

Environmental Monitoring Report

Project Number: 43253-027
Semestral Report (July-December 2020)
March 2021

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

Appendices (PART B)

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		mock drill register <ul style="list-style-type: none"> The list of PPEsto be provided. 	
31	Personal protective equipment;	<p>The Contractor shall provide and ensure enforcement with zero tolerance the following:</p> <ul style="list-style-type: none"> 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. 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. 	Comply with in 5 days
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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Certified and Experienced supervisor will be appointed by Contractor 	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	<ul style="list-style-type: none"> Contractor submitted Monthly report to PIU & PMU 	Not complied January, February, March, April, May, June , July, August and September 2020 Monthly report has to

			be submitted by contractor Will be Compiled Within 10days
36.	Camp has been vacated and restored to pre-project conditions	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. H & S plan is to be prepared by contractors Comply with in 10 days



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

Annexure-1

Site Visit Observations on 17th September 2020

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

2	Barricading, PPEs and water facility to workers at pipe laying work site		<p>Instructed contractors to provide soft barricading at side of the excavation</p> <p>PPEs should be provided at all work site</p> <p>Drinking water facility should be provided at site for worker</p>
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3	Electrical panel installation at kodi OHT and house service connection	 <p>Latitude: 13.618725 Longitude: 74.693284 Accuracy: 2400.0m GPSTime: 13/09/2020 16:40</p> 	Instructed contracting agency to provide hand gloves, shoes while interconnecting cables wires to avoid electric shock and also to provide safety gloves shoes and jackets to HSE connection persons at site.
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4	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.
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5	Steel bars/iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		<p>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.</p> <p>Steel Reinforcement Work should be carried out in safe working location</p>
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6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly
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7	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>
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8	Toilet is not properly maintained atOHT Halekote,Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.
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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
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ANNEXURE-2

STATUS OF SITE OBSERVATIONS VISITED ON 23rd June 2020

S.No	Observation		Recommendation	Status
1	Sign Boards at Kodi Beach OHT are not proper	 <p>Latitude: 13.630562 Longitude: 74.669485 Elevation: 10.89m Accuracy: 4.3m Time: 06-23-2020 13:59 Note: At Kodi beach kundapur OHT site</p>	Project Information Board provided in English and Kannada. And instructed to contracting agency to put same in Halekote OHT site.	Partially complied

2	Material Store room at Kodi OHT site	 <p>Latitude: 13.630666 Longitude: 74.669713 Elevation: 5.89m Accuracy: 3.2m Time: 06-23-2020 14:02 Note: At Kodi beach kundapuram OHT</p>	Instructed contractors to provide proper sheet door for store room to avoid injury to workers during opening the door	Not complied
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3	DI materials stored at kodi OHT site	 <p>Latitude: 13.630553 Longitude: 74.670016 Elevation: 5.27m Accuracy: 3.2m Time: 06-23-2020 14:03 Note: At Kodi beach kundapura OHT site</p> <p>Powered by NoteCam</p>	Instructed contracting agency to place material on wooden platform and to cover the material with tarpaulin to avoid the rusting	Not complied
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4	HDPE materials stored at kodi OHT site	 <p>Latitude: 13.628488 Longitude: 74.673892 Accuracy: 500.0m Time: 06-23-2020 14:01 Note: At Kodi beach kundapura OHT site</p> <p>Latitude: 13.630494 Longitude: 74.670195 Elevation: 3.72m Accuracy: 3.2m Time: 06-23-2020 14:04 Note: At Kodi beach kundapura OHT site</p>	Instructed contracting agency to place properly HDPE role one on one, to provide sign board and to soft barricade the hdpe surrounding area	Not complied
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5	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not complied
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6	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>	<p>Not complied</p>
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7	Toilet is not properly maintained at OHT Halekote, Kundapura	 <p>Latitude: 13.638331 Longitude: 74.703162 Accuracy: 2100.0m Time: 06-23-2020 14:22 Note: At halekote kundapura OHT site</p> <p>Powered by Notes app</p>	Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied
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8	Scrape materials stored at Halekote area.	 <p>Latitude: 13.635577 Longitude: 74.704435 Elevation: 10.4m Accuracy: 3.2m Time: 06-23-2020 14:23 Note: At halekote kundapura OHT site</p> <p>Latitude: 13.6354 Longitude: 74.704139 Elevation: 17.33m Accuracy: 3.2m Time: 06-23-2020 14:27 Note: At halekote kundapura OHT site</p>	Instructed contracting agency to remove all scrape materials and sand, aggregates from OHT site.	Not complied
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ANNEXURE -3

Status of site observations Visited on Aug 13th 2020

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

ANNEXURE -3		Status of site observations Visited on Aug 13th 2020		
S.No	Observation		Recommendation	Status
a	Material storage at kodi OHT, Kundapura	 	<p>Instructed contractor agency to dispose all loose earth stored to dumping yard</p> <p>Material at kodi OHT site were properly stored and bunded</p>	<p>Partially complied</p> <p>Partially complied</p>

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
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C	Housekeeping at Kodi OHT Site , Kundapura	 	Instructed contractor agency to remove all material covers, cardboard boxes stored at Kodi OHT Store yard and also steel rods to keep in proper places and to maintain proper housekeeping near store and site	Partially complied
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d	One side of the Clariflocculator Ja pti 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
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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
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f	Housekeeping at OHT Site, Halekote				Instructed contractor agency maintain proper housekeeping at site and to keep valves and others important materials in store room instead of keeping outside in rain	Not complied
						

g	OHT Halkote work site	 <p>Latitude: 13.635485 Longitude: 74.704272 Elevation: 9.07m Accuracy: 4.3m Time: 02/27/2020 16:02 Note: OHT Halkote site, Kundapura</p>	Hard barricading by sheetmust be provided so that residential staying nearby and animals should not enter into the OHT site during work	Not complied
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H	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly	Not complied
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I	Store room at kodi beach	 <p>Latitude: 13.62853 Longitude: 74.670233 Accuracy: 2500.0m Time: 08-13-2020 14:27 Note: At Kodi OHT site, kundapur</p> <p>Powered by Note</p>	Instructed contractors to provide proper door for storing OHT and pipe work materials	Not complied
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Monthly Environmental Monitoring Report

Project Number: 43253-027
September 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



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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 was built 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 25 km² with two sewerage districts 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 km² 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 km². Overall 60% of Mangalore, 75.60 km², 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, and 22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km². West district consists of 6 zones (city center of Mangalore) covers 30.82 km². South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km². East district consists of 1 zone (Pachanady, Bondel and Shakatinagara) covers 18.78 km².

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	12°87'N Latitude 74°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	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes
Total Number of Manholes	8000
Total Number of Wet Wells	8
Total area covered	25 km ²
Designed Population	2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network	245 km
Total Number of Manholes	8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments	24
Underground drainage Network	360 km - diameter varying from 150 mm to 900 mm
Total Number of Manholes	14,815
Total Number of Wet Wells	22
Total Area Covered	70%
Designed Population	624,432
Capacity and Technology of STP	
• STP at Kavour	43.5 MLD UASB
• STP at Pachanady	8.75 MLD ASP
• STP at Bajal	20 MLDASP
• STP at Surathkal	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, km² = 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 choked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

- 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavour sewage treatment plant (STP);
- 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
- 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
- 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 from wet wells to the STP. Table 2 shows the nature and size of the various components of the subproject, based on the detailed engineering design of the subproject. Figure 1 shows the location of four proposed pumping main sections in Mangalore City.

Figure 1 Key Plan Showing Pumping Main Alignments

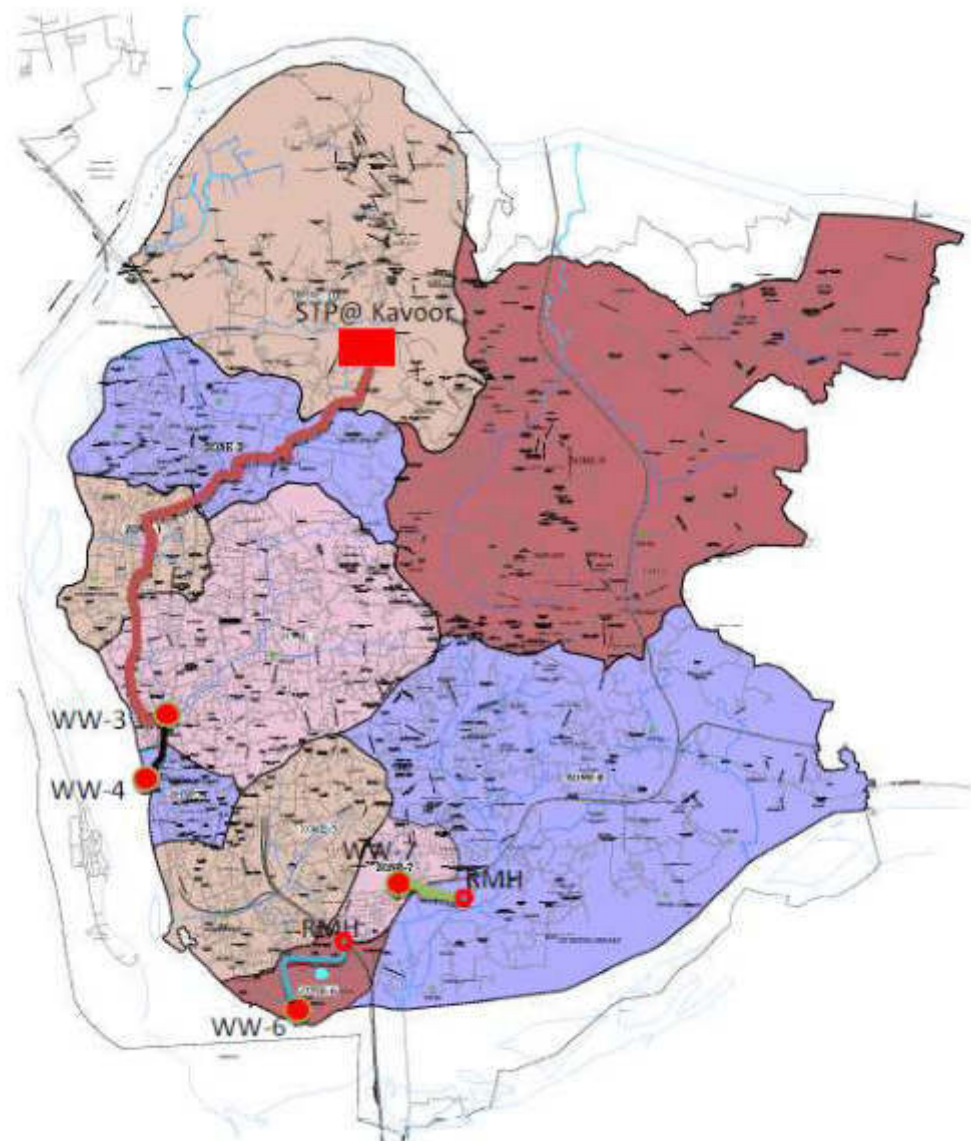


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	<p>Replacement of old pumping main of total length 11.4 km with new mains of ductile iron pipes at following section:</p> <ul style="list-style-type: none"> (i) From Kudroli wet 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: 0.95 km length and 900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate: 1.7 km length and 450 mm diameter (iv) From Jeppu Bappal wet well 7 to Ridge manhole near Yekkur, inside old STP: 1.1 km length and 450 mm diameter 	<p>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:</p> <p>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.</p>

