and sign boards and hard barricading must be provided all OHT Sites	 	Instructed contracted agency to provide hard barricading for such deep trenches Provide project information board related to the particular project work and place at all working OHT site Project information Board is to be provided both in English and Kannada language along with contact numbers	Not complied Partially complied Partially complied

2	Loose earth at OHT work site	 	• Project information board must be framed in proper frame • All excess loose earth and debris must be removed from work site to dumping yard • Proper bunding should be done to stored sand and aggregates	Not complied Not complied Not complied

3	Pedestrian to be provided	 	Instructed contractors to restore and provide steel or wooden pedestrians in front of residential doors if work delayed to next day	Partially complied

4	Barricading and sign boards at distribution work	 	Instructed contractors to provide project information boards, full hard barrication and to keep go slow sign boards, work in progress sign boards and two flag mans at both road ends to maintain traffic and to avoid accidents when work is progress in main road area	Not complied

5	Steel rods used for barricading at OHT sites	 	Instructed contractors to use wooden planks and remove steel rods used for barricading propose at all OHT sites	Not complied

6	PPEs for worker and drinking water		Contracting agency provided PPEs but instructed them to provide Drinking Water facility and one mobil toilet to worker at all working site	Partially complied

Annexure 3

Status of Site Visit observations of 19th December 2019

S.No	Observation		Recommendation	Status of observation
1	Project Information Board at padnur, Puttur		Contracting agency provided Project information Board sign boards at padnur OHT in kannada But instructed to be provided both in English and Kannada language Sign boards should be easily seen to all and placed in the entrance of the site not into the bushes	Partially complied Project information only in kannada. instructed to put English and should be proper open area not in bushes

2	Project Information Board at padnur, kabaka		Contracting agency provided Project information Board sign boards at padnur OHT in kannada But instructed to be provided both in English and Kannada language	Not complied

3	Material Bunding at work site		 	Sand should be properly bunded with sand bags to avoid flow of sand due to slope And also aggregates should be bunded if stocking in future at sites Sign boards should be be placed on ground should be properly framed with stand	Not complied

4	Loose earth stocking at site	 	Loose earth must be disposed off to the landfills, it should not be stocked at the working places	Not complied

5	Workers wearing PPEs at work places	 	Worker wearing PPEs at all work places but also found some are not wearing. So instructed safety person, workers must wear PPEs at work places Drinking Water can must be provided to workers at sites Mobil toilet for workers 1nos should be provide at work places	Complied Drinking water can is not provided at site for workers And no mobil toilets provided at site for workers

6	Project information board, Safety sign and Barricading and flagman at pipe laying at Nekkeladi road			No sign boards provided at Nekkeladi main road. No proper hard barricading. No flagman at road side for management of vehicles movement	Not complied

Monthly Environmental Monitoring Report

Project Number: 43253-027
March 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi

Package No. 02UDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an water supply projects within the project area i.e. Udupi

2 Need for Infrastructure Improvement in Udupi

A detailed assessment of existing situation was carried out and it concludes that the present water production of 27.24 million liters per day (MLD), is insufficient to meet water demand of Udupi till the year 2031 as per national standards. Besides Udupi town, this subproject investment also need to provide water supply covering 5 en-route villages, 5 outgrowth villages and 7 adjacent villages.
The present inadequacy in the water supply system, is due to

(i) mainly shortage in water source in summer season;
(ii) increased water demand; and
(iii) old and leaking distribution system, along with weak management system.

In order to meet required water demand of Udupi, an alternate water source from River Varahi is proposed under a government funded bulk water supply project. The necessary improvements and augmentation in water distribution system is proposed under the ADB funded KIUWMIP Tranche 2

3 The proposed subproject:

Subproject includes the following components:

(i) clear water feeder mains of 7.47 kilometer (km) of diameter 150 millimeters (mm) to 355 mm to feed tonew overhead tanks (OHTs);
(ii) 7 OHTs of total storage capacity 5.2 ml;
(iii) distribution network of 358.17 km (diameter 150 mm to 355 mm); and,
(iv) Replacement of 16,870 existing meters and providing new metered house service connections of 15,000for uncovered households. Distribution network pipes will be laid along existing road right-of-way (ROW) and OHTs will be constructed in government-owned lands. New water source from river Varahi about 38.5 kms from Udupi has been selected to meet shortage of water for summer four months. RCC Intake well, RCC Jackwell cum pump house and raw water pipe line for 38.5 Kms is proposed under AMRUTH Scope. Also it is proposed 30 MLD WTP at Baje to meet additional demand of Udupi under State fund.

Table 1 provides details of the KIUWMIP Tranche 2 subproject components in Udupi based on the detailed engineering design of the subproject

Table 1: Proposed Subproject Components

No.	Component	Details	Location
1	Clear water feeder main to feed treated water to overhead tanks (OHTs)	7.47 km length 150 mm – 355 mm diameter **Ductile Iron Pipes** 1.50 km - 150 mm diameter from ground level service reservoir (GLSR) at Manipal to OHT for Zone 5 at Manipal near Manapalla lake 0.5 km - 200 mm diameter from GLSR at Manipal to zone-3 OHT at Manipal **Mild Steel Pipes** 60 m - 219 mm diameter for zone -7C OHT at Kolambe 45 m - 219 mm diameter for zone -8C OHT at Indrali 1.7 km - 273.1 mm diameter for zone-6B OHT at Manchi 815 m - 323.90 mm diameter for zone-8B at Kakkunje 2.85 km - 355.6 mm diameter, for zone-9B at Santhekatte	Along the public roads within the road right of way
2	OHTs	7 OHTs of total storage capacity 5.2 ml Zone 3 – 750 kl at Manipal Zone-5 – 300 kl at Manipal near Manapalla lake Zone 6B – 750 kl at Manchi Zone 7C – 300 kl near Kolambe Zone 8B – 1,000 kl at kakkunje Zone 8C – 500 kl at Indrali Zone 9B – 1,600 kl at Santhekatte	For all 7 OHTs, government owned land parcels have been identified.
3	Distribution network	358.16 km pipes of diameter 63 mm to 350 mm **High Density Poly Ethylene (HDPE) pipes** 63 mm dia - 294.4 km 75 mm dia - 0.375 km 90 mm dia - 0.796 km 110 mm dia - 25.575 km 160 mm dia - 3.336 km 200 mm dia - 5.602 km 250 mm dia - 13.824 km 280 mm dia - 0.330 km 315 mm dia - 0.291 km DI PIPES: 150 mm dia - 0.252 km 300 mm dia - 10.282 km 350 mm dia- 3.098 km	Pipes will be laid along the public roads within the road right of way. Rider lines will be laid parallel to the existing pipes, and within the road right of way. Pipes will be mostly laid in earthen shoulder to avoid road cuttings
4	House Service Connections	Replacement of non-functioning 16,870 water meters for existing connections and providing new water supply connections of 15,000 to un-covered households	At each household

4 Environmental Management Plan.

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi	**Name of the Contractor:** Suez Civil Engineering Services Pvt,LTD& DRS Infra Tech Pvt, Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Udupi	**Name of SE/EE/AE Of concerned division PIU :-**Mr. Sudarshan, Sr.AE
Date of monthly monitoring: 04-03-2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr.PradeepSheety

Table 2: Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction

Field	Anticipated Impact	Mitigation Measures	Responsiblefor Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementations
EMP Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws,etc. 2) Appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work	Construction Contractor / PIU / PMDCSC	(i) Certificate of Completion (Safeguards Compliance Orientation) (ii) Posting of Certification of Completion at worksites (iii) Posting of EMP atworksites	Cost of EMP Implementation Orientation Training to contractor is responsibility of PMU. Other costs responsibility of contractor.	1) Spoil management submitted 2) EHS Engineer appointed

Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay,soils, gravel, and other constructionmaterials; **4)** Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; **5)** Use tarpaulins to cover sand and other loose material when transported bytrucks; **6)** Clean wheels and undercarriage of vehicles prior to leavingconstruction site	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitive receptors; (iii) Heavy equipment and machinery with air pollution control devices; (iv) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	**3)** Complied **4)** Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Complied
	oxides, and hydrocarbons .	**7)** Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				**7)** Complied

Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	**8)** Avoid stockpiling of earth fill especially during the monsoon season unless covered bytarpaulins or plasticsheets. **9)** Laying of pipelines during dryseason and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches orpumping. **10)** Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas (Appendix6).	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and wastematerials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water qualityinspection; (iv) Effectivenes s of water management measures; (v) No visible degradation to nearbydrainages,	Cost for implementation of mitigation measures responsibility of contractor.	**8)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **9)** Instructed contracting agency to fill the excavated trenches at all locations before rainy season **10)** Complied. Contracting agency dumping excess earth in CMC shown area but they contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC
		11) Install temporary silt traps or sedimentation basins along the drainage leading to the waterbodies **12)** Provide temporary bunds for stockpiles and materials **13)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund **14)** Dispose any wastes generated by construction activities in designated sites.		nallahs or waterbodies due to civil works		**11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Not complied **13)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity **14)** Complied. Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC **15)** Not complied

		15) Conduct surface quality inspection and monitoring.				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	**16)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; **17)** Construction work shall be limited to day light hours (6 AM to 6PM) **18)** Provide prior information to the local public about the work schedule; **19)** Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually bychiseling; **20)** Minimize noise from construction equipment/pneumaticdrills by using silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor;and **21)** Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from thevehicle/s. **22)** Horns should not be used unless it is necessary to warn other road users or animals ofthe vehicle'sapproach;	Construction Contractor	(i) Complaints from sensitive receptors; i)Use of silencers in noise-producing equipment and sound barriers; (iii) Equivalent day and night time noise levels (See Appendix 3 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	**16)** Complied **17)** Complied **18)** Complied **19)** No such old or sensitive building found which comes in work alignments. But instructed contracting agency to take safe precautions while executing the works **20)** Complied **21)** Complied **22)** Complied

Landscape and aesthetics	Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	**23)** Prepare and implement spoils managementplan **24)** Avoid stockpiling of excess excavatedsoils; **25)** Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas; **26)** Recover used oil and lubricants and reuse or remove from thesites; **27)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **28)** Remove all wreckage, rubbish, or temporary structures which are no longer required;and **29)** Request PMU/PMDCSC to report in writing that the necessary environmental restoration work has beenadequatelyperformed before acceptance of work.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Worksite clear of hazardous wastes such as oil/fuel (iiv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	Cost for implementation of mitigation measures responsibility of contractor.	**23)** Spoil management plan is prepared **(attached in annexture 2a august 2019 but updation is to be done).** **24)** Found no such surplus and stockpiling of soils found in sites **25)** Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC **26)** Used oil and lubricants not generated on site **27)** Contracting agency reusing by backfilling and dumping excess solid waste to the designated areas **28)** Complied **29)** No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.
Existing Infrastructure and Facilities Accessibility	Disruption of service and damage to existing infrastructure at specified project	**30)** Obtain from PIU/PMDCSC the list of affected utilities and operators ifany; **31)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility of contractor.	**30)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at

	location Traffic problems and conflicts near project locations and haul road	2) (iii) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately. **33)** Plan pipeline work in consultation with the trafficpolice **34)** Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possibletime; **35)** Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the trafficmovement; **36)** Schedule transport and hauling activities during non-peakhours; **37)** Do not close the road completely, allow traffic to move on oneline; **38)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of deliverysites; **39)** In unavoidable circumstances of road closure, providealternative routes, and ensure that public is informed about such trafficdiversions; **40)** At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule;executing agency and contractor details; nature and schedule				any section. **31)** Not complied **32)** No accidental breaking of any properties yet recorded but instructed contracting agency to rectify immediately
			Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix7); (ii) Complaints from sensitive receptors; (iii) Number of signages placed at projectlocation.	Cost for implementation of mitigation measures responsibility of contractor.	**33)** Contractor should inform and take permission from traffic police for any pipe line laying/execution on roads. **34)** Complied **35)** Instructed to contractor agency to backfill and restore the excavated area immediately to avoid traffic **36)** Complied **37)** Complied **38)** Not Complied **39)** Instructed contract agency to provide one separate person at site to give route information to public **40)** Partially complied. Project information board should be both in Kannada and English format.

		of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. **41)** Keep the site free from all unnecessary obstructions; **42)** Drive vehicles in a consideratemanner; **43)** Prepare a Traffic Management Plan –a template is provided for reference at Appendix 7.				**41)** Complied **42)** Complied **43)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 2b august 2019 but updation is to be done).**
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**44)** Prepare and implement spoils managementplan **45)** Leave spaces foraccess between mounds of soil; and Provide walkways and metal sheets where required for people; **46)** Increase workforcein front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **47)** Consult businesses and institutions regarding operating hours and factoring this in work schedules;and **48)** Provide sign boards for pedestrians to inform nature and duration ofconstruction works and contactnumbers for concerns/complaints.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Spoils managementplan (iii) Number of walkways, signages, and metal sheets placed at projectlocation.	Cost for implementation of mitigation measures responsibility of contractor.	**44)** Spoil management plan is prepared **(attached in annexture 3caugust 2019 but updation is to be done)** **45)** Complied **46)** Complied **47)** Complied **48)** Complied
Socio cultural resources	Disturbance to socio cultural resources	**48)** No material should be stocked close to these areas; material shallbe	Construction Contractor	(i) Visual site observations	Cost for implementation of mitigation	**48)**Complied

	(religious, educational, health care etc.,), access disruptions etc.,	brought to the site as and when required. **49)** Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles **50)** No work should be conducted near the religious places during religious congregations **51)** Material transport to the site should be arranged considering school timings; material should be in place before schoolstarts; **52)** Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos anddon'ts **53)** Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly atthe sites.		(i) Public complaints	measures responsibility of contractor.	**49)** Complied **50)** Complied and instructed to follow **51)** Complied and instructed to follow **52)** Partially complied **53)** Not complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**54)** Employ local labor force to the maximum extent, if manpower isavailable; **55)** Comply with laborlaws	Construction Contractor	(i) Employment records; (ii) Records of sources of materials (iii) Compliance to core labor laws (See appendix 2 of thisIEE)	Cost for implementation of mitigation measures responsibility of contractor.	**54)** Register maintained by contractor **55)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).
Occupational Health and Safety	Occupational hazards which can arise during work	**56)** Comply with all national, state and local core labor laws (See Appendix 2 of thisIEE) **57)** Develop and implement site-specific occupational health and safety (OHS) Plan, and include in the Construction Management	Construction Contractor	(i) Site-specific OHSPlan; (ii) Equipped first- aid stations; (iii) Medical insurance coverage	Cost for implementation of mitigation measures responsibility of contractor.	**56)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor. **57)** Contractor following Company EHS Policy-PPE'S provided by

		plan. The OHS plan will include measures suchas: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work- relatedaccidents; **58)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **59)** Provide medical insurance coverage for workers; **60)** Secure all installations from unauthorizedintrusion and accident risks; **61)** Provide supplies of potable drinking water; **62)** Provide clean eating areas where workers arenot exposed to hazardous or noxioussubstances;		forworkers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of health and safety orientation trainings (viii) persona l protective equipment; (ix) % of moving equipment outfitted with audible back- up alarms; (xi) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. (xii) Compliance to core laborlaws		Contractor. **a)** **Complied** **b)** **Complied.** PPE'S provided by Contractor to workers **c)** Complied **d)** Not complied **e)** Accident and incident register maintained **58)** Partially Complied. Instructed to keep first-aid box at each working sites separately **59)** Not complied **60)** Complied **61)** Partially Complied **62)** Not Complied

		63) Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellowworkers; **64)** Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areasunescorted; **65)** Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operatingareas; **66)** Ensure moving equipment is outfittedwith audible back-upalarms; **67)** Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate;and **68)** Disallow worker exposure to noise level greater than 85 dBA for a duration of more than8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. **69)** Overall, the contractor should comply with International Finance Corporation (IFC) EHS		(See appendix 2 of this IEE)		**63)** Not complied. Instructed to Provide health and safety orientation training to all workers **64)** Not complied **65)** Complied **66)** Complied **67)** Complied **68)** Not complied **69)** Not complied

		Guidelines on Occupational Health and Safety				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**70)** Provide hard barricading for all deep excavations that may require especially for pipe lines; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct ofwork **71)** Plan material and waste routes to avoid times of peak-pedestrianactivities **72)** Liaise with Udupi CMC in identifying risk areas on routecards/maps **73)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure **74)** Provide road signs and flag persons to warn of dangerous conditions, for all work sites along theroads **75)** Overall, the contractor should comply with IFC EHSGuidelines Community Health and Safety	Construction Contractor	(i) Traffic ManagementPlan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	**70)** No such deep trenches found during laying pipes. But instructed contracting agency to put hard barricading if trenches are more then 1.5m depth **71)** Not complied **72)** Not complied **73)** Not complied **74)** Complied **75)** Not complied

Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	**76)** Consult with PIU before locating workers camps/sheds, and construction plants; as faras possible located at least 200 m from residentialareas. **77)** Minimize removal of vegetation and disallow cutting oftrees **78)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge **79)** The camp site should be adequately drained to avoid the accumulation of stagnant water **80)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination **81)** Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or lesspersons **82)** Train employees in the storage and handling of materials which can	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.	**76)** Not Complied Labour camp location was finalized but Letter has to be issued from PIU to contractors. **77)** Removal of vegetation Minimize by selecting best alignment. **78)** Instructed contracting agency to builtlabour shad with sheets with proper ventilation in clean hygienic area and drinking water. **79)** Instructed contracting agency to built camp in dry and plan area where there is no water logging and must hygienic area. **80)** Instructed contracting agency to provide drinking water as per the standards at camp **81)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **82)** Instructed contracting agency to provide training of solid and liquid materials handling to the persons at campcarefully to avoid soil contamination

		potentially cause soil contamination; **83)** Recover used oil and lubricants and reuse or remove from thesite; **84)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **85)** Remove all wreckage, rubbish, or temporary structureswhich are no longer required;and **86)** Report in writing that the camp has been vacated and restored to pre- project conditions before acceptance ofwork. **87)** The work camp details should be includedin the Construction ManagementPlan.				**83)** Instructed to contracting agency to train persons not to spill oil and lubricant and use carefully to avoid soil contamination **84)** Instructed to contracting agency to follow at camp **85)** Instructed to contracting agency to follow at camp **86)** Construction work is in progress **87)** Not complied
Social and Cultural Resources	Risk of archaeological chance finds	**88)** Create awareness among the workers and supervisors about the chance finds during excavation work **89)** Stop work immediately if any finds are suspected to allow further investigation **90)** Inform archaeological agencies promptly if a find is suspected, and take any action they require toensure its removal or protection in situ. **91)** Adjacent to important religious sites, undertake excavationandConstruction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	**88)** Till now no such suspected items found nor recorded **89)** Till now no such suspected items found nor recorded **90)** Till now no such archaeological items recorded **91)** No such damages recorded during the visit. But instructed to maintain if such damages happens.

Submission of EMP implementation report	Unsatisfactory compliance to EMP	**92)** Appointment of EHS engineer to ensure EMP implementation **93)** Timely submissionof monitoring reports includingpictures	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	**92)** EHS Engineer appointed **93)** Complied **Annexure-4**
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**94)** Remove all spoils wreckage, rubbish, or temporary structures(such as buildings, shelters, and latrines) which are no longer required;and **95)** All excavated roads shall be reinstated to originalcondition. **96)** All disrupted utilities restored **97)** All affected structures rehabilitated/compensated **98)** The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleanedup. **99)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be topsoiled and regrassed using the guidelines set out in the revegetation specification that forms part of this document.	Construction Contractor	PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.	Cost for implementation of mitigation measures responsibility of contractor.	**94)** Complied **95)** No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage **96)** If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **97)** Till now no structures affected **98)** Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **99)** Not complied
		100) The contractor must arrange the cancellation of all temporaryservices. **101)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance ofwork.				**100)** Not complied **101)** Construction work is in progress

Conclusion:-

Construction stage is in progress. Disposal yard is to be identified and consultations with PIU have to be taken. Health and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Contractor has to submit Site specific EMP of January and March 2020 as construction stage EMP present in IEE report, Udupi.

Recommendation:

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)Engineer		Complied
2.	Submission of Site specific EMP		Comply with in 7 days
3.	Submission of monthly reports.	• Construction status or complacence report	Contractor has to submit Site specific EMP of January 2020 as construction stage EMP present in IEE report, Udupi Comply with in 7 days
4.	Telephone lines, electric Poles and wires, water Lines within proposed project area	• List of utilities going to effect will be submit to PIU	Comply with in 7 days
5.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days
6.	Tree cutting/pruning permission; and	• If any tree affected are noted in survey permission have to be taken	Comply with in 7 days
7.	Compensatory tree plantation as part of the project.		Comply with in 5 days
8.	List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given.	Comply with in 15 days
9.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner have to be taken	Comply with in 5days
10	List of selected sites for disposal	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given.	Comply with in 5 days

		• If any private land is selected NOC from owner have to be taken	
11	List of approved quarry Sites and Sources of materials; and		Comply with in 7 days
12	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarry sites if necessary.		Comply with in 5 days
13	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
14	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	Draft copy shown and submitted and attached as **annexure 3a** in **Aug 2019**report and informed contractor to updateplan once construction phase starts
15	Traffic management plan		Draft copy shown, submitted and attached as **annexure 3b** in **Aug 2019 report** and informed contractor to updateplan once construction phase starts
16	Environmental management plan		Draft copy shown, submitted and attached as **annexure 3c** in **Aug 2019 report** and informed contractor to updateplan once construction phase starts
17	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can	Comply with in 5 days

		be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account. International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety **attached in june 2019 month**	
18	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. Construction test conducted in **Jan 2020** and noise report attached as **annexure 5**
19	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. Construction test conducted **in Jan 2020** and air report attached as **annexure 5**

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure 1

Site visit observations of27th Feb 2020

S.No	Observation		Recommendation	Status
1	Project Information Board and barricading at work site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Not complied

		 Latitude: 13.345375 Longitude: 74.771271 Elevation: 25.07m Accuracy: 3.2m Time: 02-27-2020 13:15 Note: Endrali OHT site location,udupi		

2	PPEs and Sign boards at work places		Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

3	Worker sheds at santtekatte OHT site		Instructed contracting agency to provide proper shelter sheds to worker for resting and also to provide proper toilets sheds.	Not complied

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

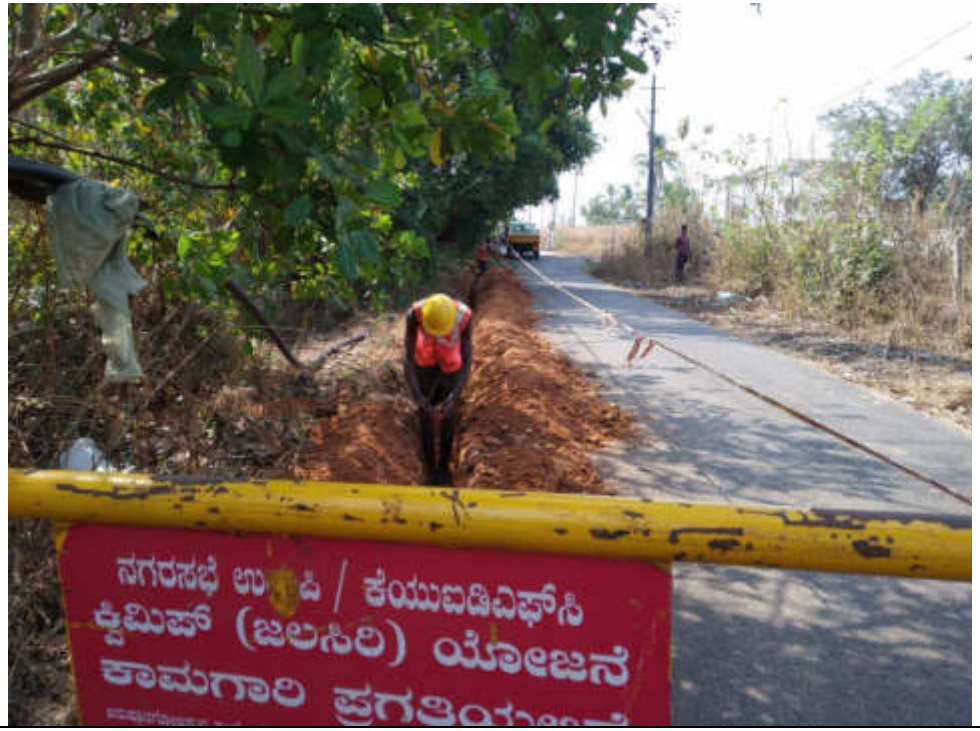
6	Project information board, Barricading at all OHT sites	 	Instructed contracting agency to remove or dump debris and loose materials in dumping yard from OHT site Project information board is not provided by the contractor agency both in English and Kannada language at all OHT sites Instructed to put sign boards like go slow, work in progress, deep excavation boards on OHT sites	Not complied

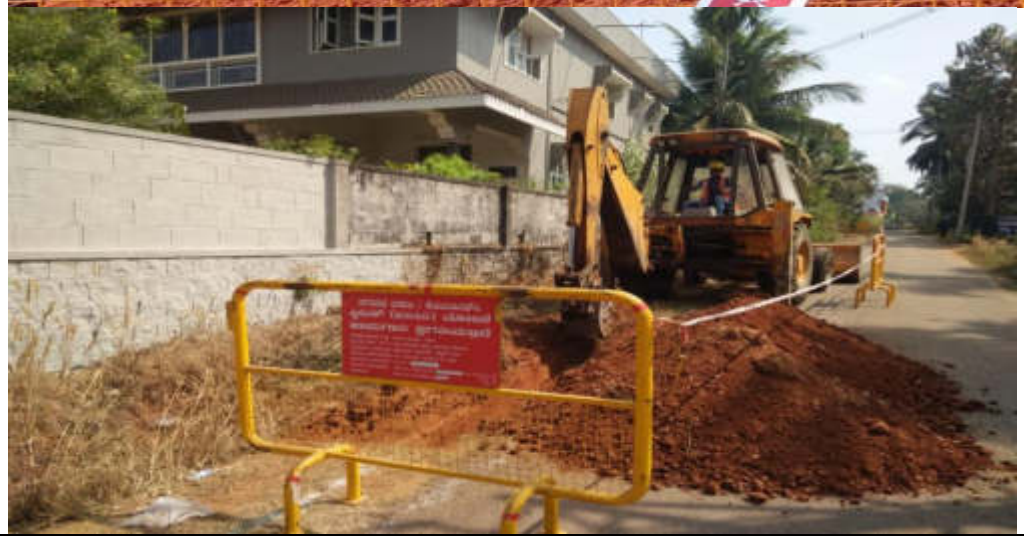
		 Latitude: 13.323403 Longitude: 74.772226 Elevation: 38.55m Accuracy: 3.2m Time: 02-27-2020 11:36 Note: OHT site at manchi location,udupi Powered by NoteCam  Latitude: 13.345138 Longitude: 74.771237 Elevation: 29.27m Accuracy: 3.2m Time: 02-27-2020 13:07 Note: Endrali OHT site location,udupi Powered by NoteCam		

7	Steel stock at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

Annexure 2

Site visit observations of 21st January 2020

S.No	Observation		Recommendation	Status
1	Sign board and flag man at site		Instructed contractors to provided cones, go slow boards and flag man at both the ends at all main road work places	Partially complied

2	Excavated earth at work site	 	Instructed contractor agency to immediately reuse the loose stored earth at site and dispose the remaining earth to dumping yard after the pipe laying And to sprinkle water by water tank to avoid dust generation near residential and commercial areas	Partially complied

3	Aggregates, sand and excavated earth Material stored at santtekatti OHT site		Instructed contracting agency to make bunds for sand and aggregates storage to avoid flow and mix Instructed to remove steel rods used for sheet support And dispose loose earth stored at site to dumping yard	Not complied

4	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose and to use present tank for other usage	Not complied

5	Housekeeping at santekatte OHT for work site	 	Proper housekeeping should be done at work site Instructed not use fire wood burning for cooking and other purpose at work site place	Not complied

6	Excavation work infront of residential house		Instructed contracting agency to immediately restore the excavated area or else to provide wooden or steel pedestrians if work delayed for next day	Partially Complied. Contractors informing to house owners regarding excavation and refilling the earth same day.

Annexure 3

Status of Site visit observations of 18th December 2019

S.No	Observation		Recommendation	Status of observation
1	Project Information Board and barricading at Doddegudde and Parakala site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Partially complied

		 Latitude: 13.372083 Longitude: 74.800365 Elevation: 98.41m Accuracy: 2.3m Time: 18-12-2019 15:17 Note: Parkala Pipe Laying Powered by NoteCam		

2	PPEs and Sign boards at work places	 	Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

		 CITY MUNICIPAL COUNCIL UDUPI KIUDFC KIUWMIP PROJECT WORK IN PROGRESS Latitude: 13.362352 Longitude: 74.767857 Elevation: 118.23m Accuracy: 2.4m Time: 18-12-2019 13:19 Note: Doddengudde Pipe Laying Powered by NoteCam		

3	Stock Yard at Santhekatte fully barricaded on all sides.		Stock Yard at Santhekatte must be hard barricaded and provide proper sign boards	Complied

4	Sign boards at santekatte stock yard		Project information board is provided by the contractor agency both in English and Kannada language at santekatte stock yard	Complied

		 suez Suez Project Pvt Ltd, Suez India Pvt Ltd, DBS Infratech Pvt Ltd (JV) Latitude: 13.389127 Longitude: 74.741602 Elevation: 106.95m Accuracy: 3.2m Time: 18-12-2019 16:05 Note: Santhekatte Store Yard Powered by NoteCam  172.98 Core 16-11-2018 16-08-2022 36 ತಿಂಗಳು 96 ತಿಂಗಳು suez ERIAL STOCK YARD S.R Latitude: 13.389075 Longitude: 74.741582 Elevation: 115.75m Accuracy: 1.9m Time: 18-12-2019 16:02 Note: Santhekatte Store Yard Powered by NoteCam		

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

6	Waste debris and materials at work sites		Instructed contracting agency to remove or dump debris and loose materials in dumping yard from work site Project information board is not provided by the contractor agency both in English and Kannada language at santtekatte OHT site Instructed to put sign boards like go slow, work in progress, deep excavation boards on work sites	Not complied

7	Steel stocked at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

ANNEXURE 4

ADB Visit on March 2nd to 5th 2020 to Kundapura, Udupi and Mangalore Locations for Site Inspection

Kundapura Site Visit on 4th March 2020


Latitude: 13.637934
Longitude: 74.70243
Accuracy: 2600.0m
Time: 04-03-2020 12:51
Note: Site visit ADB
Powered by NoteCam


Latitude: 13.630102
Longitude: 74.670968
Elevation: 17.31m
Accuracy: 4.9m
Time: 04-03-2020 13:25
Note: Talking with affected person
Powered by NoteCam


Latitude: 13.630116
Longitude: 74.670953
Elevation: 16.01m
Accuracy: 7.2m
Time: 04-03-2020 13:25
Note: Talking with affected person
Powered by NoteCam

Udupi Site Visit on 4th March 2020


Diver ek Celebration
Inter al Wo


SUEZ
Diversity week Celebration
International Women's Day

Mangalore Site Visit on5th March 2020


Latitude: 12.901981
Longitude: 74.848947
Accuracy: 100.0m
Time: 03-03-2020 16:39
Note: Kanchady
Powered by NoteCam

Monthly Environmental Monitoring Report

Project Number: 43253-027
April 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura

Package No. 02KDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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Note - Work Was Not in Progress due to Lockdown for Covid-19 Case

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Water Supply System in Kundapura

Kundapura is located in Udupi District in Karnataka and is the headquarters of the KundapuraTaluk placed 92 km from Mangalore and 416 km from Bangalore (Figure 1). Geographically, Kundapura Town is located at a latitude of 13080'N and longitude of 7407'E at an average altitude of 80 m above the mean sea level (msl). The municipality spreads in an area of 14 square kilometer (km^2) and consists of Kundapura Kasaba and Vaderahobli villages, with 23 municipal wards. Population of Kundapura is 30,450 (2011 Census). Kundapura is well connected to other parts of the state and country by highways and railways. National highway (NH-66) passes through the town. Nearest airport is Mangalore International Airport, 87 km from Kundapura. Kundapura is also connected to the Konkan Railway, which runs from Mumbai to Mangalore. Nearest railway station is at about 4 km from the town.

Kundapuran Town Municipal Council (TMC)provides urban services to the people efficiently and is well recognized by the state and central governments. Kundapura TMC has been awarded following certificates of appreciation by the Government of Karnataka:

(i) Best Urban Local Body in the year of 1996-1997;
(ii) Best Urban Local Body Award in the 2009-2010;
(iii) Second Best Practices Award in the year 2010 for Reduction of Nonrevenue Water Supply;
(iv) Third Best Practices Award-2010 for Solid Waste Management (SWM) for providing excellent Municipal Services, maintaining Healthy Environment;
(v) The best Utilization of reserved Fund for the social Service Activities; and
(vi) Town Municipal Council also grabbed Green Leaf Award-2009, Nation Urban Water Awards-2009, and ICONSMW Award-2011 in National level.

3. Need for Infrastructure Improvement in Kundapura

River Varahi is the main surface source of water supply to Kundapura. The intake works, located in Jambu beside JambukeshwaraTemple, about 11 km from Kundapura, pump raw water to the WTP constructed on a hillock in Japhthi village at a distance of about 2.5 km from the intake works by 400 mm diametermild steel (MS) rising main. Treated water from WTP is pumped through a 400mm diameter MS rising main to the 500

kilolitre (kl) capacity OHT at Ashraya Colony, 500klcapacity OHT at Gandhi Park and 500klcapacity OHT at Halekote. The

clear water transmission main passes through Kundapura-Shimoga Road and pass through four-enroutevillages viz., Japhthi, Balkur, Basrur and Koni. A Schematic diagram of the existing water supply systemis shown in the Figure 1.

Figure 1: Existing Water Supply System in Kundapura

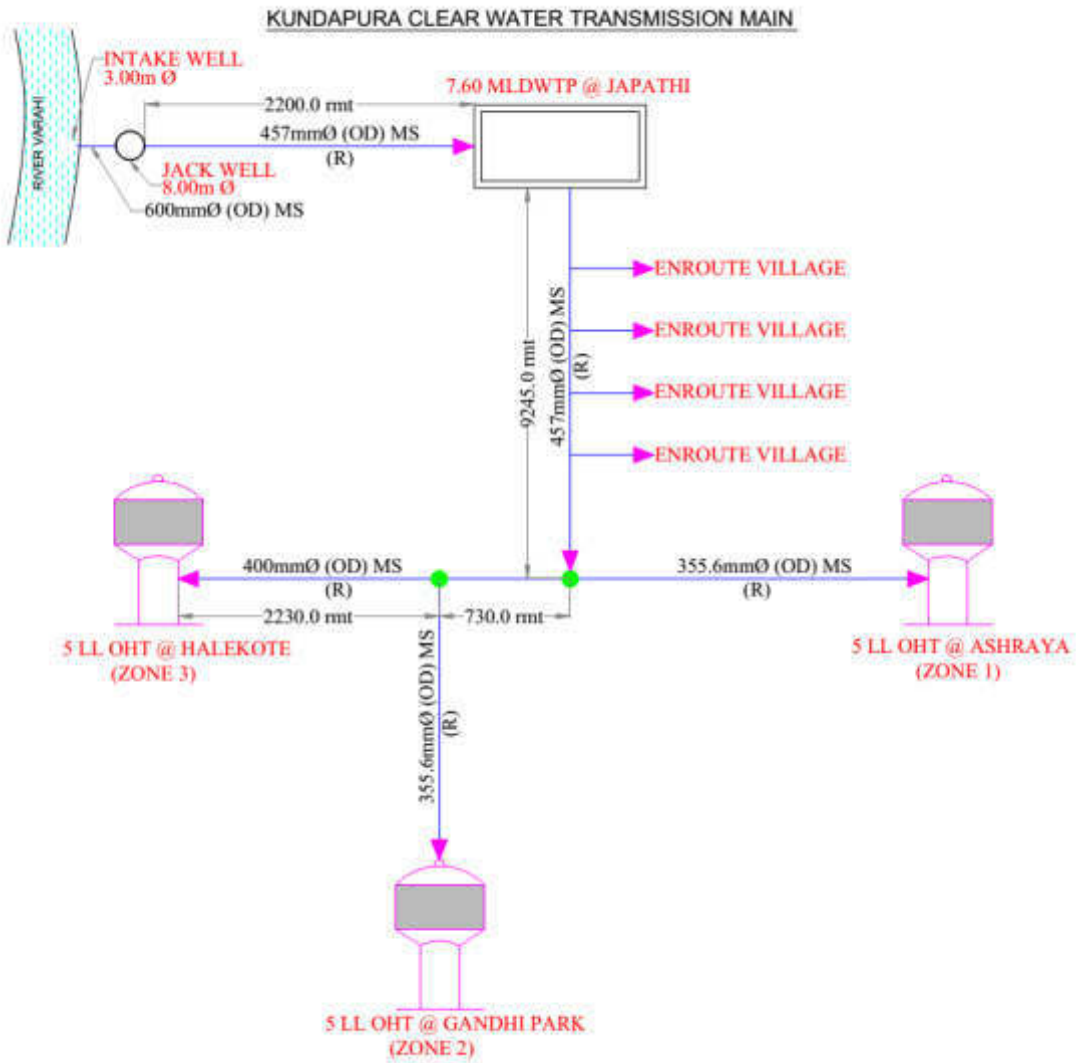


Table 1: Component of Existing Water Supply System in Kundapura

WTP Location	Capacity (MLD)	Treatment Process	Preliminary Design Stage? (Y/N)	Distance of WTP to nearest receptors in meters	Receiving Water of WTP Backwash /Wastewater Discharge	Uses of the receiving water (swimming, boating, fishing, irrigation, others [please specify])
Japthi, Kundapura	7.6	Inlet chamber ,Parshall flume,Flash Mixer , ClrifloculatorFilterhouse, Chlorination,	Existing WTP Rehabilitation	79	Discharged to drain	Irrigation

4. The proposed subproject:

The subproject formulated under this Investment Program to address gaps in current water supply system. Detailed design of all the subproject components is completed prior to the bidding, and as per the detailed design thesubproject includes the following components:

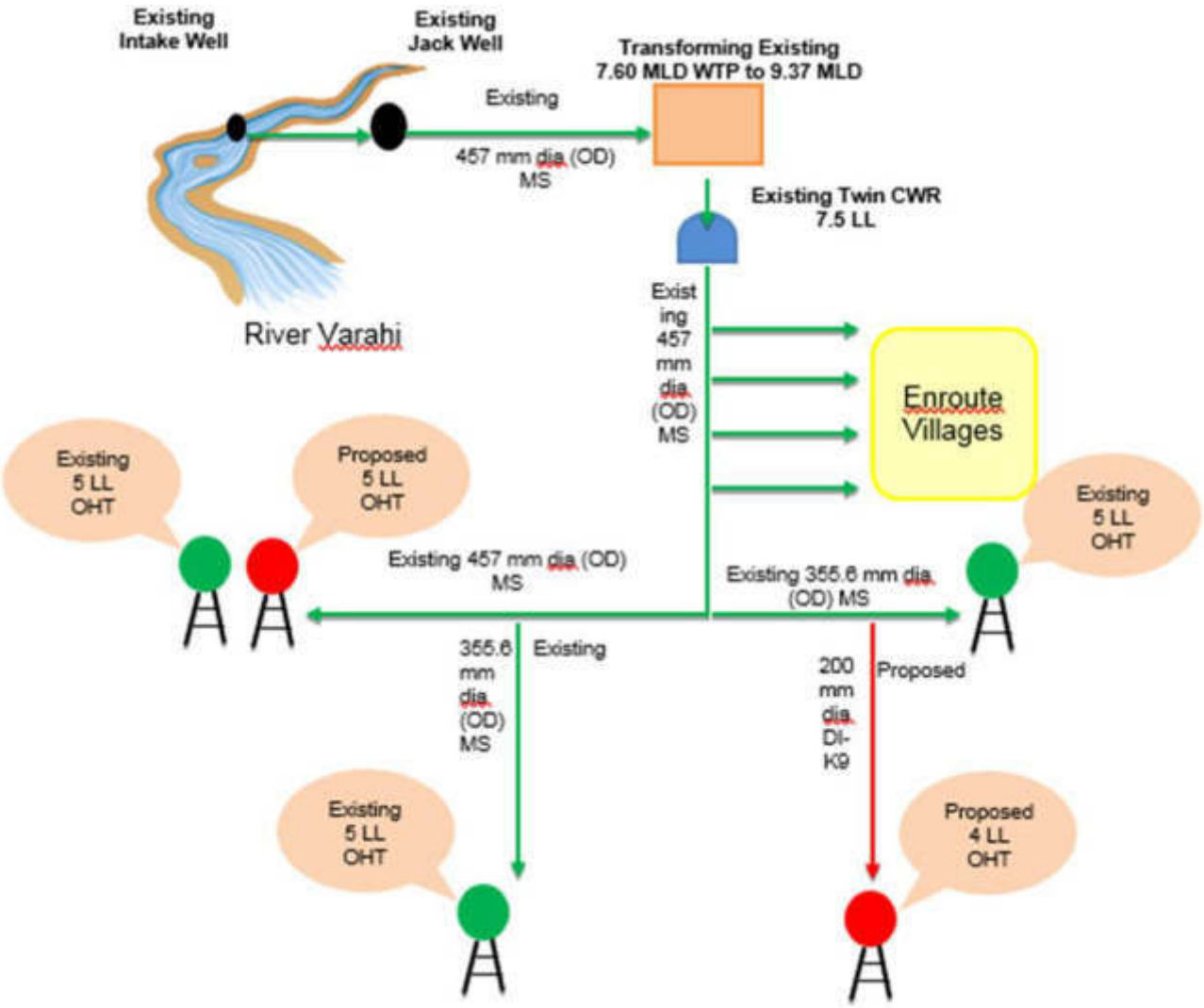
(i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
(ii) rehabilitation of the existing 7.60 MLD WTP in Japthi village including provision of backwash water recirculation and sludge management system;
(iii) laying of 4.8 kilometer (km) feeder main tapping from existing clear water main with 200 millimeter (mm) diameter pipe to feed to the proposed overhead tank (OHT) located in Kodi for the newly added zone 4;
(iv) construction of 2 OHTs with a total capacity of 0.9 million liter;
(v) extension of 31.64 km distribution network of diameter of 75 mm to 250 mm; and
(vi) replacement of 4,200 existing meters and providing new meteredhouse service connection (HSC) of 2,250 for uncovered households.