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: 22/09/2020	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	<ul style="list-style-type: none"> Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and Occupational hazards which can occur to workers and public during work. 	<p>Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following:</p> <ol style="list-style-type: none"> Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; Details of materials at each site (type and quantity); 	Construction Contractor	<ul style="list-style-type: none"> 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	<ol style="list-style-type: none"> Maintaining daily work records Attached in Jan 2020 annexure 5 a & b Complied. Attached in Sep 2019 annexure 3 Complied and PPEs are provided to workers on site. Attached in annexure Sep 2019 1.v Contractor maintained registers for

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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.);</p> <p>6. Construction waste/debris generated (details and quantity);</p> <p>7. Detail the sequence of work process (step-by- step) including specific details of each work;</p> <p>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.</p> <p>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</p>				<p>pumping main sites and recommended to maintain for each site</p> <p>5. Work stopped due to rain. Building and infrastructure were not found near excavation area. And instructed contracting agency to put hard barricades.</p> <p>6. Contractor maintained register for damaged infrastructure. Attached as Annexure-11 in May - 2019 report. Recommended contracting agency to Updated work record monthly</p> <p>7. Not complied. Work plan has to be prepared.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains.</p> <p>The following should be included in the site layout plan:</p> <ul style="list-style-type: none"> 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). 				<p>8. Not Complied. First aider not provided.</p> <p>9. Typical site layout plan not prepared</p> <p>a) Work stopped due to rain..</p> <p>b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU.</p> <p>c) Contractor is dumping surplus soil in the Pachanady Solid waste management.</p> <p>d) Complied.</p> <p>e) Site layout plan Not prepared as per given mitigation Measures.</p>

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)	<p>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;</p> <p>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</p> <p>12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)</p>	Construction Contractor and PIU	<p>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</p> <p>Record to confirm that contingency services are provided and all damaged utilities are restored after the work</p>	Part of project cost	<p>10 Complied-Recommended Contractor to maintain list of utilities identified prior to start of work at any section.</p> <p>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</p> <p>12 Recommended contractors to provide diversion of drains and provision of water tanker whenever and wherever</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>13. Coordinate with the respective department and ensure that electricity and telephone services are restored quickly</p> <p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p>				<p>required on site.</p> <p>13 Work stopped due to rain. Instructed contractors to restore such damages in same condition as before.</p> <p>14 Work stopped due to rain. Instructed contractors to restore such damages in same condition as before.</p> <p>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.</p>
Construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>15. Prioritize areas within or nearest possible vacant space in the subproject location;</p> <p>16. Avoid locating construction work camps close (100 m away) to residential areas;</p>	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	<p>15 Compiled</p> <p>16 Compiled – Advised contractor to mark dumping</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>17. Do not consider residential areas; for stockpiling the waste/surplus soil; and</p> <p>18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.</p>		Complaints from sensitive receptors		<p>yard location on google map which is complied. Attached in Sep 2019annexure 4</p> <p>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</p> <p>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</p>

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	<p>19. Contractor should obtain material from existing mines approved/licensed by Mines and Geology Department/ Revenue Department only;</p> <p>20. Verify suitability of all material sources and obtain approval of implementing agency;</p> <p>21. No new quarry sites shall be developed for the subproject purpose; and</p> <p>22. Submit a monthly statement of construction material procured indicating material type, source and quantity.</p>	Construction Contractor	Check Sources and approval	Good construction practice to be followed by contractor –no additional costs	<p>19 Contractor obtained material from authorised agency but no supporting documents maintained by Contractor.</p> <p>20 Contractor has been recommended to maintain the Proper Documentation.</p> <p>21 Complied - No new quarry sites developed by contractor for this project</p> <p>22 Complied</p>
Air quality	Dust and emissions from construction activity may de-grade the air quality	<p>23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>24. Damp down exposed soil and any stockpiled on site by spraying with water when</p>	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)	<p>Good construction practice to be followed by contractor</p> <p>Contractor's cost – air quality monitoring (4 locations x 9 samples</p>	<p>23 Complied- Recommended contractor to maintain the copy of Document.</p> <p>24 No such exposed soil and</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>necessary during dry weather;</p> <p>25. Bring materials (aggregates, sand, etc. gravel) as and when required;</p> <p>26. Use tarpaulins to cover sand and other loose material when transported by vehicles;</p> <p>27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation</p> <p>28. Clean wheels and undercarriage of vehicles prior to leaving construction site;</p> <p>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</p>			in construction x 5000 = INR 1,80,000)	<p>stockpiled were found but instructed contracting agency must spray water wherever necessary.</p> <p>25 Complied</p> <p>26 Instructed contractors to cover sand, gravel and aggregates with tarpaulins to avoid flow during rainy season</p> <p>27 Complied. Stockpile, sand and other loose material are kept in barricaded areas.</p> <p>28 Complied</p> <p>29 Not Complied.</p> <p>Recommended to Contractor to maintain Pollution under Control (PUC) Certificates for</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		30. Carry out air quality monitoring.				all vehicles and equipments used in the 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. Instructed contractors to conduct all three tests quarterly.
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	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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>chiselling;</p> <p>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</p> <p>35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles</p>				<p>sensitive buildings observed.</p> <p>34 However; noise will be minimized by using construction equipment by using vehicle silencers.</p> <p>Recommended to fit jackhammers with noise-reducing mufflers, and portable street barriers at sensitive receptors.</p> <p>35 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter</p> <p>Instructed contractors to conduct all three</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation tests quarterly.
Water Quality	Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	<p>36. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</p> <p>37. Stockpiles shall be provided with temporary bunds;</p> <p>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;</p> <p>39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should</p>	Construction Contractor	Site observations	Good construction practice to be followed by contractor –no additional costs	<p>36 Contractor not carried out Major Construction works during monsoon season. Stockpiling of earth fill not observed during site visit.</p> <p>37 Work was stopped due to rain and no such stockpiles found on work site.</p> <p>38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant</p> <p>39 NA - Surface water bodies not observed along the Project alignment.</p> <p>40 Complied. Contractor not using fuels and lubricants in</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		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 is not blocked / disturbed during the work				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 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	Construction Contractor	Work site inspection Complaints from public	Good construction practice to be followed by contractor – no additional costs	43 Complied 44 Compiled-disposed in the Pachanady Solid waste management

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>or disposal in landfill</p> <p>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;</p> <p>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;</p> <p>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</p> <p>48. Recover used oil and lubricants and reuse or remove from the sites;</p> <p>49. Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>50. Request program implementation unit (PIU)/ project management, design and construction supervision consultant (PMDSC) to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.</p>				<p>treatment plant</p> <p>45 No such activities observed at the time of inspection</p> <p>46 Partially Complied-Waste Management Plan prepared by contractor needs to be updated.</p> <p>47 Complied Followed by contracting agency</p> <p>48 Complied</p> <p>49 Complied</p> <p>50 Construction phase work is in progress.</p>
Construction	Hindrance to traffic	51. Plan pipeline work in	Construction	Work Program Review	Good construction	51 Traffic

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
works	movement / accessibility	<p>consultation with the traffic police; Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8.</p> <p>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</p> <p>53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement;</p> <p>54. Do not close the road completely, ensure that work is conducted onto edge of the road; allow traffic to move on one line;</p> <p>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.</p> <p>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</p>	Contractor		practice to be followed	<p>Management Plan prepared by Contractor and it needs to be updated again.</p> <p>52 Complied</p> <p>53 Complied.</p> <p>54 Complied.</p> <p>55 Complied. (Attached in june 2019)</p> <p>56 Complied.</p> <p>And work is carried out in low traffic hours in day time and; prior information given</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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</p> <p>57. Maintain safe pedestrian access at all times to the houses along the work site</p> <p>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.</p> <p>59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken.</p> <p>60. Hard barricades should be mandatorily provided along with caution board and traffic diversion boards. Some of the</p>				<p>about the schedule of the work.</p> <p>57 Complied (Attached in June 2019) and</p> <p>58 Work stopped due to rain. but instructed to provide Caution board at work site if work starts. Entry 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)</p> <p>59 Respective Engineers present on the site for continuous monitoring</p> <p>60 Traffic diversion</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		densely populated area identified in project area are Old Port Road, Jeppubappal to Suterpete				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 of such place)	<p>61. No material should be stocked in this area; material shall be brought to the site as and when required</p> <p>62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles</p> <p>63. No work should be conducted near the religious places during religious congregations</p> <p>64. Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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,</p>	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no additional costs	<p>61 Complied</p> <p>Followed by contracting agency</p> <p>62 Complied</p> <p>Followed by contracting agency</p> <p>63 Followed by contracting agency</p> <p>64 Complied</p> <p>Followed by contracting agency</p> <p>65 Complied – Recommended to maintain documentary</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		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.				Evidence
Socio-Economic-Livelihood Impediment of access to houses and business	Impediment of access to houses and business	<p>66. Leave space for access between mounds of excavated soil, where required</p> <p>67. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required.</p> <p>68. Consult affected business people to inform them in advance when work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p>	Construction Contractor	<ul style="list-style-type: none"> • 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	<p>66 Complied.</p> <p>67 Complied – access provided by contractor. (Attached in june 2019)</p> <p>68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work.</p> <p>69 Complied implementation</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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</p> <p>71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p> <p>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.</p>				<p>Resettlement Plan to address these issues in progress (Attached in June 2019)</p> <p>70 Complied - Traffic diversion boards, Hard barricading and Caution boards provided(Attached in June 2019) Work schedule not provided.</p> <p>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)</p> <p>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)</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
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	<p>74. Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> (a) excluding public from the 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; <p>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;</p> <p>76. Take all necessary precaution during isolation and blocking of existing pumping main and connecting the new main to the</p>	Construction Contractor	<p>Site specific OHSEquipped first aid station.</p> <p>Potable watersupply andclean eating area.</p> <p>PPE and medical insurance</p>	Good construction practice to be followed by contractor – no additional costs	<p>74 Complied Site-specific Health and Safety (H&S) Plan prepared by contractor. Proper implementation required.</p> <p>75 Not Complied.</p> <p>76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided.(Attac</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>existing system. Skilled supervision, appropriate apparatus and PPEs must be used;</p> <p>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 hazardous working conditions</p> <p>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;</p> <p>79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use;</p> <p>80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>81. Provide medical insurance coverage for workers;</p>				<p>hed Sep 2019 in annexure 1.v)</p> <p>77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are provided</p> <p>78 Complied</p> <p>79 Oxygen masks for emergency not provided PPEs are provided</p> <p>80 Not Complied</p> <p>81 Employees Compensation Insurances</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>82. Secure all installations from unauthorized intrusion and accident risks;</p> <p>83. Provide supplies of potable drinking water;</p> <p>84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>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;</p> <p>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;</p> <p>87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p>				<p>taken for 40 Unskilled and for 10 semiskilled workers</p> <p>82 Complied.</p> <p>83 Complied.</p> <p>84 Specific eating area not provided.</p> <p>85 Safety and Tool box meeting conducted. (Attached in Sep 2019 annexure 1.u)</p> <p>86 Not Complied</p> <p>87 Complied.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>88. Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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.</p> <p>90. 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;</p> <p>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</p> <p>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).</p>				<p>88 Compiled</p> <p>89 Not Complied.</p> <p>90 Signage are Provided but not in accordance with international standards</p> <p>91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. (Attached in Sep 2019 annexure 1.v)</p> <p>92. Not Complied</p>
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	Construction Contractor	<ul style="list-style-type: none"> Traffic Management Plan Complaints from public 	Good construction practice to be followed by contractor – no	93 Traffic Management Plan submitted by contractor is not sufficient