Following Table 2 provides details of the KIUWMIP Tranche 2 subproject components in Kundapura based on the detailed engineering design of the subproject. Schematic diagram of water supply system in Kundapura is shown in Figure 2. Locations of proposed components in Kundapura are shown. The position of the pipe alignment shown on road sectionis not exact due to mapping scale and underground utilities, and it will be fixed exactly during the pipeline laying work on site. All pipelines will be laid in the road shoulder, whereverit is available, or into the edge of road carriage way.

Table 2: Proposed Components for 24x7 Water Supply Systems

Infrastructure	Function	Description	Location
Jack well and Pump House	Pumping raw water to water treatment plant (WTP)	Rehabilitation works in Jack well by replacing mechanical equipment inside the pump house (pressure gauges, dewatering pumps, and electrical improvements) Provision of diesel generator set of 200 kilovolt ampere (kVA) for the un-interrupted power supply to the Jack well.	Works will be conducted within the existing Jack well near Jambukeshwara Temple in Jambu village
WTP	Treats raw water	Rehabilitation works in WTP by replacement equipment (flow meters, valves, pressure gauges, flash mixer, clari-floculator, alum and lime mixer, chlorinator, lab equipment etc.), Provision of diesel generator set (160 kVA) at WTP. Provision of backwash water recirculation and sludge management system to cater to total capacity of WTP (7.6 MLD); clarified water will be re-circulated to WTP inlet and accumulated sludge will be disposed in sanitary landfill	Works will be conducted within the existing WTP at Japthi village Sufficient land available within the WTP campus to develop backwash and sludge management facilities (see Figure 7)
Clear Water Transmission Main	Conveys clear water to service reservoirs	4.8 kilometer (km) length 200 millimeter (mm) diameter ductile iron pipe	Pipeline will be laid from the existing clear water main on NH-66 near Vinayaka theater to proposed new overhead tank (OHT) Kodi. Alignment is all along Kodi Road Alignment and profile drawings are shown in Figures 9 to 16.
Water service reservoirs	Water storage for supply	2 no.OHTs (of reinforced cement concrete, RCC) including compound walls at the sites: 500kiloliter (kl) capacity for Zone-3 at Halekote 400klcapacity for Zone-4 at Kodi	Site is vacant and owned by TMC Site is vacant and owned by Government of Karnataka Layout plans and elevations of OHTs are shown in Figures 17 to 20.
Distribution system Pipelines	Distributes clear water to the houses for the entire Town	31.64 km length diameter 75 - 250 mm high density poly ethylene (HDPE)pipes 75 mm dia-12.01km 90 mm dia- 5.89 km 110 mm dia- 7.08 km 160 mm dia- 2.27 km 200 mm dia- 2.33 km 250 mm dia- 2.06 km	Distribution pipes will be laid along the roads, within the road right of way, in 4 zones in KundapuraTown Municipal Council (TMC) area. Distribution zones with existing and proposed pipelines are shown Zone wise in Figures 21 to 24.
House Service Connections (HSC)	Individual houses get water after HSC.	HSC with Class B Multijet water meters 2,250 new 4,200 replacement	All households in four zones

Figure 2: Proposed 24/7 Water Supply System for Kundapura



CWR = clear water reservoir, dia = diameter, LL = lahk liter, mm = millimeter, MLD = million liters per day, MS = mild steel, OHT = overhead tank, WTP = water treatment plant.

5. Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura	**Name of the Contractor:**Laxmi Civil Engineering Services Pvt,Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Kundapura	**Name of SE/EE/AE of concerned division PIU :-**Mr.HarishWalmiki, AEE
Date of monthly monitoring:30/04/2020	**Name of Environment, Health And Safety (EHS) Engineer :-**Mr. Vijay

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction–Kundapura

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
Environmental Management Plan (EMP) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and 2) Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.	Construction Contractor/ project implementation unit (PIU)/ Project Management Design and Construction Supervision Consultant (PMDCSC)	a) Certificate of Completion (Safeguards Compliance Orientation) b) Posting of Certification of Completion at worksites c) Posting of EMP at worksites.	Cost of EMP Implementation Orientation Training to contractor is responsibility of Program Management Unit (PMU). Other costs responsibility of contractor.	1) Contractor prepared SOPs.OHS plan and Activities are going on as per company EHS Policies. 2) Complied Environmental, Health and Safety (EHS) Engineer appointed by contractor.

Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	1) Consult with PMU/PMDCSC on the designated areas forstockpiling of clay, soils, gravel, and other construction materials; 2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; 3) Use tarpaulins to cover sand and other loose material when transported by trucks; and 4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and 6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.	Construction Contractor	a) Location of stockpiles; b) Complaints from sensitive receptors; c) Heavy equipment and machinery with air pollution control devices; d) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Instructed to contracting agency to Spray water on exposed soil and stock piled mainly in commercial and residential area 3) Complied 4) Partially Complied. 5) Complied 6) Complied
Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 2) Laying of pipelines during dry season and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches or pumping; 3) Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed,	Construction Contractor	a) Areas for stockpiles, storage of fuels and lubricants and waste materials; b) Number of silt traps installed along trenches leading to water bodies; c) Records of surface water quality inspection; d) Effectiveness of water	Cost for implementation of mitigation measures responsibility of contractor.	1) Stockpiling of earth fill not found during the site visit 2) Instructed to contracting agency to close all opened trenches Before rainy season 3) Partially Complied - Spoil Management plan prepared by Contractor Annexure attached in Feb 2019 reportand recommended to

		dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10); 4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 5) Provide temporary bunds for stockpiles and materials; 6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 100% capacity bund; and 7) Dispose any wastes generated by construction activities in landfill or reuse in beneficial purposes		management measures; e) No visible degradation to nearby drainages, nallahs or waterbodies due to civil works		update according to the suggestions given and submit Spoil Management Plan. updated /Corrected Spoil Management plan yet to be submitted by Contractor 4) Surface Water bodies not found along the Project site. 5) Partially Complied 6) Fuels and lubricants in bulk are not stored by contractor at site. 7) Debris generated by construction is disposed in the ULB designated areas. Waste is used to fill the low line area
	Contamination of coastal water due to works in coastal zone	In addition to the above measures following measures given below for piling works: 8) Piling activities for OHT foundation work at Kodi shall be conducted carefully; there shall no spillage of bentonite on the ground; bentonite slurry shall be properly collected in leak proof containers and re-circulated in the piling activity; excess bentonite slurry shall be dried properly in containers, and disposed			Cost for implementation of mitigation measures responsibility of contractor.	8) Pilling activities for OHT foundation work at Kodi beach has beendone and OHT Construction work in progress and excess earth is disposed in landfill

		in landfill safely				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	1) Plan activities in consultation with PMU/PMDCSC so that activities with the greatest potential to generate noise (road cutting and piling activity) are conducted during periods of the day which will result in least disturbance; 2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; 3) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.	Construction Contractor	a) Complaints from sensitive receptors; b) Use of silencers in noise-producing equipment and sound barriers; and c) Equivalent day and night time noise levels (Appendix 3)	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Complied 3) Complied 4) Complied
Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants,	1) Manage surplus soil, debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary	Construction Contractor	a) Complaints from sensitive receptors; b) Worksite clear of hazardous wastes such as oil/fuel; and c) Worksite clear of any excess excavated earth, excess construction materials, and	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied. No excess excavated earth at work site. 2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill.

	and other similar items.	storage for future use or disposal in landfill 3) In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / Kundapura; waste shall not be disposed in the forest areas and in or near water bodies/ rivers / coast 4) Prepare and implement spoils management plan; 5) Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 6) Recover used oil and lubricants and reuse or remove from the sites; 7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and 8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works have been adequately performed before acceptance of work.		solid waste such as removed concrete, wood, packaging materials, empty containers		3) Complied 4) Partially Complied spoil management plan Prepared and Implementation is going on accordingly (SPM attached as Annexure in Feb 2019 Monthly report. Recommended the Contractor for update as per suggestions given and to submit SM Plan. Updated /Corrected Spoil Management plan not submitted by Contractor 5) Complied 6) Used oil and lubricants not generated on site 7) Complied 8) Restoration work is going on and when work gets completed, joint site inspection will be

						conducted and report / letter will be issued.
Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	1) At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 2) Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section	Construction Contractor and PIU	a) Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken b) Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	1) Complied 2) Complied contingency services are provided and restoration is going on after thework. 3) Complied 4) Complied 5) Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	1) Except four (4) coconut trees at Kodi OHT site, and pruning of large tree to the minimum required extent at Halekoti OHT site, no trees shall be removed for the subproject. 2) Trees in the pipeline	Construction Contractor	a) PMU/PMDCSC to report in writing the numberof trees cut and planted.	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied. 6 trees got felled and Compensations were paid to the owners. Attached as **Annexures 10 in the May 2019 report.** And also ADB Social safeguard team visited on 23/9/2019 to particular affected persons to provide

		alignments shall be avoided during construction by locally altering the alignment. 3) Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed				further training for them. 2) Complied 3) Compensation paid to the owner of the tree.
Accessibility	Traffic problems and conflicts near project locations and haul road	1) Plan pipeline work in consultation with the traffic police; prepare a Traffic Management Plan – a template is provided for reference at Appendix 11. 2) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 3) Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the traffic movement; 4) Schedule transport and hauling activities during non-peak hours; 5) No road shall be completely closed for traffic; in unavoidable circumstances of road closure (eg, NH service road closure at Shastri Circle for trenchless work),	Construction Contractor	a) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix 11); b) Complaints from sensitive receptors; and c) Number of signages placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	1) Traffic Management Plan prepared by contractor and followedaccordingly. Traffic Management Plan attached as Annexure**– 9 in the May 2019 report.** It was advised to contractor to update Traffic ManagementPlan. Traffic management plan yet to be updated 2) Complied 3) Complied 4) Complied 5) Contractor has to provide traffic management plan for their all working areas to minimize the traffic in busy

		provide alternative route, and ensure that public is informed about such traffic diversions; 6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; 7) Maintain safe pedestrian access at all times to the houses along the work site; 8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board. 9) At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints; 10) Keep the site free from all unnecessary obstructions; 11) Drive vehicles in a considerate manner In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work				and small congested areas 6) Complied 7) Complied 8) MS tubular barricadesare provided by Contractor at HaleKote OHT and Kodi OHT Site. 9) The public information/caution boards at work sites not provided with details mentioned in Mitigation Measures except at Kodi Beach which is also in Kannada. 10) Complied 11) Partially Complied
Socio-Economic –	Impede the	1) Strictly follow the pipe	Construction	a) Complaints from	Cost for	1) Complied

Income.	access of residents and customers to nearby shops	laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 2) Leave spaces for access between mounds of soil; 3) Provide walkways and metal sheets where required for people; 4) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; 5) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and 6) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Contractor	sensitive receptors; b) Spoils management plan; and c) Number of walkways, signs, and metal sheets placed at project location.	implementation of mitigation measures responsibility of contractor.	2) Complied 3) Complied 4) Complied 5) Complied 6) Not Complied. Project information board was not provided at all working areas. **Provided board in kannadaonly at OHT work, Kodi and Hallekote. Instructed contracting agency to provide project information board in both Kannada and English**
Socio cultural resources	Disturbance to socio cultural	1) No material should be stocked close to these	Construction Contractor	a) Visual site observations	Cost for implementatio	1) Complied

	resources (religious, educational, health care etc.,), access disruptions etc.,	areas; material shall be brought to the site as and when required; 2) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles; 3) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 4) No work should be conducted near the religious places during religious congregations; 5) Material transport to the site should be arranged considering school timings; material should be in place before school starts; 6) Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts; and 7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.		b) Public complaints	n of mitigation measures responsibility of contractor.	2) Contractor conducting work manually for all possible works to minimize the use of equipment. 3) Complied 4) Complied 5) Complied 6) Recommended contacting agency to provide information about project work and Proper record has to be maintained 7) Improvement is required in Implementation.
Socio-Economic - Employment	Generation of contractual employment and increase in local	1) Employ local labor force to the maximum extent, if manpower is available; and	Construction Contractor	a) Employment records; b) Records of sources of	Cost for implementation of mitigation measures	1) Register maintained by contractor attached as

	revenue	2) Comply with labor laws		materials; and c) Compliance to core labor laws (See Appendix 2of this IEE)	responsibility of contractor.	**Annexure – 7 in May 2019 report.** 2) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled). Attached as **Annexure 11 and 12 in May 2019 report.**
Occupational Health and Safety	Occupational hazards which can arise during work	1) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE); 2) Develop and implement site-specific health and safety (H&S) plan which will include measures such as: **(a)** excluding public from the site; **(b)** ensuring all workers are provided with and use Personal Protective Equipment; **(c)** H&S Training for all site personnel; **(d)**documentedprocedures to be followed for all site activities; and **(e)** documentation of work-related accidents; 3) All trenches in sandy and mixed sandy soils	Construction Contractor	a) Site-specific OHS Plan; b) Equipped first-aid stations; c) Medical insurance coverage for workers; d) Number of accidents; e) Supplies of potable drinking water; f) Clean eating areas where workers are not exposed to hazardous or noxious substances; g) record of H&S orientation trainings h) personal protective equipment; i) % of moving equipment outfitted with	Cost for implementation of mitigation measures responsibility of contractor.	1) Contractor following Company EHS Policy Site-specific OHS Plan Not prepared by Contractor and is yet to be submitted 2) Contractor following Company EHS Policy-PPE'S provided by Contractor. Proper Documentation has to be maintained by Contractor 3) Recommended contractor to

		irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures 4) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 5) Provide medical insurance coverage for workers; 6) Secure all installations from unauthorized intrusion and accident risks; 7) Provide supplies of potable drinking water; 8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances 9) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers;		audible back-up alarms; j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. k) Compliance to core labor laws (Appendix 2)		implement the mitigation measure when such deep trenchesare to be executed. 4) First aid box is available but not adequate as per standards.The equipped first-aid station not provided. 5) Employees Compensation Insurances for Workers (Skilled and unskilled). 6) Complied 7) Complied 8) Separate clean eating areas not provided by contractor. 9) H&S orientation training for workers not found during the work and proper documentation required need to be done 10) Not Complied

		10) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; 11) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 12) Ensure moving equipment is outfitted with audible back-up alarms; 13) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 14) Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and				11) Complied 12) Complied 13) Not Complied 14) Not Complied Recommended the Contractor to use hearing protection measures and not allow worker to work more than 8 hours per day during the work. 15) Not complied

		15) Overall, the contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES)				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	1) Provide protective shorting / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (>1m); 2) One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and take necessary precautions for safe conduct of work. 3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work;	Construction Contractor	a) Traffic Management Plan; and b) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	1) Recommended contractor to implement the mitigation measure when such deep trench were executed. 2) Complied 3) Joint inspection conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and should take necessary precautions for safe conduct of work, No such record found at time of inspection 4) Complied

		4) Plan material and waste routes to avoid times of peak-pedestrian activities; 5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps; 6) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and 8) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES).				5) Complied 6) Not complied- Register of Equipment and Vehicles maintenance certificates not found at site during the site visit. 7) Work in progress at Halekote OHT and sign boards provided at work site but no pipe execution work was in progress during inspection. Instructed contracting agency to keep necessarysign boardswhen pipe execution work starts. 8) Not Complied.
Work Camps and worksites	Temporary air and noise pollution from machine operation, water	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within	Construction Contractor	a) Complaints from sensitive receptors; b) Drinking water and sanitation facilities	Cost for implementation of mitigation measures	1) Complied.

	pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	reasonable distance of work site; 2) Minimize removal of vegetation and disallow cutting of trees; 3) Labor camps shall include accommodation for workers/laborers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 4) The roof height of the worker's and labor camp shall not be less than 3 m from floor level to the lowest part of the roof. 5) The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant regulation, whichever is higher. 6) Fire and electrical safety pre-cautions shall be adhered to. 7) Cooking, sanitation and washing areas shall be provided separately. 8) The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.		for employees	responsibility of contractor.	2) Removal of vegetation minimized by selecting best alignment. 3) Labor camps facilitiesprovided by the Contractor to be improved. 4) Not Complied 5) Not Complied 6) Fire Extinguisher not provided and electrical cable connections are not safely maintained. 7) Separate Cooking areahas not been provided 8) Gas Cylinder has been Provided by Contractor 9) Complied

		10) The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 12) Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons; 13) Train employees in the storage and handling of materials which can potentially cause soil contamination; 14) Recover used oil and lubricants and reuse or remove from the site; 15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 16) Remove all wreckage, rubbish, or temporary structures which are no longer required; 17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				10) Not complied 11) Complied 12) NotComplied. The toilets are in unhygienic conditions. 13) Not Complied 14) Complied - reused. 15) Complied 16) Complied 17) Still Construction Phase is in progress.

Social and Cultural Resources	Risk of archaeological chance finds	18) Create awareness among the workers and supervisors about the chance finds during excavation work; 19) Stop work immediately if any finds are suspected to allow further investigation; 20) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in site; and 21) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	18) Complied 19) Till now no such suspected items found nor recorded 20) Till now no such archaeological items recorded 21) Till now no such change found nor recorded
Submission of EMP implementation report	Unsatisfactory compliance to EMP	22) Timely submission of monitoring reports including pictures.	Construction contractor	a) Availability and competency of appointed supervisor Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	23) Monthly report submitted by Contractor.
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	24) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; 25) All excavated roads shall be reinstated to original condition. 26) All disrupted utilities restored. 27) All affected structures rehabilitated/compensated. 28) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these	Construction Contractor	a) PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to operation and maintenance (O&M) are removed; and (iv) Worksite clean-up is satisfactory.	Cost for implementation of mitigation measures responsibility of contractor.	24) Complied 25) Complied 26) Complied 27) Till now no structures affected 28) Complied

		shall be cleaned up; 29) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regressed using the guidelines set out in the revegetation specification that forms part of this document; 30) The contractor must arrange the cancellation of all temporary services; and 31) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.				29) Construction Phase is in progress 30) Construction Phase is in progress. 31) Construction Phase is in progress

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project isnot satisfactory. Contractor is maintaining copy of IEE. HIV AIDS Awareness Training programme have to be conducted by the Contractor. Proper Safety precautions should be improved by Contractor. January, February and March 2020 site specific EMP Monthly report with PIU letter has to be submitted from the contracting agency.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation /Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Certificate of Completion (Safeguards Compliance Orientation)	• **Register of Clearances required /status**	**1)** CRZ Clearance attached as**Annexures 2,3 &4 in June 2019 report** 2) Tree cutting permission from tree officer not provided yet.
2.	Posting of Certification of Completion at worksites	• If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board.	Within3 day of work Completion
3.	Posting of EMP at worksites.	• **Project Information board should also be in Kannada Language along with contact numbers for grievance Redressal**	Comply with in 15 days
4.	Location of stockpiles;	• To prepare the Google map of the Locations of identified stockpiles	Comply with in 5 days
5.	Complaints from sensitive receptors;	• **Complaints/Grievance Redressal Registers should be maintained at each work site.**	**Compiled and maintaining grievance registers at site**
6.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
7.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
8.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	Comply with in 7 days
9.	Number of silt traps installed along trenches leading to water bodies;	• Prepare list of silt traps installed along trenches	If applicable in 8 days
10	Records of surface water quality inspection;	• If any surface water body is Present nearby project area during	For every 3 months,

		the construction phase, the contractor will carry out environmental monitoring and testing for Surface water engaging NABL approved laboratory.	**Complied (Jan to March Monitoring).Annexure 2 in May 2019 report.** **The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report**
11	Use of silencers in noise-producing equipment and sound barriers; and	• **Only acoustic enclosures fitted DG set will be allowed at the construction site and camp sites**. • Maintenance of equipment and machinery (including proper lubrication, tuning and checks for muffler effectiveness) shall be regular and up to the satisfaction of the Engineer to keep noise level under control. • **Barricading- Hard Barricade should be provided to protect from unauthorized access of common people**	Daily monitoring required at site during the work Comply during the work.
12	Equivalent day and night time noise levels (Appendix 3)	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	For every 3 months, **Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors toconduct the noise test every 3 months.**The Noise level monitoring is done in January 2020 and attached as **Annexure-5b in Jan 2020 report**
13	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	For every 3 months**, Complied (Jan to March Monitoring). Annexure-2**during the work.**Informed the contractors to conduct the air quality test every 3 months.**The Air quality monitoring is done in January 2020 and attached as **Annexure-5a in Jan 2020 report**
14	Worksite clear of hazardous wastes such as oil/fuel;	• Used oil generated from vehicles/DG set at plant/camp site will be collected in closed containers and sold to MoEF&CC/SPCB approved used oil recyclers.	Daily monitoring required at site during the work

		• No solid or hazardous wastes (such as oil contaminated waste) will be dumped in drains or in open areas	Comply during the work
15	solid waste such as removed concrete, wood, packaging materials, empty containers	• Burning of wastes will not be allowed. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are regularly emptied and waste is disposed off in a hygienic manner as per the Solid Waste (Handling and Management) Rules, 2016. • Solid waste generated at the construction site, plant/camp site, will be collected in covered wasted bins and segregated as biodegradable (food waste, paper, etc) and non-biodegradable (plastic, polyethylene bag etc.). Polyethylene/plastic wastes will be stored in empty cement bags and should be sent for recycling. Biodegradable (food waste, paper etc.) solid waste will be disposed in a compost pit.	Daily monitoring required at site during the work Comply all the issues during the work
16	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• **Maintain copy of Section-wise list of utilities to be shifted / disturbed**.	Partially Complied. Communication letter maintained by PIU **attached as Annexures 3&4in the May 2019 report.** Contactor should also have copy with him **Section-wise list of utilities to be shifted** comply within 7 days.
17	Record to confirm that contingency services are provided and all damaged utilities are restored after the work	• **Register of damaged infrastructure** • **Register of reinstated infrastructure**	Comply with in 3 days
18	PMU/PMDCSC to report in writing the number of trees cut and planted.	• **Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation.**	**Complied attached as Annexures 10in the May 2019 report**
19	Number of signage's placed at project location.	• **Maintain thesignages placed at project location**	Comply with in 5 days
20	Visual site observations	• **Register of official visiting the site and directions given if any at each site.**	Comply with in 3 days
21	Employment records;	• **Attendance registers of labour at each site.**	**Complied and attached as Annexure 7in the May 2019 report and maintaining the attendance register.**
22	Records of sources of materials; and	• **Maintain separate record of quantity of materials used and with all authorized certificates of suppliers**	Comply with in 5 days
23	Compliance to core labor laws (See Appendix 2 of this IEE)	• **Register of payment to the workers**	Comply Immediately
24	Site-specific OHS Plan;	• **Site-specific Occupational Health and Safety Plan**	Comply with in 4 days

25	Equipped first-aid stations;	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. • First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	Comply with in 7 days
26	Medical insurance coverage for workers;	• **File of insurance as per 13.1 PCC with contents showing the validity.** • Health Camps and Check -up should be conducted for the workers • **Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.**	Comply with in 12 days
27	Number of accidents;	• **Accident and Incident register will be maintained by Contractor at each work site.**	**Complied. Attached in Annexure 1 in Aug 2019**
28	Supplies of potable drinking water;	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the construction site.	**Complied**
29	Clean eating areas where workers are not exposed to hazardous or noxious substances;	• Since a common mess is not provided/operated, separate space for cooking and eating shall be provided.	Comply with in 4 days
30	Record of H&S orientation trainings personal protective equipment;	• **Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register** • **The list of PPEsto be provided.**	Complywith in 7 days
31	Personal protective equipment;	The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers whenever on the construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These	Comply with in 5 days

		shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided. • During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	
32	Permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.	• **The contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. Guidelines.**	Comply with in 10 days
33	Records of chance finds	• Concerned records should be maintained if any chance find transpires.	Comply immediately as soon as chance find occurs.
34	Availability and competency of appointed supervisor	• Certified and Experienced supervisor will be appointed by Contractor	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	• **Contractor submitted Monthly report to PIU & PMU**	January 2020 Monthly report has to be submitted
36	Camp has been vacated and restored to pre-project conditions	• All construction related structures not relevant to operation and maintenance (O&M) are removed; and • Worksite clean-up must be satisfactory.	Will be Compiled Within 2 days of Work Completion

MAHMAD RAPHIYODDIN SHAPHIYODDIN MALIK
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

ANNEXURE -1

STATUS OF SITE OBSERVATIONS VISITED ON FEB 27th 2020

S.No	Observation		Recommendation	Status
a	Material storage at kodi OHT, Kundapura		Material at kodi OHT site were properly stored and bunded Instructed contractor agency to dispose all loose earth stored to dumping yard	Partially complied

b	First Aid Box at Kodi OHT Site , Kundapura			To have proper first hand treatment at site if any injury occurs to any personnel, First Aid Box as per standards is to be provided at site immediately.	Partially complied

C	Housekeeping at Kodi OHT Site , Kundapura	 	Instructed contractor agency to remove all material covers, cardboard boxesstored at Kodi OHT Store yard and also steel rods to keep in proper placesand to maintain proper housekeeping near store and site	Partially complied

d	One side of the ClariflocculatorJapti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator.	 	One side Opening is required with proper channel/Gate/tubular rods.	Partially complied

e	Electrical Switch Board Panel is without proper Enclosure at WTP Jabti, Kundapura		Electrical Switch Board Panel should be covered with proper box cover which prevents rain water from entering inside the panel box.	Not complied

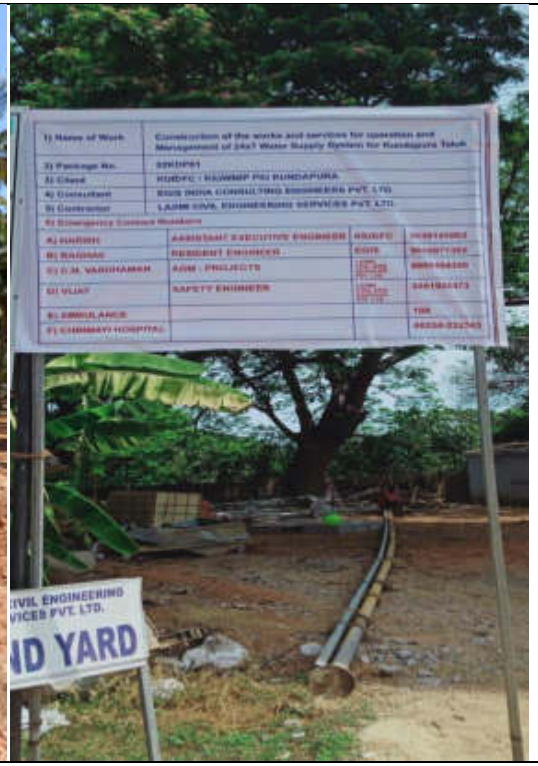
f	Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site,Halekote		Hard Barricading is to be done at river side near Water Tank in order to prevent fall of any person. Proper bathroom and washing platform need to be provided.	Not complied

g	OHT Halkote work site		Hard barricading by sheetmust be provided so that residential staying nearby and animals should not enter into the OHT site during work	Not complied

h	Toilet is not properly maintainedat OHT Halekote,Kundapura		Toilet facilities at works camp at Halekote must be maintained properly	Not complied

ANNEXURE-2

SITE VISIT OBSERVATIONS VISITED ON 23rd JANURAY 2020

S.No	Observation		Recommendation	
1	Sign Boards at Kodi Beach OHT are not proper	 	Work in progress Board is to be placed at site, which should be legible Project Information Board also to be in English along with necessary contact numbers for Grievance Redressal.	Complied

2	Material storage area not barricaded and bunding is done partially	 	Material storage area is to be barricaded and proper bunding is to be done around the stored material	Complied

3	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Complied

4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		Immediately shift the steel bars from the present location and keep near the Store Room, where space is available. Put proper caution signboards near the storage area. Steel Reinforcement Work should be carried out in safe working location	Partially complied

5	Housekeeping at work Halikote OHT		Materials after use must be shifted to their yards. Proper housekeeping should be done at work site to avoid injuries	Not complied

6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not complied

7	Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote		Proper Hard Barricading is to be done completely along with sign boardsfrom behind the labour room to washing area up to last point of working area at backside in order to prevent fall of any of the persons. Proper bathrooms and washing platform need to be provided.	Not complied

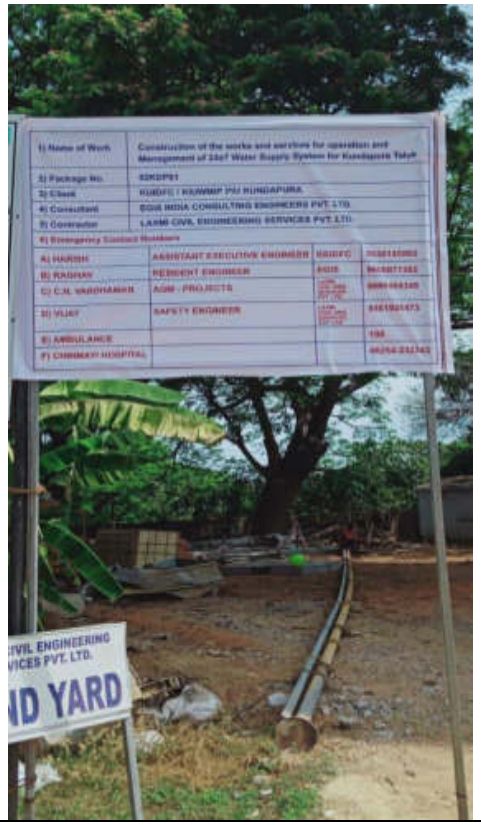
8	Toilet is not properly maintained atOHT Halekote,Kundapura		Toilet facilitiesat works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied

9	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.			It should be replaced with another cable of required specifications and with no damage	Not complied

ANNEXURE -3

STATUS OF SITE OBSERVATIONS VISITED ON DECEMBER 2019

S.No	Observation		Recommendation	Status of Observations
1	PPEs at work site		Workers wearing PPEs at kodi OHT site and instructed to wear PPEs regularly at working sites	Complied

2	Project information board at kodi OHT Site to be provided in English as well			Project information board in English must be provided. Contact number must be provided for emergency and for public complaints in English and Kannada language as well	Complied

3	Material storage area not barricaded and not provided sign board at Kodi OHT at material stocks		Material storage area is to be barricaded properly and sign boards must be provide at stock yard	Complied

4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause vehicular accidents by passing traffic	 	Immediately shift the steel bars from the present location and keep near the Store Room, where space is available. Put proper caution signboards near the storage area.	Partially Complied

5	Pipes and other material stockpiled along the access roads	 	Provide a designated area for material stockpile away from access ways to maintain flow of the traffic and proper barricading is to be done for the stored material along with sign board	Partially complied

6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not Complied

7	Worker cutting steel without safety			Worker must wear face shield or safety glasses or goggles and protective hand gloves	Partially complied

8	OHT Hallekote work site is barricaded except a small portion which is for material transportation		Provide Corrugated metal sheets only to a portion adjacent to the houses in order to prevent entry of any person/animal into the work site. Loose materials should be disposed off to their landfills area	Complied

9	Steel bars coming out of the storage area posing a risk of injury to the workers near labour room		Immediately remove the steel bars from the area and store it at a proper place. And proper housekeeping should be maintained after work at work sites	Complied

10	The distribution board provided for the clari-flocculator is found open during raining condition				The distribution board should be kept closed and only authorised electrician is allowed to operate it.Necessary warning with distribution board number should be displayed on it for awareness of others The distribution board should be protected from weather. ELCB should be fixed on the DB for the safety of employees from electric shock.	Not Complied

11	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.		It should be replaced with another cable of required specifications and with no damage	Not Complied

12	A small portion is left out of barricading		The left out portion of barricading is to be done	Complied

13	One side of the Clariflocculator Japti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator			One side Opening is required with proper channel/Gate/tubular rods.	Not Complied

14	Hard Barricading has been completed as per the instructions near GL Water Reservoir at Japti WTP Site Kundapura		The remaining Hard Barricading is done near GL Water Reservoir at Japti WTP Site , Kundapura	Complied

15	Stones are lying in the premises		It should be either used or disposed off appropriately.	Not complied

Monthly Environmental Monitoring Report

Project Number: 43253-027
April 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City

Package No. 02MNG02

Prepared by

egis India
Consulting engineers pvt. ltd.

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Note - Work Was Not in Progress due to Lockdown for Covid-19 Case

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Sewerage System in Mangalore

The first sewerage system in Mangalore wasbuilt in 1961 and was designed for an ultimate flow of 27.04 million liters per day (MLD) estimated for a design population of 200,000 of the year 1991. This scheme was implemented by Public Health Department. The total area covered by the sewerage network is about 25km^2 with two sewerage disrticts and seven zones. Total length of sewerage network constructed was about 250 km with pipe diameter varying from 150mm to 600mm with 7,000 manholes

and eight wet wells-cum-pump houses. In 1974, Karnataka Urban Water Supply and Sewerage Board (KUWSDB) extended the sewerage networks within the existing 25 km^{2}area by another 245 km with 8,000 units of manholes.

The second scheme was established in 2003 under the ADB funded Karnataka Urban Development and Coastal Environmental Management Project (KUDCEMP) and commissioned in 2007-2008 and the sewerage system was upgraded for an ultimate flow of 88.75MLD for a design population of 624,432.

Sewerage network extended to adjoining areas of old city and to other areas in Mangalore City Corporation (MCC) boundary covering 50.60 km^2.Overall 60% of Mangalore, 75.60km^2, is covered with sewerage systems.

Mangalore city is divided into two parts as Surathkal and Mangalore, further subdivided into seven sewerage districts. Each district has one STP. The total length of sewerage network is about 360 km including 14,875 Manholes with pipe diameter varying from 150 mm to 900 mm,and22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km^2. West district consists of 6 zones (city center of Mangalore) covers 30.82 km^2.South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km^2. East district consists of1 zone (Pachanady, Bondel and Shakatinagara)covers 18.78km^2.

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	$12^0$87'N Latitude $74^0$88'E Longitude
Area	132.45 km^2
Population 2011	488,487
Number of households	115,036
Road length	1,134 km
Projected population for the year 2016	554,183
Projected population for the year 2031	756,903
Projected population for the year 2046	1,033,778
Existing Underground Drainage (1961 Scheme) by Public Health Department	
Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total area covered Designed Population	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes 8000 8 25 km^2 2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network Total Number of Manholes	245 km 8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total Area Covered Designed Population	24 360 km - diameter varying from 150 mm to 900 mm 14,815 22 70% 624,432
Capacity and Technology of STP • STP at Kavoor • STP at Pachanady • STP at Bajal • STP at Surathkal	 43.5 MLD UASB 8.75 MLD ASP 20 MLDASP 16 MLD ASP
Total Number of House ServiceConnections	45,000

ASP = activated sludge process, km = kilometer, KUDCEMP = Karnataka Urban Development and Coastal Environment Management Project, KUIDFC = Karnataka Urban Infrastructure Development and Finance Corporation, KUWSDB=Karnataka Urban Water Supply and Drainage Board, MCC = Mangalore City Corporation, mm = millimeter, MLD = million liters per day,STP = sewage treatment plant, km^2 = square kilometer, UASB = up-flow anaerobic sludge blanket.

3. The proposed subproject:

Under this subproject, it is proposed to replace existing sewage pumping mains, which are damaged, undersized and/or chocked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

(i) 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavoor sewage treatment plant (STP);
(ii) 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
(iii) 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
(iv) 1.1 km length 450 mm diameter main from JeppuBappal wet well no.7 to ridge manhole near Yekkur, inside old sewage treatment plant (STP).

includes of replacement of sewerage pumping mains fromwet wells to the STP.Table 2showsthenatureandsizeofthevariouscomponentsofthesubproject, based on the detailed engineering design of the subproject.Figure1shows the location of four proposed pumping main sections in Mangalore City.

Figure 1Key Plan Showing Pumping Main Alignments

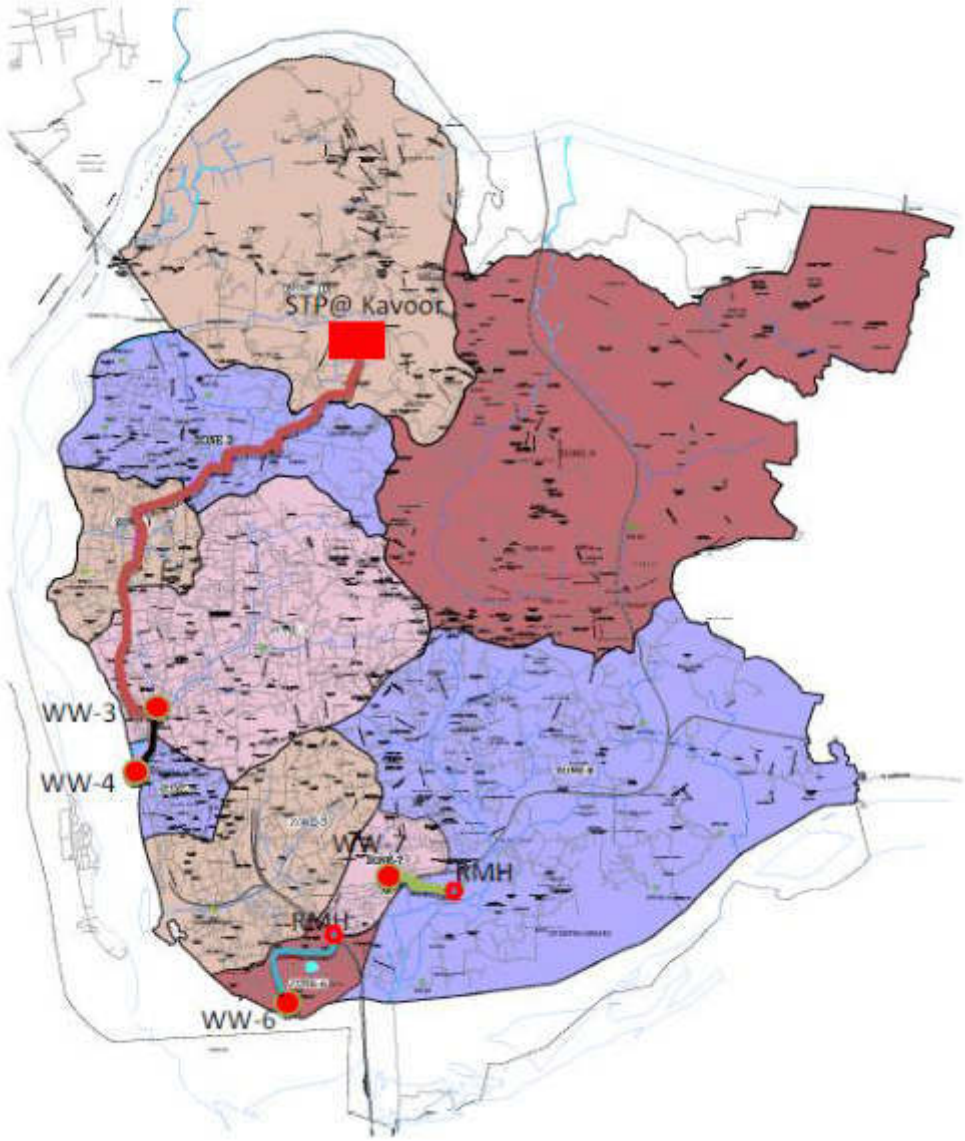


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	Replacement of old pumping main of total length 11.4 km withnew mains of ductile iron pipes at following section: (i) From Kudroliwet well 3 to Kavoor STP: 7.65 km length and 1,100 mm) diameter (ii) From Kandathpalli wet well 4 to Kudroli wet well 3: 0.95km length and900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate:1.7km length and 450 mm diameter (iv) From JeppuBappal wet well 7 to Ridge manhole near Yekkur, inside old STP:1.1km length and 450 mm diameter	New pumping mains will be laid along the public roads – in the vacant earthen shoulder where it is available, or in the tarmac portion, where there is no vacant land. New pipeline will be mostly laid adjacent to the existing ones which are currently in operation: Road width varies from 3.5 m to 8 m. List of roads and alignment details of each pipeline section is provided in Table 11.

km = kilometer, mm = millimeter, STP = sewage treatment plant.

4. Environmental Management Plan

An environmental management plan (EMP) is included as part of this IEE, which includes: (i)mitigation measures for environmental impacts during implementation; (ii)an environmental monitoring program, and the responsible entities for mitigating, monitoring, and reporting; (iii)public consultation and information disclosure; and (iv)a grievance redress mechanism. A number of impacts and their significance have already been reduced by amending the designs.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	**Name of the Contractor:** DRS Infra Tech Pvt, Ltd.,
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Mangalore	**Name of SE/EE/AE Of concerned division PIU :-** AE **-** Mr. Shiv Kumar
Date of monitoring: 30/04/2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr. Madukar

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction– Mangalore

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Construction Impacts	• Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and • Occupational hazards which can occur to workers and public during work.	Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following: 1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; 2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); 3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; 4. Details of materials at each site (type and quantity);	Construction Contractor	• Site inspection and record verification; - Done. • Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done • Site specific Occupational Health and Safety (OHS)plan; • Spoil and waste management plan; and • Complaints from sensitive receptors and public.	Good construction practice to be followed by contractor – no additional costs	1. Maintaining daily work records **Attached in Jan 2020 annexure 5 a & b** 2. Complied. **Attached in Sep 2019 annexure 3** 3. Complied and PPEs are provided to workers on site. **Attached in annexure Sep 2019 1.v** 4. Contractor maintained registers for

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		5. Risks/hazards associated with the work (for example, Trench excavation will have risks such as trench collapse, persons/vehicles falling into trench, structural risk to nearby buildings, damage to buildings, infrastructure etc.); 6. Construction waste/debris generated (details and quantity); 7. Detail the sequence of work process (step-by- step) including specific details of each work; 8. Contractor's supervision and management arrangements for the work; Emergency: Designate (i) Responsible person on site, and (ii) first aider; and (iii)Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading, etc. 9. The pumping main lines are to be laid along the roads, Roads are provided with side drains to carry rain water. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of				pumping main sites and recommended to maintain for each site 5. Building and infrastructure were not found near excavation area. And instructed contracting agency to put hard barricades. 6. Contractor maintained register for damaged infrastructure. Attached as **Annexure-11** in **May - 2019 report.** Recommended contracting agency to Updated work record monthly 7. Not complied. Work plan has to be prepared. 8. Not Complied. First aider not

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains. **The following should be included in the site layout plan**: a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone; b) Location of temporary stockpiles and provision of bunds; c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil; d) Wetting of soil to arrest dust generation by sprinkling water; and e) Waste/surplus soil utilization and disposal plan – indicate expected duration of temporary stockpiling along the trench at each site and identify final surplus soil utilization/disposal site in consultation with program implementation unit (PIU).				provided. 9. Typical site layout plan not prepared a) Barricading and security personals are provided on working site. b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU. c) Contractor is dumping surplus soil in the Pachanady Solid waste management. d) Complied. e) Site layout plan Not prepared as per given mitigation Measures.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Utilities	Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	10. At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 11. Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 13. Coordinate with the respective department and ensure that	Construction Contractor and PIU	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	10 Complied- Recommended Contractor to maintain list of utilities identified prior to start of work at any section. 11 Proper record of restoration of the utilities and letter of communication with Different departments and Public is available and Copy should be maintained by Contractor. **Attached as Annexures-2, 3, 4 & 5 in May - 2019 report** 12 Work is in progress and Recommended contractors to provide diversion of drains and provision of water tanker

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		electricity and telephone services are restored quickly 14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section				whenever and wherever required on site. 13 Work in progress and no such damage and restoration found in this month during site visit. 14 Work in progress and no such damage and restoration happened in this month. List of identified damaged compound walls, culverts and drains for reconstruction have to be maintained. Record of before and after Condition also to be maintained at site by contractor.
Construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	15. Prioritize areas within or nearest possible vacant space in the subproject location; 16. Avoid locating construction work camps close (100 m away) to residential areas;	Construction Contractor	List of selected sites for construction work camp, storage area and disposal area.	Good construction practice to be followed by contractor –no additional costs	15 Compiled 16 Compiled – Advised contractor to mark dumping yard location on

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		17. Do not consider residential areas; for stockpiling the waste/surplus soil; and 18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.		Complaints from sensitive receptors		google map which is complied. **Attached in Sep 2019 annexure 4** 17 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is marked on Google map. **Attached in Sep 2019 annexure 4** 18 Instructed contracting agency, if any stockpiles have been stored temporarily in working site must be provided by bunds or dumped in the stock yard. **Attached in Jan 2020 in**

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						annexure 4
Source of construction materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution	19. Contractor should obtain material from existing mines approved/licensed by Mines and Geology Department/ Revenue Department only; 20. Verify suitability of all material sources and obtain approval of implementing agency; 21. No new quarry sites shall be developed for the subproject purpose; and 22. Submit a monthly statement of construction material procured indicating material type, source and quantity.	Construction Contractor	Check Sources and approval	Good construction practice to be followed by contractor –no additional costs	19 Contractor obtained material from authorised agency but no supporting documents maintained by Contractor. 20 Contractor has been recommended to maintain the Proper Documentation. 21 Complied - No new quarry sites developed by contractor for this project 22 Complied
Air quality	Dust and emissions from construction activity may de-grade the air quality	23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 24. Damp down exposed soil and any stockpiled on site by spraying with water when	Construction Contractor	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	Good construction practice to be followed by contractor Contractor's cost – air quality monitoring (4 locations x 9 samples	23 Complied- Recommended contractor to maintain the copy of Document. 24 No such exposed soil and

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		necessary during dry weather; 25. Bring materials (aggregates, sand, etc. gravel) as and when required; 26. Use tarpaulins to cover sand and other loose material when transported by vehicles; 27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 28. Clean wheels and undercarriage of vehicles prior to leaving construction site; 29. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly; ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity; and 30. Carry out air quality monitoring.			in construction x 5000 = INR 1,80,000)	stockpiled were found but instructed contracting agency must spray water wherever necessary. 25 Complied 26 Complied 27 Stockpile, sand and other loose material are kept in barricaded areas. 28 Complied 29 Not Complied. Recommended to Contractor to maintain Pollution under Control (PUC) Certificates for all vehicles and equipments used in the construction. 30 Air, Noise and

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	31. Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise (road cutting activity) are conducted during periods of the day which will result in least disturbance; 32. Construction work shall be limited to day light hours (6 AM to 6 PM) for all the works located within the town; Provide prior information to the local public about the work schedule; 33. Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually by chiselling; 34. Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and	Construction Contractor	Complaints from sensitive receptors Site observations Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	Good construction practice to be followed by contractor Contractor's cost – noise level monitoring (4 locations x 9 samples in construction x 2500 = ₹90.000)	31 Complied. 32 Complied. 33 Till now such buildings are not found and will be complied when such sensitive buildings observed. 34 However; noise will be minimized by using construction equipment by

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles				using vehicle silencers. Recommended to fit jackhammers with noise-reducing mufflers, and portable street barriers at sensitive receptors. 35 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
Water Quality	Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	36. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 37. Stockpiles shall be provided with temporary bunds;	Construction Contractor	Site observations	Good construction practice to be followed by contractor –no additional costs	36 Contractor not carried out Major Construction works during monsoon season. Stockpiling of earth fill not observed during site visit. 37 Work in progress and no such stockpiles found

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		38. Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas; 39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund; 41. Dispose any wastes generated by construction activities in designated sites; and, 42. Ensure that there is no spill over of excavated earth, construction materials like cement concrete into the drain near wet well no. 3; also ensure that the drain flow				on work site. 38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant 39 NA - Surface water bodies not observed along the Project alignment. 40 Complied. Contractor not using fuels and lubricants in bulk. Whenever required fuel used on particular day onsite. But instructed contracting agency to provide storage yard if fuel stored in bulk. 41 Complied Followed by contracting

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		is not blocked / disturbed during the work				agency 42 Complied Followed by contracting agency
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 44. Coordinate with PIU / MCC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 45. In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / MCC; waste shall not be disposed in the forest areas and in or near water bodies/ rivers; 46. Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported, reused and disposed properly; 47. Surplus soil and debris from work	Construction Contractor	Work site inspection Complaints from public	Good construction practice to be followed by contractor – no additional costs	43 Compiled 44 Compiled-disposed in the Pachanady Solid waste management treatment plant 45 No such activities observed at the time of inspection 46 Partially Complied-Waste Management Plan prepared by contractor needs to be updated. 47 Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 48. Recover used oil and lubricants and reuse or remove from the sites; 49. Remove all wreckage, rubbish, or temporary structures which are no longer required; and 50. Request program implementation unit (PIU)/ project management, design and construction supervision consultant (PMDCSC) to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.				Followed by contracting agency 48 Complied 49 Complied 50 Construction work is in progress.
Construction works	Hindrance to traffic movement / accessibility	51. Plan pipeline work in consultation with the traffic police; Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. 52. Strictly follow the pipe laying method presented in Table 13 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time 53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will	Construction Contractor	Work Program Review	Good construction practice to be followed	51 Traffic Management Plan prepared by Contractor and it needs to be updated again. 52 Complied 53 Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		minimise disturbance to the traffic movement; 54. Do not close the road completely, ensure that work is conducted onto edge of the road; allow traffic to move on one line; 55. In narrow roads with considerable traffic (Jama Masjid- Road, Ashok Nagara road, and old port / Kandathapalli Road), work shall be undertaken between two intersections and diverting traffic in that section to a parallel road, so that through traffic is not blocked fully. 56. In some sections on Jama Masjid- Road, Old Port Road and Kandathapalli Road there are no parallel roads to divert traffic; in those sections work shall be conducted in the nights or in low traffic hours in day time; but in case of day-time work traffic shall not be blocked for more than 2-3 hours at a stretch; prior information shall be provided to public – a week before and a day before work, about the schedule of the work and temporary road closure; proper signage shall be provided 57. Maintain safe pedestrian access at all times to the houses along the work site 58. At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name,				54 Complied. 55 Complied. (**Attached in june 2019)** 56 Complied. Work is carried out in low traffic hours in day time and; prior information given about the schedule of the work. 57 Complied (**Attached in June 2019) and** no such work are executing near residential areas during site visit 58 Caution board provided at work site. Entry restriction information; competent

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. 59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken. 60. Hard barricades should be mandatorily provided along with caution board and traffic diversion boards. Some of the densely populated area identified in project area are Old Port Road, Jeppubappal to Suterpete				official's name and contact for public complaints provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4 g, h, i, j, k and l)** 59 Respective Engineers present on the site for continuous monitoring 60 Traffic diversion boards, hard barricading and Caution boards provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4 g, h, i, j, k and l)**
Nuisance/ disturbance to sensitive areas	Schools, hospitals and religious places) due construction work in the proximity (within 250 m	61. No material should be stocked in this area; material shall be brought to the site as and when required 62. Conduct work manually with	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no	61 Complied Followed by contracting

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
	of such place)	small group of workers and less noise; minimize use of equipment and vehicles 63. No work should be conducted near the religious places during religious congregations 64. Material transport to the site should be arranged considering school timings; material should be in place before school starts; 65. Notify concerned schools, hospitals, etc. 2 weeks prior to the work; conduct a 30 minutes awareness program at on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.			additional costs	agency 62 Complied Followed by contracting agency 63 Followed by contracting agency 64 Complied Followed by contracting agency 65 Complied – Recommended to maintain documentary Evidence

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Socio-Economic-Livelihood Impediment of access to houses and business	Impediment of access to houses and business	66. Leave space for access between mounds of excavated soil, where required 67. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required. 68. Consult affected business people to inform them in advance when work will occur 69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues 70. Provide sign/caution/warning boards at work site indicating work schedule and traffic information; prevent public entry into work sites through barricading and security; and	Construction Contractor	• Number of walkways, wooden planks and foot bridges; • Complaints from public; • Spoil Management Plan; and • Traffic Management plan.	Good construction practice to be followed by contractor – no additional costs	66 Complied. 67 Complied – access provided by contractor. (**Attached in june 2019)** 68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work. 69 Complied implementation Resettlement Plan to address these issues in progress **(Attached in June 2019)** 70 Complied -

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints. 72. Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. The site-specific traffic management plan should be part of the Construction Management Plan.				Traffic diversion boards, Hard barricading and Caution boards provided(**Attached in June 2019)** work schedule not provided. 71 Complied. Recommended all project information board and sign board must be Retro reflective (**Attached in annexure 4 g, h, i, j, k and l)** 72 Site-Specific Traffic Management Plan Prepared by contractor is not adequate and to get it updated again. **Recommended to comply (Attached in June 2019)**
Socio-Economic Employment	Impact on local employment generation	73. Employ local labour force to the maximum extent, if manpower is available	Construction Contractor	Employment Records Compliance to labour laws	NA	73 Complied
Occupational Health and Safety	Workers occupational health and safety	74. Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as: (a) excluding public from the	Construction Contractor	Site specific OHSEquipped first aid station.	Good construction practice to be followed by contractor – no	74 Complied Site-specific Health and Safety (H&S) Plan prepared by

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		site; (b) ensuring all workers are provided with and use Personal Protective Equipment (PPE); (c) H&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; 75. All trenches in sandy and mixed sandy soils irrespective of depth and trenches deeper than 2m (or less, if designed by the engineer)in other soils shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution; 76. Take all necessary precaution during isolation and blocking of existing pumping main and connecting the new main to the existing system. Skilled supervision, appropriate apparatus and PPEs must be used; 77. Extreme care shall be taken while working on existing sewer lines/ manholes, where they are required to be shifted, to safeguard the workers against the gaseous emissions and		Potable watersupply andclean eating area. PPE and medical insurance	additional costs	contractor. Proper implementation required. 75 Not Complied. 76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided.(**Attached Sep 2019 in annexure 1.v)** 77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are provided

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		hazardous working conditions 78. Create awareness among all workers, supervisors and site engineers on potential hazard conditions and safety risks in working with existing/old sewer lines; working conditions may be hazardous with harmful gaseous emissions (hydrogen sulphide, carbon monoxide, methane, etc.) and oxygen deficiency; 79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use; 80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 81. Provide medical insurance coverage for workers; 82. Secure all installations from unauthorized intrusion and				78 Complied 79 Oxygen masks for emergency not provided PPEs are provided 80 Not Complied 81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		accident risks; 83. Provide supplies of potable drinking water; 84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances; 85. Provide H & S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 86. Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; 87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 88. Ensure moving equipment is outfitted with audible back-up alarms; 89. Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. 90. Signage shall be in accordance				82 Complied. 83 Complied. 84 Specific eating area not provided. 85 Safety and Tool box meeting conducted. (**Attached in Sep 2019 annexure 1.u)** 86 Not Complied 87 Complied. 88 Compiled 89 Not Complied. 90 Signage are

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 91. Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 92. Overall, the contractor should comply with IFC EHS Guidelines on Occupational Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD =AJPERES).				Provided but not in accordance with international standards 91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. (**Attached in Sep 2019 annexure 1.v)** 92. Not Complied
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	93. All trenches in sandy and mixed sandy soils irrespective of depth, and trenches deeper than 2m (or less, if desired by engineer) shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution; 94. Plan material and waste routes to avoid times of peak-	Construction Contractor	• Traffic Management Plan • Complaints from public	Good construction practice to be followed by contractor – no additional costs	**93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.** No such deep trench found during site visit but instructed contracting agency to Provide sheet piling for shoring and strutting if depth is more than 2m. 94 Partially

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		pedestrian activities; 95. One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and MCC to identify risk areas and buildings and take necessary precautions for safe conduct of work; 96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and 98. Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/ 3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES).				Complied – waste management plan not prepared 95 Complied. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions **but not maintained record of joint inspection.** 96 Complied 97 Complied Followed by contracting agency 98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Worker Camps	Temporary worker camps	99 The contractor should operate the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers accommodation), including the following: 100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 101 Minimize removal of vegetation and disallow cutting of trees; 102 Labour camps shall include accommodation for workers/labourers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 103 The roof height of the worker's and labour camp shall not be less than 3 m from floor level to the lowest part of the roof. 104 The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant	Construction Contractor	List of selected sites. Written consent of land owner Waste Management plan	Good construction practice to be followed by contractor – no additional costs	99. Contractor Not operating the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation. 100 Complied. 101 Complied. 102 Proper Kitchen, bathrooms garbage room yet to be provided. 103 Complied. 104 Not Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		regulation, whichever is higher. 105 Fire and electrical safety pre-cautions shall be adhered to. 106 Cooking, sanitation and washing areas shall be provided separately. 107 The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 109 The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 110 Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 111 Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;				105. Not Complied. 106. Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms. 107. Partially Complied 108. Such depressions not found during site visit 109. Not complied. 110. Complied. 111. Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		112 Train employees in the storage and handling of materials which can potentially cause soil contamination; 113 Recover used oil and lubricants and reuse or remove from the site; 114 Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 115 Remove all wreckage, rubbish, or temporary structures which are no longer required; and 116 Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				112. Complied. 113. Reused. 114. Complied. 115. Complied. 116. Work is in progress.

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project needs improvement. Contractor maintained copy of IEE. Instructed contracting agency has to conduct HIV AIDS Awareness Training programme. Contracting agency has not submitted March 2020 Site specific EMP report with PIU letter.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Site inspection and record verification	• Site inspection Register must be maintained	**Complied**
2.	Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done		**Complied**
3.	Site specific Occupational Health and Safety (OHS)plan;	Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety**)** • Institutional setup • List of PPE provided and standards followed, Site specific OHS Equipped first aid station, Medical insurance. Hospitals recognized in emergency. • Health Camps and Check -up should conducted for the workers • Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor. • Electrical measures safety • Fire safety measures should be reflect in OHS plan. • Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register	OHS Plan submitted – but not adequate, recommended the contractor to update the same and submit
4.	Waste management plan; and	• Type of waste generated (Solid and Hazardous) • Quantity of different waste generated at site • List and type of garbage bins provided • Time of waste collection • Location of Waste disposal site identified consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are regularly emptied and waste is disposed off in a hygienic manner as per the	Comply with in 15 days

		Solid Waste (Handling and Management) Rules, 2016.	
5.	Complaints from sensitive receptors and public.	• Complaints register must be maintained at each site.	Complaint register maintained at pumping station and recommended the contractor to maintain the complaint register at all working sites .
6.	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• Section-wise list of utilities to be shifted/ disturbed • Submission Letters of Section-wise list of utilities to be shifted/ disturbed to PIU • Plan to shift and contingency steps to be taken	Complied partially - Communication Letters to different Departments from PIU maintained**.** Contractor has to maintain the recommended documents Comply with in 7 days
7.	Record to confirm that contingency services are provided and all damaged utilities are restored after the work		Complied
8.	List of selected sites for construction work camp, storage area and disposal area	• Identify the location consultation with PIU • Letters of communications and finalization location • Mark the location on google map.	Complied - letter for finalization of the disposal site**.** The **letters** for finalization of the locations for (work camp, storage area) have to be complied. Marking the locations on Google map complied
9.	Check Sources and approval	• Maintain Copy of Certification of authorized material sources	Comply with in 5 days
10.	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
11.	Site observations	• Maintain Register for site observation at site	Complied
12.	Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
13.	Work Program Review	• Work plan must be prepared and review	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	• List of walkways, wooden planks and foot bridges provided with location must be maintained	Work in progress and instructed contractors to provide walkways, wooden planks and foot bridge if area is excavated.

15.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	Spoil Management Plan submitted – not adequate Comply with in 5 days
16.	Traffic Management plan		Traffic Management Plan submitted –not adequate and recommended the contractor to update the same and submit Comply with in 5 days
17.	Employment Records Compliance to labour laws	• Attendance registers of labour at each site. • Register of payment to the workers at each site.	**Attendance register is maintained. but Register of payment to the workers Not maintained** Comply with in 5 days
18.	Site specific OHS Equipped first aid station	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	Comply with in 10 days (when work is in progress all this facilities must be provided)
19.	Potable water supply and clean eating area.	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the each construction site.	Complied

20.	PPE and medical insurance	• The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers when on the construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided. • During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	Complied
21.	List of selected sites. Written consent of land owner	• If any Activity related to project carrying out in private land written consent of land owner (NOC) must be taken.	If any, Comply with in 20 days

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

Annexure -1

Status of Site Observations for the month of 29th February 2020

S.No	Observation		Recommendation	Status
a	Proper barricading and Cautionary Sign. information		Barricading is done at kunttikana site Instructed contracting agency to put hard barricading continuous without gap.	Partially complied

b	Flag man at kunttikanna Work location		Flagman provided t both side of the road to maintain traffic and avoid any accident and incident Again instructed to follow it properly	Partially complied

c	PPEs at work locations		All workers are wear PPEs during site visit at kuttikana and kandatpalli locations Instructed to follow it properly at all work site Drinking water must be provided at all working locations for workers One mobil toilet should be provided site site	Complied

d	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Partially complied

e	Gas stove is being used for cooking food	 	Gas cylinder is to be provided for cooking Kitchen must be separate for cooking Lose electrical cables or boards must be replaced to avoid from electric shocks	Not complied

f	Material stocks at shaktinagara locations	 	Proper sign board in frame with stand should be at site And soft barricading should be done for every stocked materials	Partially complied

g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not complied

i	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied

Annexure -2

Status of Site Observations for the month of 20th January 2020

S.No	Observation		Recommendation	Status
a	Water sprinkling at dry location at kadathpalli		Water is sprinked by contracting agency after work in dry areas to avoid dust generation at work site kandatpalli site	

b	PPEs at work locations and hard barricading at konchady loaction			All workers are wearing PPEs during site visit at konchady location Hard barricading should be maintained at work site	Partially complied

c	Safety helmets jackets, shoes and safety ear plug for drivers			Safety helmets jackets, shoes and safety ear plug must be weared by drivers during working at site	

d	Sign boards and hard barrication at work site			Work in progress sign board should be kept and hard barricading must be done during road restoration work to avoid public entrance to carry safe work	Partially complied

d	One toilet was found damaged		Repair the Toilet	Not complied

e	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours	Not complied

f	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not complied

g	Poor Housekeeping at shakti nagar labour camp of subcontractor		Labour camp of subcontractor at shaktinagar is not properly maintained. Housekeeping should be done properly to keep surrounding area clean.	Partially complied

h	Sign Boards are not properly visible from the distance		Retro reflective sign boards with legible matter are to placed so that it may be visible from the considerable distance for the fast moving vehicles	Partially complied

Annexure -3

Site Observations for the month of 19th December 2019

S.No	Observation		Recommendation	Status of obervation
a.	PPEs at work locations		All workers are wearing PPEs during site visit at kuttikana and kandatpalli locations Instructed to follow it properly at all work site Drinking water must be provided at all working locations for workers One mobil toilet should be provided site site	Complied Drinking water and 1nos Mobil toilets to be provided for 10nos workers at work site

b	Project information board at work matadkani site		Provided Project information board at matadkani work site	Complied

c	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours Rest room for workers should be separate	Not complied

d	First Aid Box is not adequate		First Aid Box with adequate materials as specified by ADB is to be provided at labour camp.	Not complied

e	Loose electrical wires found		Electrical wires should be properly fitted with pipes and plugs are to be used instead loose connections.	Not complied

f	Sign boards found and proper hard barricading		Proper sign boards are to be placed at open trench with Retro reflective sign boards and with hard barricading at matadkani site	Not complied

h	Project Information Board is not proper	 	Project information board, Go slow boards, work in progress board is provided by contracting agency But project information board, Go slow boards, work in progress board is to be provided Retro reflective as per instructions	Partially complied

i	Fire Extinguisher at shakinagara labour camp site		Provided Fire Extinguisher at shakinagara labour camp and instructed safety person to keep one Fire Extinguisher at all work site for any emergency	Partially complied

Monthly Environmental Monitoring Report

Project Number: 43253-027
April 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur

Package No. 02PTR01

Prepared by

egis India
Consulting engineers pvt. ltd.

CONTENTS

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura, Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be improved water resource planning, monitoring and service delivery in 24x7 water supply for Puttur City. Project 2 will have 3 outputs: (i) UWSS and sanitation infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened. The IEE is based on an assessment of these components within the project area.

2 Need for Infrastructure Improvement in Puttur

At present, Puttur City meets its water supply requirement through surface source. River Kumaradhara is the main surface source of water supply to Puttur. A new vented dam was constructed under KUDCEMP with a storage capacity of 0.61 million cubic meter (MCM) and a storage spreading of 2,400 m upstream the vented dam. Existing water supply system is depicted in Figure 1.

3 The proposed subproject:

This subproject includes the following components:

(i) Replacement of two old pumps with new vertical turbine pumps in Jackwell at Nekkilady;
(ii) construction of 1.68 kilometer (km) of raw water pumping main (400 millimeter (mm) diameter) from Jackwell to water treatment plant (WTP) at Nekkilady;
(iii) construction of 12.42 km clear water main of 400 mm diameter from the proposed new Water Treatment Plant (WTP) at Nekkilday to ground level service reservoir (GLSR) at Tenkila;
(iv) construction of new WTP of capacity 8.7 million litres per day (MLD) at Nekkilady;
(v) replacement of clear water pumps in existing WTP at Nekkilady;
(vi) construction of 5.06 km of clear water feeder mains;
(vii) construction of six new overhead tanks (OHTs) – (a) 300 kiloliters (kl) capacity in Zone-2 at Mura Shantinagra, Padnur, (b) 100 kl in Zone-3 at Karmala near Microwave station, (c) 600 kl in Zone-4A at Darbe; (d) 250 kl in zone-5 at Lingadagudda, Kabaka, (e) 200 kl in Zone-6A at Balnad Helipad, and (f) 100 kl zone-8 at BalnadKelyadi, Vitla Road;
(viii) construction of two GLSRs - (a) 1,000 kl capacity at Seethigudda, and (b) 2,000 KL at Tenkila;
(ix) Intermediate pumping station at Tenkila; (x) booster pumping station at Balnad Helipad, (xi) 29 bulk water meters;
(x) 142.66 km of distribution network to cover 24x7 water supply to Puttur city for 8 zones; and

(xi) Replacement of 8,441 existing meters and providing new house service connections of 4,500 for un-covered households.

Figure 1: Existing Water Supply System in Puttur

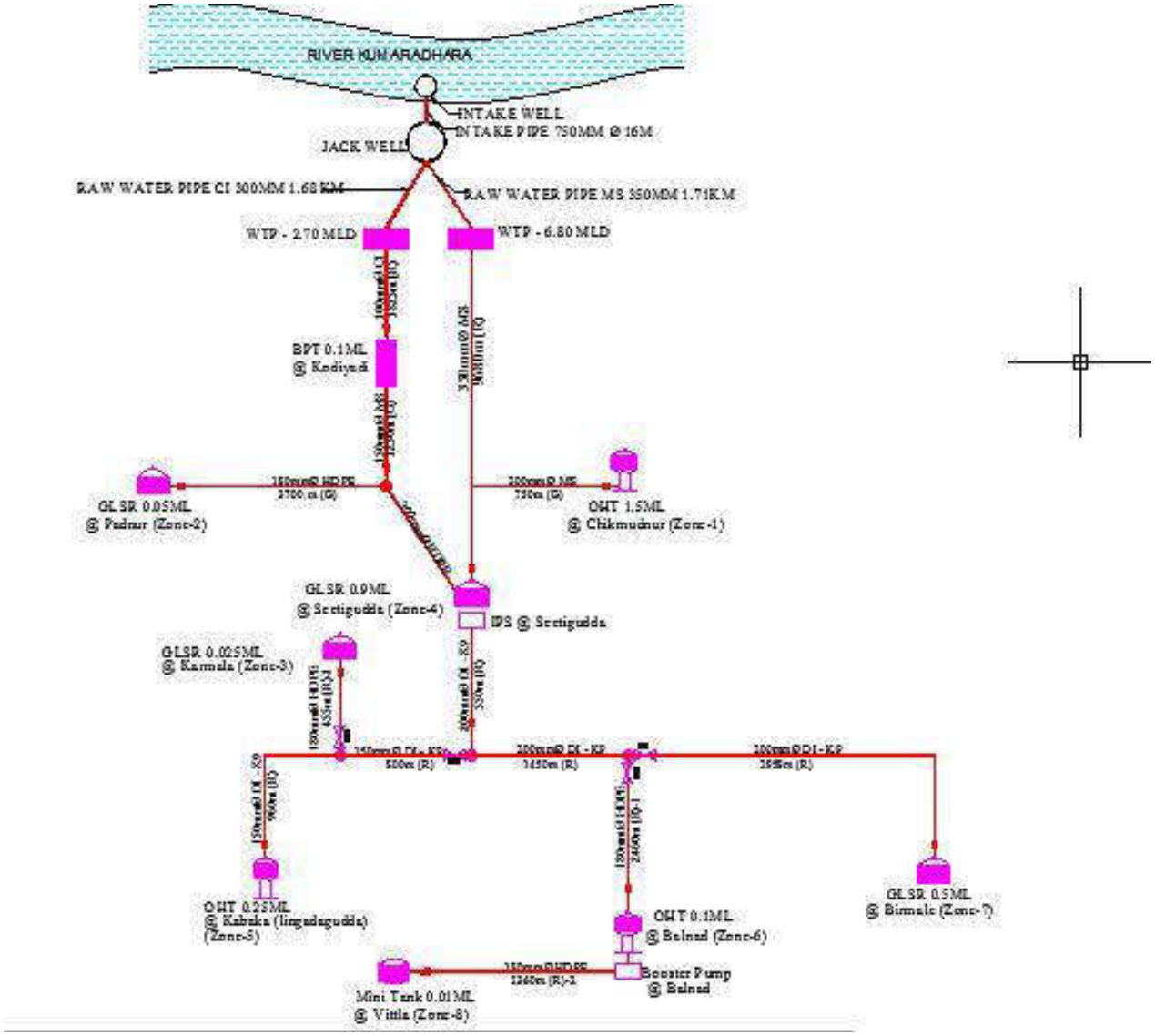


Table 1: Proposed Components for 24x7 Water Supply System

Infrastructure	Function	Description	Location
Raw water pumps in existing Jack well	Pumping of Raw water from Jack well Standby power supply arrangement for pumping	-Replacement of two old pumps with new vertical turbine pumps of capacity 335 m^3/h, 75 m head (1+1) Procurement of diesel generator of 500 kilovolt-ampere -(kVA)	Jack well site at Nekkilady Jack well site at Nekkilady
Raw water Transmission Main	Conveys raw water to WTP by pumping	1.68 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to WTP all along the existing road
Water Treatment Plant	Treats raw water to meet drinking water standards	New 8.7 MLD capacity WTP based on conventional treatment Process. The components Include Cascade Aerator Parshall flume Flash mixer Flocculators – 2 units Tube settlers – 2 units Rapid sand filters - 4 beds Chlorination system with safety measures Lime and alum mixing Tanks Clear water sump and pump house Backwash water recirculation and sludge management system (sludge collection, drying beds) – a combined system of adequate capacity for backwash and sludge management will be developed to cater to both new and existing WTPs. This component addresses the issues of concern identified in the environmental audit of existing WTP (Ref Corrective Action Plan, Table 8)	Nekkilady Adjacent to the existing WTP; sufficient land available within the existing WTP campus to accommodate the new WTP
Clear water Pumps in existing WTP	Pumps clear water to Service reservoirs	Replacement of old pumps within new pumps: 2 pump sets of capacity 325 m^3 /hour and 84 m head (1+1)	Pumps will be installed in the existing clear water pumping station at WTP, Nekkilady
Clear Water Transmission Main	Pumping of clear water from WTP (water treatment plant) to service reservoirs	12.42 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to Tenkila GLSR along the public roads within the road right of way
Clear water feeder main	Pumping of clear water from MBR to Service Reservoirs	5.06 km length 180 – 300 mm diameter DI /HDPE) pipes DI pipe of 300 mm diameter – 1.134 km DI Pipe of 200 mm diameter – 2.422 km	Laying of pipes underground along public roads within the ULB area

Infrastructure	Function	Description	Location
		DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km	
Water service reservoirs	Water storage for supply	Six OHTs and two GLSRs of RCC including compound walls at the selected sites: **OHT** 300KL for Zone-2 at Mura Shantinagra, Padnur 100KL for Zone-3 at Karmala near Microwave station 600KLfor Zone-4A at CTO, Darbe 250KLfor Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at,Balnad Kelyadi, Vitla Road1 **GLSR** 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila	**OHT** Existing within ULB Properties. No non-title users are present at these sites **GSLR** Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	Intermediate pumping station at Tenkila Pump capacities: 65m^3/h and 85 m head for zone 3 and 5 (1+1) 82 m^3/h and 33 m head for zone 4A, (1+1) 119 m^3/h and 100 m head for zone 6, 6A and 7, (1+1) Booster pumping station at Balnad Pump capacity 11 m^3/h and 80 m head (1+1)	Pumping station will be located within Tenkila GLSR site Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad
Distribution system	Supply of water from service reservoirs to consumers	142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes) 75 mm – 106.139 km 90 mm – 1.853 km 110 mm – 21.744 km 150 mm (DI) - 2.784 km 160 mm – 2.889 km 200 mm – 1.403 km	In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW

		250 mm – 0.362 km	

Infrastructure	Function	Description	Location
		250 mm (DI)- 4.916 km 280 mm – 0.570 km	
Bulk Water Meters	To record data of volume of flow to each Distribution System zones at desired time interval.	29 no.	Bulk meters will be fixed at strategic locations in the pipe line at Jack well point, WTP and service reservoir points
House Service Connections (HSC)	For each house connection will be provided with meters to supply water and record volume of water. W	4,500 new HSC connections 9226 replacement of existing domestic water meters	In 8 zones for all the houses within the city limits

CMC = City Municipal Council, m^3/h = cubic meter per hour, DI = ductile iron, GLSR = ground level service reservoir, HDPE = high density polyethylene, HSC = House Service Connections, IPS = Intermediate Pumping Stations, km = kilometer, m = meter, mm = millimeter, MLD = million liters per day, OHT = overhead tank, RCC = reinforced cement concrete, ROW = right-of-way, ULB = urban local body, WTP = water treatment plant.

4 Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur	**Name of the Contractor: Suez Civil Engineering services Pvt,LTD**
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Puttur	**Name of SE/EE/AE Of concerned division PIU** :-Mr.Shamath, AE
Date of monthly monitoring: 30/04/2020	**Name of Environment, Health And Safety (EHS) engineer :-** Mr.YAmruth

Table 2: Status of implementation Environmental Management Plan for Anticipated Impacts –Construction Stage - PUTTUR

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of Implementation
Environmental Management Plan (EMP) ImplementationTraining	Impacts on the environment, workers, and community due to improper implementation of EMP	**1)** Project manager and all key workers will be required toundergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational healthandsafety(OHS),corelabor laws, applicable environmental laws, etc.;and **2)** appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start ofwork	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDCSC)	(i) Certificate of Completion (Safeguards Compliance Orientation); (ii) Posting Certification Completion (iii) Posting of EMP at worksites	Cost of EMP Implementation Orientation Training to contractor is Responsibility Othercosts Responsibility	**1)** Spoil management submitted but it needs to be updated **2)** EHS Engineer appointed
Air Quality	Emissions from constructionvehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, Sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other constructionmaterials; **4)** Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dryweather; **5)** Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dustgeneration; **6)** Use tarpaulins to cover sand and other loose material when transported bytrucks; **7)** Clean wheels andundercarriage of vehicles prior to leaving construction site;and	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitiverecepters; (iii) Heavy equipment and machinery with air pollution (iv) Certification that vehicles are compliant with AirAct.	Cost forimplementation of mitigation measures responsibility	**3)** Complied **4)** Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Not complied **7)** Complied **8)** Complied

		8) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				
Surface water quality	Mobilization ofsettled silt materials , and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface waterquality.	**9)** Prepare and implement a spoils managementplanasthepartof the Construction ManagementPlan; **10)** Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plasticsheets; **11)** Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; **12)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacitybund;	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed alongtrenches leading to waterbodies; (iii) Records of surface water (iv) Effective ness of water management measures;and (v) No visible degradation to nearby drainages, nallahs or	Cost forimplementatio n of mitigation measures responsibility	**9)** Spoil management plan is submitted during preconstruction stage. Updation is to be done for construction stage **10)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity

		13) Dispose any wastes generated by installation of pipeline in designated sites;and **14)** Conduct surface quality inspection according to the Environmental Management Plan (EMP).		waterbodies due to civil works.		**13)** Complied **14)** Not complied
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, andpeople	**15)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatestpotential to generate noise are conducted during periods of the day whichwill result in leastdisturbance; **16)** Horns should not be used unless it is necessary to warn other road users or animals of the vehicle'sapproach; **17)** Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitivereceptor; **18)** Properly enclose the dismantling area with temporary noise barriers;and **19)** Maintainmaximumsoundlevels not exceeding 80 decibels(dbA) when measured at a distance of 10 m or more from thevehicle/s.	Construction Contractor	(i) Complaints from sensitivereceptors; (ii) Use of silencers in noise-producing equipment and sound barriers;and (iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).	Cost forimplementation of mitigation measures responsibility	**15)** Complied **16)** Complied **17)** Complied **18)** Complied **19)** Complied

Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removedconcrete, wood, packaging materials, empty	**20)** Prepare and implement spoils managementplan; **21)** Avoid stockpiling of excess excavatedsoils; **22)** Coordinate with Puttur CMCfor beneficial uses of excess excavated soils or immediately dispose to designatedareas;	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Worksite clear of hazardous wastes such as oil/fuel; and (iii) Worksite clear of any excess excavated earth,	Cost forimplementation of mitigation measures responsibility	**20)** Spoil management plan is prepared **(attached in annexture 3a july 2019 but updation is to be done)**and contractor agency following and found no surplus soil found in sites **21)** Complied **22)** Complied **(attached in annexture4september 2019)**
	containers, spoils, oils, lubricants, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	**23)** Recover used oil andlubricants andreuseorremovefromthe sites; **24)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designatedareas; **25)** Remove all wreckage, rubbish, or temporary structures which are no longer required;and **26)** Request PIU/PMDCSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance ofwork. C&Dmaterialsafterdismantling of theoldWTPandoldGLSRshallbe managedasperC&DRules2016,		and solid waste such as removedconcrete, wood, packaging materials, empty containers.		**23)** Used oil and lubricants not generated on site **24)** Complied **(attached in annexture4september 2019)** **25)** Complied **26)** No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.

Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	**27)** Obtain from PIU/PMDCSC the list of affected utilities and operators ifany; **28)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service;and **29)** The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.	Construction Contractor	Existing Utilities ContingencyPlan	Cost forimplementation of mitigation measures responsibility	**27)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at any section. **28)** Not complied **29)** Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented; (a) Minimize removal of vegetation and disallow cutting of trees;	Construction Contractor	PMU/PMDCSC to report in writing the no oftreescutand planted.	Cost forimplementation of mitigation measures responsibility	**30)** Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work
		b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department;and c) Plant two native trees for every one that is removed.				b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work c) Instructed contracting agency

Accessibility	Traffic problems and conflicts near project locations and haul road	**31)**Traffic Management Plan (TMP) should be part of the Construction Management Plan. **a)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of deliverysites; **b)** Schedule transport and hauling activities during non-peakhours; **c)** Locate entry and exit points in areas where there is low potential for trafficcongestion; **d)** Keep the site free from all unnecessaryobstructions; **e)** Drive vehicles in a considerate manner; **f)** Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peakhours; **g)** Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration ofconstruction works and contact numbers for concerns/complaints; **h)** Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum;and **i)** Provide pedestrian access inall the locations until normalcy is restored.	Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12); (ii) Complaints from sensitive receptors;and (iii) Number ofsignages placed at project location.	Cost forimplementation of mitigation measures responsibility	**31)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 3bjuly 2019 but updation is to be done)** **a)** **Not complied.** Instructed to prepare plan **b)** Complied **c)** Complied **d)** Complied **e)** Complied **f)** Instructed contracting agency to inform traffic department for temporary road diversionbefore two days start of the work. **g)** Complied **h)** Complied **i)** No such execution work found near any commercials or residential areas. But instructed contracting agency to provide pedestrian wherever required

Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**32)** Prepare and implement spoils managementplan; **33)** Leave spaces for access between mounds of soil; **34)** Provide walkways and metal sheets where required forpeople; **35)** Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **36)** Consult businesses and institutions regarding operating hours and factoring this in work schedules;and **37)** Provide sign boards for pedestrians to inform nature and duration of construction works and contact	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Spoils management plan;and (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost forimplementation of mitigation measures responsibility	**32)** Spoil management plan is prepared **(attached in annexture 3a july 2019 but updation is to be done)** **33)** Complied **34)** Complied **35)** Complied **36)** Complied **37)** Complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**38)** Employ local labor force to the maximum extent, if manpower is available; and **39)** Comply with core labor laws	Construction Contractor	(i) Employment records; and (ii) Compliance to core labor laws (See Appendix 2 of this IEE).	Cost forimplementation of mitigation measures responsibility	**38)** Register maintained by contractor attached as **Annexure – 4 in dec 2019** **39)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).

Occupational Health and Safety	Occupational hazards which can arise duringwork	**40)** Comply with all national, state and local core labor laws (See Appendix 2 of thisIEE); **41)** Develop and implement site- specific occupational health and safety (OHS) Plan, and include in the Construction Management plan. The OHS plan will include measures such as: (a)excluding public from the site; (b) ensuringall workers are provided with anduse	Construction Contractor	(i) Site-specific OHS Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage forworkers; (iv) Number of accidents; (v) Supplies of potable drinkingwater;	Cost forimplementation of mitigation measures responsibility	**40)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor. **41)** Contractor following Company EHS Policy-PPE'S provided by Contractor. **a)** **Complied** **b)** **Complied.** PPE'S provided by Contractor to workers and tool box training provided at site. **Annexure-4**
		personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; **42)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **43)** Provide medical insurance coverage forworkers; **44)** Secure all installations from unauthorized intrusion and accidentrisks; **45)** Provide supplies of potable drinkingwater; **46)** Provide clean eating areas where workers are not exposed to hazardous or		(vi) Clean eating areas where workers are not exposed to hazardous or noxioussubstances; (vii) record of health and safety orientation trainings; (viii) personalprotective equipment; (ix) % of moving equipment outfitted with audible back-up alarms; (x) permanent sign boards for hazardous areas such as		**c)** Complied **d)** Not complied **e)** Accident and incident register maintained **42)** Partially Complied. Instructed to keep first-aid box at each working sites separately **Annexure-4 in dec2019** **43)** Not complied **44)** Complied **45)** Complied **46)** Complied

		noxioussubstances; **47)** Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of workatthesite,personalprotective protection, and preventing injuring to fellowworkers; **48)** Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; **49)** Ensure the visibility of workers through their use of highvisibility		energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and (xi) Compliance to core labor laws (See Appendix 2 of this IEE).		**47)** Not complied. Instructed to Provide health and safety orientation training to all workers **48)** Not complied **49)** Complied **Annexure-1 in dec 2019**
		vests when working in or walking through heavy equipment operating areas; **50)** Ensure moving equipment is outfitted with audible back-up alarms; **51)**Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well knownto,andeasilyunderstood by workers, visitors, and the general public as appropriate;and **52)** Disallow worker exposure to noise level greater than 85 dBAfor				**50)** Complied **51)** Complied **52)** Workers not allowed to work more than 8 hours per day without hearing protection who are exposing to noise level greater than 85 dB. Recommended Contractor to use hearing protection Measures to workers

		adurationofmorethan8hoursper daywithouthearingprotection. The use of hearing protection shall be enforced actively.				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**53)** Plan routes to avoid times of peak-pedestrianactivities. **54)** Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps. **55)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or prematurefailure. **56)** Provide road signs and flag persons to warn of on-going trenchingactivities.	Construction Contractor	(i) Traffic Management Plan;and (ii) Complaints from sensitiverecept ors.	Cost forimplementation of mitigation measures responsibility	**53)** Not complied **54)** Not complied **55)** Not complied **56)** Complied
Work Camps and worksites	Temporary air and noise pollution from machine operation ,	**57)** Consult with PIU before locatingworkerscamps/sheds,and construction plants; as faras	Construction Contractor	(i) Complaints from sensitiverecept ors;	Cost for implementation of mitigation measures	**57)** Complied Contractor informed to PIU office regarding labour campconstruction at mottetadka opposite NCRC but they not having letter from PIU.

	water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers.	possible located at least 200 m from residential areas; **58)** Minimize removal of vegetation and disallow cutting of trees; **59)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and otherrefuge; **60)** The camp site should be adequately drained to avoid the accumulation of stagnantwater; **61)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60-80LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; **62)** Provide separate facilities for men and women; sanitary facilities shall be properly buildand		(ii) Drinking water and sanitation facilities for employees.	responsibility	**58)** Removal of vegetation Minimize by selecting best alignment. **59)** Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area. **60)** Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area. **61)** Instructed contracting agency to provide drinking water as per the standards at camp **62)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **63)** Instructed contracting agency to provide

		well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or lesspersons; **63)** Train employees in the storage and handling of materials which can potentially cause soil contamination; **64)** Recover used oil and lubricants and reuse or remove from thesite; **65)** Manage solid waste according to the following preference hierarchy:reuse, recycling and disposal to designated areas;				training of solid and liquid materials handling at camp **64)** Instructed to contracting agency **65)** Complied
		66) Remove all wreckage, rubbish, or temporary structures which are no longerrequired; **67)** Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work;and **68)** The work camp details should be included in the Construction Management Plan.				**66)** Complied **67)** Construction work is in progress. **68)** Not complied

Social and Cultural Resources	Risk of archaeological chance finds	**69)** Create awareness among the workers and supervisors about the chance finds during excavation work; **70)** Stop work immediately if any finds are suspected to allow furtherinvestigation; **71)** Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ;and **72)** Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to thebuilding.	Construction Contractor	Records of chance finds	Cost forimplementation of mitigation measures responsibility	**69)** Till now no such suspected items found nor recorded **70)** Till now no such suspected items found nor recorded **71)** Till now no such archaeological items recorded **72)** No such damages recorded during the visit. But instructed to maintain if such damages happens.
Submission of EMP implementation report	Unsatisfactory compliance to EMP	**73)** Appointment of EHS Engineer to ensure EMP implementation;and **74)** Timelysubmissionofmonitoring reports includingpictures.	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost forimplementation of mitigation measures responsibility	**73)** EHS Engineer appointed **74)** Complied **Annexure-5in dec2019**

Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**75)** Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; **76)** All excavated roads shall be reinstated to originalcondition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to originalconditions; (ii) camp has been vacated and restored to	Cost forimplementation of mitigation measures responsibility	**75)** Complied **76)** No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage
		77) All disrupted utilitiesrestored; **78)** All affected structures rehabilitated/compensated; **79)** Theareathatpreviouslyhoused the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleanedup; **80)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall betop soiled and regressed using the guidelines set out in the revegetation specification that forms part of thisdocument; **81)** The contractor must arrange the cancellation of all temporary services;and **82)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-projectconditions before acceptance of work.		pre-project conditions; and (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.		**77)** If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **78)** Till now no structures affected **79)** Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **80)** Not complied **81)** Not complied **82)** Construction work is in progress

Conclusion:-

Construction stage is in progress. Health and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Proper safety measures like project information boards, safety sign boards, hard barricading and register books should be maintained at all work sites. Contractor has to submit Site Specific EMP of January, February and March 2020 with PIU letter, Puttur.

Recommendation:-

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)engineer		Complied
2.	Submission of Site specific EMP		Before start of Construction work Comply with in 7days
3.	Submission of monthly reports.	• Construction status or compliance report	Contractor has to submit Site specific EMP of January 2020 Comply with in 7 days
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	• List of utilities going to effect will be submitted to PIU	Before start of Construction work
5.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
6.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
7.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days
8.	Tree cutting/pruning permission; and	• If any of the tree is getting affected, it is to be noted in the survey and its permission has to be taken	Comply with in 7 days
9.	Compensatory tree plantation as part of the project.	NA	Identify Before start of Construction work and Compensate during Construction
10.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	Comply with in 7 days
11.	List of selected sites forconstruction work camps, hot mixplants, stockpileareas, storage areas,and disposal Areas.	• Location must be identified and marked on google map and consult with PIU and after joint inspection and with consideration of all given mitigation measure given.	Complied Attached as **Annexure –2 & 3 in may 2019.** Take site approval letter from PIU (for construction work camps, hot mix plants, stockpile areas, storage areas, and disposalareas.) Before start of Construction work

12.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner has to be taken	Comply with in 15 days
13.	List of selected sites fordisposal	• Location must be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given. • If any private land is selected ,NOC from owner have to be taken	Debris disposal land location identified and Permission letter has been issued by PIU. **Attached as annexure 4 in September 2019.**
14.	List of approved quarrySites andSources of materials; and		Before start of Construction work
15.	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarrysites if necessary.		Before start of Construction work
16.	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
17.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on Google map	Draft copy shown and submitted attached as an **annexure 3a in August 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Debris disposal land location identified and Permission letter has been issued by PIU. **Attached as annexure 4 in September 2019.**
18.	Traffic management plan		Draft copy shown and submitted attached as **annexure 3bAugust 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Comply with in 7 days
19.	Environmental management plan		Draft copy shown and submitted attached as an **annexure 3c in August 2019 report but updation is to be done**and informed contractors to updateplan once construction phase starts Comply with in 7 days
20.	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be	Comply with in 7 days

		provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	
21.	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. **Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors**
22.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. **Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors**

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1

Status of Site Visit observations on 28th February 2019

1	Project information board and sign boards must be provided at work site.		Provide project information board related to the particular project work and place at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand	Not complied

		 Latitude: 12.774197 Longitude: 75.186639 Elevation: 168.96m Accuracy: 3.2m Time: 02-28-2020 15:24 Note: OHT at karmala site, puttur		

2	Sign boards , barricading should be provided at work site		• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site. • Labour attendance register, labour wages register, grevienceredresal register and accident and incident register compulsory be at all work site. • Drinking Water can must be provided at all work site	• Not complied • Partially complied • Not complied

		 Latitude: 12.771951 Longitude: 75.213244 Elevation: 100.67m Accuracy: 7.5m Time: 02-28-2020 17:40 Note: 110mm dia Distribution line laying at zone 1, puttur Powered by NoteC		

3	Bunding of materials		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope	• Not complied

		 Latitude: 12.782042 Longitude: 75.17585 Elevation: 150.85m Accuracy: 3.2m Time: 02-28-2020 15:00 Note: OHT at padnoor site, puttur		

4	Scrap and materials storage at work locations	 	Instructed contracting agency to avoid scarp steel and other materials storage at works sites	• Not complied

5	Labour Camp at mottetadka site, puttur	 	Labour camp is properly maintained Toilets are provided to workers Drinking water tap connection provided at the camp	

		 	Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases	Not complied

6	PPEs for workers at work site		Workers wearing PPEs at works site	

		 Latitude: 12.782025 Longitude: 75.175763 Elevation: 142.79m Accuracy: 3.2m Time: 02-28-2020 15:02 Note: OHT at padnoor site, puttur		

Annexure 2

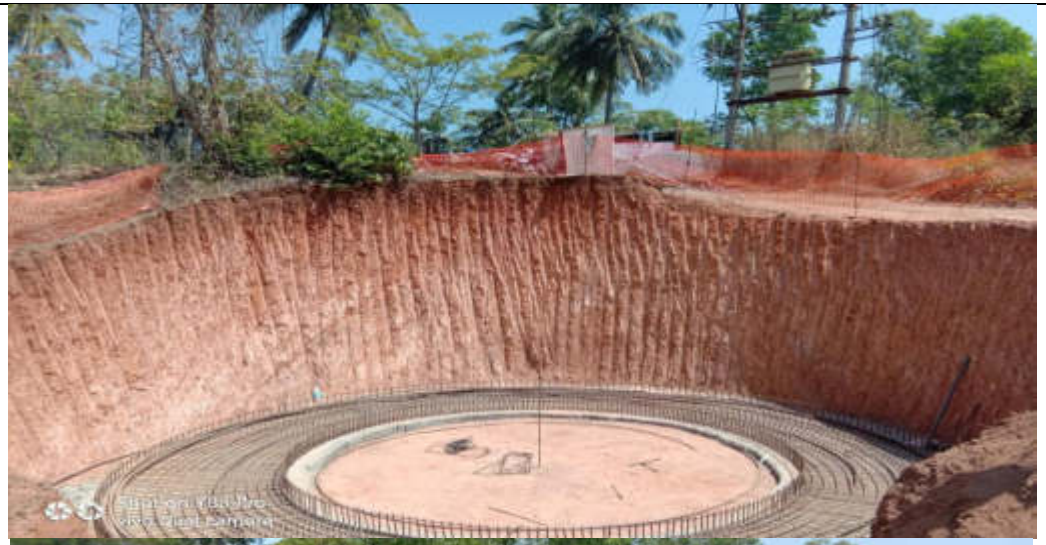
Site Visit observations on 22ndJanuary 2020

1	Project information board and sign boards and hard barricading must be provided all OHT Sites	 	Instructed contracted agency to provide hard barricading for such deep trenches Provide project information board related to the particular project work and place at all working OHT site Project information Board is to be provided both in English and Kannada language along with contact numbers	Not complied Partially complied Partially complied

2	Loose earth at OHT work site	 	• Project information board must be framed in proper frame • All excess loose earth and debris must be removed from work site to dumping yard • Proper bunding should be done to stored sand and aggregates	Not complied Not complied Not complied

3	Pedestrian to be provided	 	Instructed contractors to restore and provide steel or wooden pedestrians in front of residential doors if work delayed to next day	Partially complied

4	Barricading and sign boards at distribution work	 	Instructed contractors to provide project information boards, full hard barrication and to keep go slow sign boards, work in progress sign boards and two flag mans at both road ends to maintain traffic and to avoid accidents when work is progress in main road area	Not complied

5	Steel rods used for barricading at OHT sites	 	Instructed contractors to use wooden planks and remove steel rods used for barricading propose at all OHT sites	Not complied

6	PPEs for worker and drinking water		Contracting agency provided PPEs but instructed them to provide Drinking Water facility and one mobil toilet to worker at all working site	Partially complied

Annexure 3

Status of Site Visit observations of 19th December 2019

S.No	Observation		Recommendation	Status of observation
1	Project Information Board at padnur, Puttur		Contracting agency provided Project information Board sign boards at padnur OHT in kannada But instructed to be provided both in English and Kannada language Sign boards should be easily seen to all and placed in the entrance of the site not into the bushes	Partially complied Project information only in kannada. instructed to put English and should be proper open area not in bushes

2	Project Information Board at padnur, kabaka		Contracting agency provided Project information Board sign boards at padnur OHT in kannada But instructed to be provided both in English and Kannada language	Not complied

3	Material Bunding at work site		 	Sand should be properly bunded with sand bags to avoid flow of sand due to slope And also aggregates should be bunded if stocking in future at sites Sign boards should be be placed on ground should be properly framed with stand	Not complied

4	Loose earth stocking at site	 	Loose earth must be disposed off to the landfills, it should not be stocked at the working places	Not complied

5	Workers wearing PPEs at work places	 	Worker wearing PPEs at all work places but also found some are not wearing. So instructed safety person, workers must wear PPEs at work places Drinking Water can must be provided to workers at sites Mobil toilet for workers 1nos should be provide at work places	Complied Drinking water can is not provided at site for workers And no mobil toilets provided at site for workers

6	Project information board, Safety sign and Barricading and flagman at pipe laying at Nekkeladi road			No sign boards provided at Nekkeladi main road. No proper hard barricading. No flagman at road side for management of vehicles movement	Not complied

Monthly Environmental Monitoring Report

Project Number: 43253-027
April 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi

Package No. 02UDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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Note - Work Was Not in Progress due to Lockdown for Covid-19 Case

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an water supply projects within the project area i.e. Udupi

2 Need for Infrastructure Improvement in Udupi

A detailed assessment of existing situation was carried out and it concludes that the present water production of 27.24 million liters per day (MLD), is insufficient to meet water demand of Udupi till the year 2031 as per national standards. Besides Udupi town, this subproject investment also need to provide water supply covering 5 en-route villages, 5 outgrowth villages and 7 adjacent villages.
The present inadequacy in the water supply system, is due to

(i) mainly shortage in water source in summer season;
(ii) increased water demand; and
(iii) old and leaking distribution system, along with weak management system.

In order to meet required water demand of Udupi, an alternate water source from River Varahi is proposed under a government funded bulk water supply project. The necessary improvements and augmentation in water distribution system is proposed under the ADB funded KIUWMIP Tranche 2

3 The proposed subproject:

Subproject includes the following components:

(i) clear water feeder mains of 7.47 kilometer (km) of diameter 150 millimeters (mm) to 355 mm to feed tonew overhead tanks (OHTs);
(ii) 7 OHTs of total storage capacity 5.2 ml;
(iii) distribution network of 358.17 km (diameter 150 mm to 355 mm); and,
(iv) Replacement of 16,870 existing meters and providing new metered house service connections of 15,000for uncovered households. Distribution network pipes will be laid along existing road right-of-way (ROW) and OHTs will be constructed in government-owned lands. New water source from river Varahi about 38.5 kms from Udupi has been selected to meet shortage of water for summer four months. RCC Intake well, RCC Jackwell cum pump house and raw water pipe line for 38.5 Kms is proposed under AMRUTH Scope. Also it is proposed 30 MLD WTP at Baje to meet additional demand of Udupi under State fund.

Table 1 provides details of the KIUWMIP Tranche 2 subproject components in Udupi based on the detailed engineering design of the subproject

Table 1: Proposed Subproject Components

No.	Component	Details	Location
1	Clear water feeder main to feed treated water to overhead tanks (OHTs)	7.47 km length 150 mm – 355 mm diameter **Ductile Iron Pipes** 1.50 km - 150 mm diameter from ground level service reservoir (GLSR) at Manipal to OHT for Zone 5 at Manipal near Manapalla lake 0.5 km - 200 mm diameter from GLSR at Manipal to zone-3 OHT at Manipal **Mild Steel Pipes** 60 m - 219 mm diameter for zone -7C OHT at Kolambe 45 m - 219 mm diameter for zone -8C OHT at Indrali 1.7 km - 273.1 mm diameter for zone-6B OHT at Manchi 815 m - 323.90 mm diameter for zone-8B at Kakkunje 2.85 km - 355.6 mm diameter, for zone-9B at Santhekatte	Along the public roads within the road right of way
2	OHTs	7 OHTs of total storage capacity 5.2 ml Zone 3 – 750 kl at Manipal Zone-5 – 300 kl at Manipal near Manapalla lake Zone 6B – 750 kl at Manchi Zone 7C – 300 kl near Kolambe Zone 8B – 1,000 kl at kakkunje Zone 8C – 500 kl at Indrali Zone 9B – 1,600 kl at Santhekatte	For all 7 OHTs, government owned land parcels have been identified.
3	Distribution network	358.16 km pipes of diameter 63 mm to 350 mm **High Density Poly Ethylene (HDPE) pipes** 63 mm dia - 294.4 km 75 mm dia - 0.375 km 90 mm dia - 0.796 km 110 mm dia - 25.575 km 160 mm dia - 3.336 km 200 mm dia - 5.602 km 250 mm dia - 13.824 km 280 mm dia - 0.330 km 315 mm dia - 0.291 km DI PIPES: 150 mm dia - 0.252 km 300 mm dia - 10.282 km 350 mm dia- 3.098 km	Pipes will be laid along the public roads within the road right of way. Rider lines will be laid parallel to the existing pipes, and within the road right of way. Pipes will be mostly laid in earthen shoulder to avoid road cuttings
4	House Service Connections	Replacement of non-functioning 16,870 water meters for existing connections and providing new water supply connections of 15,000 to un-covered households	At each household

4 Environmental Management Plan.

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Annexure 1

Site visit observations of27th Feb 2020

S.No	Observation		Recommendation	Status
1	Project Information Board and barricading at work site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Not complied

		 Latitude: 13.345375 Longitude: 74.771271 Elevation: 25.07m Accuracy: 3.2m Time: 02-27-2020 13:15 Note: Endrali OHT site location,udupi		

2	PPEs and Sign boards at work places		Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

3	Worker sheds at santtekatte OHT site		Instructed contracting agency to provide proper shelter sheds to worker for resting and also to provide proper toilets sheds.	Not complied

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

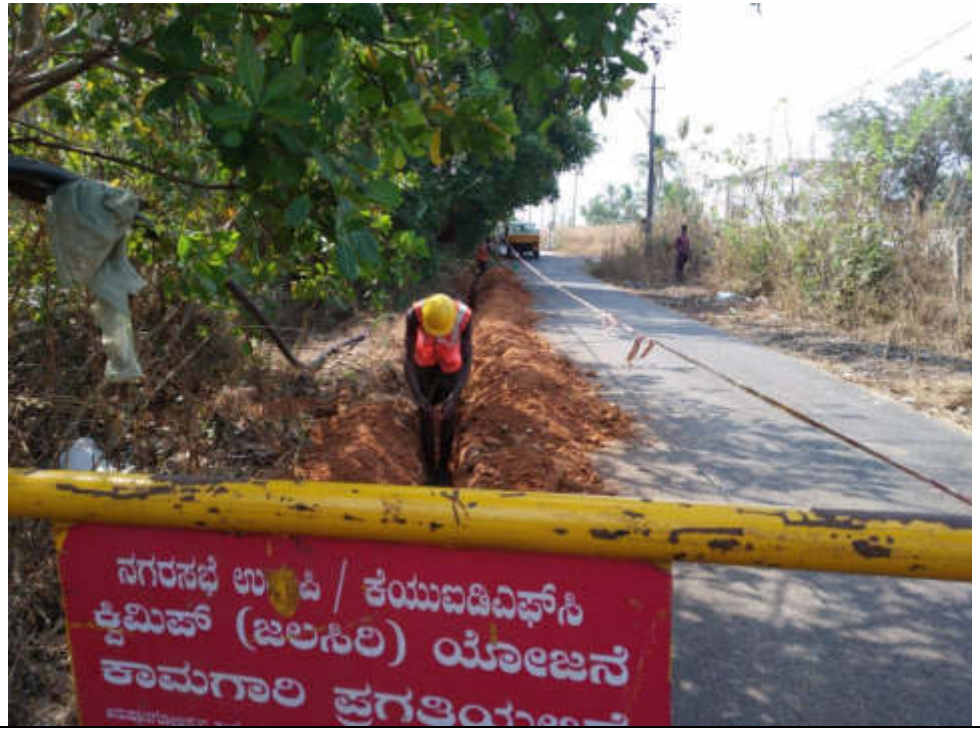
6	Project information board, Barricading at all OHT sites	 	Instructed contracting agency to remove or dump debris and loose materials in dumping yard from OHT site Project information board is not provided by the contractor agency both in English and Kannada language at all OHT sites Instructed to put sign boards like go slow, work in progress, deep excavation boards on OHT sites	Not complied

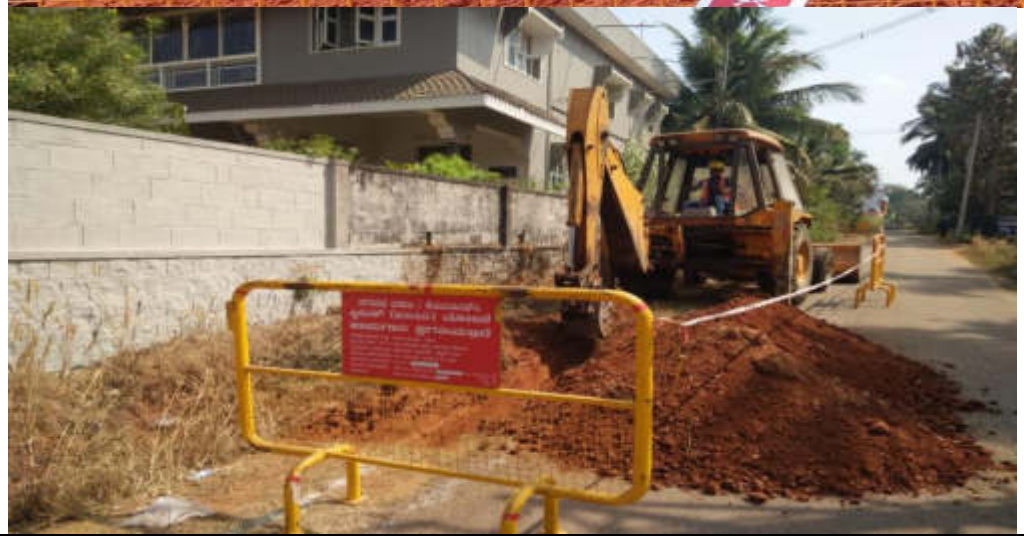
		 Latitude: 13.323403 Longitude: 74.772226 Elevation: 38.55m Accuracy: 3.2m Time: 02-27-2020 11:36 Note: OHT site at manchi location,udupi Powered by NoteCam  Latitude: 13.345138 Longitude: 74.771237 Elevation: 29.27m Accuracy: 3.2m Time: 02-27-2020 13:07 Note: Endrali OHT site location,udupi Powered by NoteCam		

7	Steel stock at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

Annexure 2

Site visit observations of 21st January 2020

S.No	Observation		Recommendation	Status
1	Sign board and flag man at site		Instructed contractors to provided cones, go slow boards and flag man at both the ends at all main road work places	Partially complied

2	Excavated earth at work site	 	Instructed contractor agency to immediately reuse the loose stored earth at site and dispose the remaining earth to dumping yard after the pipe laying And to sprinkle water by water tank to avoid dust generation near residential and commercial areas	Partially complied

3	Aggregates, sand and excavated earth Material stored at santtekatti OHT site		Instructed contracting agency to make bunds for sand and aggregates storage to avoid flow and mix Instructed to remove steel rods used for sheet support And dispose loose earth stored at site to dumping yard	Not complied

4	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose and to use present tank for other usage	Not complied

5	Housekeeping at santekatte OHT for work site	 	Proper housekeeping should be done at work site Instructed not use fire wood burning for cooking and other purpose at work site place	Not complied

6	Excavation work infront of residential house		Instructed contracting agency to immediately restore the excavated area or else to provide wooden or steel pedestrians if work delayed for next day	Partially Complied. Contractors informing to house owners regarding excavation and refilling the earth same day.

Annexure 3

Status of Site visit observations of 18th December 2019

S.No	Observation		Recommendation	Status of observation
1	Project Information Board and barricading at Doddegudde and Parakala site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Partially complied

		 Latitude: 13.372083 Longitude: 74.800365 Elevation: 98.41m Accuracy: 2.3m Time: 18-12-2019 15:17 Note: Parkala Pipe Laying Powered by NoteCam		

2	PPEs and Sign boards at work places	 	Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

		 CITY MUNICIPAL COUNCIL UDUPI KIUDFC KIUWMIP PROJECT WORK IN PROGRESS Latitude: 13.362352 Longitude: 74.767857 Elevation: 118.23m Accuracy: 2.4m Time: 18-12-2019 13:19 Note: Doddengudde Pipe Laying Powered by NoteCam		

3	Stock Yard at Santhekatte fully barricaded on all sides.		Stock Yard at Santhekatte must be hard barricaded and provide proper sign boards	Complied

4	Sign boards at santekatte stock yard		Project information board is provided by the contractor agency both in English and Kannada language at santekatte stock yard	Complied

		 suez Suez Project Pvt Ltd, Suez India Pvt Ltd, DBS Infratech Pvt Ltd (JV) Latitude: 13.389127 Longitude: 74.741602 Elevation: 106.95m Accuracy: 3.2m Time: 18-12-2019 16:05 Note: Santhekatte Store Yard Powered by NoteCam  172.98 Core 16-11-2018 16-08-2022 36 ತಿಂಗಳು 96 ತಿಂಗಳು suez ERIAL STOCK YARD S.R Latitude: 13.389075 Longitude: 74.741582 Elevation: 115.75m Accuracy: 1.9m Time: 18-12-2019 16:02 Note: Santhekatte Store Yard Powered by NoteCam		

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

6	Waste debris and materials at work sites		Instructed contracting agency to remove or dump debris and loose materials in dumping yard from work site Project information board is not provided by the contractor agency both in English and Kannada language at santtekatte OHT site Instructed to put sign boards like go slow, work in progress, deep excavation boards on work sites	Not complied

7	Steel stocked at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

Monthly Environmental Monitoring Report

Project Number: 43253-027
May 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City

Package No. 02MNG02

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Sewerage System in Mangalore

The first sewerage system in Mangalore wasbuilt in 1961 and was designed for an ultimate flow of 27.04 million liters per day (MLD) estimated for a design population of 200,000 of the year 1991. This scheme was implemented by Public Health Department. The total area covered by the sewerage network is about 25km^2 with two sewerage disrticts and seven zones. Total length of sewerage network constructed was about 250 km with pipe diameter varying from 150mm to 600mm with 7,000 manholes

and eight wet wells-cum-pump houses. In 1974, Karnataka Urban Water Supply and Sewerage Board (KUWSDB) extended the sewerage networks within the existing 25 km^{2}area by another 245 km with 8,000 units of manholes.

The second scheme was established in 2003 under the ADB funded Karnataka Urban Development and Coastal Environmental Management Project (KUDCEMP) and commissioned in 2007-2008 and the sewerage system was upgraded for an ultimate flow of 88.75MLD for a design population of 624,432.

Sewerage network extended to adjoining areas of old city and to other areas in Mangalore City Corporation (MCC) boundary covering 50.60 km^2.Overall 60% of Mangalore, 75.60km^2, is covered with sewerage systems.

Mangalore city is divided into two parts as Surathkal and Mangalore, further subdivided into seven sewerage districts. Each district has one STP. The total length of sewerage network is about 360 km including 14,875 Manholes with pipe diameter varying from 150 mm to 900 mm,and22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km^2. West district consists of 6 zones (city center of Mangalore) covers 30.82 km^2.South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km^2. East district consists of1 zone (Pachanady, Bondel and Shakatinagara)covers 18.78km^2.

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	$12^0$87'N Latitude $74^0$88'E Longitude
Area	132.45 km^2
Population 2011	488,487
Number of households	115,036
Road length	1,134 km
Projected population for the year 2016	554,183
Projected population for the year 2031	756,903
Projected population for the year 2046	1,033,778
Existing Underground Drainage (1961 Scheme) by Public Health Department	
Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total area covered Designed Population	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes 8000 8 25 km^2 2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network Total Number of Manholes	245 km 8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total Area Covered Designed Population	24 360 km - diameter varying from 150 mm to 900 mm 14,815 22 70% 624,432
Capacity and Technology of STP • STP at Kavoor • STP at Pachanady • STP at Bajal • STP at Surathkal	 43.5 MLD UASB 8.75 MLD ASP 20 MLDASP 16 MLD ASP
Total Number of House ServiceConnections	45,000

ASP = activated sludge process, km = kilometer, KUDCEMP = Karnataka Urban Development and Coastal Environment Management Project, KUIDFC = Karnataka Urban Infrastructure Development and Finance Corporation, KUWSDB=Karnataka Urban Water Supply and Drainage Board, MCC = Mangalore City Corporation, mm = millimeter, MLD = million liters per day,STP = sewage treatment plant, km^2 = square kilometer, UASB = up-flow anaerobic sludge blanket.

3. The proposed subproject:

Under this subproject, it is proposed to replace existing sewage pumping mains, which are damaged, undersized and/or chocked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

(i) 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavoor sewage treatment plant (STP);
(ii) 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
(iii) 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
(iv) 1.1 km length 450 mm diameter main from JeppuBappal wet well no.7 to ridge manhole near Yekkur, inside old sewage treatment plant (STP).

includes of replacement of sewerage pumping mains fromwet wells to the STP.Table 2showsthenatureandsizeofthevariouscomponentsofthesubproject, based on the detailed engineering design of the subproject.Figure1shows the location of four proposed pumping main sections in Mangalore City.

Figure 1Key Plan Showing Pumping Main Alignments

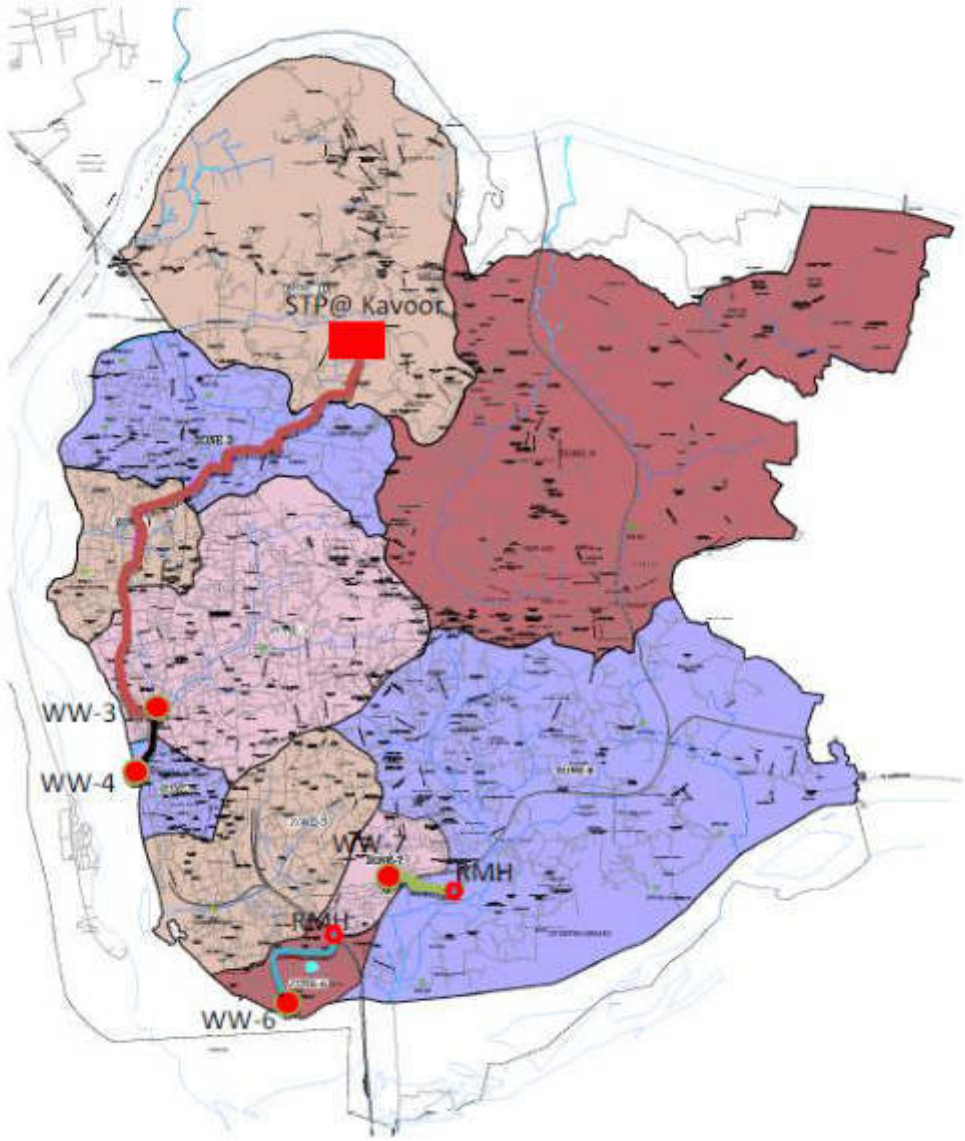


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	Replacement of old pumping main of total length 11.4 km withnew mains of ductile iron pipes at following section: (i) From Kudroliwet well 3 to Kavoor STP: 7.65 km length and 1,100 mm) diameter (ii) From Kandathpalli wet well 4 to Kudroli wet well 3: 0.95km length and900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate:1.7km length and 450 mm diameter (iv) From JeppuBappal wet well 7 to Ridge manhole near Yekkur, inside old STP:1.1km length and 450 mm diameter	New pumping mains will be laid along the public roads – in the vacant earthen shoulder where it is available, or in the tarmac portion, where there is no vacant land. New pipeline will be mostly laid adjacent to the existing ones which are currently in operation: Road width varies from 3.5 m to 8 m. List of roads and alignment details of each pipeline section is provided in Table 11.

km = kilometer, mm = millimeter, STP = sewage treatment plant.