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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;</p> <p>94. Plan material and waste routes to avoid times of peak-pedestrian activities;</p> <p>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;</p> <p>96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and</p>			additional costs	<p>and it needs updation.</p> <p>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.</p> <p>94 Partially Complied – waste management plan not prepared</p> <p>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.</p> <p>96 Partially Complied</p> <p>97 Complied Followed by contracting agency</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		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).				98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as
Worker Camps	Temporary worker camps	<p>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:</p> <p>100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site;</p> <p>101 Minimize removal of vegetation and disallow cutting of trees;</p> <p>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.</p> <p>103 The roof height of the worker's</p>	Construction Contractor	<p>List of selected sites. Written consent of land owner</p> <p>Waste Management plan</p>	Good construction practice to be followed by contractor – no additional costs	<p>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 on site and in their camps</p> <p>100 Complied.</p> <p>101 Complied.</p> <p>102 Proper Kitchen, bathrooms garbage room yet to be provided.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>and labour camp shall not be less than 3 m from floor level to the lowest part of the roof.</p> <p>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 regulation, whichever is higher.</p> <p>105 Fire and electrical safety precautions shall be adhered to.</p> <p>106 Cooking, sanitation and washing areas shall be provided separately.</p> <p>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.</p> <p>108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.</p> <p>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.</p> <p>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</p>				<p>103 Complied.</p> <p>104 Not Complied</p> <p>105. Not Complied.</p> <p>106. Not Complied Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms.</p> <p>107. Partially Complied</p> <p>108. Such depressions not found during site visit</p> <p>109. Not complied.</p> <p>110. Complied.</p>

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

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 to conduct HIV AIDS Awareness Training programme and H and S Training to workers at site. Contracting agency has not submitted **April, June, July, August and September 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	<ul style="list-style-type: none"> 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;	<p>Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety)</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Type of waste generated (Solid and Hazardous) Quantity of different waste generated at site List and type of garbage bins provided 	Comply with in 15 days

		<ul style="list-style-type: none"> • 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 Solid Waste (Handling and Management) Rules, 2016. 	
5.	Complaints from sensitive receptors and public.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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, SO _x , NO _x)	<ul style="list-style-type: none"> • During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory 	<p>Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter</p> <p>And instructed contractors to do quarterly but contracting agency not done all monitoring tests.</p>

11.	Site observations	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory 	<p>Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.</p> <p>And instructed contractors to do quarterly but contracting agency not done all monitoring tests.</p>
13.	Work Program Review	<ul style="list-style-type: none"> Work plan must be prepared and review 	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	<ul style="list-style-type: none"> 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	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 	<p>Spoil Management Plan submitted – not adequate</p> <p>Comply with in 5 days</p>
16.	Traffic Management plan		<p>Traffic Management Plan submitted – not adequate and recommended the contractor to update the same and submit</p> <p>Comply with in 5 days</p>
17.	Employment Records Compliance to labour laws	<ul style="list-style-type: none"> Attendance registers of labour at each site. Register of payment to the workers at each site. 	<p>Attendance register is maintained. but Register of payment to the workers Not maintained Comply with in 5 days</p>
18.	Site specific OHS Equipped first aid station	<ul style="list-style-type: none"> 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. 	<p>Comply with in 10 days</p> <p>(when work is in progress all this facilities must be provided)</p>

		<ul style="list-style-type: none"> 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. <p>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.</p>	
19.	Potable water supply and clean eating area.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Daily Contractor as to provide awareness to all office staffs and site workers to follow H& S measures of COVID-19 	<p>Not Complied.</p> <p>Comply with in 3 days</p>

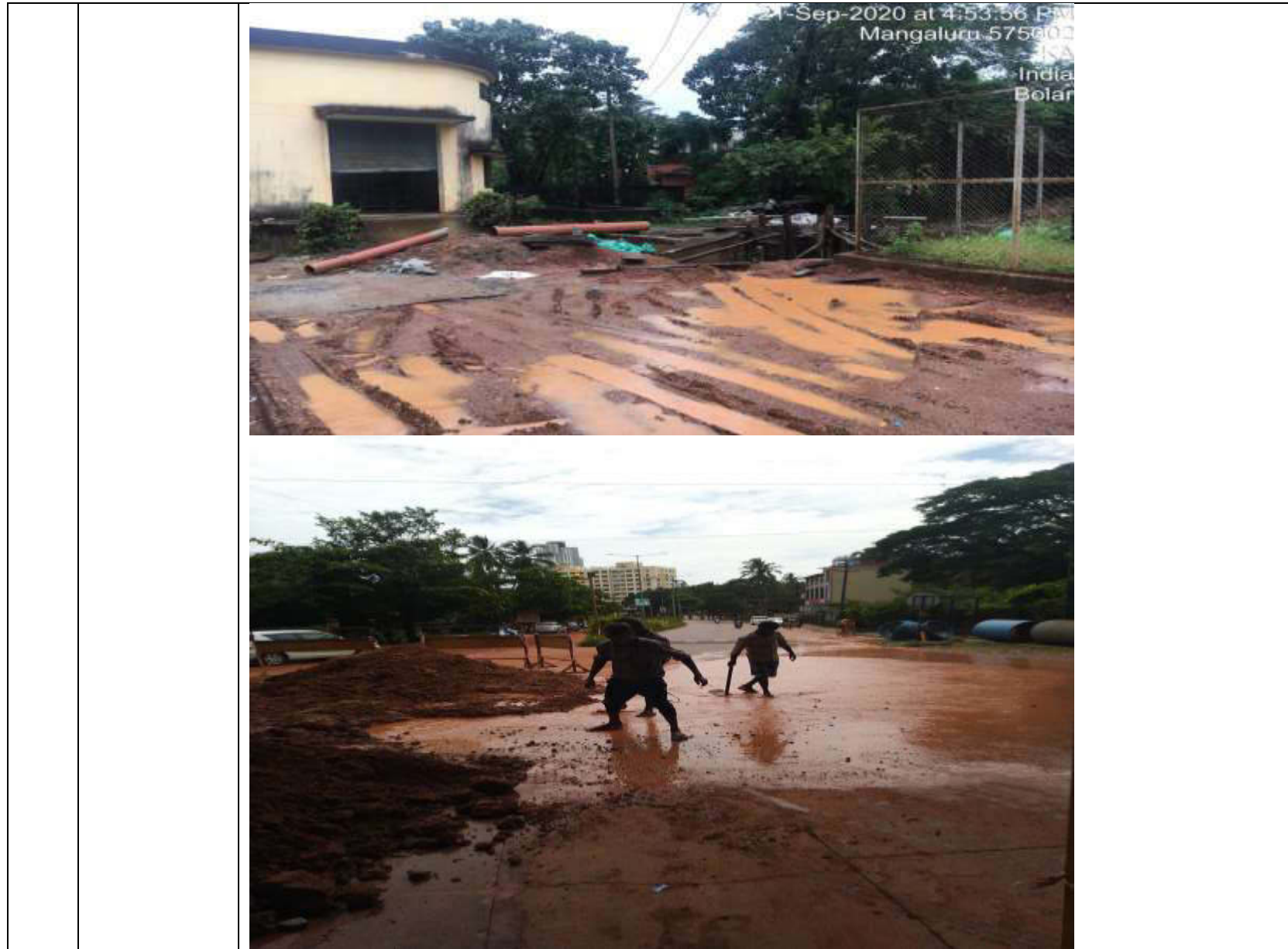


Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

Annexure -1

Site Observations for the month of 22nd September 2020

S.No	Observation		Recommendation
a	Barricadding and sign boards at mulihitlu well valve chamber construction		<p>Instructed contractor agency to provide hard baricattion around the excavated area</p> <p>Instructed to provide PPEs for workers at working site and to provide water can to the labours at work site.</p>



b	Open trenches and earth stocked at work site		<p>Instructed contracting agency to fill earth immediately after pipe laying and excess earth should not be stocked at site and must dumped in dumping yard</p> <p>Drinking Water facility should be provided to workers at all site</p>
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c	One toilet was found damaged		Repair the Toilet
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d	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
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e	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard
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f	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.
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Annexure -2

Status of Site Observations for the month of 24th June 2020

S.No	Observation		Recommendation	Status
a	PPEs for workers at work locations	 	<p>All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site</p> <p>Instructed contractors to provided PPEs to all worker at site</p> <p>Drinking Water facility should be provided to workers at all site</p>	Partially Complied

b	Sign boards and hard barricading at work site		<p>Road restoration Work in progress sign board should be kept and hard barricading must be done during road loose earth filling or cement concreting work to avoid public entrance to carry safe work</p> <p>Flag mans should be kept on either side of the road if JCB, road roller are being used</p>	Partially Complied
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d	One toilet was found damaged		Repair the Toilet	Not Complied
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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
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f	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not Complied
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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.	Not Complied
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Annexure -3

Status of site observations for the month of 20th August 2020

S.N o	Observation		Recommendation	Status
a	Proper hard barricading and Cautionary Sign. information	 	<p>Hard Barricading is to be done at Mulihitlu valve chamber work site</p> <p>Instructed contracting agency to put hard barricading all around the excavated area to avoid human and animal fall.</p>	Partially complied

b	PPEs at work locations		<p>Instructed to provide PPEs at all work site</p> <p>Drinking water must be provided at all working locations for workers</p> <p>One mobil toilet should be provided site site</p>	Partially complied
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d	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Not complied
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e	Gas stove is being used for cooking food	 	<p>Gas cylinder is to be provided for cooking</p> <p>Kitchen must be separate for cooking</p> <p>Lose electrical cables or boards must be replaced to avoid from electric shocks</p>	Not complied
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f	Material stocks at shaktinagara locations		<p>Proper sign board in frame with stand should be at site</p> <p>And soft barricading should be done for every stocked materials</p>	<p>Pipes are used for execution purpose but instructed to do barricading if pipes stocked again</p>
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g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not complied
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i	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied
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Monthly Environmental Monitoring Report

Project Number: 43253-027
September 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



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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 Nekkilady 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

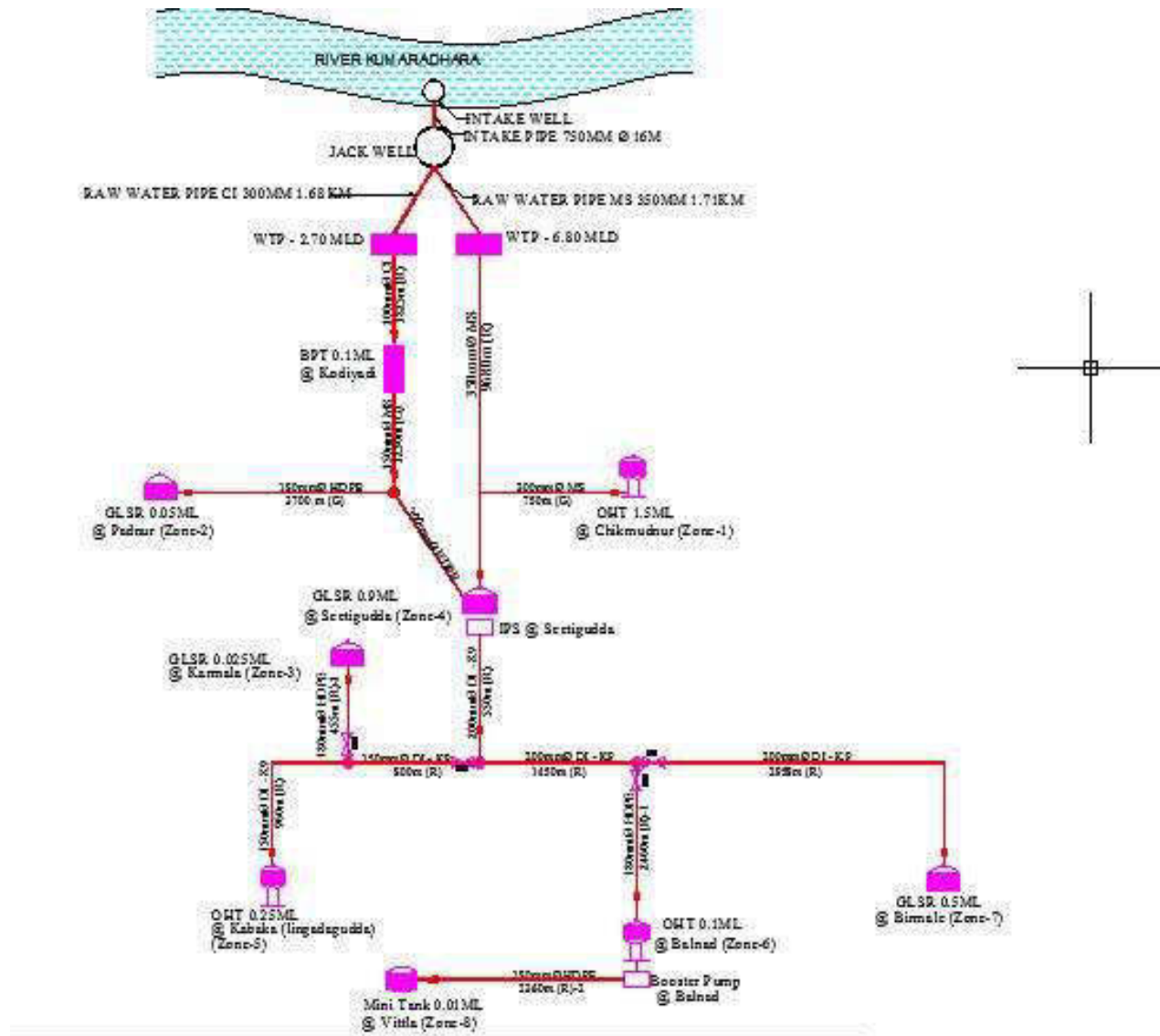


Table 1: Proposed Components for 24x7 Water Supply System

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
Water service reservoirs	Water storage for supply	<p>DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km</p> <p>Six OHTs and two GLSRs of RCC including compound walls at the selected sites:</p> <p>OHT 300KL for Zone-2 at Mura Shantinagra, Padnur</p> <p>100KL for Zone-3 at Karmala near Microwave station 600KL for Zone-4A at CTO, Darbe 250KL for Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at, Balnad Kelyadi, Vitla Road1</p> <p>GLSR 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila</p>	<p>OHT Existing within ULB Properties. No non-title users are present at these sites</p> <p>GLSR Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.</p>
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	<p>Intermediate pumping station at Tenkila Pump capacities: 65m³/h and 85 m head for zone 3 and 5 (1+1) 82 m³/h and 33 m head for zone 4A, (1+1) 119 m³/h and 100 m head for zone 6, 6A and 7, (1+1)</p> <p>Booster pumping station at Balnad Pump capacity 11 m³/h and 80 m head (1+1)</p>	<p>Pumping station will be located within Tenkila GLSR site</p> <p>Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad</p>
Distribution system	Supply of water from service reservoirs to consumers	<p>142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes)</p> <p>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</p>	<p>In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW</p>

	250 mm – 0.362 km	
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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, m³/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: 20/09/2020	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) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	<p>1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and</p> <p>2) appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work</p>	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDSC)	<p>(i) Certificate of Completion (Safeguards Compliance Orientation);</p> <p>(ii) Posting Certification Completion</p> <p>(iii) Posting of EMP at worksites</p>	Cost of EMP Implementation Orientation Training to contractor is Responsibility Other costs Responsibility	<p>1) Spoil management submitted but it needs to be updated</p> <p>2) EHS Engineer appointed</p>

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.	<p>3) Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4) Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dry weather;</p> <p>5) Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dust generation;</p> <p>6) Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>7) Clean wheels and undercarriage of vehicles prior to leaving construction site; and</p> <p>8) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p>	Construction Contractor	<p>(i) Location of stockpiles;</p> <p>(ii) Complaints from sensitive receptors;</p> <p>(iii) Heavy equipment and machinery with air pollution</p> <p>(iv) Certification that vehicles are compliant with Air Act.</p>	Cost for implementation of mitigation measures responsibility	<p>3) Complied</p> <p>4) Pipe execution work is not in progress due to rain but OHT construction under progress. And instructed contracting agency to remove stock piled at work site and to spray water at commercial and residential areas if stock piled on-site to avoid dust generation.</p> <p>5) Not complied</p> <p>6) Not complied. Instructed to cover sand and loose earth with tarpaulins is transported</p> <p>7) Complied</p> <p>8) Complied</p>
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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.	<p>9) Prepare and implement a spoils management plan as the part of the Construction Management Plan;</p> <p>10) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</p> <p>11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>12) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;</p>	Construction Contractor	<p>(i) Areas for stockpiles, storage of fuels and lubricants and waste materials;</p> <p>(ii) Number of silt traps installed along trenches leading to water bodies;</p> <p>(iii) Records of surface water</p> <p>(iv) Effectiveness of water management measures; and</p> <p>(v) No visible degradation to nearby drainages, nallahs or water bodies due to civil works.</p>	Cost for implementation of mitigation measures responsibility	<p>9) Spoil management plan is submitted during preconstruction stage. Updation is to be done for construction stage</p> <p>10) Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season</p> <p>11) No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found</p> <p>12) Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity</p>
		<p>13) Dispose any wastes generated by installation of pipeline in designated sites; and</p> <p>14) Conduct surface quality inspection according to the Environmental Management Plan (EMP).</p>				<p>13) Complied</p> <p>14) Not complied</p>

Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<p>15) Plan activities in consultation with PIU/PMD/CSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance;</p> <p>16) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p> <p>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 sensitive receptor;</p> <p>18) Properly enclose the dismantling area with temporary noise barriers; and</p> <p>19) Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s.</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Use of silencers in noise-producing equipment and sound barriers; and</p> <p>(iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).</p>	Cost for implementation of mitigation measures responsibility	<p>15) Complied</p> <p>16) Complied</p> <p>17) Complied</p> <p>18) Complied</p> <p>19) Complied</p>
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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, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	<p>20) Prepare and implement spoils management plan;</p> <p>21) Avoid stockpiling of excess excavated soils;</p> <p>22) Coordinate with Puttur CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p> <p>23) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>24) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>25) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>26) Request PIU/PMD CSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work. C&D materials after dismantling of the old WTP and old GLSR shall be managed as per C&D Rules 2016,</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel; and Worksite clear of any excess excavated earth, and solid waste such as removed concrete, wood, packaging materials, empty containers.</p>	Cost for implementation of mitigation measures responsibility	<p>20) Spoil management plan is prepared (attached in annexure 3a July 2019 but updation is to be done) and contractor agency following and found no surplus soil found in sites</p> <p>21) Complied</p> <p>22) Complied (attached in annexure 4 September 2019)</p> <p>23) Used oil and lubricants not generated on site</p> <p>24) Complied (attached in annexure 4 september 2019)</p> <p>25) Complied</p> <p>26) Pipe execution work is not in progress due to rain but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>
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Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<p>27) Obtain from PIU/PMDcsc the list of affected utilities and operators if any;</p> <p>28) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service; and</p> <p>29) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p>	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility	<p>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.</p> <p>28) Not complied</p> <p>29) Complied</p>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<p>30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented;</p> <p>(a) Minimize removal of vegetation and disallow cutting of trees;</p>	Construction Contractor	PMU/PMDcsc to report in writing the no of trees cut and planted.	Cost for implementation of mitigation measures responsibility	<p>30) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p>
		<p>b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department; and</p> <p>c) Plant two native trees for every one that is removed.</p>				<p>b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>c) Instructed contracting agency</p>