4. Environmental Management Plan

An environmental management plan (EMP) is included as part of this IEE, which includes: (i)mitigation measures for environmental impacts during implementation; (ii)an environmental monitoring program, and the responsible entities for mitigating, monitoring, and reporting; (iii)public consultation and information disclosure; and (iv)a grievance redress mechanism. A number of impacts and their significance have already been reduced by amending the designs.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	**Name of the Contractor:** DRS Infra Tech Pvt, Ltd.,
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Mangalore	**Name of SE/EE/AE Of concerned division PIU :-** AE **-** Mr. Shiv Kumar
Date of monitoring: 27/05/2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr. Madukar

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction– Mangalore

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Construction Impacts	• Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and • Occupational hazards which can occur to workers and public during work.	Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following: 1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; 2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); 3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; 4. Details of materials at each site (type and quantity);	Construction Contractor	• Site inspection and record verification; - Done. • Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done • Site specific Occupational Health and Safety (OHS)plan; • Spoil and waste management plan; and • Complaints from sensitive receptors and public.	Good construction practice to be followed by contractor – no additional costs	1. Maintaining daily work records **Attached in Jan 2020 annexure 5 a & b** 2. Complied. **Attached in Sep 2019 annexure 3** 3. Complied and PPEs are provided to workers on site. **Attached in annexure Sep 2019 1.v** 4. Contractor maintained registers for

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		5. Risks/hazards associated with the work (for example, Trench excavation will have risks such as trench collapse, persons/vehicles falling into trench, structural risk to nearby buildings, damage to buildings, infrastructure etc.); 6. Construction waste/debris generated (details and quantity); 7. Detail the sequence of work process (step-by- step) including specific details of each work; 8. Contractor's supervision and management arrangements for the work; Emergency: Designate (i) Responsible person on site, and (ii) first aider; and (iii)Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading, etc. 9. The pumping main lines are to be laid along the roads, Roads are provided with side drains to carry rain water. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of				pumping main sites and recommended to maintain for each site 5. Building and infrastructure were not found near excavation area. And instructed contracting agency to put hard barricades. 6. Contractor maintained register for damaged infrastructure. Attached as **Annexure-11** in **May - 2019 report.** Recommended contracting agency to Updated work record monthly 7. Not complied. Work plan has to be prepared. 8. Not Complied. First aider not

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains. **The following should be included in the site layout plan**: a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone; b) Location of temporary stockpiles and provision of bunds; c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil; d) Wetting of soil to arrest dust generation by sprinkling water; and e) Waste/surplus soil utilization and disposal plan – indicate expected duration of temporary stockpiling along the trench at each site and identify final surplus soil utilization/disposal site in consultation with program implementation unit (PIU).				provided. 9. Typical site layout plan not prepared a) Barricading and security personals are provided on working site. b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU. c) Contractor is dumping surplus soil in the Pachanady Solid waste management. d) Complied. e) Site layout plan Not prepared as per given mitigation Measures.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Utilities	Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	10. At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 11. Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 13. Coordinate with the respective department and ensure that	Construction Contractor and PIU	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	10 Complied- Recommended Contractor to maintain list of utilities identified prior to start of work at any section. 11 Proper record of restoration of the utilities and letter of communication with Different departments and Public is available and Copy should be maintained by Contractor. **Attached as Annexures-2, 3, 4 & 5 in May - 2019 report** 12 Work is in progress and Recommended contractors to provide diversion of drains and provision of water tanker

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		electricity and telephone services are restored quickly 14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section				whenever and wherever required on site. 13 Work in progress and instructed contractors to restore such damages in same condition as before. 14 Work in progress and and instructed contractors to restore such damages in same condition as before. And List of identified damaged compound walls, culverts and drains for reconstruction have to be maintained. Record of before and after Condition also to be maintained at site by contractor.
Construction work camps, stockpile areas, storage areas, and	Disruption to traffic flow and sensitive areas and receptors	15. Prioritize areas within or nearest possible vacant space in the subproject location; 16. Avoid locating construction work camps close (100 m away) to	Construction Contractor	List of selected sites for construction work camp, storage area and disposal area.	Good construction practice to be followed by contractor –no	15 Compiled 16 Compiled – Advised contractor to

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
disposal areas		residential areas; 17. Do not consider residential areas; for stockpiling the waste/surplus soil; and 18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.		Complaints from sensitive receptors	additional costs	mark dumping yard location on google map which is complied. **Attached in Sep 2019 annexure 4** 17 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is marked on Google map. **Attached in Sep 2019 annexure 4** 18 Instructed contracting agency, if any stockpiles have been stored temporarily in working site must be provided by bunds or dumped in the stock yard.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						Attached in Jan 2020 in annexure 4
Source of construction materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution	19. Contractor should obtain material from existing mines approved/licensed by Mines and Geology Department/ Revenue Department only; 20. Verify suitability of all material sources and obtain approval of implementing agency; 21. No new quarry sites shall be developed for the subproject purpose; and 22. Submit a monthly statement of construction material procured indicating material type, source and quantity.	Construction Contractor	Check Sources and approval	Good construction practice to be followed by contractor –no additional costs	19 Contractor obtained material from authorised agency but no supporting documents maintained by Contractor. 20 Contractor has been recommended to maintain the Proper Documentation. 21 Complied - No new quarry sites developed by contractor for this project 22 Complied
Air quality	Dust and emissions from construction activity may de-grade the air quality	23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 24. Damp down exposed soil and	Construction Contractor	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24	Good construction practice to be followed by contractor Contractor's cost – air quality	23 Complied- Recommended contractor to maintain the copy of Document.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		any stockpiled on site by spraying with water when necessary during dry weather; 25. Bring materials (aggregates, sand, etc. gravel) as and when required; 26. Use tarpaulins to cover sand and other loose material when transported by vehicles; 27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 28. Clean wheels and undercarriage of vehicles prior to leaving construction site; 29. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly; ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity; and 30. Carry out air quality monitoring.		months, parameters - SPM, RSPM, SOx, NOx)	monitoring (4 locations x 9 samples in construction x 5000 = INR 1,80,000)	24 No such exposed soil and stockpiled were found but instructed contracting agency must spray water wherever necessary. 25 Complied 26 Complied 27 Stockpile, sand and other loose material are kept in barricaded areas. 28 Complied 29 Not Complied. Recommended to Contractor to maintain Pollution under Control (PUC) Certificates for all vehicles and equipments used in the

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						construction. 30 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	31. Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise (road cutting activity) are conducted during periods of the day which will result in least disturbance; 32. Construction work shall be limited to day light hours (6 AM to 6 PM) for all the works located within the town; Provide prior information to the local public about the work schedule; 33. Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually by chiselling; 34. Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable	Construction Contractor	Complaints from sensitive receptors Site observations Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	Good construction practice to be followed by contractor Contractor's cost – noise level monitoring (4 locations x 9 samples in construction x 2500 = ₹90.000)	31 Complied. 32 Complied. 33 Till now such buildings are not found and will be complied when such sensitive buildings observed. 34 However; noise will be minimized by

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		street barriers the sound impact to surrounding sensitive receptor; and 35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles				using construction equipment by using vehicle silencers. Recommended to fit jackhammers with noise-reducing mufflers, and portable street barriers at sensitive receptors. 35 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
Water Quality	Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	36. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 37. Stockpiles shall be provided with temporary bunds;	Construction Contractor	Site observations	Good construction practice to be followed by contractor –no additional costs	36 Contractor not carried out Major Construction works during monsoon season. Stockpiling of earth fill not observed during site visit. 37 Work in progress

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		38. Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas; 39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund; 41. Dispose any wastes generated by construction activities in designated sites; and, 42. Ensure that there is no spill over of excavated earth, construction				and no such stockpiles found on work site. 38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant 39 NA - Surface water bodies not observed along the Project alignment. 40 Complied. Contractor not using fuels and lubricants in bulk. Whenever required fuel used on particular day onsite. But instructed contracting agency to provide storage yard if fuel stored in bulk. 41 Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		materials like cement concrete into the drain near wet well no. 3; also ensure that the drain flow is not blocked / disturbed during the work				Followed by contracting agency 42 Complied Followed by contracting agency
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 44. Coordinate with PIU / MCC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 45. In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / MCC; waste shall not be disposed in the forest areas and in or near water bodies/ rivers; 46. Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported, reused and disposed properly;	Construction Contractor	Work site inspection Complaints from public	Good construction practice to be followed by contractor – no additional costs	43 Compiled 44 Compiled-disposed in the Pachanady Solid waste management treatment plant 45 No such activities observed at the time of inspection 46 Partially Complied-Waste Management Plan prepared by contractor needs to be

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		47. Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 48. Recover used oil and lubricants and reuse or remove from the sites; 49. Remove all wreckage, rubbish, or temporary structures which are no longer required; and 50. Request program implementation unit (PIU)/ project management, design and construction supervision consultant (PMDCSC) to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.				updated. 47 Complied Followed by contracting agency 48 Complied 49 Complied 50 Construction work is in progress.
Construction works	Hindrance to traffic movement / accessibility	51. Plan pipeline work in consultation with the traffic police; Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. 52. Strictly follow the pipe laying method presented in Table 13 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time 53. Provide for immediate	Construction Contractor	Work Program Review	Good construction practice to be followed	51 Traffic Management Plan prepared by Contractor and it needs to be updated again. 52 Complied 53 Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement; 54. Do not close the road completely, ensure that work is conducted onto edge of the road; allow traffic to move on one line; 55. In narrow roads with considerable traffic (Jama Masjid- Road, Ashok Nagara road, and old port / Kandathapalli Road), work shall be undertaken between two intersections and diverting traffic in that section to a parallel road, so that through traffic is not blocked fully. 56. In some sections on Jama Masjid- Road, Old Port Road and Kandathapalli Road there are no parallel roads to divert traffic; in those sections work shall be conducted in the nights or in low traffic hours in day time; but in case of day-time work traffic shall not be blocked for more than 2-3 hours at a stretch; prior information shall be provided to public – a week before and a day before work, about the schedule of the work and temporary road closure; proper signage shall be provided 57. Maintain safe pedestrian access at all times to the houses along the work site				54 Complied. 55 Complied. (**Attached in june 2019)** 56 Complied. Work is carried out in low traffic hours in day time and; prior information given about the schedule of the work. 57 Complied (**Attached in June 2019) and** no such work are executing near residential areas during site visit 58 Caution board provided at work site. Entry

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		58. At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. 59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken. 60. Hard barricades should be mandatorily provided along with caution board and traffic diversion boards. Some of the densely populated area identified in project area are Old Port Road, Jeppubappal to Suterpete				restriction information; competent official's name and contact for public complaints provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4 g, h, i, j, k and l)** 59 Respective Engineers present on the site for continuous monitoring 60 Traffic diversion boards, hard barricading and Caution boards provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4 g, h, i, j, k and l)**

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Nuisance/ disturbance to sensitive areas	Schools, hospitals and religious places) due construction work in the proximity (within 250 m of such place)	61. No material should be stocked in this area; material shall be brought to the site as and when required 62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles 63. No work should be conducted near the religious places during religious congregations 64. Material transport to the site should be arranged considering school timings; material should be in place before school starts; 65. Notify concerned schools, hospitals, etc. 2 weeks prior to the work; conduct a 30 minutes awareness program at on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no additional costs	61 Complied Followed by contracting agency 62 Complied Followed by contracting agency 63 Followed by contracting agency 64 Complied Followed by contracting agency 65 Complied – Recommended to maintain documentary Evidence

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Socio-Economic-Livelihood Impediment of access to houses and business	Impediment of access to houses and business	66. Leave space for access between mounds of excavated soil, where required 67. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required. 68. Consult affected business people to inform them in advance when work will occur 69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues 70. Provide sign/caution/warning boards at work site indicating work schedule and traffic information; prevent public entry into work sites through barricading and security; and	Construction Contractor	• Number of walkways, wooden planks and foot bridges; • Complaints from public; • Spoil Management Plan; and • Traffic Management plan.	Good construction practice to be followed by contractor – no additional costs	66 Complied. 67 Complied – access provided by contractor. (**Attached in june 2019)** 68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work. 69 Complied implementation Resettlement Plan to address these issues in progress **(Attached in June 2019)** 70 Complied -

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints. 72. Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. The site-specific traffic management plan should be part of the Construction Management Plan.				Traffic diversion boards, Hard barricading and Caution boards provided(**Attached in June 2019)** work schedule not provided. 71 Complied. Recommended all project information board and sign board must be Retro reflective (**Attached in annexure 4 g, h, i, j, k and l)** 72 Site-Specific Traffic Management Plan Prepared by contractor is not adequate and to get it updated again. **Recommended to comply (Attached in June 2019)**
Socio-Economic Employment	Impact on local employment generation	73. Employ local labour force to the maximum extent, if manpower is available	Construction Contractor	Employment Records Compliance to labour laws	NA	73 Complied
Occupational Health and Safety	Workers occupational health and safety	74. Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as: (a) excluding public from the	Construction Contractor	Site specific OHSEquipped first aid station.	Good construction practice to be followed by contractor – no	74 Complied Site-specific Health and Safety (H&S) Plan prepared by

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		site; (b) ensuring all workers are provided with and use Personal Protective Equipment (PPE); (c) H&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; 75. All trenches in sandy and mixed sandy soils irrespective of depth and trenches deeper than 2m (or less, if designed by the engineer)in other soils shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution; 76. Take all necessary precaution during isolation and blocking of existing pumping main and connecting the new main to the existing system. Skilled supervision, appropriate apparatus and PPEs must be used; 77. Extreme care shall be taken while working on existing sewer lines/ manholes, where they are required to be shifted, to safeguard the workers against the gaseous emissions and		Potable watersupply andclean eating area. PPE and medical insurance	additional costs	contractor. Proper implementation required. 75 Not Complied. 76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided.(**Attached Sep 2019 in annexure 1.v)** 77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are provided

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		hazardous working conditions 78. Create awareness among all workers, supervisors and site engineers on potential hazard conditions and safety risks in working with existing/old sewer lines; working conditions may be hazardous with harmful gaseous emissions (hydrogen sulphide, carbon monoxide, methane, etc.) and oxygen deficiency; 79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use; 80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 81. Provide medical insurance coverage for workers; 82. Secure all installations from unauthorized intrusion and				78 Complied 79 Oxygen masks for emergency not provided PPEs are provided 80 Not Complied 81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		accident risks; 83. Provide supplies of potable drinking water; 84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances; 85. Provide H & S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 86. Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; 87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 88. Ensure moving equipment is outfitted with audible back-up alarms; 89. Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. 90. Signage shall be in accordance				82 Complied. 83 Complied. 84 Specific eating area not provided. 85 Safety and Tool box meeting conducted. (**Attached in Sep 2019 annexure 1.u)** 86 Not Complied 87 Complied. 88 Compiled 89 Not Complied. 90 Signage are

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 91. Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 92. Overall, the contractor should comply with IFC EHS Guidelines on Occupational Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD =AJPERES).				Provided but not in accordance with international standards 91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. (**Attached in Sep 2019 annexure 1.v)** 92. Not Complied
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	93. All trenches in sandy and mixed sandy soils irrespective of depth, and trenches deeper than 2m (or less, if desired by engineer) shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution; 94. Plan material and waste routes to avoid times of peak-	Construction Contractor	• Traffic Management Plan • Complaints from public	Good construction practice to be followed by contractor – no additional costs	**93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.** No such deep trench found during site visit but instructed contracting agency to Provide sheet piling for shoring and strutting if depth is more than 2m. 94 Partially

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		pedestrian activities; 95. One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and MCC to identify risk areas and buildings and take necessary precautions for safe conduct of work; 96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and 98. Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/ 3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES).				Complied – waste management plan not prepared 95 Complied. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions **but not maintained record of joint inspection.** 96 Complied 97 Complied Followed by contracting agency 98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Worker Camps	Temporary worker camps	99 The contractor should operate the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers accommodation), including the following: 100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 101 Minimize removal of vegetation and disallow cutting of trees; 102 Labour camps shall include accommodation for workers/labourers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 103 The roof height of the worker's and labour camp shall not be less than 3 m from floor level to the lowest part of the roof. 104 The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant	Construction Contractor	List of selected sites. Written consent of land owner Waste Management plan	Good construction practice to be followed by contractor – no additional costs	99. Contractor Not operating the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation. **And instructed to provide awareness to all workers to follow H& S measures of COVID-19** 100 Complied. 101 Complied. 102 Proper Kitchen, bathrooms garbage room yet to be provided. 103 Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		regulation, whichever is higher. 105 Fire and electrical safety pre-cautions shall be adhered to. 106 Cooking, sanitation and washing areas shall be provided separately. 107 The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 109 The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 110 Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 111 Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;				104 Not Complied 105. Not Complied. 106. Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms. 107. Partially Complied 108. Such depressions not found during site visit 109. Not complied. 110. Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		112 Train employees in the storage and handling of materials which can potentially cause soil contamination; 113 Recover used oil and lubricants and reuse or remove from the site; 114 Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 115 Remove all wreckage, rubbish, or temporary structures which are no longer required; and 116 Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				111. Complied. 112. Complied. 113. Reused. 114. Complied. 115. Complied. 116. Work is in progress.

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project needs improvement. Contractor maintained copy of IEE. Instructed contracting agency has to conduct HIV AIDS Awareness Training programme. Contracting agency has not submitted April and May 2020 Site specific EMP report with PIU letter.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Site inspection and record verification	• Site inspection Register must be maintained	**Complied**
2.	Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done		**Complied**
3.	Site specific Occupational Health and Safety (OHS)plan;	Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety**)** • Institutional setup • List of PPE provided and standards followed, Site specific OHS Equipped first aid station, Medical insurance. Hospitals recognized in emergency. • Health Camps and Check -up should conducted for the workers • Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor. • Electrical measures safety • Fire safety measures should be reflect in OHS plan. • Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register	OHS Plan submitted – but not adequate, recommended the contractor to update the same and submit
4.	Waste management plan; and	• Type of waste generated (Solid and Hazardous) • Quantity of different waste generated at site • List and type of garbage bins provided • Time of waste collection • Location of Waste disposal site identified consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are regularly emptied and waste is disposed off in a hygienic manner as per the	Comply with in 15 days

		Solid Waste (Handling and Management) Rules, 2016.	
5.	Complaints from sensitive receptors and public.	• Complaints register must be maintained at each site.	Complaint register maintained at pumping station and recommended the contractor to maintain the complaint register at all working sites
6.	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• Section-wise list of utilities to be shifted/ disturbed • Submission Letters of Section-wise list of utilities to be shifted/ disturbed to PIU • Plan to shift and contingency steps to be taken	Complied partially - Communication Letters to different Departments from PIU maintained**.** Contractor has to maintain the recommended documents Comply with in 7 days
7.	Record to confirm that contingency services are provided and all damaged utilities are restored after the work		Complied
8.	List of selected sites for construction work camp, storage area and disposal area	• Identify the location consultation with PIU • Letters of communications and finalization location • Mark the location on google map.	Complied - letter for finalization of the disposal site**.** The **letters** for finalization of the locations for (work camp, storage area) have to be complied. Marking the locations on Google map complied
9.	Check Sources and approval	• Maintain Copy of Certification of authorized material sources	Comply with in 5 days
10.	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
11.	Site observations	• Maintain Register for site observation at site	Complied
12.	Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
13.	Work Program Review	• Work plan must be prepared and review	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	• List of walkways, wooden planks and foot bridges provided with location must be maintained	Work in progress and instructed contractors to provide walkways, wooden planks and foot bridge if area is excavated.

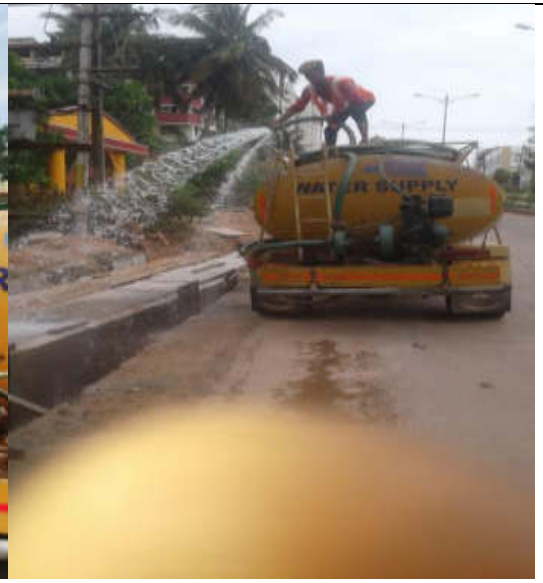
15.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	Spoil Management Plan submitted – not adequate Comply with in 5 days
16.	Traffic Management plan		Traffic Management Plan submitted –not adequate and recommended the contractor to update the same and submit Comply with in 5 days
17.	Employment Records Compliance to labour laws	• Attendance registers of labour at each site. • Register of payment to the workers at each site.	**Attendance register is maintained. but Register of payment to the workers Not maintained** Comply with in 5 days
18.	Site specific OHS Equipped first aid station	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	Comply with in 10 days (when work is in progress all this facilities must be provided)
19.	Potable water supply and clean eating area.	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the each construction site.	Complied

20.	PPE and medical insurance	• The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers when on the construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided. • During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	Complied
21.	List of selected sites. Written consent of land owner	• If any Activity related to project carrying out in private land written consent of land owner (NOC) must be taken.	If any, Comply with in 20 days
22.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness to all office staffs and site workers to follow H& S measures of COVID-19**	Complied. Implementation of H & S at work site is done**. Attached as Annexure 3. H & S plan is to be prepared by contractors**

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

Annexure -1

Site Observations for the month of 27th May 2020

S.No	Observation		Recommendation
a	Water sprinkling at dry location at konchady site	 	Water is sprinked by contracting agency after work in dry areas to avoid dust generation at work site konchady site

b	PPEs for workers at work locations	 	All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site Drinking Water facility should be provided to workers at all site

c	Sign boards and hard barrication at work site	 	Work in progress sign board should be kept and hard barricading must be done during road cement concreting work to avoid public entrance to carry safe work

d	One toilet was found damaged		Repair the Toilet

e	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours

f	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard

g	Poor Housekeeping at shakti nagar labour camp of subcontractor		Labour camp of subcontractor at shaktinagar is not properly maintained. Housekeeping should be done properly to keep surrounding area clean.

Annexure -2

Status of Site Observations for the month of 29th February 2020

S.No	Observation		Recommendation	Status
a	Proper barricading and Cautionary Sign. information		Barricading is done at kunttikana site Instructed contracting agency to put hard barricading continuous without gap.	Partially complied

b	Flag man at kunttikanna Work location		Flagman provided t both side of the road to maintain traffic and avoid any accident and incident Again instructed to follow it properly	Partially complied

c	PPEs at work locations		All workers are wear PPEs during site visit at kuttikana and kandatpalli locations Instructed to follow it properly at all work site Drinking water must be provided at all working locations for workers One mobil toilet should be provided site site	Complied

d	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Partially complied

e	Gas stove is being used for cooking food	 	Gas cylinder is to be provided for cooking Kitchen must be separate for cooking Lose electrical cables or boards must be replaced to avoid from electric shocks	Not complied

f	Material stocks at shaktinagara locations	 	Proper sign board in frame with stand should be at site And soft barricading should be done for every stocked materials	Partially complied

g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not complied

i	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied

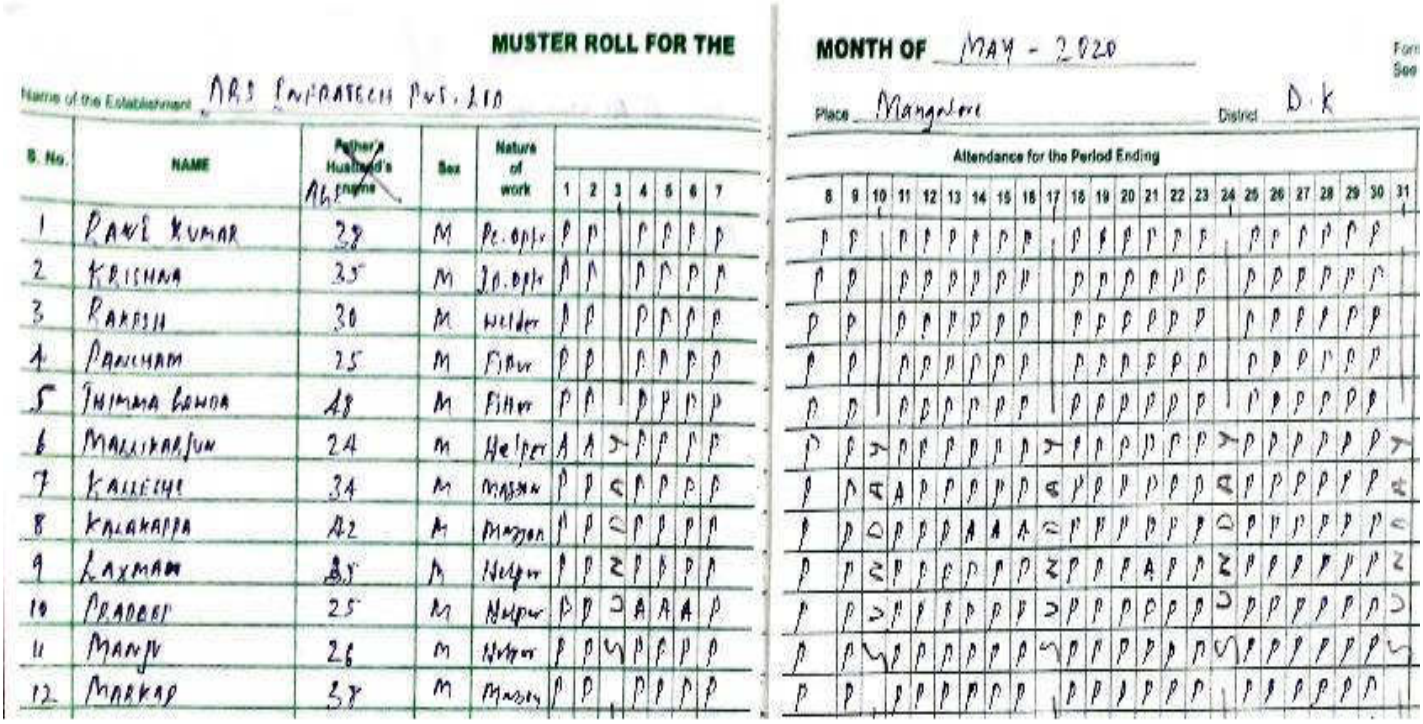
Annexture-3

DRS INFRATECH PVT LTD

DRS/MNG-02/006

COVID-19 H&S IMPLEMENTATION PLAN FOR THE MONTH OF MAY-2020

Labor's Attendance Details Month of May-2020



MUSTER ROLL FOR THE MONTH OF MAY - 2020

Name of the Establishment: DRS INFRATECH PVT. LTD

Place: Mangalore District: D.K

S. No.	NAME	Father's/Husband's Name	Sex	Nature of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	RAVI KUMAR	28	M	Re.opr	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	
2	KRISHNA	35	M	Re.opr	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	
3	RAKESH	30	M	Welder	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	
4	PANCHAM	25	M	Fitter	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	
5	THIMMA GOWDA	48	M	Fitter	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	
6	MALLIKARJUN	24	M	Helper	A	A	W	P	P	P	P	P	P	W	P	P	P	P	P	P	W	P	P	P	P	P	P	W	P	P	P	P	P	P	W
7	KALLESH	34	M	Mason	P	P	CL	P	P	P	P	P	P	CL	A	P	P	P	P	P	CL	P	P	P	P	P	P	CL	P	P	P	P	P	P	CL
8	KALAKAPPA	42	M	Mason	P	P	CL	P	P	P	P	P	P	CL	P	P	P	A	A	A	CL	P	P	P	P	P	P	CL	P	P	P	P	P	P	CL
9	LAXMAN	35	M	Helper	P	P	ZL	P	P	P	P	P	P	ZL	P	P	P	P	P	P	ZL	P	P	P	A	P	P	ZL	P	P	P	P	P	P	ZL
10	PRABHU	25	M	Helper	P	P	OD	A	A	A	P	P	P	OD	P	P	P	P	P	P	OD	P	P	P	P	P	P	OD	P	P	P	P	P	P	OD
11	MANJU	26	M	Helper	P	P	SL	P	P	P	P	P	P	SL	P	P	P	P	P	P	SL	P	P	P	P	P	P	SL	P	P	P	P	P	P	SL
12	MARKAP	38	M	Mason	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P	

Tool Box Talk about COVID-19

We are conducted TBT about COVID -19 and explain to workers how to use the Sanitizer and Hand wash Liquid and also Instructed to worker's safety precautions of against COVID-19.

BODY TEMPERATURE CHECKING

Before start the work and work closing time daily two times Body Temperature Checking for all Staff, Client and workers and also we are distributed sanitizer and hand wash liquid to every workers and staff.

Workers working with Mask

Monthly Environmental Monitoring Report

Project Number: 43253-027
May 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura

Package No. 02KDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Water Supply System in Kundapura

Kundapura is located in Udupi District in Karnataka and is the headquarters of the KundapuraTaluk placed 92 km from Mangalore and 416 km from Bangalore (Figure 1). Geographically, Kundapura Town is located at a latitude of 13080'N and longitude of 7407'E at an average altitude of 80 m above the mean sea level (msl). The municipality spreads in an area of 14 square kilometer (km^2) and consists of Kundapura Kasaba and Vaderahobli villages, with 23 municipal wards. Population of Kundapura is 30,450 (2011 Census). Kundapura is well connected to other parts of the state and country by highways and railways. National highway (NH-66) passes through the town. Nearest airport is Mangalore International Airport, 87 km from Kundapura. Kundapura is also connected to the Konkan Railway, which runs from Mumbai to Mangalore. Nearest railway station is at about 4 km from the town.

Kundapuran Town Municipal Council (TMC)provides urban services to the people efficiently and is well recognized by the state and central governments. Kundapura TMC has been awarded following certificates of appreciation by the Government of Karnataka:

(i) Best Urban Local Body in the year of 1996-1997;
(ii) Best Urban Local Body Award in the 2009-2010;
(iii) Second Best Practices Award in the year 2010 for Reduction of Nonrevenue Water Supply;
(iv) Third Best Practices Award-2010 for Solid Waste Management (SWM) for providing excellent Municipal Services, maintaining Healthy Environment;
(v) The best Utilization of reserved Fund for the social Service Activities; and
(vi) Town Municipal Council also grabbed Green Leaf Award-2009, Nation Urban Water Awards-2009, and ICONSMW Award-2011 in National level.

3. Need for Infrastructure Improvement in Kundapura

River Varahi is the main surface source of water supply to Kundapura. The intake works, located in Jambu beside JambukeshwaraTemple, about 11 km from Kundapura, pump raw water to the WTP constructed on a hillock in Japhthi village at a distance of about 2.5 km from the intake works by 400 mm diametermild steel (MS) rising main. Treated water from WTP is pumped through a 400mm diameter MS rising main to the 500

kilolitre (kl) capacity OHT at Ashraya Colony, 500klcapacity OHT at Gandhi Park and 500klcapacity OHT at Halekote. The

clear water transmission main passes through Kundapura-Shimoga Road and pass through four-enroutevillages viz., Japhthi, Balkur, Basrur and Koni. A Schematic diagram of the existing water supply systemis shown in the Figure 1.

Figure 1: Existing Water Supply System in Kundapura

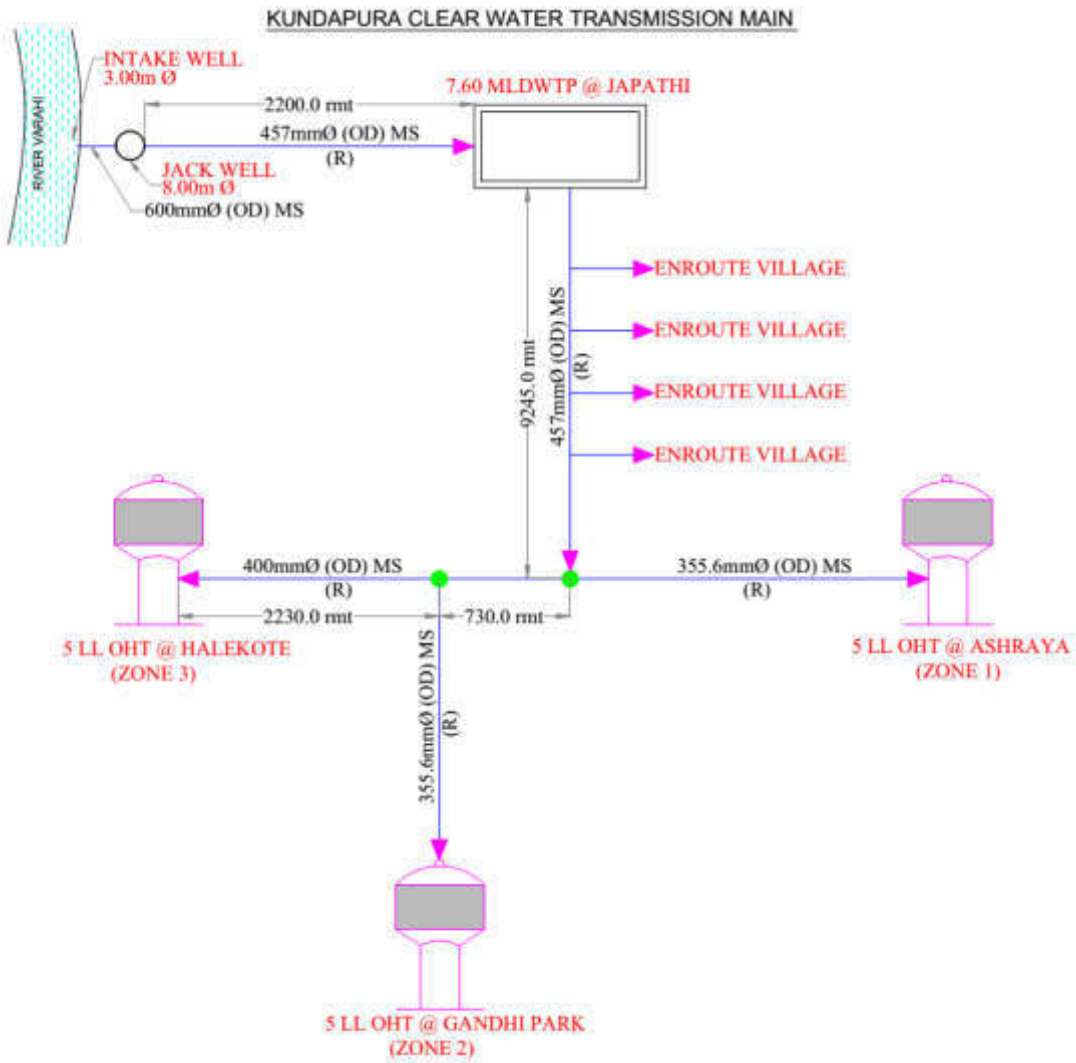


Table 1: Component of Existing Water Supply System in Kundapura

WTP Location	Capacity (MLD)	Treatment Process	Preliminary Design Stage? (Y/N)	Distance of WTP to nearest receptors in meters	Receiving Water of WTP Backwash /Wastewater Discharge	Uses of the receiving water (swimming, boating, fishing, irrigation, others [please specify])
Japthi, Kundapura	7.6	Inlet chamber ,Parshall flume,Flash Mixer , ClrifloculatorFilterhouse, Chlorination,	Existing WTP Rehabilitation	79	Discharged to drain	Irrigation

4. The proposed subproject:

The subproject formulated under this Investment Program to address gaps in current water supply system. Detailed design of all the subproject components is completed prior to the bidding, and as per the detailed design thesubproject includes the following components:

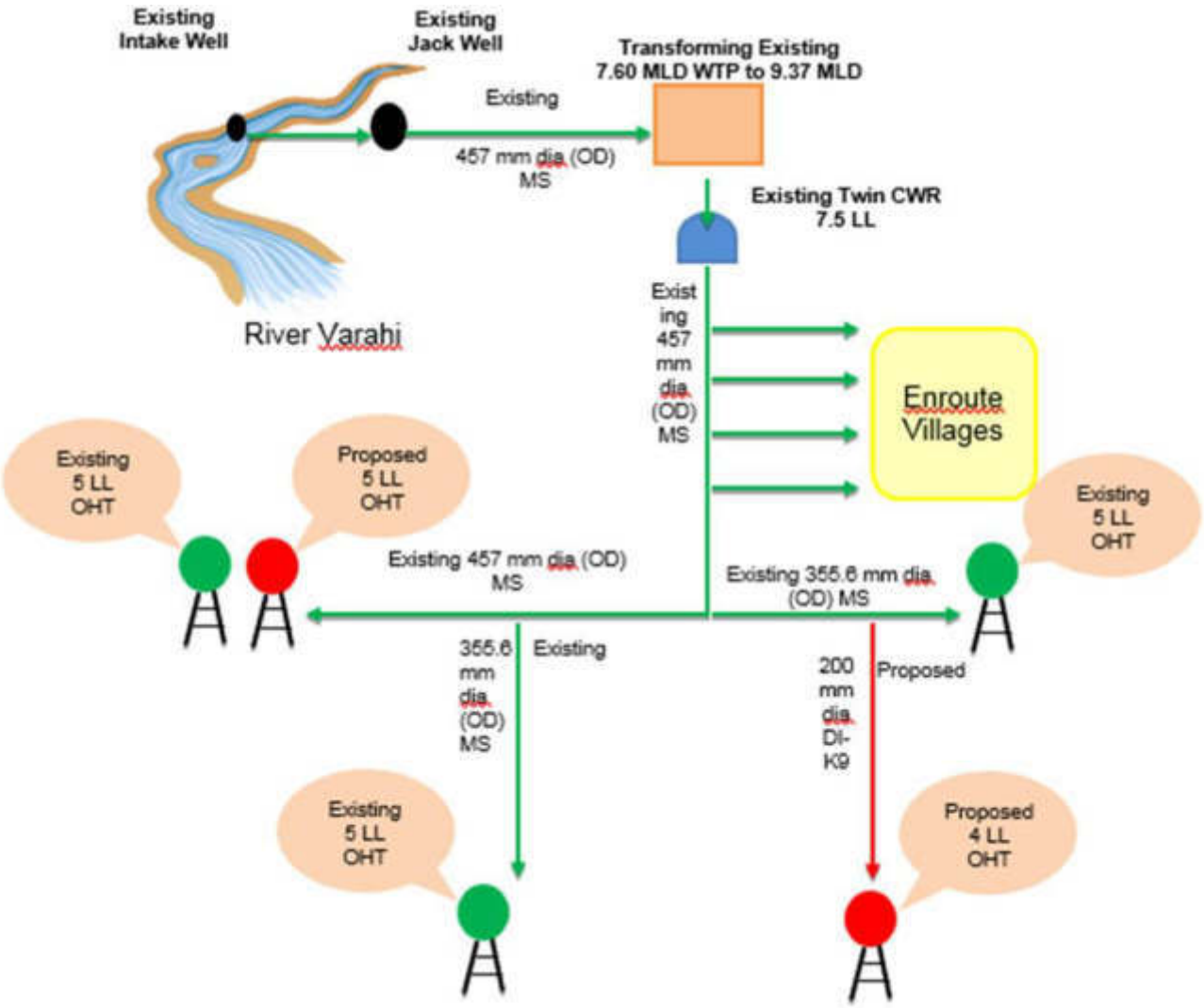
(i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
(ii) rehabilitation of the existing 7.60 MLD WTP in Japthi village including provision of backwash water recirculation and sludge management system;
(iii) laying of 4.8 kilometer (km) feeder main tapping from existing clear water main with 200 millimeter (mm) diameter pipe to feed to the proposed overhead tank (OHT) located in Kodi for the newly added zone 4;
(iv) construction of 2 OHTs with a total capacity of 0.9 million liter;
(v) extension of 31.64 km distribution network of diameter of 75 mm to 250 mm; and
(vi) replacement of 4,200 existing meters and providing new meteredhouse service connection (HSC) of 2,250 for uncovered households.

Following Table 2 provides details of the KIUWMIP Tranche 2 subproject components in Kundapura based on the detailed engineering design of the subproject. Schematic diagram of water supply system in Kundapura is shown in Figure 2. Locations of proposed components in Kundapura are shown. The position of the pipe alignment shown on road sectionis not exact due to mapping scale and underground utilities, and it will be fixed exactly during the pipeline laying work on site. All pipelines will be laid in the road shoulder, whereverit is available, or into the edge of road carriage way.

Table 2: Proposed Components for 24x7 Water Supply Systems

Infrastructure	Function	Description	Location
Jack well and Pump House	Pumping raw water to water treatment plant (WTP)	Rehabilitation works in Jack well by replacing mechanical equipment inside the pump house (pressure gauges, dewatering pumps, and electrical improvements) Provision of diesel generator set of 200 kilovolt ampere (kVA) for the un-interrupted power supply to the Jack well.	Works will be conducted within the existing Jack well near Jambukeshwara Temple in Jambu village
WTP	Treats raw water	Rehabilitation works in WTP by replacement equipment (flow meters, valves, pressure gauges, flash mixer, clari-floculator, alum and lime mixer, chlorinator, lab equipment etc.), Provision of diesel generator set (160 kVA) at WTP. Provision of backwash water recirculation and sludge management system to cater to total capacity of WTP (7.6 MLD); clarified water will be re-circulated to WTP inlet and accumulated sludge will be disposed in sanitary landfill	Works will be conducted within the existing WTP at Japthi village Sufficient land available within the WTP campus to develop backwash and sludge management facilities (see Figure 7)
Clear Water Transmission Main	Conveys clear water to service reservoirs	4.8 kilometer (km) length 200 millimeter (mm) diameter ductile iron pipe	Pipeline will be laid from the existing clear water main on NH-66 near Vinayaka theater to proposed new overhead tank (OHT) Kodi. Alignment is all along Kodi Road Alignment and profile drawings are shown in Figures 9 to 16.
Water service reservoirs	Water storage for supply	2 no.OHTs (of reinforced cement concrete, RCC) including compound walls at the sites: 500kiloliter (kl) capacity for Zone-3 at Halekote 400klcapacity for Zone-4 at Kodi	Site is vacant and owned by TMC Site is vacant and owned by Government of Karnataka Layout plans and elevations of OHTs are shown in Figures 17 to 20.
Distribution system Pipelines	Distributes clear water to the houses for the entire Town	31.64 km length diameter 75 - 250 mm high density poly ethylene (HDPE)pipes 75 mm dia-12.01km 90 mm dia- 5.89 km 110 mm dia- 7.08 km 160 mm dia- 2.27 km 200 mm dia- 2.33 km 250 mm dia- 2.06 km	Distribution pipes will be laid along the roads, within the road right of way, in 4 zones in KundapuraTown Municipal Council (TMC) area. Distribution zones with existing and proposed pipelines are shown Zone wise in Figures 21 to 24.
House Service Connections (HSC)	Individual houses get water after HSC.	HSC with Class B Multijet water meters 2,250 new 4,200 replacement	All households in four zones

Figure 2: Proposed 24/7 Water Supply System for Kundapura



CWR = clear water reservoir, dia = diameter, LL = lahk liter, mm = millimeter, MLD = million liters per day, MS = mild steel, OHT = overhead tank, WTP = water treatment plant.

5. Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura	**Name of the Contractor:**Laxmi Civil Engineering Services Pvt,Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Kundapura	**Name of SE/EE/AE of concerned division PIU :-**Mr.HarishWalmiki, AEE
Date of monthly monitoring:25/05/2020	**Name of Environment, Health And Safety (EHS) Engineer :-**Mr. Vijay

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction–Kundapura

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
Environmental Management Plan (EMP) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and 2) Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.	Construction Contractor/ project implementation unit (PIU)/ Project Management Design and Construction Supervision Consultant (PMDCSC)	a) Certificate of Completion (Safeguards Compliance Orientation) b) Posting of Certification of Completion at worksites c) Posting of EMP at worksites.	Cost of EMP Implementation Orientation Training to contractor is responsibility of Program Management Unit (PMU). Other costs responsibility of contractor.	1) Contractor prepared SOPs.OHS plan and Activities are going on as per company EHS Policies. 2) Complied Environmental, Health and Safety (EHS) Engineer appointed by contractor.

Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	1) Consult with PMU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; 3) Use tarpaulins to cover sand and other loose material when transported by trucks; and 4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and 6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.	Construction Contractor	a) Location of stockpiles; b) Complaints from sensitive receptors; c) Heavy equipment and machinery with air pollution control devices; d) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Instructed to contracting agency to Spray water on exposed soil and stock piled mainly in commercial and residential area 3) Complied 4) Partially Complied. 5) Complied 6) Complied
Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 2) Laying of pipelines during dry season and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches or pumping; 3) Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed,	Construction Contractor	a) Areas for stockpiles, storage of fuels and lubricants and waste materials; b) Number of silt traps installed along trenches leading to water bodies; c) Records of surface water quality inspection; d) Effectiveness of water	Cost for implementation of mitigation measures responsibility of contractor.	1) Stockpiling of earth fill not found during the site visit 2) Work was not in progress due to lack of labor's due to covid-19 case but Instructed to contracting agency to close all opened trenches Before rainy season 3) Partially Complied - Spoil Management plan prepared by Contractor

		dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10); 4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 5) Provide temporary bunds for stockpiles and materials; 6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 100% capacity bund; and 7) Dispose any wastes generated by construction activities in landfill or reuse in beneficial purposes		management measures; e) No visible degradation to nearby drainages, nallahs or water bodies due to civil works		Annexure attached in Feb 2019 reportand recommended to update according to the suggestions given and submit Spoil Management Plan. updated /Corrected Spoil Management plan yet to be submitted by Contractor 4) Surface Water bodies not found along the Project site. 5) Partially Complied 6) Fuels and lubricants in bulk are not stored by contractor at site. 7) Debris generated by construction is disposed in the ULB designated areas. Waste is used to fill the low line area
	Contamination of coastal water due to works in coastal zone	In addition to the above measures following measures given below for piling works: 8) Piling activities for OHT foundation work at Kodi shall be conducted carefully; there shall no spillage of bentonite on the ground; bentonite slurry shall be properly collected in leak proof containers and re-circulated in the			Cost for implementation of mitigation measures responsibility of contractor.	8) Pilling activities for OHT foundation work at Kodi beach has been done and OHT Construction work in progress and excess earth is disposed in landfill

		piling activity; excess bentonite slurry shall be dried properly in containers, and disposed in landfill safely				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	1) Plan activities in consultation with PMU/PMDCSC so that activities with the greatest potential to generate noise (road cutting and piling activity) are conducted during periods of the day which will result in least disturbance; 2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; 3) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.	Construction Contractor	a) Complaints from sensitive receptors; b) Use of silencers in noise-producing equipment and sound barriers; and c) Equivalent day and night time noise levels (Appendix 3)	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Complied 3) Complied 4) Complied
Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils,	1) Manage surplus soil, debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction	Construction Contractor	a) Complaints from sensitive receptors; b) Worksite clear of hazardous wastes such as oil/fuel; and c) Worksite clear of any excess excavated earth, excess construction	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied. No excess excavated earth at work site. 2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in

	oils, lubricants, and other similar items.	works or for temporary storage for future use or disposal in landfill 3) In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / Kundapura; waste shall not be disposed in the forest areas and in or near water bodies/ rivers / coast 4) Prepare and implement spoils management plan; 5) Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 6) Recover used oil and lubricants and reuse or remove from the sites; 7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and 8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works have been adequately performed before		materials, and solid waste such as removed concrete, wood, packaging materials, empty containers		Authorized landfill. 3) Complied 4) Partially Complied spoil management plan Prepared and Implementation is going on accordingly (SPM attached as Annexure in Feb 2019 Monthly report. Recommended the Contractor for update as per suggestions given and to submit SM Plan. Updated /Corrected Spoil Management plan not submitted by Contractor 5) Complied 6) Used oil and lubricants not generated on site 7) Complied 8) Restoration work is going on and when work gets completed, joint site

		acceptance of work.				inspection will be conducted and report / letter will be issued.
Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	1) At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 2) Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section	Construction Contractor and PIU	a) Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken b) Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	1) Complied 2) Complied contingency services are provided and restoration is going on after thework. 3) Complied 4) Complied 5) Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	1) Except four (4) coconut trees at Kodi OHT site, and pruning of large tree to the minimum required extent at Halekoti OHT site, no trees shall be removed for the subproject.	Construction Contractor	a) PMU/PMDCSC to report in writing the numberof trees cut and planted.	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied. 6 trees got felled and Compensations were paid to the owners. Attached as **Annexures 10 in the May 2019 report.** And also ADB Social safeguard team visited on 23/9/2019 to particular affected

		2) Trees in the pipeline alignments shall be avoided during construction by locally altering the alignment. 3) Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed				persons to provide further training for them. 2) Complied 3) Compensation paid to the owner of the tree.
Accessibility	Traffic problems and conflicts near project locations and haul road	1) Plan pipeline work in consultation with the traffic police; prepare a Traffic Management Plan – a template is provided for reference at Appendix 11. 2) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 3) Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the traffic movement; 4) Schedule transport and hauling activities during non-peak hours; 5) No road shall be completely closed for traffic; in unavoidable circumstances of road closure (eg, NH service road closure at Shastri	Construction Contractor	a) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix 11); b) Complaints from sensitive receptors; and c) Number of signages placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	1) Traffic Management Plan prepared by contractor and followed accordingly. Traffic Management Plan attached as Annexure**– 9 in the May 2019 report.** It was advised to contractor to update Traffic Management Plan. Traffic management plan yet to be updated 2) Complied 3) Complied 4) Complied 5) Contractor has to provide traffic management plan for their all working

		Circle for trenchless work), provide alternative route, and ensure that public is informed about such traffic diversions; 6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; 7) Maintain safe pedestrian access at all times to the houses along the work site; 8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board. 9) At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints; 10) Keep the site free from all unnecessary obstructions; 11) Drive vehicles in a considerate manner In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work				areas to minimize the traffic in busy and small congested areas 6) Complied 7) Complied 8) Work was not in progress due to lack of labor's due to covid-19 case but Instructed to contracting agency to close all opened trenches Before rainy season MS tubular barricades are provided by Contractor at HaleKote OHT and Kodi OHT Site. 9) The public information/caution boards at work sites not provided with details mentioned in Mitigation Measures except at Kodi Beach which is also in Kannada.

						10) Complied 11) Partially Complied
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	1) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 2) Leave spaces for access between mounds of soil; 3) Provide walkways and metal sheets where required for people; 4) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; 5) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and 6) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Construction Contractor	a) Complaints from sensitive receptors; b) Spoils management plan; and c) Number of walkways, signs, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Complied 3) Complied 4) Complied 5) Complied 6) Not Complied. Project information board was not provided at all working areas. **Provided board in kannada only at OHT work, Kodi**

						and Hallekote. Instructed contracting agency to provide project information board in both Kannada and English
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.,), access disruptions etc.,	1) No material should be stocked close to these areas; material shall be brought to the site as and when required; 2) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles; 3) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 4) No work should be conducted near the religious places during religious congregations; 5) Material transport to the site should be arranged considering school timings; material should be in place before school starts; 6) Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures	Construction Contractor	a) Visual site observations b) Public complaints	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Contractor conducting work manually for all possible works to minimize the use of equipment. 3) Complied 4) Complied 5) Complied 6) Recommended contacting agency to provide information about project work and Proper record has to be maintained 7) Improvement is required in

		in place, entry restrictions and dos and don'ts; and 7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.				Implementation.
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	1) Employ local labor force to the maximum extent, if manpower is available; and 2) Comply with labor laws	Construction Contractor	a) Employment records; b) Records of sources of materials; and c) Compliance to core labor laws (See Appendix 2of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	1) Register maintained by contractor attached as **Annexure – 7 in May 2019 report.** 2) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled). Attached as **Annexure 11 and 12 in May 2019 report.**
Occupational Health and Safety	Occupational hazards which can arise during work	1) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE); 2) Develop and implement site-specific health and safety (H&S) plan which will include measures such as: **(a)** excluding public from the site; **(b)** ensuring all workers	Construction Contractor	a) Site-specific OHS Plan; b) Equipped first-aid stations; c) Medical insurance coverage for workers; d) Number of accidents; e) Supplies of potable drinking water; f) Clean eating areas where workers are not exposed to	Cost for implementation of mitigation measures responsibility of contractor.	1) Contractor following Company EHS Policy Site-specific OHS Plan Not prepared by Contractor and is yet to be submitted 2) Contractor following Company EHS Policy-PPE'S provided by

		are provided with and use Personal Protective Equipment; **(c)** H&S Training for all site personnel; **(d)**documented procedures to be followed for all site activities; and **(e)** documentation of work-related accidents; 3) All trenches in sandy and mixed sandy soils irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures 4) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 5) Provide medical insurance coverage for workers; 6) Secure all installations from unauthorized intrusion and accident risks; 7) Provide supplies of potable drinking water; 8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances		hazardous or noxious substances; g) record of H&S orientation trainings h) personal protective equipment; i) % of moving equipment outfitted with audible back-up alarms; j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. k) Compliance to core labor laws (Appendix 2)		Contractor. Proper Documentation has to be maintained by Contractor 3) Recommended contractor to implement the mitigation measure when such deep trenches are to be executed. 4) First aid box is available but not adequate as per standards.The equipped first-aid station not provided. 5) Employees Compensation Insurances for Workers (Skilled and unskilled). 6) Complied 7) Complied 8) Separate clean eating areas not provided by contractor. 9) H&S orientation training for

		9) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 10) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; 11) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 12) Ensure moving equipment is outfitted with audible back-up alarms; 13) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 14) Disallow worker exposure to noise level greater than 85 dB for duration of more				workers not found during the work and proper documentation required need to be done 10) Not Complied 11) Complied 12) Complied 13) Not Complied 14) Not Complied Recommended the Contractor to

		than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 15) Overall, the contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES)				use hearing protection measures and not allow worker to work more than 8 hours per day during the work. 15) Not complied
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	1) Provide protective shorting / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (>1m); 2) One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and take necessary precautions for safe conduct of work. 3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe	Construction Contractor	a) Traffic Management Plan; and b) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	1) Recommended contractor to implement the mitigation measure when such deep trench were executed. 2) Complied 3) Joint inspection conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise)

		conduct of work; 4) Plan material and waste routes to avoid times of peak-pedestrian activities; 5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps; 6) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and 8) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/ dd673400488559ae83c4d				and should take necessary precautions for safe conduct of work, No such record found at time of inspection 4) Complied 5) Complied 6) Not complied- Register of Equipment and Vehicles maintenance certificates not found at site during the site visit. 7) Work in progress at Halekote OHT and sign boards provided at work site but no pipe execution work was in progress during inspection. Instructed contracting agency to keep necessarysign boardswhen pipe execution work starts. 8) Not Complied.

		36a6515bb18/3%2Bcomm unity%2Bhealth%2Band% 2Bsafety.pdf? MOD=AJPERES).				
Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 2) Minimize removal of vegetation and disallow cutting of trees; 3) Labor camps shall include accommodation for workers/laborers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 4) The roof height of the worker's and labor camp shall not be less than 3 m from floor level to the lowest part of the roof. 5) The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant regulation, whichever is higher. 6) Fire and electrical safety pre-cautions shall be adhered to. 7) Cooking, sanitation and washing areas shall be provided separately. 8) The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of	Construction Contractor	a) Complaints from sensitive receptors; b) Drinking water and sanitation facilities for employees	Cost for implementatio n of mitigation measures responsibility of contractor.	1) Complied. 2) Removal of vegetation minimized by selecting best alignment. 3) Labor camp facilities provided by the Contractor needed to be improved. 4) Not Complied 5) Not Complied 6) Fire Extinguisher not provided and electrical cable connections are not safely maintained. 7) Separate Cooking areahas not been provided

		clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 10) The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 12) Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons; 13) Train employees in the storage and handling of materials which can potentially cause soil contamination; 14) Recover used oil and lubricants and reuse or remove from the site; 15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 16) Remove all wreckage, rubbish, or temporary structures which are no longer required; 17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				8) Gas Cylinder has been Provided by Contractor 9) Complied 10) Not complied 11) Complied 12) Not Complied. The toilets are in unhygienic conditions. 13) Not Complied 14) Complied - reused. 15) Complied 16) Complied 17) Still Construction Phase is in

						progress.
Social and Cultural Resources	Risk of archaeological chance finds	18) Create awareness among the workers and supervisors about the chance finds during excavation work; 19) Stop work immediately if any finds are suspected to allow further investigation; 20) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in site; and 21) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	18) Complied 19) Till now no such suspected items found nor recorded 20) Till now no such archaeological items recorded 21) Till now no such change found nor recorded
Submission of EMP implementation report	Unsatisfactory compliance to EMP	22) Timely submission of monitoring reports including pictures.	Construction contractor	a) Availability and competency of appointed supervisor Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	23) Monthly report submitted by Contractor.
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	24) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; 25) All excavated roads shall be reinstated to original condition. 26) All disrupted utilities restored. 27) All affected structures rehabilitated/compensated. 28) The area that previously housed the construction camp is to be checked for	Construction Contractor	a) PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to operation and maintenance (O&M) are removed; and (iv) Worksite clean-	Cost for implementation of mitigation measures responsibility of contractor.	24) Complied 25) Complied 26) Complied 27) Till now no structures affected 28) Complied

		spills of substances such as oil, paint, etc. and these shall be cleaned up; 29) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regressed using the guidelines set out in the revegetation specification that forms part of this document; 30) The contractor must arrange the cancellation of all temporary services; and 31) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.		up is satisfactory.		29) Construction Phase is in progress 30) Construction Phase is in progress. 31) Construction Phase is in progress

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project isnot satisfactory. Contractor is maintaining copy of IEE. HIV AIDS Awareness Training programme have to be conducted by the Contractor. Proper Safety precautions should be improved by Contractor. January, February, March, April and May 2020 site specific EMP Monthly report with PIU letter has to be submitted from the contracting agency.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation /Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Certificate of Completion (Safeguards Compliance Orientation)	• **Register of Clearances required /status**	1) CRZ Clearance attached as**Annexures 2,3 &4 in June 2019 report** 2) Tree cutting permission from tree officer not provided yet.
2.	Posting of Certification of Completion at worksites	• If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board.	Within3 day of work Completion
3.	Posting of EMP at worksites.	• **Project Information board should also be in Kannada Language along with contact numbers for grievance Redressal**	Comply with in 15 days
4.	Location of stockpiles;	• To prepare the Google map of the Locations of identified stockpiles	Comply with in 5 days
5.	Complaints from sensitive receptors;	• **Complaints/Grievance Redressal Registers should be maintained at each work site.**	**Compiled and maintaining grievance registers at site**
6.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
7.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
8.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	Comply with in 7 days
9.	Number of silt traps installed along trenches leading to water bodies;	• Prepare list of silt traps installed along trenches	If applicable in 8 days
10	Records of surface water quality inspection;	• If any surface water body is Present nearby project area during the construction phase, the contractor will carry out environmental monitoring and testing for Surface water engaging NABL approved laboratory.	For every 3 months, **Complied (Jan to March Monitoring).Annexure 2 in May 2019 report.**

			The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report
11	Use of silencers in noise-producing equipment and sound barriers; and	• **Only acoustic enclosures fitted DG set will be allowed at the construction site and camp sites**. • Maintenance of equipment and machinery (including proper lubrication, tuning and checks for muffler effectiveness) shall be regular and up to the satisfaction of the Engineer to keep noise level under control. • **Barricading- Hard Barricade should be provided to protect from unauthorized access of common people**	Daily monitoring required at site during the work Comply during the work.
12	Equivalent day and night time noise levels (Appendix 3)	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	For every 3 months, **Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors toconduct the noise test every 3 months.**The Noise level monitoring is done in January 2020 and attached as **Annexure-5b in Jan 2020 report**
13	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	For every 3 months**, Complied (Jan to March Monitoring). Annexure-2**during the work.**Informed the contractors to conduct the air quality test every 3 months.**The Air quality monitoring is done in January 2020 and attached as **Annexure-5a in Jan 2020 report**
14	Worksite clear of hazardous wastes such as oil/fuel;	• Used oil generated from vehicles/DG set at plant/camp site will be collected in closed containers and sold to MoEF&CC/SPCB approved used oil recyclers. • No solid or hazardous wastes (such as oil contaminated waste) will be dumped in drains or in open areas	Daily monitoring required at site during the work Comply during the work
15	Solid waste such as removed concrete, wood, packaging materials, empty containers	• Burning of wastes will not be allowed. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are	Daily monitoring required at site during the work Comply all the issues

		regularly emptied and waste is disposed off in a hygienic manner as per the Solid Waste (Handling and Management) Rules, 2016. • Solid waste generated at the construction site, plant/camp site, will be collected in covered wasted bins and segregated as biodegradable (food waste, paper, etc) and non-biodegradable (plastic, polyethylene bag etc.). Polyethylene/plastic wastes will be stored in empty cement bags and should be sent for recycling. Biodegradable (food waste, paper etc.) solid waste will be disposed in a compost pit.	during the work
16	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• **Maintain copy of Section-wise list of utilities to be shifted / disturbed**.	Partially Complied. Communication letter maintained by PIU **attached as Annexures 3&4in the May 2019 report.** Contactor should also have copy with him **Section-wise list of utilities to be shifted** comply within 7 days.
17	Record to confirm that contingency services are provided and all damaged utilities are restored after the work	• **Register of damaged infrastructure** • **Register of reinstated infrastructure**	Comply with in 3 days
18	PMU/PMDCSC to report in writing the number of trees cut and planted.	• **Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation.**	**Complied attached as Annexures 10in the May 2019 report**
19	Number of signage's placed at project location.	• **Maintain the signages placed at project location**	Comply with in 5 days
20	Visual site observations	• **Register of official visiting the site and directions given if any at each site.**	Comply with in 3 days
21	Employment records;	• **Attendance registers of labour at each site.**	**Complied and attached as Annexure 7in the May 2019 report and maintaining the attendance register.**
22	Records of sources of materials; and	• **Maintain separate record of quantity of materials used and with all authorized certificates of suppliers**	Comply with in 5 days
23	Compliance to core labor laws (See Appendix 2 of this IEE)	• **Register of payment to the workers**	Comply Immediately
24	Site-specific OHS Plan;	• **Site-specific Occupational Health and Safety Plan**	Comply with in 4 days
25	Equipped first-aid stations;	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones.	Comply with in 7 days

		• Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. • First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	
26	Medical insurance coverage for workers;	• **File of insurance as per 13.1 PCC with contents showing the validity.** • Health Camps and Check -up should be conducted for the workers • **Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.**	Comply with in 12 days
27	Number of accidents;	• **Accident and Incident register will be maintained by Contractor at each work site.**	**Complied. Attached in Annexure 1 in Aug 2019**
28	Supplies of potable drinking water;	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the construction site.	**Complied**
29	Clean eating areas where workers are not exposed to hazardous or noxious substances;	• Since a common mess is not provided/operated, separate space for cooking and eating shall be provided.	Comply with in 4 days
30	Record of H&S orientation trainings personal protective equipment;	• **Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register** • **The list of PPEsto be provided.**	Complywith in 7 days
31	Personal protective equipment;	The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers whenever on the construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided.	Comply with in 5 days

		• During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	
32	Permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.	• **The contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. Guidelines.**	Comply with in 10 days
33	Records of chance finds	• Concerned records should be maintained if any chance find transpires.	Comply immediately as soon as chance find occurs.
34	Availability and competency of appointed supervisor	• Certified and Experienced supervisor will be appointed by Contractor	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	• **Contractor submitted Monthly report to PIU & PMU**	January 2020 Monthly report has to be submitted
36	Camp has been vacated and restored to pre-project conditions	• All construction related structures not relevant to operation and maintenance (O&M) are removed; and • Worksite clean-up must be satisfactory.	Will be Compiled Within 2 days of Work Completion
37.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19**	Partially complied. Implementation of H & S at work site is done**. Attached as Annexure 3. H & S plan is to be prepared by contractors**

MAHMAD RAPHIYODDIN SHAPHIYODDIN MALIK
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

ANNEXURE-1

SITE VISIT OBSERVATIONS VISITED ON 25rd May 2020

S.No	Observation		Recommendation
1	Sign Boards at Kodi Beach OHT are not proper		Work in progress Board is to be placed at site, which should be legible Project Information Board also to be in English along with necessary contact numbers for Grievance Redressal.

2	Barricading, PPEs and water facility to workers at pipe laying work site	 	Instructed contractors to provide soft barricading at side of the excavation PPEs should be provided at all work site Drinking water facility should be provided at site for worker

3	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.

4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		Immediately shift the steel bars from the present location and keep near the Store Room, where space is available. Put proper caution signboards near the storage area. Steel Reinforcement Work should be carried out in safe working location

5	Housekeeping near store room not maintained			The housekeeping near store room should be done properly

7	Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote		Proper Hard Barricading is to be done completely along with sign boards from behind the labour room to washing area up to last point of working area at backside in order to prevent fall of any of the persons. Proper bathrooms and washing platform need to be provided.

8	Toilet is not properly maintained atOHT Halekote,Kundapura		Toilet facilitiesat works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.

9	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.				It should be replaced with another cable of required specifications and with no damage

ANNEXURE -2

STATUS OF SITE OBSERVATIONS VISITED ON FEB 27th 2020

S.No	Observation		Recommendation	Status
a	Material storage at kodi OHT, Kundapura		Material at kodi OHT site were properly stored and bunded Instructed contractor agency to dispose all loose earth stored to dumping yard	Partially complied

b	First Aid Box at Kodi OHT Site , Kundapura			To have proper first hand treatment at site if any injury occurs to any personnel, First Aid Box as per standards is to be provided at site immediately.	Partially complied

C	Housekeeping at Kodi OHT Site , Kundapura	 	Instructed contractor agency to remove all material covers, cardboard boxesstored at Kodi OHT Store yard and also steel rods to keep in proper placesand to maintain proper housekeeping near store and site	Partially complied

d	One side of the ClariflocculatorJapti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator.	 	One side Opening is required with proper channel/Gate/tubular rods.	Partially complied

e	Electrical Switch Board Panel is without proper Enclosure at WTP Jabti, Kundapura		Electrical Switch Board Panel should be covered with proper box cover which prevents rain water from entering inside the panel box.	Not complied

f	Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site,Halekote		Hard Barricading is to be done at river side near Water Tank in order to prevent fall of any person. Proper bathroom and washing platform need to be provided.	Not complied

g	OHT Halkote work site		Hard barricading by sheetmust be provided so that residential staying nearby and animals should not enter into the OHT site during work	Not complied

h	Toilet is not properly maintainedat OHT Halekote,Kundapura		Toilet facilities at works camp at Halekote must be maintained properly	Not complied

EHS IMPLEMENTATION ON SITE DURING MAY 2020.

1) Kept hand sanitizer in site.

2) Conducted tool box talk.

3) Daily body temperature checking of labors and staff.

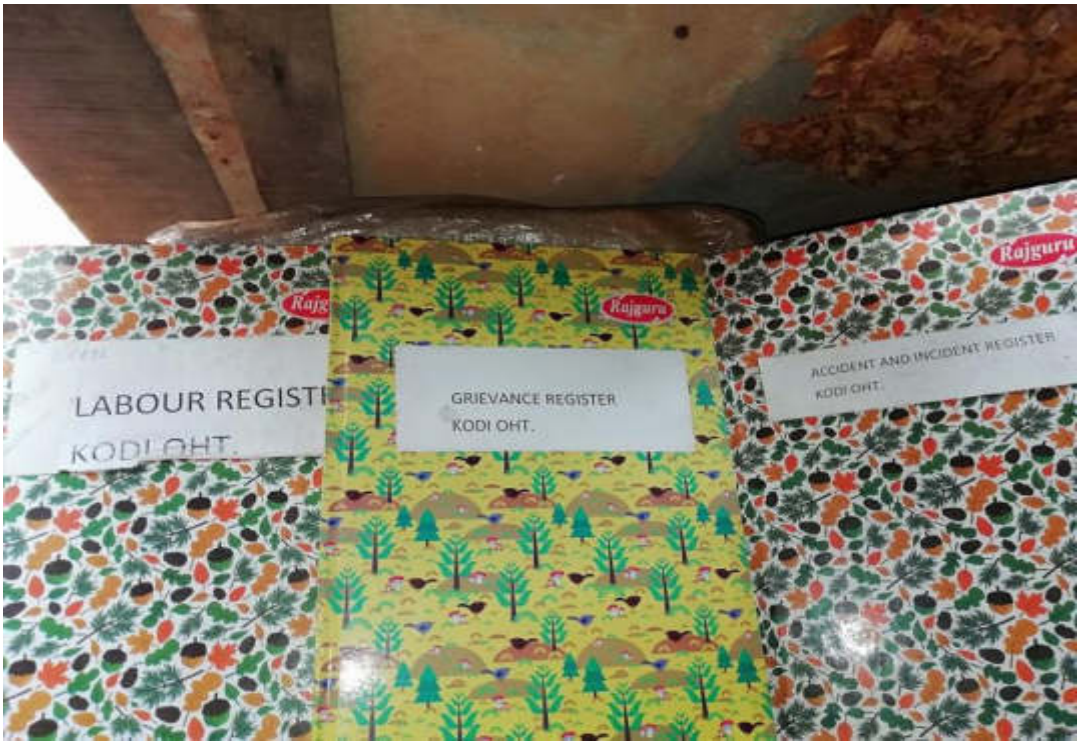
4) Provided PPEs like mask, gloves etc to protect from corona to all staff and labors.

5) Grass cutted in sites to avoid the staying of snakes and other animals in site.

6) Maintained separate area to keep unwanted and small iron rods.

7) All materials are stacked in proper way to avoid slip and trip hazards.

8) Maintained all required registers in all sites.



LABOUR REGISTER OF MAY MONTH.

~~(35. 37.2)~~ Labour register. 09/05/2020

09/05/2020

Sl No	Name of Worker	Designation.	Thermal scanning Date.	Thermal scanning Temperature (°C)
1)	Hussain	Mesthri	09/05/2020	36.4 °C.
2)	Raja Saab	Mesthri	09/05/2020	36.0 °C
3)	Baaba	Mesthri	09/05/2020	36.9 °C
4)	Shamshuddin	Mesthri	09/05/2020	36.7°C
5)	Saleem	Helper	09/05/2020	36.7 °C
6)	Mathar Saab	Mesthri	09/05/2020	36.3 °C
7)	Ummar Khan	Helper	09/05/2020	36.9°C
8)	Aakash	Helper	09/05/2020	36.3 °C

E.N.D

09/05/2020

11/05/2020

Sl No	Name of worker	Designation	Thermal scanning Date	Thermal scanning Temperature (°C)
1)	Hussain	Mesthri	11/05/2020	36.9°C
2)	Raja saab	Mesthri	11/05/2020	Leave.
3)	Baaba	Mesthri	11/05/2020	36.3°C
4)	Shamshuddin	Mesthri	11/05/2020	36.9°C
5)	Saleem	Helper	11/05/2020	37.0°C
6)	Mathar saab	Mesthri	11/05/2020	36.1°C
7)	Ummar Khan	Helper	11/05/2020	36.8°C
8)	Akash.	Helper	11/05/2020	36.1°C

E.N.C

11/05/2020.

12/05/2020

Sl No	Name of the worker	Designation	Thermal scanning Date	Thermal scanning Temperature (°C)
1)	Hussain	Mesthri	12/05/2020	36.9°C
2)	Raja saab	Mesthri	12/05/2020	36.1°C
3)	Baaba	Mesthri	12/05/2020	36.4°C
4)	Shamshuddin	Mesthri	12/05/2020	36.9°C
5)	Saleem	Helper	12/05/2020	36.9°C
6)	Mathar saab	Mesthri	12/05/2020	36.2°C
7)	Ummar Khan	Helper	12/05/2020	36.9°C
8)	Akash	Helper	12/05/2020	36.3°C.

E.N.D 12/05/2020.

13/05/2020

Sl No	Name of Worker	Designation	Thermal scanning date	Thermal Scanning Temperature
1)	Hussain	Mesthri	13/05/2020	36.9°C
2)	Raja saab	Mesthri	13/05/2020	36.3°C
3)	Baaba	Mesthri	13/05/2020	36.4°C
4)	Shamshuddin	Mesthri	13/05/2020	36.8°C
5)	Saleem	Helper	13/05/2020	36.8°C
6)	Mathar saab	Mesthri	13/05/2020	36.2°C
7)	Ummar Khan	Helper	13/05/2020	37.0°C
8)	Akash	Helper	13/05/2020	36.4°C
9)	Vikas	Helper	13/05/2020	36.5°C
10)	Radha	Helper	13/05/2020	36.8°C
11)	Sathish	Helper	13/05/2020	36.1°C
12)	Raju	Mesthri	13/05/2020	36.9°C
13)	Raghavendra	Helper	13/05/2020	36.6°C
14)	Sadanonda	Helper	13/5/2020	~~37.0~~ 37.
15)	Subbanna	Mesthri	13/05/2020.	36.9°C
16)	Shrinivasa	Helper	13/05/2020.	36.7°C.

23/5/2020

Sl No	Name of worker	Designation	Thermal scanning Date.	Thermal scanning temperature (°C)
1)	Hussain	Mesthri	14/05/2020	36.8°C
2)	Raja saab	Mesthri	14/05/2020	36.3°C
3)	Baaba saab	Mesthri	14/05/2020	36.5°C
4)	Shamshuddin	Mesthri	14/05/2020	36.5°C
5)	Saleem	Helper	14/05/2020	36.8°C
6)	Mastar saab	Mesthri	14/05/2020	36.1°C
7)	Ummar Khan	Helper	14/05/2020	36.9°C
8)	Akash	Helper	14/05/2020	36.4°C
9)	Vikas	Helper	14/05/2020	36.6°C
10)	Radha	Helper	14/05/2020	36.8°C
11)	Sathish	Helper	14/05/2020	36.1°C
12)	Raju	Mesthri	14/05/2020	36.7°C
13)	Raghavendra	Helper	14/05/2020	36.1°C
14)	Sadananda	Helper	14/05/2020	37.1°C
15)	Subbanna	Mesthri	14/05/2020	36.9°C
16)	Mallika	Helper	14/05/2020	36.7°C
17)	Meena	Helper	14/05/2020	36.2°C

14/05/2020

Sl No	Name of the employee	Designation	Thermal scanning Date.	Thermal scanning Temperature
1)	Hussain	Mesthri	16/05/2020	36.6°C
2)	Raja saab	Mesthri	16/05/2020	36.6°C
3)	Baaba saab	Mesthri	16/05/2020	36.4°C
4)	Shamshuddin	Mesthri	16/05/2020	36.8°C
5)	Saleem	Mesthri	16/05/2020	36.9°C
6)	Mastan saab	Mesthri	16/05/2020	36.3°C
7)	Ummar Khan	Helper	16/05/2020	36.9°C
8)	Akash	Helper	16/05/2020	36.6°C
9)	Vikas	Helper	16/05/2020	36.4°C
10)	Radha	Helper	16/05/2020	37.0°C
11)	Sathish	Helper	16/05/2020	36.1°C
12)	Raju	Mesthri	16/05/2020	36.9°C
13)	Raghavendra	Helper	16/05/2020	36.0°C
14)	Sadananda	Helper	16/05/2020	37.0°C
15)	Subbanna	Mesthri	16/05/2020	36.8°C
16)	Mallika	Helper	16/05/2020	36.8°C
17)	Meena	Helper	16/05/2020	36.2°C

16/05/2020.

18/05/2020

Sl No	Name of the worker	Designation	Thermal scanning Date	Thermal scanning Temperature (°C)
1)	Hussain	Mesthri	18/05/2020	36.9°C
2)	Raja saab	Mesthri	18/05/2020	36.7°C
3)	Baaba Saab	Mesthri	18/05/2020	36.1°C
4)	Shamshuddin	Mesthri	18/05/2020	37.0°C
5)	Saleem	Mesthri	18/05/2020	37.0°C
6)	Mastar saab	Mesthri	18/05/2020	36.1°C
7)	Ummar Khan	Helper	18/05/2020	37.0°C
8)	Akash	Helper	18/05/2020	36.0°C
9)	Vijay	Helper	18/05/2020	36.5°C
10)	Radha	Helper	18/05/2020	36.5°C
11)	Sathish	Helper	18/05/2020	36.9°C
12)	Raju	Mesthri	18/05/2020	36.8°C
13)	Raghavendra	Helper	18/05/2020	36.1°C
14)	Sadanenda	Helper	18/05/2020	36.6°C
15)	Subbanna	Mesthri	18/05/2020	36.9°C
16)	Meena	Helper	18/05/2020	36.3°C

18/05/2020

19/05/2020

Sl No	Name of the worker	Designation	Thermal scanning Date	Temperature (°C)
1)	Hussain	Mesthri	19/05/2020	36.8°C
2)	Raja saab	Mesthri	19/05/2020	36.7°C
3)	Baaba saab	Mesthri	19/05/2020	36.6°C
4)	Shamshuddin	Mesthri	19/05/2020	36.6°C
5)	Saleem	~~Mesthri~~ Helper	19/05/2020	36.8°C
6)	Mastar Saab	Mesthri	19/05/2020	37.0°C
7)	Ummar Khan	Helper	19/05/2020	36.3°C
8)	Akash	Helper.	19/05/2020	36.8°C
			[illegible]	19/05/2020

BODY TEMPERATURE CHECKING OF LABOURS IN MAY 2020.


Latitude: 13.630705
Longitude: 74.669509
Elevation: 29.3m
Accuracy: 4.9m
Time: 09-05-2020 13:47
Note: Checking body temperature.
Powered by NoteCam


CLEAN
Latitude: 13.630692
Longitude: 74.669683
Elevation: 2.3m
Accuracy: 4.9m
Time: 09-05-2020 13:46
Note: Checking body temperature.
Powered by NoteCam


Latitude: 13.630705
Longitude: 74.669509
Elevation: 29.3m
Accuracy: 4.9m
Time: 09-05-2020 13:48
Note: Checking body temperature.
Powered by NoteCam


Latitude: 13.630705
Longitude: 74.669509
Elevation: 29.3m
Accuracy: 4.9m
Time: 09-05-2020 13:49
Note: Checking body tempe
Powered by NoteCam

BODY TEMPERATURE CHECKING OF STAFF ON MAY 2020.


Latitude: 13.633652
Longitude: 74.692047
Accuracy: 13.9m
Time: 09-05-2020 15:44
Note: Checking body tempe
Powered by NoteCam


Latitude: 13.630713
Longitude: 74.669513
Altitude: -61.88m
Accuracy: 4.9m
Time: 09-05-2020 15:12
Note: Checking body temperature.
Powered by NoteCam


Time: 09-05-2020 13:00
Note: Checking body temperature.
Powered by NoteCam


Latitude: 13.630713
Longitude: 74.669513
Altitude: -61.88m
Accuracy: 4.9m
Time: 09-05-2020 15:15
Note: Checking body temperature.

Monthly Environmental Monitoring Report

Project Number: 43253-027
May 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur

Package No. 02PTR01

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura, Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be improved water resource planning, monitoring and service delivery in 24x7 water supply for Puttur City. Project 2 will have 3 outputs: (i) UWSS and sanitation infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened. The IEE is based on an assessment of these components within the project area.

2 Need for Infrastructure Improvement in Puttur

At present, Puttur City meets its water supply requirement through surface source. River Kumaradhara is the main surface source of water supply to Puttur. A new vented dam was constructed under KUDCEMP with a storage capacity of 0.61 million cubic meter (MCM) and a storage spreading of 2,400 m upstream the vented dam. Existing water supply system is depicted in Figure 1.

3 The proposed subproject:

This subproject includes the following components:

(i) Replacement of two old pumps with new vertical turbine pumps in Jackwell at Nekkilady;
(ii) construction of 1.68 kilometer (km) of raw water pumping main (400 millimeter (mm) diameter) from Jackwell to water treatment plant (WTP) at Nekkilady;
(iii) construction of 12.42 km clear water main of 400 mm diameter from the proposed new Water Treatment Plant (WTP) at Nekkilday to ground level service reservoir (GLSR) at Tenkila;
(iv) construction of new WTP of capacity 8.7 million litres per day (MLD) at Nekkilady;
(v) replacement of clear water pumps in existing WTP at Nekkilady;
(vi) construction of 5.06 km of clear water feeder mains;
(vii) construction of six new overhead tanks (OHTs) – (a) 300 kiloliters (kl) capacity in Zone-2 at Mura Shantinagra, Padnur, (b) 100 kl in Zone-3 at Karmala near Microwave station, (c) 600 kl in Zone-4A at Darbe; (d) 250 kl in zone-5 at Lingadagudda, Kabaka, (e) 200 kl in Zone-6A at Balnad Helipad, and (f) 100 kl zone-8 at BalnadKelyadi, Vitla Road;
(viii) construction of two GLSRs - (a) 1,000 kl capacity at Seethigudda, and (b) 2,000 KL at Tenkila;
(ix) Intermediate pumping station at Tenkila; (x) booster pumping station at Balnad Helipad, (xi) 29 bulk water meters;
(x) 142.66 km of distribution network to cover 24x7 water supply to Puttur city for 8 zones; and

(xi) Replacement of 8,441 existing meters and providing new house service connections of 4,500 for un-covered households.