Accessibility	Traffic problems and conflicts near project locations and haul road	<p>31) Traffic Management Plan (TMP) should be part of the Construction Management Plan.</p> <p>a) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>b) Schedule transport and hauling activities during non-peak hours;</p> <p>c) Locate entry and exit points in areas where there is low potential for traffic congestion;</p> <p>d) Keep the site free from all unnecessary obstructions;</p> <p>e) Drive vehicles in a considerate manner;</p> <p>f) Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours;</p> <p>g) Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints;</p> <p>h) Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum; and</p> <p>i) Provide pedestrian access in all the locations until normalcy is restored.</p>	Construction Contractor	<p>(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12);</p> <p>(ii) Complaints from sensitive receptors; and</p> <p>(iii) Number of signages placed at project location.</p>	Cost for implementation of mitigation measures responsibility	<p>31) Traffic Management Plan is prepared by contracting agency (attached in annexure 3b July 2019 but updation is to be done)</p> <p>a) Not complied. Instructed to prepare plan</p> <p>b) Complied</p> <p>c) Complied</p> <p>d) Complied</p> <p>e) Complied</p> <p>f) Pipe execution work is not in progress due to rain. But instructed contracting agency to inform traffic department for temporary road diversion before two days start of the work.</p> <p>g) Complied</p> <p>h) Complied</p> <p>i) Pipe execution work is not in progress due to rain. But instructed contracting agency to provide pedestrian wherever required</p>
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Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	32) Prepare and implement spoils management plan; 33) Leave spaces for access between mounds of soil; 34) Provide walkways and metal sheets where required for people; 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 sensitive receptors; (ii) Spoils management plan; and (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility	32) Spoil management plan is prepared (attached in annexure 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 for implementation 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 during work	<p>40) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE);</p> <p>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:</p> <p>(a) excluding public from the site; (b) ensuring all workers are provided with and use</p>	Construction Contractor	<p>(i) Site-specific OHS Plan;</p> <p>(ii) Equipped first-aid stations;</p> <p>(iii) Medical insurance coverage for workers;</p> <p>(iv) Number of accidents;</p> <p>(v) Supplies of potable drinking water;</p>	Cost for implementation of mitigation measures responsibility	<p>40) Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor.</p> <p>41) Contractor following Company EHS Policy-PPE'S provided by Contractor.</p> <p>a) Complied</p> <p>b) Complied. PPE'S provided by Contractor to workers and tool box training provided at site.</p>
		<p>personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs;</p> <p>(c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;</p> <p>42) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>43) Provide medical insurance coverage for workers;</p> <p>44) Secure all installations from unauthorized intrusion and accident risks;</p> <p>45) Provide supplies of potable drinking water;</p> <p>46) Provide clean eating areas where workers are not exposed to hazardous or</p>		<p>(vi) Clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) record of health and safety orientation trainings;</p> <p>(viii) personal protective equipment;</p> <p>(ix) % of moving equipment outfitted with audible back-up alarms;</p> <p>(x) permanent sign boards for hazardous areas such as</p>		<p>c) Complied</p> <p>d) Not complied</p> <p>e) Accident and incident register maintained</p> <p>42) Partially Complied. Instructed to keep first-aid box at each working sites separately Annexure-4 in Dec 2019</p> <p>43) Not complied</p> <p>44) Complied</p> <p>45) Complied</p> <p>46) Complied</p>

		<p>noxioussubstances;</p> <p>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;</p> <p>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;</p> <p>49) Ensure the visibility of workers through their use of highvisibility</p>		<p>energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and</p> <p>(xi) Compliance to core labor laws (See Appendix 2 of this IEE).</p>		<p>47) Not complied. Instructed to Provide health and safety orientation training to all workers</p> <p>48) Not complied</p> <p>49) Complied Annexure-1 in dec 2019</p>
		<p>vests when working in or walking through heavy equipment operating areas;</p> <p>50) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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 known to, and easily understood by workers, visitors, and the general public as appropriate; and</p> <p>52) Disallow worker exposure to noise level greater than 85 dBAfor</p>				<p>50) Complied</p> <p>51) Complied</p> <p>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.</p> <p>Recommended Contractor to use hearing protection Measures to workers</p>

		aduration of more than 8 hours per day without the ring protection. 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	<p>53) Plan routes to avoid times of peak-pedestrian activities.</p> <p>54) Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps.</p> <p>55) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.</p> <p>56) Provide road signs and flag persons to warn of on-going trenching activities.</p>	Construction Contractor	(i) Traffic Management Plan; and (ii) Complaints from sensitive receptors.	Cost for implementation of mitigation measures responsibility	<p>53) Not complied And instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and to office staffs</p> <p>54) Not complied</p> <p>55) Not complied</p> <p>56) Complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation	57) Consult with PIU before locating workers camps/sheds, and construction plants; as far as	Construction Contractor	(i) Complaints from sensitive receptors;	Cost for implementation of mitigation measures	57) Complied Contractor informed to PIU office regarding labor camp construction at mottetadka opposite NCRC but they not having letter from PIU. And also instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and camps

	<p>water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers.</p>	<p>possible located at least 200 m from residential areas;</p> <p>58) Minimize removal of vegetation and disallow cutting of trees;</p> <p>59) Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p>60) The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p>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;</p> <p>62) Provide separate facilities for men and women; sanitary facilities shall be properly built and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;</p> <p>63) Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>64) Recover used oil and lubricants and reuse or remove from the site;</p> <p>65) Manage solid waste</p>	<p>(ii) Drinking water and sanitation facilities for employees.</p>	<p>responsibility</p>	<p>58) Removal of vegetation Minimize by selecting best alignment.</p> <p>59) Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area. And also instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and camps</p> <p>60) Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area.</p> <p>61) Instructed contracting agency to provide drinking water as per the standards at camp</p> <p>62) Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p>63) Instructed contracting agency to provide training of solid and liquid materials handling at camp</p> <p>64) Instructed to contracting agency</p>
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		<p>according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>66) Remove all wreckage, rubbish, or temporary structures which are no longer required;</p> <p>67) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work; and</p> <p>68) The work camp details should be included in the Construction Management Plan.</p>				<p>65) Complied</p> <p>66) Complied</p> <p>67) Construction work is in progress.</p> <p>68) Not complied</p>
Social and Cultural Resources	Risk of archaeological chance finds	<p>69) Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>70) Stop work immediately if any finds are suspected to allow further investigation;</p> <p>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</p> <p>72) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility	<p>69) Till now no such suspected items found nor recorded</p> <p>70) Till now no such suspected items found nor recorded</p> <p>71) Till now no such archaeological items recorded</p> <p>72) No such damages recorded during the visit. But instructed to maintain if such damages happens.</p>

Submission of EMP implementation report	Unsatisfactory compliance to EMP	73) Appointment of EHS Engineer to ensure EMP implementation; and 74) 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	73) EHS Engineer appointed 74) Not Complied
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 original condition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to	Cost for implementation 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 utilities restored; 78) All affected structures rehabilitated/compensated; 79) 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; 80) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be topsoiled and regressed using the		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

		<p>guidelines set out in the revegetation specification that forms part of this document;</p> <p>81) The contractor must arrange the cancellation of all temporary services; and</p> <p>82) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>clean surface area free of oil and paints for construction camp</p> <p>80) Not complied</p> <p>81) Not complied</p> <p>82) Construction work is in progress</p>
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Conclusion:-

Construction stage is in progress. Health and safety training 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, March, April, May, June, July, August and September 2020 month** with PIU letter, Puttur. Overall the work in the projects for health and safety needs improvement.

Recommendation:-

Sl.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.	<ul style="list-style-type: none"> Construction status or compliance report 	Contractor has to submit Site specific EMP of January, Feb, March, April, May, June, July, August and September 2020 Month Comply with in 7 days
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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 for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	<ul style="list-style-type: none"> 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 disposal areas.) Before start of Construction work
12	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	<ul style="list-style-type: none"> If any private land is selected NOC from owner has to be taken 	Comply with in 15 days
13	List of selected sites for disposal	<ul style="list-style-type: none"> 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 quarry Sites and Sources of materials; and		Before start of Construction work
15	Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.		Before start of Construction work
16	Method of statement in table format	<ul style="list-style-type: none"> As mention in mitigation measures 	Comply with in 10 days
17	Spoil Management Plan	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 update plan 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 3b August 2019 report but updation is to be done and informed contractors to update plan 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 update plan once construction phase starts Comply with in 7 days
20	Site specific OHS Plan	<ul style="list-style-type: none"> 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. <p>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.</p>	Comply with in 7 days
21	Equivalent day and night time noise levels	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>Partially Complied.</p> <p>Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors</p> <p>Instructed contractors to conduct noise test every quarterly.</p> <p>Comply with in 10 days</p>
22	Records of Air quality inspection	<ul style="list-style-type: none"> 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 	<p>Complied. Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors</p> <p>Instructed contractors to conduct Air monitoring test every quarterly.</p>

			Comply with in 10 days
23	H & S Plan for COVID-19 implementation	<ul style="list-style-type: none"> 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. H & S plan is to be prepared by contractors Comply with in 3 days



Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1


Site Visit on 20th September 2020

1	PPEs provided at work site.	 <p>Latitude: 12.756583 Longitude: 75.172088 Elevation: 323.41 m Accuracy: 1.7 m Time: 09-05-2020 15:19 Note: Kalyadi Column above 1st bracing beam concreting</p>  <p>Latitude: 12.78099 Longitude: 75.177867 Elevation: 231.71 m Accuracy: 2.4 m Time: 09-07-2020 11:45 Note: 75mm Hdpe laying in zone 2 at Padnur</p>	<p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p> <p>Labour attendance register, labour wages register, grievance redresal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>
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2	Excavated trench for pipe laying, puttur		Instructed contractors to close the open trench immediately after pipe laying in rainy season. And to provide soft barricading and sign boards near open trench to avoid accidents
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3	Bunding of materials at all OHT sites,Puttur		Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope
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4	Scrap, steel rods and materials storage at all OHT work sites,Puttur	 <p>Latitude: 12.756568 Longitude: 75.172308 Elevation: 419.46 m Accuracy: 1.8 m Time: 09-21-2020 16:25 Note: Kelyadi OHT</p> <p>Powered by NoteCam</p>	Instructed contracting agency to avoid scarp steel and other materials storage at works sites
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Annexure-2

Status of Site Visit observations on 25th June 2020

1	PPEs to workers at Nekkeladi WTP work site.		<p>Instructed contracting agency to Project information Board is to be provided both in English and Kannada.</p> <p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Labour attendance register, labour wages register, grievance redresal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>	<p>Not complied</p> <p>Partially complied</p> <p>Partially complied</p> <p>Not complied</p>
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2	Barrication and sign boards at CTO Darbe OHT		Sign boards and soft barricading should be done at work site for public awareness to avoid their entry at work place	Not complied
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3	Project information board at OHT sites	 	Project information board should be present at all work site and should be place at the entrance of the work sites	Not complied
4	Housekeeping at work sites, puttur		Instructed contracting agency to maintain proper housekeeping at work sites. Rods, wooden, sheets should be kept at safe place after its usage to avoid any cuts to works or publics during visits	Not complied