Figure 1: Existing Water Supply System in Puttur

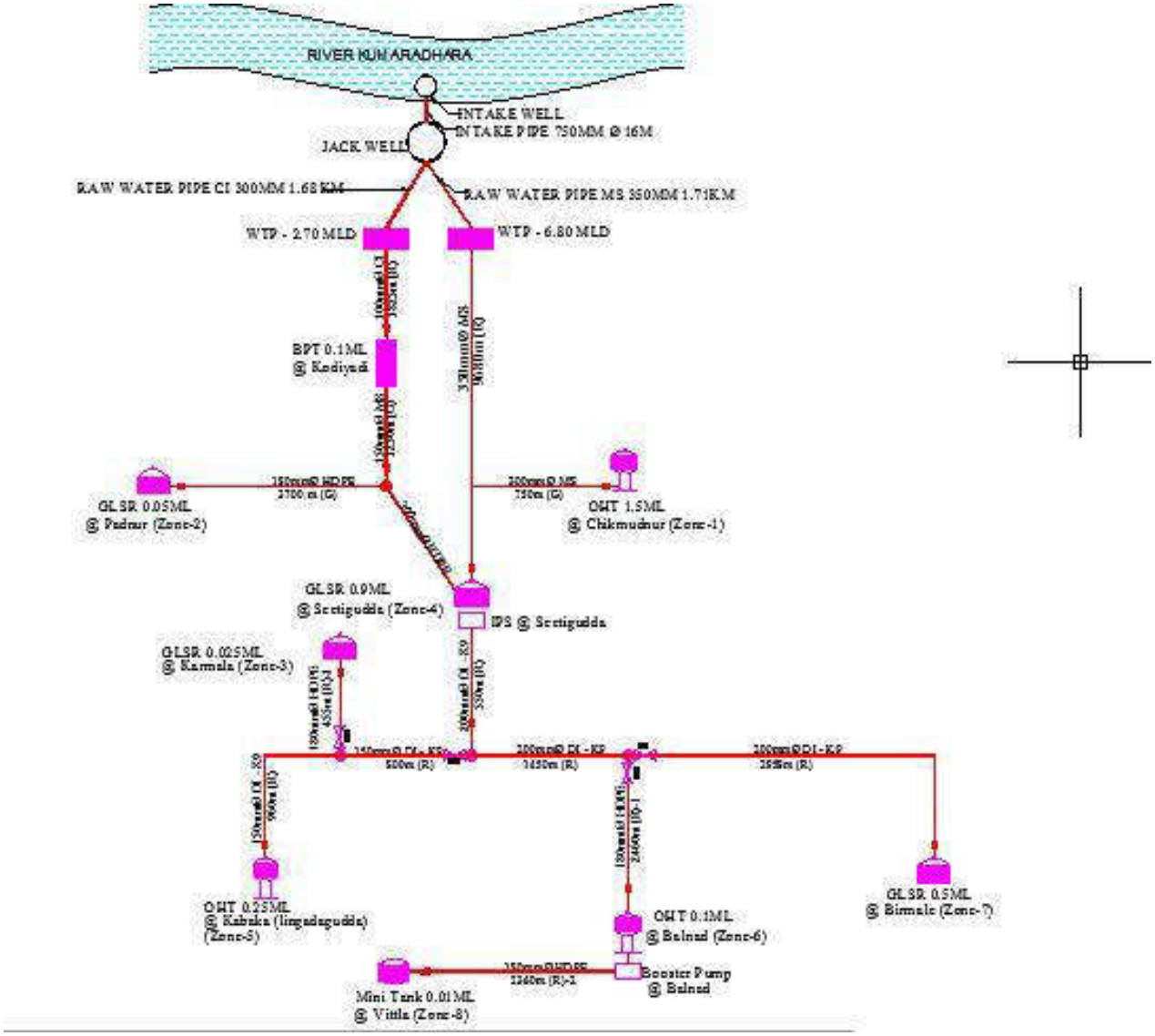


Table 1: Proposed Components for 24x7 Water Supply System

Infrastructure	Function	Description	Location
Raw water pumps in existing Jack well	Pumping of Raw water from Jack well Standby power supply arrangement for pumping	-Replacement of two old pumps with new vertical turbine pumps of capacity 335 m^3/h, 75 m head (1+1) Procurement of diesel generator of 500 kilovolt-ampere -(kVA)	Jack well site at Nekkilady Jack well site at Nekkilady
Raw water Transmission Main	Conveys raw water to WTP by pumping	1.68 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to WTP all along the existing road
Water Treatment Plant	Treats raw water to meet drinking water standards	New 8.7 MLD capacity WTP based on conventional treatment Process. The components Include Cascade Aerator Parshall flume Flash mixer Flocculators – 2 units Tube settlers – 2 units Rapid sand filters - 4 beds Chlorination system with safety measures Lime and alum mixing Tanks Clear water sump and pump house Backwash water recirculation and sludge management system (sludge collection, drying beds) – a combined system of adequate capacity for backwash and sludge management will be developed to cater to both new and existing WTPs. This component addresses the issues of concern identified in the environmental audit of existing WTP (Ref Corrective Action Plan, Table 8)	Nekkilady Adjacent to the existing WTP; sufficient land available within the existing WTP campus to accommodate the new WTP
Clear water Pumps in existing WTP	Pumps clear water to Service reservoirs	Replacement of old pumps within new pumps: 2 pump sets of capacity 325 m^3 /hour and 84 m head (1+1)	Pumps will be installed in the existing clear water pumping station at WTP, Nekkilady
Clear Water Transmission Main	Pumping of clear water from WTP (water treatment plant) to service reservoirs	12.42 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to Tenkila GLSR along the public roads within the road right of way
Clear water feeder main	Pumping of clear water from MBR to Service Reservoirs	5.06 km length 180 – 300 mm diameter DI /HDPE) pipes DI pipe of 300 mm diameter – 1.134 km DI Pipe of 200 mm diameter – 2.422 km	Laying of pipes underground along public roads within the ULB area

Infrastructure	Function	Description	Location
		DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km	
Water service reservoirs	Water storage for supply	Six OHTs and two GLSRs of RCC including compound walls at the selected sites: **OHT** 300KL for Zone-2 at Mura Shantinagra, Padnur 100KL for Zone-3 at Karmala near Microwave station 600KLfor Zone-4A at CTO, Darbe 250KLfor Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at,Balnad Kelyadi, Vitla Road1 **GLSR** 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila	**OHT** Existing within ULB Properties. No non-title users are present at these sites **GSLR** Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	Intermediate pumping station at Tenkila Pump capacities: 65m^3/h and 85 m head for zone 3 and 5 (1+1) 82 m^3/h and 33 m head for zone 4A, (1+1) 119 m^3/h and 100 m head for zone 6, 6A and 7, (1+1) Booster pumping station at Balnad Pump capacity 11 m^3/h and 80 m head (1+1)	Pumping station will be located within Tenkila GLSR site Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad
Distribution system	Supply of water from service reservoirs to consumers	142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes) 75 mm – 106.139 km 90 mm – 1.853 km 110 mm – 21.744 km 150 mm (DI) - 2.784 km 160 mm – 2.889 km 200 mm – 1.403 km	In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW

		250 mm – 0.362 km	

Infrastructure	Function	Description	Location
		250 mm (DI)- 4.916 km 280 mm – 0.570 km	
Bulk Water Meters	To record data of volume of flow to each Distribution System zones at desired time interval.	29 no.	Bulk meters will be fixed at strategic locations in the pipe line at Jack well point, WTP and service reservoir points
House Service Connections (HSC)	For each house connection will be provided with meters to supply water and record volume of water. W	4,500 new HSC connections 9226 replacement of existing domestic water meters	In 8 zones for all the houses within the city limits

CMC = City Municipal Council, m^3/h = cubic meter per hour, DI = ductile iron, GLSR = ground level service reservoir, HDPE = high density polyethylene, HSC = House Service Connections, IPS = Intermediate Pumping Stations, km = kilometer, m = meter, mm = millimeter, MLD = million liters per day, OHT = overhead tank, RCC = reinforced cement concrete, ROW = right-of-way, ULB = urban local body, WTP = water treatment plant.

4 Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Annexure-1

Site Visit observations on 26th May 2020

1	PPEs provided at work site.		PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand Labour attendance register, labour wages register, grevience redresal register and accident and incident register compulsory be at all work site. Drinking Water can must be provided at all work site

2	Bunding of materials at all OHT sites,Puttur		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope

3	Scrap, steel rods and materials storage at all OHT work sites,Puttur		Instructed contracting agency to avoid scarp steel and other materials storage at works sites

Annexure-2

Status of Site Visit observations on 28th February 2019

1	Project information board and sign boards must be provided at work site.		Provide project information board related to the particular project work and place at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand	Not complied

		 Latitude: 12.774197 Longitude: 75.186639 Elevation: 168.96m Accuracy: 3.2m Time: 02-28-2020 15:24 Note: OHT at karmala site, puttur		

2	Sign boards , barricading should be provided at work site		• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site. • Labour attendance register, labour wages register, grevienceredresal register and accident and incident register compulsory be at all work site. • Drinking Water can must be provided at all work site	• Not complied • Partially complied • Not complied

		 Latitude: 12.771951 Longitude: 75.213244 Elevation: 100.67m Accuracy: 7.5m Time: 02-28-2020 17:40 Note: 110mm dia Distribution line laying at zone 1, puttur Powered by NoteC		

3	Bunding of materials		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope	• Not complied

		 Latitude: 12.782042 Longitude: 75.17585 Elevation: 150.85m Accuracy: 3.2m Time: 02-28-2020 15:00 Note: OHT at padnoor site, puttur		

4	Scrap and materials storage at work locations	 	Instructed contracting agency to avoid scarp steel and other materials storage at works sites	• Not complied

5	Labour Camp at mottetadka site, puttur	 	Labour camp is properly maintained Toilets are provided to workers Drinking water tap connection provided at the camp	

		 	Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases	Not complied

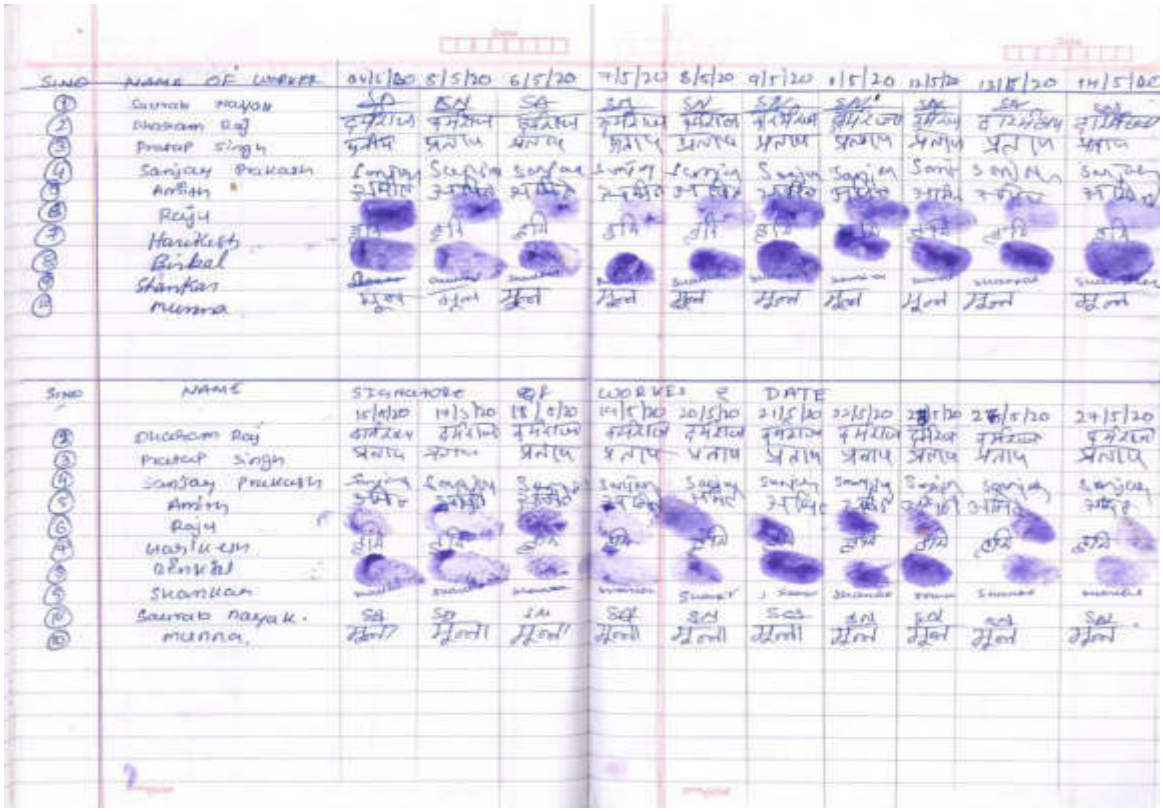
6	PPEs for workers at work site		Workers wearing PPEs at works site	

		 Latitude: 12.782025 Longitude: 75.175763 Elevation: 142.79m Accuracy: 3.2m Time: 02-28-2020 15:02 Note: OHT at padnoor site, puttur		

SPPL-SIPL-DRS INFRATECH PVT.LTD, PUTTUR

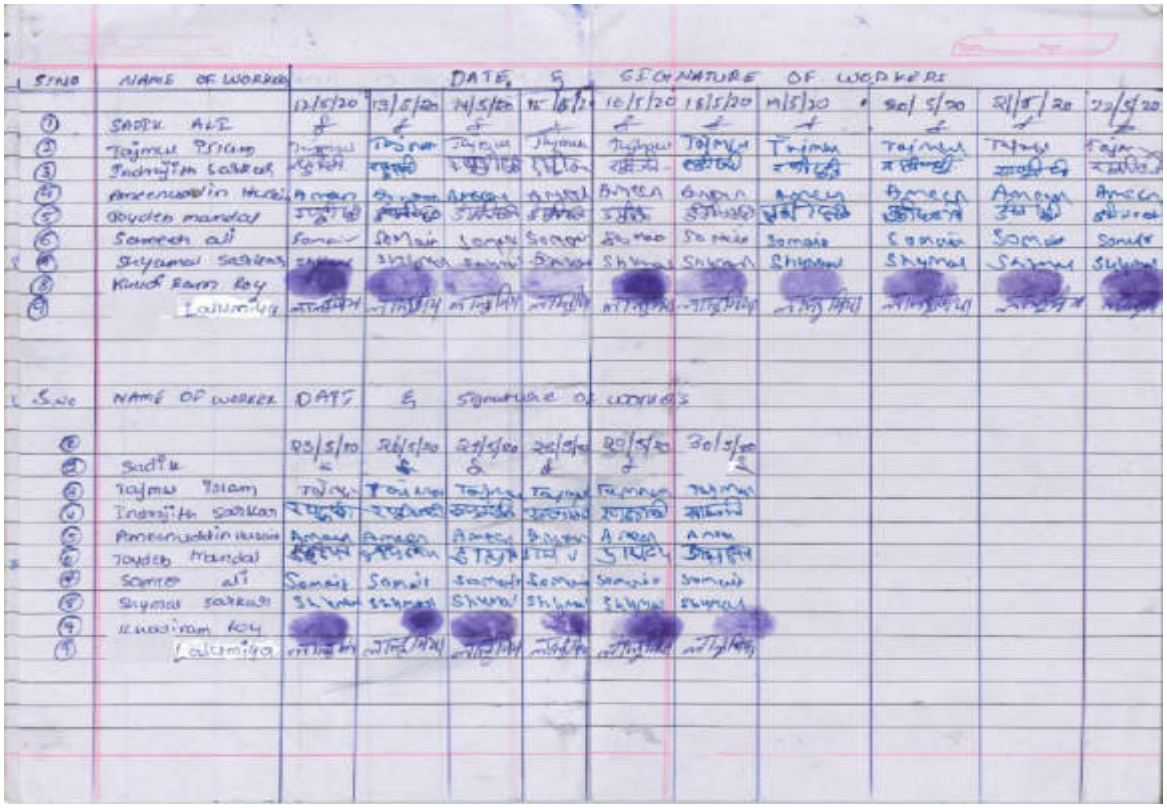
LABOUR ATTENDENCE SHEET FOR THE MONTH- MAY 2020

Annexure-3



S.NO	NAME OF WORKER	04/5/20	5/5/20	6/5/20	7/5/20	8/5/20	9/5/20	11/5/20	12/5/20	13/5/20	14/5/20
1	Saurab Nayak	SN	SN	SN	SN	SN	SN	SN	SN	SN	SN
2	Dharam Raj	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ
3	Pratap Singh	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ
4	Sanjay Prakash	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay
5	Amitav	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ
6	Rajib	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব
7	Harikesh	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি
8	Bikal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	Shankar	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না
10	Munna										

S.NO	NAME	SIGNATURE			WORKER		DATE				
		15/4/20	14/5/20	18/5/20	19/5/20	20/5/20	21/5/20	22/5/20	23/5/20	25/5/20	24/5/20
1	Dharam Raj	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ	ধর্মরাজ
2	Pratap Singh	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ	প্রতাপ
3	Sanjay Prakash	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay	Sanjay
4	Amitav	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ	অমিতাভ
5	Rajib	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব	রাজীব
6	Harikesh	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি	হরি
7	Bikal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	Shankar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	Saurab Nayak	SN	SN	SN	SN	SN	SN	SN	SN	SN	SN
10	Munna	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না	মুন্না



S.NO	NAME OF WORKER	DATE & SIGNATURE OF WORKERS									
		12/5/20	13/5/20	14/5/20	15/5/20	16/5/20	18/5/20	19/5/20	20/5/20	21/5/20	22/5/20
1	SADIK ALI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	Tajmul Islam	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul
3	Indrajit Sarkar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Ameenuddin Hussain	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen
5	Jayden Mandal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	Samim ali	Samim	Samim	Samim	Samim	Samim	Samim	Samim	Samim	Samim	Samim
7	Shyamal Sarkar	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal
8	Kinod Ram Roy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	Lakshmiya	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

S.No	NAME OF WORKER	DATE & Signature of workers					
		23/5/20	26/5/20	27/5/20	28/5/20	29/5/20	30/5/20
1	Sadik	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	Tajmul Islam	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul	Tajmul
3	Indrajit Sarkar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Ameenuddin Hussain	Ameen	Ameen	Ameen	Ameen	Ameen	Ameen
5	Jayden Mandal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	Samim ali	Samim	Samim	Samim	Samim	Samim	Samim
7	Shyamal Sarkar	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal	Shyamal
8	Kinodram Roy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	Lakshmiya	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SPPL-SIPL-DRS INFRATECH PVT.LTD, PUTTUR

LABOUR ATTENDENCE SHEET FOR THE MONTH- MAY 2020

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- Hand Wash Campaign for workers
- Provided Hand Sanitizers to workers
- Every Worker has been Instructed to wear Mask and Social Distance

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020






- Conducting daily COVID-19 Induction to workers with a Physical Distance

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- Conducting Thermal screening Everyday

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- Sanitizing Workers Camp and Wash Rooms

Monthly Environmental Monitoring Report

Project Number: 43253-027
May 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi

Package No. 02UDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an water supply projects within the project area i.e. Udupi

2 Need for Infrastructure Improvement in Udupi

A detailed assessment of existing situation was carried out and it concludes that the present water production of 27.24 million liters per day (MLD), is insufficient to meet water demand of Udupi till the year 2031 as per national standards. Besides Udupi town, this subproject investment also need to provide water supply covering 5 en-route villages, 5 outgrowth villages and 7 adjacent villages.
The present inadequacy in the water supply system, is due to

(i) mainly shortage in water source in summer season;
(ii) increased water demand; and
(iii) old and leaking distribution system, along with weak management system.

In order to meet required water demand of Udupi, an alternate water source from River Varahi is proposed under a government funded bulk water supply project. The necessary improvements and augmentation in water distribution system is proposed under the ADB funded KIUWMIP Tranche 2

3 The proposed subproject:

Subproject includes the following components:

(i) clear water feeder mains of 7.47 kilometer (km) of diameter 150 millimeters (mm) to 355 mm to feed tonew overhead tanks (OHTs);
(ii) 7 OHTs of total storage capacity 5.2 ml;
(iii) distribution network of 358.17 km (diameter 150 mm to 355 mm); and,
(iv) Replacement of 16,870 existing meters and providing new metered house service connections of 15,000for uncovered households. Distribution network pipes will be laid along existing road right-of-way (ROW) and OHTs will be constructed in government-owned lands. New water source from river Varahi about 38.5 kms from Udupi has been selected to meet shortage of water for summer four months. RCC Intake well, RCC Jackwell cum pump house and raw water pipe line for 38.5 Kms is proposed under AMRUTH Scope. Also it is proposed 30 MLD WTP at Baje to meet additional demand of Udupi under State fund.

Table 1 provides details of the KIUWMIP Tranche 2 subproject components in Udupi based on the detailed engineering design of the subproject

Table 1: Proposed Subproject Components

No.	Component	Details	Location
1	Clear water feeder main to feed treated water to overhead tanks (OHTs)	7.47 km length 150 mm – 355 mm diameter **Ductile Iron Pipes** 1.50 km - 150 mm diameter from ground level service reservoir (GLSR) at Manipal to OHT for Zone 5 at Manipal near Manapalla lake 0.5 km - 200 mm diameter from GLSR at Manipal to zone-3 OHT at Manipal **Mild Steel Pipes** 60 m - 219 mm diameter for zone -7C OHT at Kolambe 45 m - 219 mm diameter for zone -8C OHT at Indrali 1.7 km - 273.1 mm diameter for zone-6B OHT at Manchi 815 m - 323.90 mm diameter for zone-8B at Kakkunje 2.85 km - 355.6 mm diameter, for zone-9B at Santhekatte	Along the public roads within the road right of way
2	OHTs	7 OHTs of total storage capacity 5.2 ml Zone 3 – 750 kl at Manipal Zone-5 – 300 kl at Manipal near Manapalla lake Zone 6B – 750 kl at Manchi Zone 7C – 300 kl near Kolambe Zone 8B – 1,000 kl at kakkunje Zone 8C – 500 kl at Indrali Zone 9B – 1,600 kl at Santhekatte	For all 7 OHTs, government owned land parcels have been identified.
3	Distribution network	358.16 km pipes of diameter 63 mm to 350 mm **High Density Poly Ethylene (HDPE) pipes** 63 mm dia - 294.4 km 75 mm dia - 0.375 km 90 mm dia - 0.796 km 110 mm dia - 25.575 km 160 mm dia - 3.336 km 200 mm dia - 5.602 km 250 mm dia - 13.824 km 280 mm dia - 0.330 km 315 mm dia - 0.291 km DI PIPES: 150 mm dia - 0.252 km 300 mm dia - 10.282 km 350 mm dia- 3.098 km	Pipes will be laid along the public roads within the road right of way. Rider lines will be laid parallel to the existing pipes, and within the road right of way. Pipes will be mostly laid in earthen shoulder to avoid road cuttings
4	House Service Connections	Replacement of non-functioning 16,870 water meters for existing connections and providing new water supply connections of 15,000 to un-covered households	At each household

4 Environmental Management Plan.

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi	**Name of the Contractor:**Suez Civil Engineering Services Pvt,LTD& DRS Infra Tech Pvt, Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Udupi	**Name of SE/EE/AE Of concerned division PIU :-**Mr. Sudarshan, Sr.AE
Date of monthly monitoring: 25-05-2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr.Pradeep Sheety

Table 2: Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction

Field	Anticipated Impact	Mitigation Measures	Responsiblefor Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementations
EMP Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	**1)** Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws,etc. **2)** Appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work	Construction Contractor / PIU / PMDCSC	(i) Certificate of Completion (Safeguards Compliance Orientation) (ii) Posting of Certification of Completion at worksites (iii) Posting of EMP atworksites	Cost of EMP Implementation Orientation Training to contractor is responsibility of PMU. Other costs responsibility of contractor.	**1)** Spoil management submitted **2)** EHS Engineer appointed

Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay,soils, gravel, and other constructionmaterials; **4)** Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; **5)** Use tarpaulins to cover sand and other loose material when transported bytrucks; **6)** Clean wheels and undercarriage of vehicles prior to leavingconstruction site	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitive receptors; (iii) Heavy equipment and machinery with air pollution control devices; (iv) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	**3)** Complied **4)** Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Complied
	oxides, and hydrocarbons .	**7)** Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				**7)** Complied

Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	**8)** Avoid stockpiling of earth fill especially during the monsoon season unless covered bytarpaulins or plasticsheets. **9)** Laying of pipelines during dryseason and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches orpumping. **10)** Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas (Appendix6).	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and wastematerials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water qualityinspection; (iv) Effectivenes s of water management measures; (v) No visible degradation to nearbydrainages,	Cost for implementation of mitigation measures responsibility of contractor.	**8)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **9)** Instructed contracting agency to fill the excavated trenches at all locations before rainy season **10)** Complied. Contracting agency dumping excess earth in CMC shown area but they contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC
		11) Install temporary silt traps or sedimentation basins along the drainage leading to the waterbodies **12)** Provide temporary bunds for stockpiles and materials **13)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund **14)** Dispose any wastes generated by construction activities in designated sites.		nallahs or waterbodies due to civil works		**11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Not complied **13)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity **14)** Complied. Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC. Recommended

		15) Conduct surface quality inspection and monitoring.				contractor to get letter from PIU or CMC **15)** Not complied
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	**16)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; **17)** Construction work shall be limited to day light hours (6 AM to 6PM) **18)** Provide prior information to the local public about the work schedule; **19)** Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually bychiseling; **20)** Minimize noise from construction equipment/pneumaticdrills by using silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor;and **21)** Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from thevehicle/s. **22)** Horns should not be used unless it is necessary to warn other road users or animals ofthe vehicle'sapproach;	Construction Contractor	(i) Complaints from sensitive receptors; i)Use of silencers in noise-producing equipment and sound barriers; (iii) Equivalent day and night time noise levels (See Appendix 3 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	**16)** Complied **17)** Complied **18)** Complied **19)** No such old or sensitive building found which comes in work alignments. But instructed contracting agency to take safe precautions while executing the works **20)** Complied **21)** Complied **22)** Complied

Landscape and aesthetics	Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	**23)** Prepare and implement spoils management plan **24)** Avoid stockpiling of excess excavated soils; **25)** Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas; **26)** Recover used oil and lubricants and reuse or remove from the sites; **27)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **28)** Remove all wreckage, rubbish, or temporary structures which are no longer required; and **29)** Request PMU/PMDCSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Worksite clear of hazardous wastes such as oil/fuel (iiv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	Cost for implementation of mitigation measures responsibility of contractor.	**23)** Spoil management plan is prepared **(attached in annexture 2a august 2019 but updation is to be done).** **24)** Found no such surplus and stockpiling of soils found in sites **25)** Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC **26)** Used oil and lubricants not generated on site **27)** Contracting agency reusing by backfilling and dumping excess solid waste to the designated areas **28)** Complied **29)** No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.

Existing Infrastructure and Facilities Accessibility	Disruption of service and damage to existing infrastructure at specified project location Traffic problems and conflicts near project locations and haul road	**30)** Obtain from PIU/PMDCSC the list of affected utilities and operators if any; **31)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service **2)** (iii) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately. **33)** Plan pipeline work in consultation with the traffic police **34)** Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; **35)** Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the traffic movement; **36)** Schedule transport and hauling activities during non-peak hours; **37)** Do not close the road completely, allow traffic to move on one line; **38)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; **39)** In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions; **40)** At all work sites public information/caution boards shall	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility of contractor.	**30)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at any section. **31)** Not complied **32)** No accidental breaking of any properties yet recorded but instructed contracting agency to rectify immediately
			Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix7); (ii) Complaints from sensitive receptors; (iii) Number of signages placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	**33)** Contractor should inform and take permission from traffic police for any pipe line laying/execution on roads. **34)** Complied **35)** Instructed to contractor agency to backfill and restore the excavated area immediately to avoid traffic **36)** Complied **37)** Complied **38)** Not Complied **39)** Instructed contract agency to provide one separate person at site to give route information to public

		be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule				**40)** Partially complied. Project information board should be both in Kannada and English format.
		of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. **41)** Keep the site free from all unnecessary obstructions; **42)** Drive vehicles in a consider ate manner; **43)** Prepare a Traffic Management Plan –a Template is provided for reference at Appendix 7.				**41)** Complied **42)** Complied **43)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 2b august 2019 but updation is to be done).**

Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**44)** Prepare and implement spoils management plan **45)** Leave spaces for access between mounds of soil; and Provide walkways and metal sheets where required for people; **46)** Increase work force in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **47)** Consult businesses and institutions regarding operating hours and factoring this in work schedules; and **48)** Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Spoils management plan (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	**44)** Spoil management plan is prepared **(attached in annexture 3caugust 2019 but updation is to be done)** **45)** Complied **46)** Complied **47)** Complied **48)** Complied
Socio cultural resources	Disturbance to socio cultural resources	**48)** No material should be stocked close to these areas; material shall be	Construction Contractor	(i) Visual site observations	Cost for implementation of mitigation	**48)**Complied

	(religious, educational, health care etc.,), access disruptions etc.,	brought to the site as and when required. **49)** Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles **50)** No work should be conducted near the religious places during religious congregations **51)** Material transport to the site should be arranged considering school timings; material should be in place before school starts; **52)** Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts **53)** Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly a the sites.		(i) Public complaints	Measures responsibility of contractor.	**49)** Complied **50)** Complied and instructed to follow **51)** Complied and instructed to follow **52)** Partially complied **53)** Not complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**54)** Employ local labor force to the maximum extent, if manpower is available; **55)** Comply with labor laws	Construction Contractor	(i) Employment records; (ii) Records of sources of materials (iii) Compliance to core labor laws (See appendix 2 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	**54)** Register maintained by contractor **55)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).
Occupational Health and Safety	Occupational hazards which can arise during work	**56)** Comply with all national, state and local core labor laws (See Appendix 2 of this IEE) **57)** Develop and implement site-specific occupational health and safety (OHS) Plan, and include in the Construction Management	Construction Contractor	(i) Site-specific OHS Plan; (ii) Equipped first- aid stations; (iii) Medical insurance coverage	Cost for implementation of mitigation measures responsibility of contractor.	**56)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor. **57)** Contractor following Company EHS Policy-

		plan. The OHS plan will include measures suchas: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work- related accidents; **58)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **59)** Provide medical insurance coverage for workers; **60)** Secure all installations from unauthorized intrusion and accident risks; **61)** Provide supplies of potable drinking water; **62)** Provide clean eating areas where workers are not exposed to hazardous or noxious substances;		for workers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of health and safety orientation trainings (viii) persona l protective equipment; (ix) % of moving equipment outfitted with audible back- up alarms; (xi) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. (xii) Compliance to core laborlaws		PPE'S provided by Contractor. **a)** **Complied** **b)** **Complied.** PPE'S provided by Contractor to workers **c)** Complied **d)** Not complied **e)** Accident and incident register maintained **58)** Partially Complied. Instructed to keep first-aid box at each working sites separately **59)** Not complied **60)** Complied **61)** Partially Complied **62)** Not Complied
		63) Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal		(See appendix 2 of this IEE)		**63)** Not complied. Instructed to Provide health and safety orientation training to all workers

		protective protection, and preventing injuring to fellow workers; **64)** Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; **65)** Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; **66)** Ensure moving equipment is outfitted with audible back-up alarms; **67)** Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and **68)** Disallow worker exposure to noise level greater than 85 dBA for a duration of more than8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. **69)** Overall, the contractor should comply with International Finance Corporation (IFC) EHS Guidelines on Occupational Health and Safety				**64)** Not complied **65)** Complied **66)** Complied **67)** Complied **68)** Not complied **69)** Not complied

Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**70)** Provide hard barricading for all deep excavations that may require especially for pipe lines; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work **71)** Plan material and waste routes to avoid times of peak-pedestrian activities **72)** Liaise with Udupi CMC in identifying risk areas on route cards/maps **73)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure **74)** Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads **75)** Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety	Construction Contractor	(i) Traffic Management Plan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	**70)** No such deep trenches found during laying pipes. But instructed contracting agency to put hard barricading if trenches are more then 1.5m depth **71)** Not complied **72)** Not complied **73)** Not complied **74)** Complied **75)** Not complied
Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for	**76)** Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas. **77)** Minimize removal of vegetation and disallow cutting of trees **78)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge **79)** The camp site should be adequately drained to avoid the accumulation of stagnant water	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.	**76)** Not Complied Labour camp location was finalized but Letter has to be issued from PIU to contractors. **And instructed to provide awareness to all workers to follow H& S measures of COVID-19** **77)** Removal of vegetation Minimize by selecting best alignment.

	workers	**80)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination **81)** Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons **82)** Train employees in the storage and handling of materials which can				**78)** Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area and drinking water. **79)** Instructed contracting agency to built camp in dry and plan area where there is no water logging and must hygienic area. **80)** Instructed contracting agency to provide drinking water as per the standards at camp **81)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **82)** Instructed contracting agency to provide training of solid and liquid materials handling to the persons at campcare fully to avoid soil contamination

		potentially cause soil contamination; **83)** Recover used oil and lubricants and reuse or remove from thesite; **84)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **85)** Remove all wreckage, rubbish, or temporary structureswhich are no longer required;and **86)** Report in writing that the camp has been vacated and restored to pre- project conditions before acceptance ofwork. **87)** The work camp details should be includedin the Construction ManagementPlan.				**83)** Instructed to contracting agency to train persons not to spill oil and lubricant and use carefully to avoid soil contamination **84)** Instructed to contracting agency to follow at camp **85)** Instructed to contracting agency to follow at camp **86)** Construction work is in progress **87)** Not complied
Social and Cultural Resources	Risk of archaeological chance finds	**88)** Create awareness among the workers and supervisors about the chance finds during excavation work **89)** Stop work immediately if any finds are suspected to allow further investigation **90)** Inform archaeological agencies promptly if a find is suspected, and take any action they require toensure its removal or protection in situ. **91)** Adjacent to important religious sites, undertake excavationandConstruction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	**88)** Till now no such suspected items found nor recorded **89)** Till now no such suspected items found nor recorded **90)** Till now no such archaeological items recorded **91)** No such damages recorded during the visit. But instructed to maintain if such damages happens.

Submission of EMP implementation report	Unsatisfactory compliance to EMP	**92)** Appointment of EHS engineer to ensure EMP implementation **93)** Timely submission of monitoring reports including pictures	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	**92)** EHS Engineer appointed **93)** Complied
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**94)** Remove all spoils wreckage, rubbish, or temporary structures(such as buildings, shelters, and latrines) which are no longer required; and **95)** All excavated roads shall be reinstated to original condition. **96)** All disrupted utilities restored **97)** All affected structures rehabilitated/compensated **98)** The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. **99)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regrassed using the guidelines set out in the revegetation specification that forms part of this document.	Construction Contractor	PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.	Cost for implementation of mitigation measures responsibility of contractor.	**94)** Complied **95)** No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage **96)** If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **97)** Till now no structures affected **98)** Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **99)** Not complied
		100) The contractor must arrange the cancellation of all temporary services. **101)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance ofwork.				**100)** Not complied **101)** Construction work is in progress

Conclusion:-

Construction stage is in progress. Disposal yard is to be identified and consultations with PIU have to be taken. Health and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Contractor has to submit Site specific EMP of January, March, April and May 2020 of construction stage present in IEE report with PIU letter, Udupi.

Recommendation:

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)Engineer		Complied
2.	Submission of Site specific EMP		Comply with in 7 days
3.	Submission of monthly reports.	• Construction status or complacence report	Contractor has to submit Site specific January, March, April and May 2020 as construction stage EMP present in IEE report, Udupi Comply with in 7 days
4.	Telephone lines, electric Poles and wires, water Lines within proposed project area	• List of utilities going to effect will be submit to PIU	Comply with in 7 days
5.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days
6.	Tree cutting/pruning permission; and	• If any tree affected are noted in survey permission have to be taken	Comply with in 7 days
7.	Compensatory tree plantation as part of the project.		Comply with in 5 days
8.	List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given.	Comply with in 15 days
9.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner have to be taken	Comply with in 5days
10.	List of selected sites for disposal	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given. • If any private land is selected NOC from owner have to be taken	Comply with in 5 days
11.	List of approved quarry Sites and Sources of materials; and		Comply with in 7 days

12.	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarry sites if necessary.		Comply with in 5 days
13.	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
14.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	Draft copy shown and submitted and attached as **annexure 3a** in **Aug 2019**report and informed contractor to update plan once construction phase starts
15.	Traffic management plan		Draft copy shown, submitted and attached as **annexure 3b** in **Aug 2019 report** and informed contractor to update plan once construction phase starts
16.	Environmental management plan		Draft copy shown, submitted and attached as **annexure 3c** in **Aug 2019 report** and informed contractor to update plan once construction phase starts
17.	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency.	Comply with in 5 days

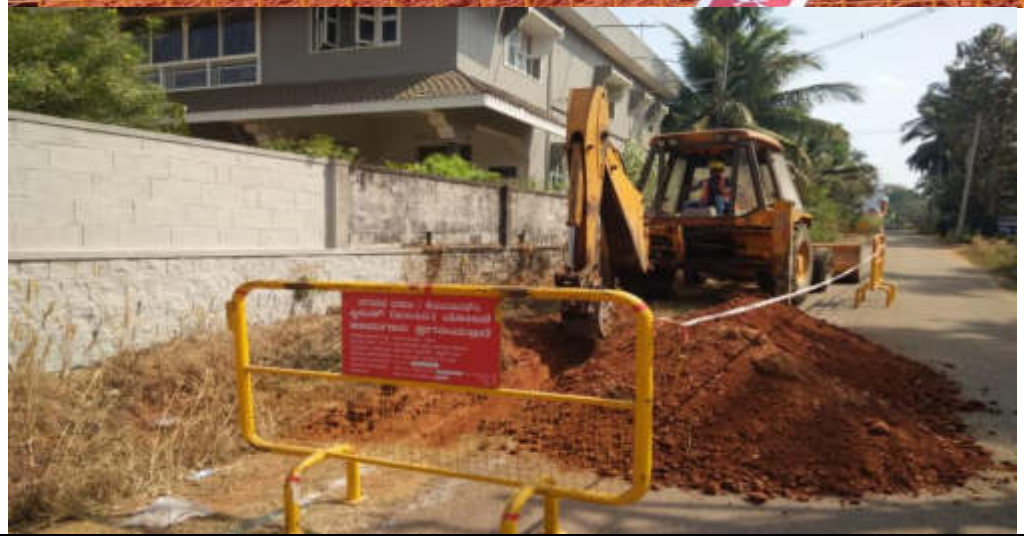
		First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account. International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety **attached in june 2019 month**	
18.	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. Construction test conducted in **Jan 2020** and noise report attached as **annexure 5 in feb 2020**
19.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. Construction test conducted **in Jan 2020** and air report attached as **annexure 5 in feb 2020**
20.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19**	Complied. Implementation of H & S at work site is done**. Attached as Annexure 3. H & S plan is to be prepared by contractors**

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure 1

Site visit observations of 25th May 2020

S.No	Observation		Recommendation
1	Sign board and flag man at site		Instructed contractors to provided cones, go slow boards Drinking water can should be kept at all working site for workers Mobil toilets facility should be provided for workers at site

2	Excavated earth at work site	 	Instructed contractor agency to immediately reuse the loose stored earth at site and dispose the remaining earth to dumping yard after the pipe laying And flag man at both the ends at all main road work places And to sprinkle water by water tank to avoid dust generation near residential and commercial areas

3	Aggregates, sand and excavated earth Material stored at santtekatti OHT site		Instructed contracting agency to make bunds for sand and aggregates storage to avoid flow and mix Instructed to remove steel rods used for sheet support And dispose loose earth stored at site to dumping yard

4	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose and to use present tank for other usage

5	Housekeeping at santekatte OHT for work site		Proper housekeeping should be done at work site Instructed not use fire wood burning for cooking and other purpose at work site place

Annexure 2

Status of Site visit observations of 27th Feb 2020

S.No	Observation		Recommendation	Status
1	Project Information Board and barricading at work site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Partially complied

		 Latitude: 13.345375 Longitude: 74.771271 Elevation: 25.07m Accuracy: 3.2m Time: 02-27-2020 13:15 Note: Endrali OHT site location,udupi		

2	PPEs and Sign boards at work places		Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

3	Worker sheds at santtekatte OHT site		Instructed contracting agency to provide proper shelter sheds to worker for resting and also to provide proper toilets sheds.	Not complied

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

6	Project information board, Barricading at all OHT sites	 	Instructed contracting agency to remove or dump debris and loose materials in dumping yard from OHT site Project information board is not provided by the contractor agency both in English and Kannada language at all OHT sites Instructed to put sign boards like go slow, work in progress, deep excavation boards on OHT sites	Partially complied

		 Latitude: 13.323403 Longitude: 74.772226 Elevation: 38.55m Accuracy: 3.2m Time: 02-27-2020 11:36 Note: OHT site at manchi location,udupi Powered by NoteCam  Latitude: 13.345138 Longitude: 74.771237 Elevation: 29.27m Accuracy: 3.2m Time: 02-27-2020 13:07 Note: Endrali OHT site location,udupi Powered by NoteCam		

7	Steel stock at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

May Month Workers Details

S. No.	Name	Department
1	Disesh (Supervisor)	Supervisor-Contractor
2	Ravi Rathod	Fitter
3	Rakesh	Labour
4	Ranganath	Labour
5	Mahesha	Labour
6	Parushuram	Labour
7	Ramesh	Labour
8	Shashi kumar	Fitter
9	Lava S Rathod	Labour
10	Yamunappa	Labour
11	Shekara	Labour
12	Ragunath Madara	Labour
13	Maresha	Labour
14	Chindanda	Labour
15	Muthu	Labour
16	Sameer	Driver
17	Ajay	Supervisor
18	Alok kumar	fitter
19	Balakram	Labour
20	Md Sajid Ahamad	Operator
21	Pradeep	Driver

Thermal Screening for Workers (<99^{0}F/,<37^{0}C)

Thermal Screening at office entrance for staff (<99^{0}F/,<37^{0}C)

Hand wash / sanitizers provided at entry/exit

Covid-19 Induction for all new employees and subcontractor workmen

Toolbox talk on Covid-19 Awareness at site

Hand wash (soap + water) / sanitizer arrangement at sites

Decontamination of vehicles.

Decontamination in store

Social distancing in office





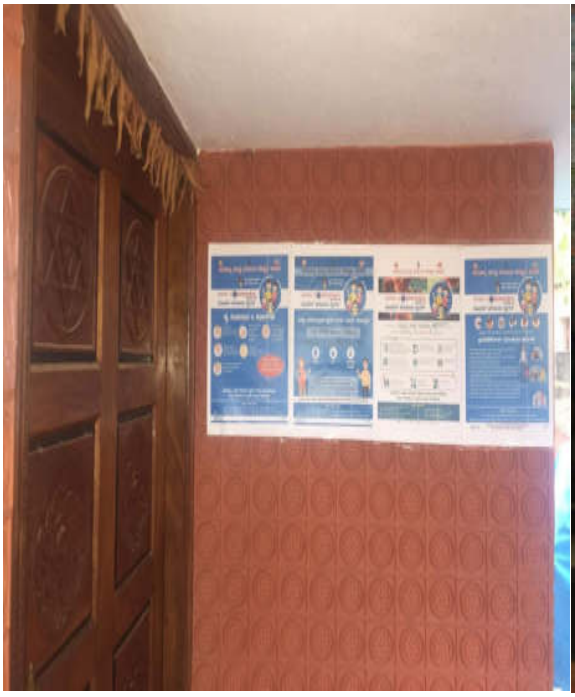




Daily decontamination of common touch points, cubicles, cabins, meeting rooms, toilets

Induvial /common Tools sanitizing

Covid -19 Awareness Posters



Monthly Environmental Monitoring Report

Project Number: 43253-027
June 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura

Package No. 02KDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

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INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Water Supply System in Kundapura

Kundapura is located in Udupi District in Karnataka and is the headquarters of the KundapuraTaluk placed 92 km from Mangalore and 416 km from Bangalore (Figure 1). Geographically, Kundapura Town is located at a latitude of 13080'N and longitude of 7407'E at an average altitude of 80 m above the mean sea level (msl). The municipality spreads in an area of 14 square kilometer (km^2) and consists of Kundapura Kasaba and Vaderahobli villages, with 23 municipal wards. Population of Kundapura is 30,450 (2011 Census). Kundapura is well connected to other parts of the state and country by highways and railways. National highway (NH-66) passes through the town. Nearest airport is Mangalore International Airport, 87 km from Kundapura. Kundapura is also connected to the Konkan Railway, which runs from Mumbai to Mangalore. Nearest railway station is at about 4 km from the town.

Kundapuran Town Municipal Council (TMC)provides urban services to the people efficiently and is well recognized by the state and central governments. Kundapura TMC has been awarded following certificates of appreciation by the Government of Karnataka:

(i) Best Urban Local Body in the year of 1996-1997;
(ii) Best Urban Local Body Award in the 2009-2010;
(iii) Second Best Practices Award in the year 2010 for Reduction of Nonrevenue Water Supply;
(iv) Third Best Practices Award-2010 for Solid Waste Management (SWM) for providing excellent Municipal Services, maintaining Healthy Environment;
(v) The best Utilization of reserved Fund for the social Service Activities; and
(vi) Town Municipal Council also grabbed Green Leaf Award-2009, Nation Urban Water Awards-2009, and ICONSMW Award-2011 in National level.

3. Need for Infrastructure Improvement in Kundapura

River Varahi is the main surface source of water supply to Kundapura. The intake works, located in Jambu beside JambukeshwaraTemple, about 11 km from Kundapura, pump raw water to the WTP constructed on a hillock in Japhthi village at a distance of about 2.5 km from the intake works by 400 mm diametermild steel (MS) rising main. Treated water from WTP is pumped through a 400mm diameter MS rising main to the 500

kilolitre (kl) capacity OHT at Ashraya Colony, 500klcapacity OHT at Gandhi Park and 500klcapacity OHT at Halekote. The

clear water transmission main passes through Kundapura-Shimoga Road and pass through four-enroutevillages viz., Japhthi, Balkur, Basrur and Koni. A Schematic diagram of the existing water supply systemis shown in the Figure 1.

Figure 1: Existing Water Supply System in Kundapura

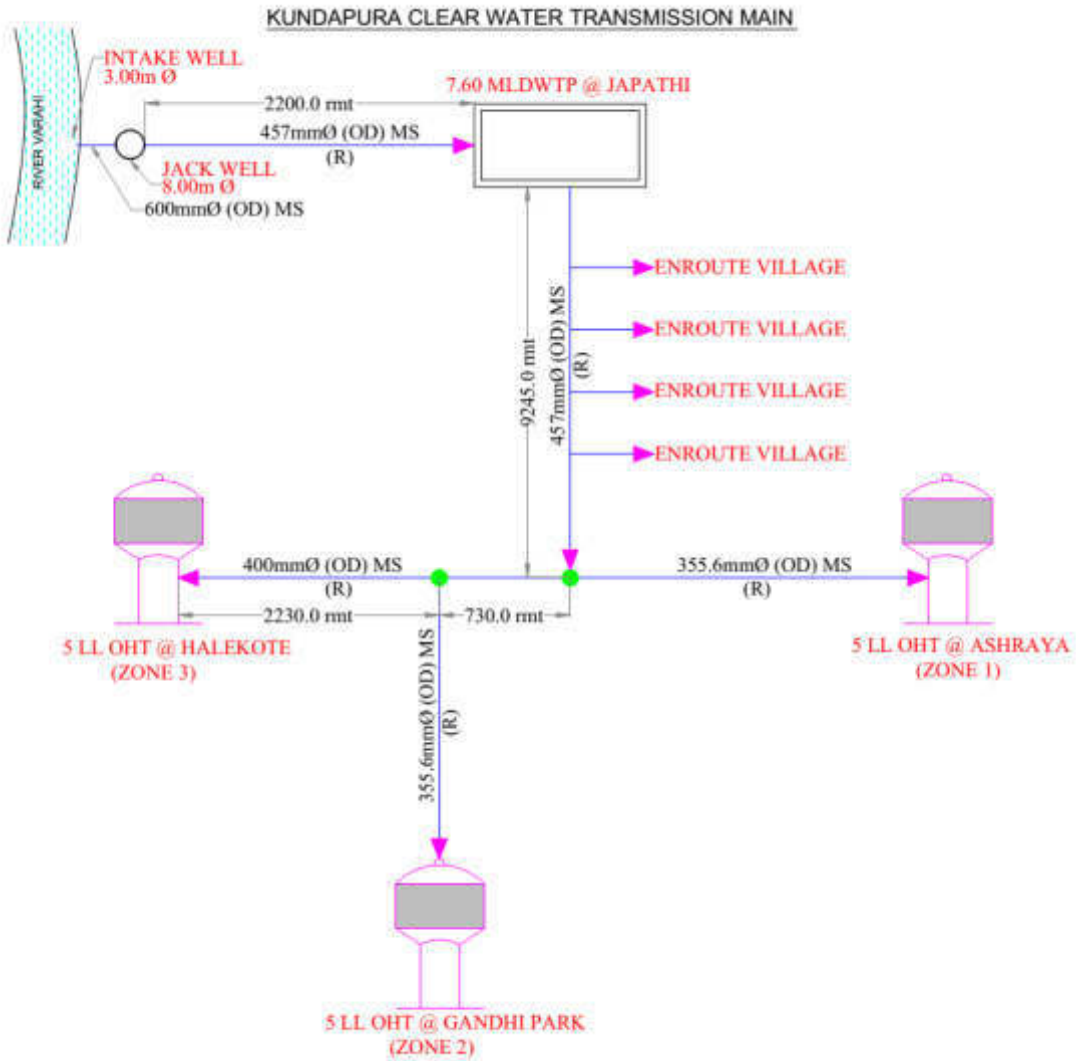


Table 1: Component of Existing Water Supply System in Kundapura

WTP Location	Capacity (MLD)	Treatment Process	Preliminary Design Stage? (Y/N)	Distance of WTP to nearest receptors in meters	Receiving Water of WTP Backwash / Wastewater Discharge	Uses of the receiving water (swimming, boating, fishing, irrigation, others [please specify])
Japthi, Kundapura	7.6	Inlet chamber ,Parshall flume,Flash Mixer , ClrifloculatorFilterhouse, Chlorination,	Existing WTP Rehabilitation	79	Discharged to drain	Irrigation

4. The proposed subproject:

The subproject formulated under this Investment Program to address gaps in current water supply system. Detailed design of all the subproject components is completed prior to the bidding, and as per the detailed design thesubproject includes the following components:

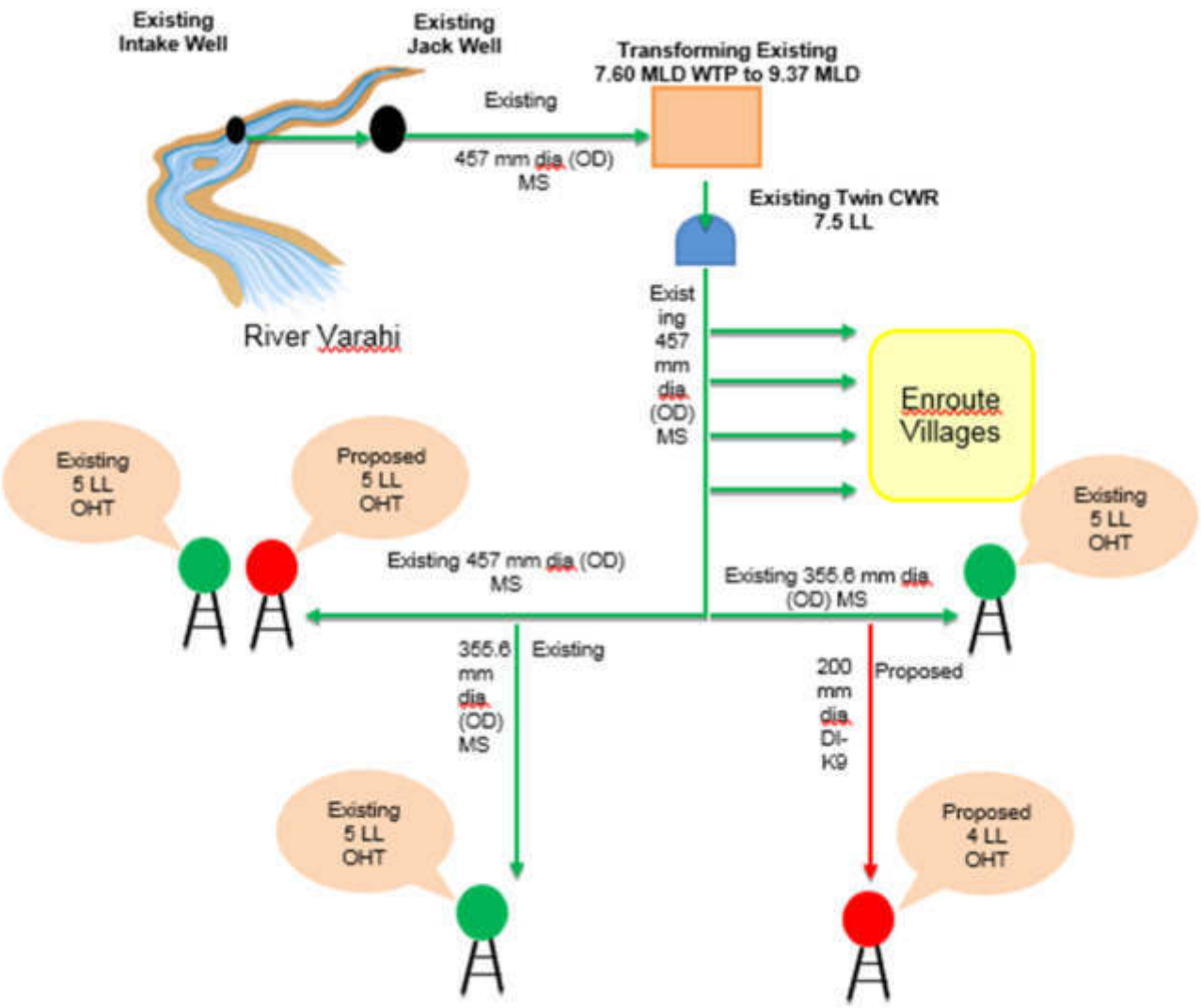
(i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
(ii) rehabilitation of the existing 7.60 MLD WTP in Japthi village including provision of backwash water recirculation and sludge management system;
(iii) laying of 4.8 kilometer (km) feeder main tapping from existing clear water main with 200 millimeter (mm) diameter pipe to feed to the proposed overhead tank (OHT) located in Kodi for the newly added zone 4;
(iv) construction of 2 OHTs with a total capacity of 0.9 million liter;
(v) extension of 31.64 km distribution network of diameter of 75 mm to 250 mm; and
(vi) replacement of 4,200 existing meters and providing new meteredhouse service connection (HSC) of 2,250 for uncovered households.

Following Table 2 provides details of the KIUWMIP Tranche 2 subproject components in Kundapura based on the detailed engineering design of the subproject. Schematic diagram of water supply system in Kundapura is shown in Figure 2. Locations of proposed components in Kundapura are shown. The position of the pipe alignment shown on road sectionis not exact due to mapping scale and underground utilities, and it will be fixed exactly during the pipeline laying work on site. All pipelines will be laid in the road shoulder, whereverit is available, or into the edge of road carriage way.

Table 2: Proposed Components for 24x7 Water Supply Systems

Infrastructure	Function	Description	Location
Jack well and Pump House	Pumping raw water to water treatment plant (WTP)	Rehabilitation works in Jack well by replacing mechanical equipment inside the pump house (pressure gauges, dewatering pumps, and electrical improvements) Provision of diesel generator set of 200 kilovolt ampere (kVA) for the un-interrupted power supply to the Jack well.	Works will be conducted within the existing Jack well near Jambukeshwara Temple in Jambu village
WTP	Treats raw water	Rehabilitation works in WTP by replacement equipment (flow meters, valves, pressure gauges, flash mixer, clari-floculator, alum and lime mixer, chlorinator, lab equipment etc.), Provision of diesel generator set (160 kVA) at WTP. Provision of backwash water recirculation and sludge management system to cater to total capacity of WTP (7.6 MLD); clarified water will be re-circulated to WTP inlet and accumulated sludge will be disposed in sanitary landfill	Works will be conducted within the existing WTP at Japthi village Sufficient land available within the WTP campus to develop backwash and sludge management facilities (see Figure 7)
Clear Water Transmission Main	Conveys clear water to service reservoirs	4.8 kilometer (km) length 200 millimeter (mm) diameter ductile iron pipe	Pipeline will be laid from the existing clear water main on NH-66 near Vinayaka theater to proposed new overhead tank (OHT) Kodi. Alignment is all along Kodi Road Alignment and profile drawings are shown in Figures 9 to 16.
Water service reservoirs	Water storage for supply	2 no.OHTs (of reinforced cement concrete, RCC) including compound walls at the sites: 500kiloliter (kl) capacity for Zone-3 at Halekote 400klcapacity for Zone-4 at Kodi	Site is vacant and owned by TMC Site is vacant and owned by Government of Karnataka Layout plans and elevations of OHTs are shown in Figures 17 to 20.
Distribution system Pipelines	Distributes clear water to the houses for the entire Town	31.64 km length diameter 75 - 250 mm high density poly ethylene (HDPE)pipes 75 mm dia-12.01km 90 mm dia- 5.89 km 110 mm dia- 7.08 km 160 mm dia- 2.27 km 200 mm dia- 2.33 km 250 mm dia- 2.06 km	Distribution pipes will be laid along the roads, within the road right of way, in 4 zones in KundapuraTown Municipal Council (TMC) area. Distribution zones with existing and proposed pipelines are shown Zone wise in Figures 21 to 24.
House Service Connections (HSC)	Individual houses get water after HSC.	HSC with Class B Multijet water meters 2,250 new 4,200 replacement	All households in four zones

Figure 2: Proposed 24/7 Water Supply System for Kundapura



CWR = clear water reservoir, dia = diameter, LL = lahk liter, mm = millimeter, MLD = million liters per day, MS = mild steel, OHT = overhead tank, WTP = water treatment plant.

5. Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura	**Name of the Contractor:**Laxmi Civil Engineering Services Pvt,Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Kundapura	**Name of SE/EE/AE of concerned division** **PIU :-**Mr.HarishWalmiki, AEE
Date of monthly monitoring:23/06/2020	**Name of Environment, Health And Safety (EHS) Engineer :-**Mr. Vijay

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction–Kundapura

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
Environmental Management Plan (EMP) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and 2) Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.	Construction Contractor/ project implementation unit (PIU)/ Project Management Design and Construction Supervision Consultant (PMDCSC)	a) Certificate of Completion (Safeguards Compliance Orientation) b) Posting of Certification of Completion at worksites c) Posting of EMP at worksites.	Cost of EMP Implementation Orientation Training to contractor is responsibility of Program Management Unit (PMU). Other costs responsibility of contractor.	1) Contractor has to update SOPs. OHS plan and Activities are going on as per company EHS Policies. 2) Complied Environmental, Health and Safety (EHS) Engineer appointed by contractor.

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	1) Consult with PMU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; 3) Use tarpaulins to cover sand and other loose material when transported by trucks; and 4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and 6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.	Construction Contractor	a) Location of stockpiles; b) Complaints from sensitive receptors; c) Heavy equipment and machinery with air pollution control devices; d) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Instructed to contracting agency to Spray water on exposed soil and stock piled mainly in commercial and residential area 3) Complied 4) Partially Complied. 5) Complied 6) Complied
Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 2) Laying of pipelines during dry season and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches or pumping; 3) Prioritize re-use of excess	Construction Contractor	a) Areas for stockpiles, storage of fuels and lubricants and waste materials; b) Number of silt traps installed along trenches leading to water bodies; c) Records of surface water quality	Cost for implementation of mitigation measures responsibility of contractor.	1) Stockpiling of earth fill not found during the site visit 2) Work was not in progress due to Rain but Instructed to contracting agency to close all opened trenches Before rainy season 3) Partially Complied -Spoil Management

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		spoils and materials in the construction works. If spoils will be disposed, dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10); 4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 5) Provide temporary bunds for stockpiles and materials; 6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 100% capacity bund; and 7) Dispose any wastes generated by construction activities in landfill or reuse in beneficial purposes		inspection; d) Effectiveness of water management measures; e) No visible degradation to nearby drainages, nallahs or water bodies due to civil works		plan prepared by Contractor Annexure attached in Feb 2019 reportand recommended to update according to the suggestions given and submit Spoil Management Plan. updated /Corrected Spoil Management plan yet to be submitted by Contractor 4) Surface Water bodies not found along the Project site. 5) Partially Complied 6) Fuels and lubricants in bulk are not stored by contractor at site. 7) Debris generated by construction is disposed in the ULB designated areas. Waste is used to fill the low line area
	Contamination of coastal water due to works in coastal zone	In addition to the above measures following measures given below for piling works: 8) Piling activities for OHT foundation work at Kodi shall be conducted carefully; there shall no			Cost for implementation of mitigation measures responsibility of contractor.	8) Pilling activities for OHT foundation work at Kodi beach has been done and OHT Construction work in progress

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		spillage of bentonite on the ground; bentonite slurry shall be properly collected in leak proof containers and re-circulated in the piling activity; excess bentonite slurry shall be dried properly in containers, and disposed in landfill safely				and excess earth is disposed in landfill
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	1) Plan activities in consultation with PMU/PMDCSC so that activities with the greatest potential to generate noise (road cutting and piling activity) are conducted during periods of the day which will result in least disturbance; 2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; 3) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.	Construction Contractor	a) Complaints from sensitive receptors; b) Use of silencers in noise-producing equipment and sound barriers; and c) Equivalent day and night time noise levels (Appendix 3)	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Complied 3) Complied 4) Complied
Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and	1) Manage surplus soil, debris and solid waste according to the following preference hierarchy:	Construction Contractor	a) Complaints from sensitive receptors; b) Worksite clear	Cost for implementation of mitigation measures	1) Complied. No excess excavated earth at work site.

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
	demolition materials and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	reuse, recycling and disposal to designated areas; 2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 3) In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / Kundapura; waste shall not be disposed in the forest areas and in or near water bodies/ rivers / coast 4) Prepare and implement spoils management plan; 5) Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 6) Recover used oil and lubricants and reuse or		of hazardous wastes such as oil/fuel; and c) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	responsibility of contractor.	2) Complied -Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill. 3) Complied 4) Partially Complied spoil management plan Prepared and Implementation is going on accordingly (SPM attached as Annexure in Feb 2019 Monthly report. Recommended the Contractor for update as per suggestions given and to submit SM Plan. Updated /Corrected Spoil Management plan not submitted by Contractor 5) Complied 6) Used oil and

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		remove from the sites; 7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and 8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works have been adequately performed before acceptance of work.				lubricants not generated on site 7) Complied 8) Work was not in progress due to Rain
Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	1) At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 2) Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section	Construction Contractor and PIU	a) Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken b) Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	1) Complied 2) Complied contingency services are provided and restoration is going on after thework. 3) Complied 4) Complied 5) Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	1) Except four (4) coconut trees at Kodi OHT site, and pruning of large tree to the minimum required extent at Halekoti OHT site, no trees shall be removed for the subproject. 2) Trees in the pipeline alignments shall be avoided during construction by locally altering the alignment. 3) Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed	Construction Contractor	a) PMU/PMDCSC to report in writing the numberof trees cut and planted.	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied. 6 trees got felled and Compensations were paid to the owners. Attached as **Annexures 10 in the May 2019 report.** And also ADB Social safeguard team visited on 23/9/2019 to particular affected persons to provide further training for them. 2) Complied 3) Compensation paid to the owner of the tree.
Accessibility	Traffic problems and conflicts near project locations and haul road	1) Plan pipeline work in consultation with the traffic police; prepare a Traffic Management Plan – a template is provided for reference at Appendix 11. 2) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;	Construction Contractor	a) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix 11); b) Complaints from sensitive receptors; and c) Number of signages placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	1) Traffic Management Plan prepared by contractor and followed accordingly. Traffic Management Plan attached as Annexure**– 9 in the May 2019 report.** It was advised to contractor to update Traffic Management Plan. Traffic management plan yet to be updated

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		3) Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the traffic movement; 4) Schedule transport and hauling activities during non-peak hours; 5) No road shall be completely closed for traffic; in unavoidable circumstances of road closure (eg, NH service road closure at Shastri Circle for trenchless work), provide alternative route, and ensure that public is informed about such traffic diversions; 6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; 7) Maintain safe pedestrian access at all times to the houses along the work site; 8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board. 9) At all work sites public information/caution boards				2) Complied 3) Complied 4) Complied 5) Contractor has to provide traffic management plan for their all working areas to minimize the traffic in busy and small congested areas 6) Complied 7) Complied 8) Work was not in progress due to Rain but Instructed to contracting agency to close all opened trenches Before rainy season

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints; 10) Keep the site free from all unnecessary obstructions; 11) Drive vehicles in a considerate manner In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work				MS tubular barricades are provided by Contractor at HaleKote OHT and Kodi OHT Site. 9) The public information/caution boards at work sites not provided with details mentioned in Mitigation Measures except at Kodi Beach which is also in Kannada. 10) Complied 11) Partially Complied
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	1) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; 2) Leave spaces for access between mounds of soil; 3) Provide walkways and	Construction Contractor	a) Complaints from sensitive receptors; b) Spoils management plan; and c) Number of walkways, signs, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Complied 3) Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		metal sheets where required for people; 4) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; 5) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and 6) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.				4) Complied 5) Complied 6) Not Complied. Work was not in progress due to Rain but instructed contracting agency to provide Project information board was at all working areas.
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.,), access disruptions etc.,	1) No material should be stocked close to these areas; material shall be brought to the site as and when required; 2) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles; 3) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum	Construction Contractor	a) Visual site observations b) Public complaints	Cost for implementation of mitigation measures responsibility of contractor.	1) Complied 2) Contractor conducting work manually for all possible works to minimize the use of equipment. 3) Complied 4) Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		possible time; 4) No work should be conducted near the religious places during religious congregations; 5) Material transport to the site should be arranged considering school timings; material should be in place before school starts; 6) Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts; and 7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.				5) Complied 6) Work was not in progress due to Rain but Recommended contacting agency when work starts to provide information about project work and Proper record has to be maintained 7) Improvement is required in Implementation.
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	1) Employ local labor force to the maximum extent, if manpower is available; and 2) Comply with labor laws	Construction Contractor	a) Employment records; b) Records of sources of materials; and c) Compliance to core labor laws (See Appendix 2of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	1) Register maintained by contractor attached as **Annexure – 7 in May 2019 report.** 2) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
						unskilled). Attached as **Annexure 11 and 12 in May 2019 report.**
Occupational Health and Safety	Occupational hazards which can arise during work	1) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE); 2) Develop and implement site-specific health and safety (H&S) plan which will include measures such as: **(a)** excluding public from the site; **(b)** ensuring all workers are provided with and use Personal Protective Equipment; **(c)** H&S Training for all site personnel; **(d)**documented procedures to be followed for all site activities; and **(e)** documentation of work-related accidents; 3) All trenches in sandy and mixed sandy soils irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures 4) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily	Construction Contractor	a) Site-specific OHS Plan; b) Equipped first-aid stations; c) Medical insurance coverage for workers; d) Number of accidents; e) Supplies of potable drinking water; f) Clean eating areas where workers are not exposed to hazardous or noxious substances; g) record of H&S orientation trainings h) personal protective equipment; i) % of moving equipment outfitted with audible back-up alarms; j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service	Cost for implementation of mitigation measures responsibility of contractor.	1) Contractor following Company EHS Policy Site-specific OHS Plan Not prepared by Contractor and is yet to be submitted 2) Contractor following Company EHS Policy-PPE'S provided by Contractor. Proper Documentation has to be maintained by Contractor 3) Recommended contractor to implement the mitigation measure when such deep trenches are to be executed. 4) First aid box is available but not adequate as per standards.The

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		accessible throughout the site; 5) Provide medical insurance coverage for workers; 6) Secure all installations from unauthorized intrusion and accident risks; 7) Provide supplies of potable drinking water; 8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances 9) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 10) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted;		rooms housing high voltage equipment, and areas for storage and disposal. k) Compliance to core labor laws (Appendix 2)		equipped first-aid station not provided. 5) Employees Compensation Insurances for Workers (Skilled and unskilled). 6) Complied 7) Complied 8) Separate clean eating areas not provided by contractor. 9) H&S orientation training for workers not found during the work and proper documentation required need to be done 10) Not Complied 11) Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		11) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 12) Ensure moving equipment is outfitted with audible back-up alarms; 13) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 14) Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 15) Overall, the contractor should comply with International Finance Corporation (IFC)				12) Complied 13) Not Complied 14) Not Complied Recommended the Contractor to use hearing protection measures and not allow worker to work more than 8 hours per day during the work. 15) Not complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES)				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	1) Provide protective shorting / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (>1m); 2) One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and take necessary precautions for safe conduct of work. 3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work;	Construction Contractor	a) Traffic Management Plan; and b) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	1) Recommended contractor to implement the mitigation measure when such deep trench were executed. 2) Complied 3) Joint inspection conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and should take necessary precautions for safe conduct of work, No such record found at time of inspection 4) Complied 5) Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		4) Plan material and waste routes to avoid times of peak-pedestrian activities; 5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps; 6) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and 8) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES).				6) Not complied- Register of Equipment and Vehicles maintenance certificates not found at site during the site visit. 7) Work in progress at Halekote OHT and sign boards provided at work site but no pipe execution work was in progress during inspection. Instructed contracting agency to keep necessarysign boardswhen pipe execution work starts. 8) Not Complied.
Work Camps and worksites	Temporary air and noise pollution from machine	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as	Construction Contractor	a) Complaints from sensitive receptors; b) Drinking water and	Cost for implementation of mitigation	1) Complied. Instructed contracting agency to provide **H&S**

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
	operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	possible located within reasonable distance of work site; 2) Minimize removal of vegetation and disallow cutting of trees; 3) Labor camps shall include accommodation for workers/laborers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 4) The roof height of the worker's and labor camp shall not be less than 3 m from floor level to the lowest part of the roof. 5) The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant regulation, whichever is higher. 6) Fire and electrical safety pre-cautions shall be adhered to. 7) Cooking, sanitation and washing areas shall be provided separately. 8) The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner.		sanitation facilities for employees	measures responsibility of contractor.	**safety measures about COVID-19 to all worker and employes** 2) Removal of vegetation minimized by selecting best alignment. 3) Labor camp facilities provided by the Contractor needed to be improved. 4) Not Complied 5) Not Complied 6) Fire Extinguisher not provided and electrical cable connections are not safely maintained. 7) Separate Cooking areahas not been provided 8) Gas Cylinder has been Provided by

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 10) The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 12) Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons; 13) Train employees in the storage and handling of materials which can potentially cause soil contamination; 14) Recover used oil and lubricants and reuse or remove from the site; 15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 16) Remove all wreckage, rubbish, or temporary structures which are no longer required; 17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				Contractor 9) Complied 10) Not complied 11) Complied 12) Not Complied. The toilets are in unhygienic conditions. 13) Not Complied 14) Complied - reused. 15) Complied 16) Complied 17) Still Construction Phase is in

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
						progress.
Social and Cultural Resources	Risk of archaeological chance finds	18) Create awareness among the workers and supervisors about the chance finds during excavation work; 19) Stop work immediately if any finds are suspected to allow further investigation; 20) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in site; and 21) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	18) Complied 19) Till now no such suspected items found nor recorded 20) Till now no such archaeological items recorded 21) Till now no such change found nor recorded
Submission of EMP implementation report	Unsatisfactory compliance to EMP	22) Timely submission of monitoring reports including pictures.	Construction contractor	a) Availability and competency of appointed supervisor Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	23) Monthly report submitted by Contractor.
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	24) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; 25) All excavated roads shall be reinstated to original condition. 26) All disrupted utilities restored. 27) All affected structures rehabilitated/compensated.	Construction Contractor	a) PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to operation and maintenance	Cost for implementation of mitigation measures responsibility of contractor.	24) Complied 25) Complied 26) Complied 27) Till now no structures

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementation
		28) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; 29) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regressed using the guidelines set out in the revegetation specification that forms part of this document; 30) The contractor must arrange the cancellation of all temporary services; and 31) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.		(O&M) are removed; and (iv) Worksite clean-up is satisfactory.		affected 28) Complied 29) Construction Phase is in progress 30) Construction Phase is in progress. 31) Construction Phase is in progress

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project isnot satisfactory. Contractor is maintaining copy of IEE. HIV AIDS Awareness Training programme have to be conducted by the Contractor. Proper Safety precautions should be improved by Contractor. January, February, March, April, May and June 2020 site specific EMP Monthly report with PIU letter has to be submitted from the contracting agency.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation /Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Certificate of Completion (Safeguards Compliance Orientation)	• **Register of Clearances required /status**	**1)** CRZ Clearance attached as**Annexures 2,3 &4 in June 2019 report** 2) Tree cutting permission from tree officer not provided yet.
2.	Posting of Certification of Completion at worksites	• If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board.	Within3 day of work Completion
3.	Posting of EMP at worksites.	• **Project Information board should also be in Kannada Language along with contact numbers for grievance Redressal**	Comply with in 15 days
4.	Location of stockpiles;	• To prepare the Google map of the Locations of identified stockpiles	Comply with in 5 days
5.	Complaints from sensitive receptors;	• **Complaints/Grievance Redressal Registers should be maintained at each work site.**	**Compiled and maintaining grievance registers at site**
6.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
7.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
8.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and	Comply with in 7 days

		ground/surface water.	
9.	Number of silt traps installed along trenches leading to water bodies;	• Prepare list of silt traps installed along trenches	If applicable in 8 days
10.	Records of surface water quality inspection;	• If any surface water body is Present nearby project area during the construction phase, the contractor will carry out environmental monitoring and testing for Surface water engaging NABL approved laboratory.	For every 3 months, **Complied (Jan to March Monitoring).Annexure 2 in May 2019 report.** **The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report**
11.	Use of silencers in noise-producing equipment and sound barriers; and	• **Only acoustic enclosures fitted DG set will be allowed at the construction site and camp sites**. • Maintenance of equipment and machinery (including proper lubrication, tuning and checks for muffler effectiveness) shall be regular and up to the satisfaction of the Engineer to keep noise level under control. • **Barricading- Hard Barricade should be provided to protect from unauthorized access of common people**	Daily monitoring required at site during the work Comply during the work.
12.	Equivalent day and night time noise levels (Appendix 3)	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	For every 3 months, **Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors toconduct the noise test every 3 months.**The Noise level monitoring is done in January 2020 and attached as **Annexure-5b in Jan 2020 report**
13.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	For every 3 months**, Complied (Jan to March Monitoring). Annexure-2**during the work.**Informed the contractors to conduct the air quality test every 3 months.**The Air quality monitoring is done in January 2020 and attached as **Annexure-5a in Jan 2020 report**
14.	Worksite clear of hazardous wastes such as oil/fuel;	• Used oil generated from vehicles/DG set at plant/camp site	Daily monitoring required at

		will be collected in closed containers and sold to MoEF&CC/SPCB approved used oil recyclers. • No solid or hazardous wastes (such as oil contaminated waste) will be dumped in drains or in open areas	site during the work Comply during the work
15.	Solid waste such as removed concrete, wood, packaging materials, empty containers	• Burning of wastes will not be allowed. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are regularly emptied and waste is disposed off in a hygienic manner as per the Solid Waste (Handling and Management) Rules, 2016. • Solid waste generated at the construction site, plant/camp site, will be collected in covered wasted bins and segregated as biodegradable (food waste, paper, etc) and non-biodegradable (plastic, polyethylene bag etc.). Polyethylene/plastic wastes will be stored in empty cement bags and should be sent for recycling. Biodegradable (food waste, paper etc.) solid waste will be disposed in a compost pit.	Daily monitoring required at site during the work Comply all the issues during the work
16.	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• **Maintain copy of Section-wise list of utilities to be shifted / disturbed**.	Partially Complied. Communication letter maintained by PIU **attached as Annexures 3&4in the May 2019 report.** Contactor should also have copy with him **Section-wise list of utilities to be shifted** comply within 7 days.
17.	Record to confirm that contingency services are provided and all damaged utilities are restored after the work	• **Register of damaged infrastructure** • **Register of reinstated infrastructure**	Comply with in 3 days
18.	PMU/PMDCSC to report in writing the number of trees cut and planted.	• **Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation.**	**Complied attached as Annexures 10in the May 2019 report**
19.	Number of signage's placed at project location.	• **Maintain the signages placed at project location**	Comply with in 5 days
20.	Visual site observations	• **Register of official visiting the site and directions given if any at each site.**	Comply with in 3 days
21.	Employment records;	• **Attendance registers of labour at each site.**	**Complied and attached as Annexure 7in the May 2019 report and maintaining the attendance register.**
22.	Records of sources of materials; and	• **Maintain separate record of quantity of materials used**	Comply with in 5 days

		and with all authorized certificates of suppliers	
23.	Compliance to core labor laws (See Appendix 2 of this IEE)	• **Register of payment to the workers**	Comply Immediately
24.	Site-specific OHS Plan;	• **Site-specific Occupational Health and Safety Plan**	Comply with in 4 days
25.	Equipped first-aid stations;	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. • First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	Comply with in 7 days
26.	Medical insurance coverage for workers;	• **File of insurance as per 13.1 PCC with contents showing the validity.** • Health Camps and Check -up should be conducted for the workers • **Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.**	Comply with in 12 days
27.	Number of accidents;	• **Accident and Incident register will be maintained by Contractor at each work site.**	**Complied. Attached in Annexure 1 in Aug 2019**
28.	Supplies of potable drinking water;	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the construction site.	**Complied**
29.	Clean eating areas where workers are not exposed to hazardous or noxious substances;	• Since a common mess is not provided/operated, separate space for cooking and eating shall be provided.	Comply with in 4 days
30.	Record of H&S orientation trainings personal protective equipment;	• **Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register** • **The list of PPEsto be provided.**	Complywith in 7 days
31.	Personal protective equipment;	The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers whenever on the	Comply with in 5 days

		construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided. • During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	
32.	Permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.	• **The contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety.** **Guidelines.**	Comply with in 10 days
33.	Records of chance finds	• Concerned records should be maintained if any chance find transpires.	Comply immediately as soon as chance find occurs.
34.	Availability and competency of appointed supervisor	• Certified and Experienced supervisor will be appointed by Contractor	Contractor must appoint certified and Experienced supervisor.
35.	Monthly report	• **Contractor submitted Monthly report to PIU & PMU**	January 2020 Monthly report has to be submitted
36.	Camp has been vacated and restored to pre-project conditions	• All construction related structures not relevant to operation and maintenance (O&M) are removed; and • Worksite clean-up must be satisfactory.	Will be Compiled Within 2 days of Work Completion
37.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19**	Partially complied. Implementation of H & S at work site is done**. Attached as Annexure 4. H & S plan is to be prepared by contractors** Comply with in 10 days

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ANNEXURE-1

SITE OBSERVATIONS VISITED ON 23rd June 2020

S.No	Observation		Recommendation
1	Sign Boards at Kodi Beach OHT are not proper		Project Information Board provided in English and Kannada. And instructed to contracting agency to put same in Halekote OHT site.
2	Material Store room at Kodi OHT site		Instructed contractors to provide proper sheet door for store room to avoid injury to workers during opening the door
3	DI materials stored at kodi		Instructed contracting agency to place

ANNEXURE-2

SITE VISIT OBSERVATIONS VISITED ON 25rd May 2020

S.No	Observation		Recommendation	Status
1	Sign Boards at Kodi Beach OHT are not proper		Work in progress Board is to be placed at site, which should be legible Project Information Board also to be in English along with necessary contact numbers for Grievance Redressal.	Complied

2	Barricading, PPEs and water facility to workers at pipe laying work site	 	Instructed contractors to provide soft barricading at side of the excavation PPEs should be provided at all work site Drinking water facility should be provided at site for worker	Not complied