				
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Annexure-3


Status of Site Visit observations on 19th August 2019

1	Project information board and sign boards must be provided at work site.		<p>Provide project information board related to the particular project work and place at entrance of the all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p>	<p>Not complied</p> <p>Partially complied</p>
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3	Bunding materials of		Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope	Not complied
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4	Scrap and materials storage at work locations		Instructed contracting agency to avoid scarp steel and other materials storage at works sites	Not complied
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5	Labour Camp at mottetadka site, puttur	 	<p>Labour camp is properly maintained</p> <p>Toilets are provided to workers</p> <p>Drinking water tap connection provided at the camp</p>	<p>Partially complied</p> <p>Complied</p> <p>Complied</p>
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			<p>Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp</p>	<p>Not complied</p>
			<p>Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases</p>	<p>Partially complied</p>

Monthly Environmental Monitoring Report

Project Number: 43253-027
September 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



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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 15,000 for 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)	<p>7.47 km length 150 mm – 355 mm diameter Ductile Iron Pipes</p> <ul style="list-style-type: none"> □ 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 <p>Mild Steel Pipes</p> <ul style="list-style-type: none"> □ 60 m - 219 mm diameter for zone -7C OHT at Kolambe 	Along the public roads within the road right of way
		<ul style="list-style-type: none"> □ 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 	
2	OHTs	<p>7 OHTs of total storage capacity 5.2 ml</p> <ul style="list-style-type: none"> □ 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	<p>358.16 km pipes of diameter 63 mm to 350 mm High Density Poly Ethylene (HDPE) pipes</p> <ul style="list-style-type: none"> □ 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 <p>DI PIPES:</p> <ul style="list-style-type: none"> □ 150 mm dia - 0.252 km □ 300 mm dia - 10.282 km □ 350 mm dia - 3.098 km 	<p>Pipes will be laid along the public roads within the road right of way.</p> <p>Rider lines will be laid parallel to the existing pipes, and within the road right of way.</p> <p>Pipes will be mostly laid in earthen shoulder to avoid road cuttings</p>
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

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

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: 21-09-2020				Name of Environment, Health And Safety (EHS) Engineer :- Mr.Pradeep Sheety		
Field	Anticipated Impact	Mitigation Measures	Responsible for 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 at work sites	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 oxides, and hydrocarbons .	<p>3) Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</p> <p>5) Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>6) Clean wheels and undercarriage of vehicles prior to leaving construction site</p> <p>7) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p>	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.	<p>3) Complied</p> <p>4) Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site.</p> <p>5) Not complied</p> <p>6) Complied</p> <p>7) Complied</p>
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.	<p>8) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets.</p> <p>9) 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.</p> <p>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).</p> <p>11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies</p>	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water quality inspection; (iv) Effectiveness of water management measures; (v) No visible	Cost for implementation of mitigation measures responsibility of contractor.	<p>8) Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season</p> <p>9) Instructed contracting agency to fill the excavated trenches at all locations before rainy season</p> <p>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</p>

		<p>12) Provide temporary bunds for stockpiles and materials</p> <p>13) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund</p> <p>14) Dispose any wastes generated by construction activities in designated sites.</p> <p>15) Conduct surface quality inspection and monitoring.</p>		<p>degradation to near by drainages, nallahs or water bodies due to civil works</p>		<p>11) No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found</p> <p>12) Not complied</p> <p>13) Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity</p> <p>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</p> <p>15) Not complied</p>
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Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<p>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;</p> <p>17) Construction work shall be limited to day light hours (6 AM to 6PM)</p> <p>18) Provide prior information to the local public about the work schedule;</p> <p>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 by chiseling;</p> <p>20) Minimize noise from construction equipment/pneumatic drills by using silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and</p> <p>21) Maintain maximum sound levels not exceeding 80 decibels (db A) when measured at a distance of 10 m or more from the vehicle/s.</p> <p>22) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>i) Use of silencers in noise-producing equipment and sound barriers;</p> <p>(iii) Equivalent day and night time noise levels (See Appendix 3 of this IEE)</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>16) Complied</p> <p>17) Complied</p> <p>18) Complied</p> <p>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</p> <p>20) Complied</p> <p>21) Complied</p> <p>22) Complied</p>
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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.	<p>23) Prepare and implement spoils management plan</p> <p>24) Avoid stockpiling of excess excavated soils;</p> <p>25) Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p> <p>26) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>27) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>28) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>29) Request PMU/PMDCSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel</p> <p>(iv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>23) Spoil management plan is prepared (attached in annexure 2a august 2019 but updation is to be done).</p> <p>24) No such surplus and stockpiling of soils found in sites</p> <p>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</p> <p>26) Used oil and lubricants not generated on site</p> <p>27) Contracting agency reusing by backfilling and dumping excess solid waste to the designated areas</p> <p>28) Complied</p> <p>29) Instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>
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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	<p>30) Obtain from PIU/PMDCSC the list of affected utilities and operators if any;</p> <p>31) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service</p> <p>32) (iii) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p> <p>33) Plan pipeline work in consultation with the traffic police</p> <p>34) Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;</p> <p>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;</p> <p>36) Schedule transport and hauling activities during non-peak hours;</p> <p>37) Do not close the road completely, allow traffic to move on one line;</p> <p>38) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>39) In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;</p> <p>40) At all work sites public</p>	Construction Contractor Construction Contractor	Existing Utilities Contingency Plan (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. Cost for implementation of mitigation measures responsibility of contractor.	<p>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.</p> <p>31) Not complied</p> <p>32) No accidental breaking of any properties yet recorded but instructed contracting agency to rectify immediately</p> <p>33) Contractor should inform and take permission from traffic police for any pipe line laying/execution on roads.</p> <p>34) Complied</p> <p>35) Instructed to contractor agency to backfill and restore the excavated area immediately to avoid traffic</p> <p>36) Complied</p> <p>37) Complied</p> <p>38) Not Complied</p> <p>39) Instructed contract agency to provide one separate person at site to give route information to public</p> <p>40) Partially complied. Project information board should be both in</p>
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		<p>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.</p> <p>41) Keep the site free from all unnecessary obstructions;</p> <p>42) Drive vehicles in a considerate manner;</p> <p>43) Prepare a Traffic Management Plan –a Template is provided for reference at Appendix 7.</p>				<p>Kannada and English format.</p> <p>41) Complied</p> <p>42) Complied</p> <p>43) Traffic Management Plan is prepared by contracting agency (attached in annexure 2b august 2019 but updation is to be done).</p>
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<p>44) Prepare and implement spoils management plan</p> <p>45) Leave spaces for access between mounds of soil; and Provide walkways and metal sheets where required for people;</p> <p>46) Increase work force in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools;</p> <p>47) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and</p> <p>48) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p>	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.	<p>44) Spoil management plan is prepared (attached in annexure 3c august 2019 but updation is to be done)</p> <p>45) Complied</p> <p>46) Complied</p> <p>47) Complied</p> <p>48) Complied</p>

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.,	<p>brought to the site as and when required.</p> <p>49) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles</p> <p>50) No work should be conducted near the religious places during religious congregations</p> <p>51) Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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</p> <p>53) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly a the sites.</p>		(i) Public complaints	Measures responsibility of contractor.	<p>49) Complied</p> <p>50) Complied and instructed to follow</p> <p>51) Complied and instructed to follow</p> <p>52) Partially complied</p> <p>53) Not complied</p>
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<p>54) Employ local labor force to the maximum extent, if manpower is available;</p> <p>55) Comply with labor laws</p>	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.	<p>54) Register maintained by contractor</p> <p>55) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).</p>
Occupational Health and Safety	Occupational hazards which can arise	56) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE)	Construction Contractor	(i) Site-specific OHS Plan;	Cost for implementation of mitigation measures responsibility of	56) Contractor following Company EHS Policy Site-specific OHS Plan Have to

	during work	<p>57) 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:</p> <p>(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;</p> <p>58) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>59) Provide medical insurance coverage for workers;</p> <p>60) Secure all installations from unauthorized intrusion and accident risks;</p> <p>61) Provide supplies of potable drinking water;</p> <p>62) Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p>	<p>(ii) Equipped first-aid stations;</p> <p>(iii) Medical insurance coverage for workers;</p> <p>(iv) Number of accidents;</p> <p>(v) Supplies of potable drinking water;</p> <p>(vi) Clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) record of health and safety orientation trainings</p> <p>(viii) personal protective equipment;</p> <p>(ix) % of moving equipment outfitted with audible back-up alarms;</p> <p>(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.</p> <p>(xii) Compliance to core labor laws</p>	contractor.	<p>be prepared by Contractor. Instructed contracting agency to provide H&S safety measures about COVID-19 to all worker and employees</p> <p>57) Contractor following Company EHS Policy- PPE'S provided by Contractor.</p> <p>a) Complied</p> <p>b) Complied. PPE'S provided by Contractor to workers</p> <p>c) Complied</p> <p>d) Not complied</p> <p>e) Accident and incident register maintained</p> <p>58) Partially Complied. Instructed to keep first-aid box at each working sites separately</p> <p>59) Not complied</p> <p>60) Complied</p> <p>61) Partially Complied</p> <p>62) Not Complied</p>
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		<p>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 fellow workers;</p> <p>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;</p> <p>65) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>66) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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</p> <p>68) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.</p> <p>69) Overall, the contractor should comply with International Finance Corporation (IFC) EHS</p>		<p>(See appendix 2 of this IEE)</p>		<p>63) Complied. Instructed to Provide health and safety orientation training on COVID-19 on site daily to all workers</p> <p>64) Not complied</p> <p>65) Complied</p> <p>66) Complied</p> <p>67) Complied</p> <p>68) Not complied</p> <p>69) Not complied</p>
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		Guidelines on Occupational Health and Safety				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<p>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</p> <p>71) Plan material and waste routes to avoid times of peak-pedestrian activities</p> <p>72) Liaise with Udupi CMC in identifying risk areas on route cards/maps</p> <p>73) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure</p> <p>74) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads</p> <p>75) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety</p>	Construction Contractor	(i) Traffic Management Plan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	<p>70) Instructed contracting agency to put hard barricading if trenches are more than 1.5m depth</p> <p>71) Not complied</p> <p>72) Not complied</p> <p>73) Not complied</p> <p>74) Complied</p> <p>75) Not complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants	<p>76) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas.</p> <p>77) Minimize removal of vegetation and disallow cutting of trees</p> <p>78) Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge</p>	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.	<p>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</p> <p>77) Removal of vegetation Minimize by selecting best</p>

	Unsanitary and poor living conditions for workers	<p>79) The camp site should be adequately drained to avoid the accumulation of stagnant water</p> <p>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</p> <p>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</p> <p>82) Train employees in the storage and handling of materials which can</p>				<p>alignment.</p> <p>78) Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area and drinking water.</p> <p>79) Instructed contracting agency to built camp in dry and plan area where there is no water logging and must hygienic area.</p> <p>80) Instructed contracting agency to provide drinking water as per the standards at camp</p> <p>81) Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p>82) Instructed contracting agency to provide training of solid and liquid materials handling to the persons at campcare fully to avoid soil contamination</p>
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		<p>potentially cause soil contamination;</p> <p>83) Recover used oil and lubricants and reuse or remove from the site;</p> <p>84) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>85) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>86) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.</p> <p>87) The work camp details should be included in the Construction Management Plan.</p>				<p>83) Instructed to contracting agency to train persons not to spill oil and lubricant and use carefully to avoid soil contamination</p> <p>84) Instructed to contracting agency to follow at camp</p> <p>85) Instructed to contracting agency to follow at camp</p> <p>86) Construction work is in progress</p> <p>87) Not complied</p>
Social and Cultural Resources	Risk of archaeological chance finds	<p>88) Create awareness among the workers and supervisors about the chance finds during excavation work</p> <p>89) Stop work immediately if any finds are suspected to allow further investigation</p> <p>90) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ.</p> <p>91) Adjacent to important religious sites, undertake excavation and Construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	<p>88) Till now no such suspected items found nor recorded</p> <p>89) Till now no such suspected items found nor recorded</p> <p>90) Till now no such archaeological items recorded</p> <p>91) No such damages recorded during the visit. But instructed to maintain if such damages happen.</p>

Submission of EMP implementation report Post-construction clean-up	Unsatisfactory compliance to EMP Damage due to debris, spoils, excess construction materials	<p>92) Appointment of EHS engineer to ensure EMP implementation</p> <p>93) Timely submission of monitoring reports including pictures</p> <p>94) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and</p> <p>95) All excavated roads shall be reinstated to original condition.</p> <p>96) All disrupted utilities restored</p> <p>97) All affected structures rehabilitated/compensated</p> <p>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.</p> <p>99) 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.</p>	Construction contractor Construction Contractor	<p>Availability and competency of appointed EHS engineer</p> <p>Monthly report PMU/PMDSC 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.</p>	<p>Cost for implementation of mitigation measures responsibility of contractor.</p> <p>Cost for implementation of mitigation measures responsibility of contractor.</p>	<p>92) EHS Engineer appointed</p> <p>93) Complied</p> <p>94) Complied</p> <p>95) But instructed to restore road same as it was before damage</p> <p>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</p> <p>97) Till now no structures affected</p> <p>98) Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp</p> <p>99) Not complied</p>
		<p>100) The contractor must arrange the cancellation of all temporary services.</p> <p>101) Request PMU/PMDSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>100) Not complied</p> <p>101) Construction work is in progress</p>

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 as similar to the construction stage table 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.	<ul style="list-style-type: none"> Construction status or complacence report 	Contractor has to submit Site specific 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> If any private land is selected NOC from owner have to be taken 	Comply with in 5days
10.	List of selected sites for disposal	<ul style="list-style-type: none"> 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 of suitability of sources and permit for additional quarry sites if necessary.		Comply with in 5 days

13.	Method of statement in table format	<ul style="list-style-type: none"> As mention in mitigation measures 	Comply with in 10 days
14.	Spoil Management Plan	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 Comply with in 5 days
17.	Site specific OHS Plan	<ul style="list-style-type: none"> 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. <p>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</p>	Comply with in 5 days

		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	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>Complied. Construction test conducted in Jan 2020 and noise report attached as annexure 5 in feb 2020</p> <p>Informed contractor agency to carryout Noise test every quarterly but still not done at site</p> <p>Comply with in 10 days</p>
19.	Records of Air quality inspection	<ul style="list-style-type: none"> 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 	<p>Complied. Construction test conducted in Jan 2020 and air report attached as annexure 5 in feb 2020</p> <p>Informed contractor agency to carryout Air test every quarterly but still not done at site</p> <p>Comply with in 10 days</p>
20.	H & S Plan for COVID-19 implementation	<ul style="list-style-type: none"> Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19 	<p>Complied.</p> <p>Implementation of H & S at work site is done. H & S plan is to be prepared by contractors</p> <p>Comply with in 5 days</p>



Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2


Annexure-1

Site visit observations of 21th September 2020

S.No	Observation		Recommendation
1	Sign board, hard barricading and project information board at santtekatte OHT site		Instructed contractors to provided Sign board, hard barricading around deep excavated area and project information board at the entrance of the all OHT sites

2	PPEs to workers at working site	 <p>Latitude: 13.367372 Longitude: 74.70251 Elevation: 8.37 m Accuracy: 5.0 m Time: 08-09-2020 11:56 Note: HDPE 200mm dia Pipe Laying work in Thottian, Malavalli Zone 9</p> <p>Latitude: 13.359604 Longitude: 74.741255 Elevation: 29.51 m Accuracy: 5.0 m Time: 08-09-2020 12:25 Note: HSC connection at Kodakaveri Sewerage Zone 9</p>	<p>Complied. PPEs are provided to all workers at site</p> <p>Instructed contractors to provide water can at all working site and one mobil toilet for 10 members working in one site</p>
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3	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose
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4	Waste scrape and loose earth at santekatte OHT for work site		Instructed contracting agency to remove all scrap and loose earth material to dumping yard and steel rods should be not use as fencing of the excavated OHT
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5	Barricading and flagman at pipe excavation at main road site	 <p>Land work in Thattai, Malpe</p> <p>Reviewed by Nishu Gao</p>	<p>Instructed contractors to do soft barricading near excavated length</p> <p>Instructed to put two flag mans at both the end of the main road to maintain the traffic</p> <p>Instructed to provide project information board and sign boards at both the ends of the excavated length.</p>
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Annexure 2

Status of Site visit observations of 23th June 2020

S.No	Observation		Recommendation	Status
1	Sign board, hard barricading and project information board at Indrali OHT site	 <p>Latitude: 13.345331 Longitude: 74.771264 Elevation: 35.55m Accuracy: 4.3m Time: 06/23/2020 16:20 Note: At Indrali OHT site, udipi</p>  <p>Latitude: 13.345326 Longitude: 74.771257 Elevation: 38.27m Accuracy: 3.2m Time: 06/23/2020 16:19 Note: At Indrali OHT site, udipi</p>	Instructed contractors to provide Sign board, hard barricading around deep excavated area and project information board at the entrance of the all OHT sites	Not complied

2	Steel rod Material stored at OHT sites	 <p>Latitude: 13.945083 Longitude: 74.771257 Elevation: 39.36m Accuracy: 3.2m Time: 06-23-2020 16:20 Note: At indrali OHT site, udupi</p> <p>Latitude: 13.387479 Longitude: 74.737933 Elevation: 38.04m Accuracy: 3.2m Time: 06-23-2020 15:53 Note: At santtekatte OHT site, udupi</p>	Instructed contracting agency to store the steel rods away from the walkways to avoid injury or else soft/hard barricade the steel surround area	Not complied
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3	Water tank at santekatte OHT for worker usage	 <p>Latitude: 13.387485 Longitude: 74.738342 Elevation: 30.55m Accuracy: 4.3m Time: 06-23-2020 15:52 Note: At santekatte OHT site, Udupi</p> <p>Powered by NoteCam</p>	Instructed contracting agency to provide separate water can for drinking purpose	Not complied
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4	Waste scrape and loose earth at santekatte OHT for work site	 <p>Latitude: 13.387459 Longitude: 74.738437 Elevation: 35.14m Accuracy: 3.2m Time: 06-23-2020 15:51 Note: At santekatte OHT site. edup</p> <p>Powered by NoteCam</p>	Instructed contracting agency to remove all scrap and loose earth material to dumping yard and steel rods should be not use as fencing of the excavated OHT	Not complied
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Annexure 3

Status of site visit observations of 13th August 2020

S.No	Observation		Recommendation	Status
1	Hard barricading and Sign board at OHT Manchi site	 <p>Latitude: 13.323326 Longitude: 74.772339 Elevation: 27.89m Accuracy: 3.2m Time: 08-13-2020 11:58 Note: At Manchi OHT site, Udipi</p>	Instructed contractors to provide hard barricading with wooden rods of 1.5 m around the OHT and sign boards	Not complied

		 <p>Latitude: 13.323351 Longitude: 74.772373 Elevation: 30.37m Accuracy: 3.2m Time: 08-13-2020 11:59 Note: At Manchi OHT site, ud.p</p>		
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2	Hard barricading and Sign board at OHT Santtekatte site		Instructed contractors to provided hard barricading around the OHT and sign boards near steel rods	Not complied
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3	<p>Aggregates, sand and excavated earth Material stored at santtekatte OHT site</p>	 <p>Latitude: 13.387502 Longitude: 74.738621 Elevation: 41.48m Accuracy: 3.2m Time: 08-13-2020 12:37 Note: At santtekatte OHT site, uob</p>	<p>Instructed contracting agency to make bunds for sand and aggregates storage to avoid flow and mix</p> <p>Instructed to remove steel rods used for sheet support And dispose loose earth stored at site to dumping yard</p>	<p>Not complied</p>
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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
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5	Labour camp at Manchi OHT site	 	<p>Instructed contractor agency to provide cooking gas for cooking purpose</p> <p>And also instructed to provide proper light connection inside camp and to concrete the room properly for cooking and resting.</p> <p>Drinking water can facility should be provided at OHT site for workers</p> <p>Mobil toilets facility should be provided for workers at site</p>	<p>Not complied</p> <p>Not complied</p> <p>Partially complied</p> <p>Not complied</p>
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5	Housekeeping at santekatte OHT for work site		<p>Proper housekeeping should be done at work site</p> <p>Instructed not use fire wood burning for cooking and other purpose at work site place</p>	Not complied
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SPPL-SIPL-DRS JV/KUIDFC/ UCMC/272/2020-21

14 September 2020

To,

The Executive Engineer,
KUIDFC-KIUWMIP-PIU,
Tranche-2, Udupi.

Sub.: KUIDFC & KIUWMIP – "Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Udupi City- Package No.02UDP01"; Submission of EMP Reports for Month of August 2020, Udupi.

Ref.:

- 1) LOA Letter No: UCMC/Udupi/KUIDFC/ADB/UDP03/2017-18 Dated 10th October 2018.
- 2) Contract Agreement for Package No. 02UDP01, Dated 16th November 2018.

Dear Sir,

With reference to the above subject, we are submitting the "Environmental Monitoring Plans (EMP) Reports" as follows for your reference and needful records.

1. Submission HSE Report for Month of August 2020.
2. Accident Records and Grievance Register copy.
3. Induction and Toolbox Training Attendance Sheet.
4. Good Practice Photographs.

Thanking you and assuring you of our best services at all times.

For SPPL-SIPL-DRS JV

(Authorized Signatory)

CC:

- 1) Deputy Project Director, KUIDFC; Mangaluru, for kind information
- 2) The Commissioner, City Municipal Council; Udupi, for Kind information.
- 3) Team Leader, Egis India Consulting Engineers Pvt Ltd; Mangaluru.

Encl: EMP Reports month of August 2020.



Monthly Environmental Monitoring Report

Document stage: Draft for Consultation Project Number: 43253-027 May 2018

IND: Karnataka Integrated Urban Water Management Investment Program
(Tranche 2) – Improvements for 24x7 Water Supply System – Distribution
System for City Municipal Council, Udupi

Package No: 02UDP01

Prepared by



Karnataka Urban Infrastructure Development and Finance Corporation, Government of Karnataka for the Asian Development Bank.	
Name of the Work: Improvements for 24x7 Water Supply System – Distribution System for City Municipal Council, Udupi	Name of the Contractor: SPPL-SIPL DRS INFRA JV
Package No: 02UDP01	
Name of the city: UDUPI	Name of SE/EE/AE Of concerned division PIU :-Executive Engineer – Umashankar
Month -September 2020	Name of Environment, Health and Safety (EHS)- Mr. Pradeep Shetty

REV	Date	Prepared By	Checked By	For Approval
00		Pradeep shetty	Srinivasa Rao	Submission Purpose

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
EMP Implementation Training	Impacts on the environment, workers, and community due to improper implementation	<p>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.;</p> <p>2. appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work.</p>	Construction Contractor / PIU /PMDSC	1. Adopted

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 oxides, and hydrocarbons.	<p>3. Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4. Damp down exposed soil and any stockpiled-on site by spraying with water when necessary during dry weather;</p> <p>5. Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>6. Clean wheels and undercarriage of vehicles prior to leaving construction site;</p> <p>7. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p>	Construction Contractor	<p>3. Adopted</p> <p>4. Adopted</p> <p>5. Adopted</p> <p>6. Adopted</p> <p>7. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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.	<p>8. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets.</p> <p>9. Lay 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.</p> <p>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 (Appendix 6).</p> <p>11. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies.</p> <p>12. Provide temporary bunds for stockpiles and materials.</p> <p>13. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund.</p> <p>14. Dispose any wastes generated by construction activities in designated sites.</p> <p>15. Conduct surface quality inspection and monitoring</p>	Construction Contractor	<p>8. No plastic materials were used</p> <p>9. De watering pump available in site</p> <p>10. Extra soils disposed in alevooru dumping yard</p> <p>11. Not applicable</p> <p>12. Not applicable</p> <p>13. Not applicable</p> <p>14. Disposed in dumping yard</p> <p>15. Water testing conducted in December</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Noise Levels	Increase in noise level due to earthmoving and excavation equipment, and the transportation of equipment, materials, and people	<p>16. Plan activities in consultation with PIU/PMDSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance.</p> <p>17. Construction work shall be limited to day light hours (6 AM to 6 PM).</p> <p>18. Provide prior information to the local public about the work schedule.</p> <p>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 by chiseling.</p> <p>20. Minimize noise from construction equipment/ pneumatic drills by using silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor.</p> <p>21. Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicles.</p> <p>22. Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach.</p>	Construction Contractor	<p>16. Noise testing conducted in December</p> <p>17. Adopted</p> <p>18. Informing to local public before start of work</p> <p>19. Not Applicable</p> <p>20. Adopted</p> <p>21. Adopted</p> <p>22. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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/PMDSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.	Construction Contractor	23. Submitted 24. Adopted 25. Soil disposed to designated areas. 26. Adopted 27. Soil disposed at Alevooru debris land 28. Adopted
Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	30 Obtain from PMU/PMDSC 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; 32 The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.	Construction Contractor	30. Adopted 31. Detecting cables and performing trial pits before start of work 32 Adopted

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Accessibility	Traffic problems and conflicts near projections and haul road	<p>33 Plan pipeline work in consultation with the traffic police;</p> <p>34 Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;</p> <p>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;</p> <p>36 Schedule transport and hauling activities during non-peak hours;</p> <p>37 Do not close the road completely, allow traffic to move on one line;</p> <p>38 Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>39 In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;</p> <p>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 of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints;</p> <p>41 Keep the site free from all unnecessary obstructions;</p> <p>42 Drive vehicles in a considerate manner;</p> <p>43 Prepare a Traffic Management Plan – a template is provided for reference at Appendix.</p>	Construction Contractor	<p>33. Adopted</p> <p>34. Adopted</p> <p>35. Road restoration work in progress</p> <p>36. Adopted</p> <p>37. Adopted</p> <p>38. Adopted</p> <p>39. Showing alternative diversion routes</p> <p>40 Provided project information and contact numbers on board</p> <p>41. Adopted</p> <p>42. Adopted</p> <p>43. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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; 46 Provide walkways and metal sheets where required for people; 47 Increase workforces in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; 48 Consult businesses and institutions regarding operating hours and factoring this in work schedules; 49 Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Construction Contractor	45. Adopted 46. Adopted 47. Adopted 48. Adopted 49. Provided project information and contact numbers on board

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.), access disruptions etc.,	50 No material should be stocked close to these areas; material shall be brought to the site as and when required; 51 Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles; 52.No work should be conducted near the religious places during religious congregations; 53 Material transport to the site should be arranged considering school timings; material should be in place before school starts	Construction Contractor	50. Required materials were taken from store and after completion of work the same materials were transferred back to store every day. 51. Adopted 52. Adopted 53. Adopted

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	54. Adopted 55. Adopted

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Occupational Health and Safety	Occupational hazards which can arise during work	<p>56 Comply with all national, state and local core labor laws (See Appendix 2 of this IEE);</p> <p>57 Develop and implement site-specific occupational health and safety (OHS) Plan and include in the Construction Management plan.</p> <p>The OHS plan will include measures such as:</p> <p>(a) excluding public from the site;</p> <p>(b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs;</p> <p>(c) OHS Training for all site personnel;</p> <p>(d) documented procedures to be followed for all site activities; and</p> <p>(e) documentation of work-related accidents;</p> <p>58 Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>59 Provide medical insurance coverage for workers;</p> <p>60 Secure all installations from unauthorized intrusion and accident risks;</p> <p>61 Provide supplies of potable drinking water;</p> <p>62 Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>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 fellow workers;</p>	Construction Contractor	<p>56. Adopted</p> <p>57. Adopted</p> <p>58. First Aid box provided at working areas</p> <p>59. Provided medical insurance</p> <p>60. Adopted</p> <p>61. provided</p> <p>62. Adopted</p> <p>63. Conducting safety training and providing PPE and safety induction to workers.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Occupational Health and Safety	Occupational hazards which can arise during work	<p>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;</p> <p>65 Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>66 Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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;</p> <p>68 Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively;</p> <p>69 Overall, the contractor should comply with International Finance Corporation (IFC) EHS Guidelines on Occupational Health and Safety.</p>	Construction Contractor	<p>64. Adopted</p> <p>65. Adopted</p> <p>66. Adopted</p> <p>67. Provided sign boards at site</p> <p>68. Adopted</p> <p>69. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation.	<p>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;</p> <p>71 Plan material and waste routes to avoid times of peak pedestrian activities;</p> <p>72 Liaise with Udupi CMC in identifying risk areas on route cards/maps;</p> <p>73 Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>74 Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and</p> <p>75 Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety.</p>	Construction Contractor	<p>70. Provided hard barricade.</p> <p>71. Adopted</p> <p>72. No</p> <p>73. Adopted</p> <p>74. Sign boards provided</p> <p>75. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>76 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas;</p> <p>77 Minimize removal of vegetation and disallow cutting of trees;</p> <p>78 Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p>79 The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p>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;</p> <p>81 Provide separate facilities for men and women; sanitary facilities shall be properly built and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;</p> <p>82 Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>83 Recover used oil and lubricants and reuse or remove from the site;</p> <p>84 Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>85 Remove all wreckage, rubbish, or temporary structures which are no longer required;</p>	Construction Contractor	<p>76. Adopted</p> <p>77. Not Applicable</p> <p>78. Adopted</p> <p>79. Adopted</p> <p>80. Adopted</p> <p>81. Adopted</p> <p>82. Adopted</p> <p>84. Adopted</p> <p>85. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>86 Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work;</p> <p>87 The work camp details should be included in the Construction Management Plan</p>	Construction Contractor	<p>86. Adopted</p> <p>87. Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Social and Cultural Resources	Risk of archaeological chance finds	<p>88 Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>89 Stop work immediately if any finds are suspected to allow further investigation;</p> <p>89 Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ; and</p> <p>90 Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building</p>	Construction Contractor	<p>88. Always Conducting training to workers and engineers</p> <p>89. Adopted</p> <p>90. Not applicable</p>
Submission of EMP implementation report	Damage due to debris, spoils, excess construction materials	<p>91 Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>92 All excavated roads shall be reinstated to original condition;</p> <p>93 All disrupted utilities restored;</p> <p>94 All affected structures rehabilitated/compensated;</p> <p>95 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;</p> <p>96 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;</p> <p>97 The contractor must arrange the cancellation of all temporary services;</p> <p>98 Request PMU/PMDSC to report in writing that worksites and camps have been vacated and restored to pre-project</p>	Construction Contractor	<p>91. Adopted</p> <p>92. Adopted</p> <p>93. Adopted</p> <p>94 Adopted</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	<p>99 Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>100 All excavated roads shall be reinstated to original condition;</p> <p>101 All disrupted utilities restored;</p> <p>102 All affected structures rehabilitated/compensated;</p> <p>103 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;</p> <p>104 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;</p> <p>105 The contractor must arrange the cancellation of all temporary services;</p> <p>106 Request PMU/PMD CSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>	Construction Contractor	<p>99. Adopted</p> <p>100. Adopted</p> <p>101. Adopted</p> <p>102 Adopted</p> <p>104. Adopted</p> <p>105.</p> <p>106. Adopted</p>

S.No	Date	Description of Accident	Severity	Damage of Infrastructure	Loss of month	Zone / ward no	Address	Responsible person name	Employee / Non Employee	Remarks
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NIL

-27

[illegible]

Date	Labour's Name	Father's Name	Age	Sex
1/09/2020	Parshuram	Rangappa	28	M
	Ravi	Krishnappa	28	M
	Yamunappa	Hanumappa	35	M
	Shashi	Devappa	32	M
2/09/2020	Ravi	Krishnappa	28	M
	Yamunappa	Hanumappa	35	M
	Rangappa	Hanumappa	38	M
	Chandrashekar	Raghunanda	30	M
	Shashi	Devappa	32	M
3/09/2020	Shashi	Devappa	32	M
	Chandrashekar	Raghunanda	30	M
	Rangappa	Hanumappa	38	M
	Kumar	Devraj	26	M
4/09/2020	Shashi Gopal	Devappa	25	M
	Shashi	Devappa	32	M
	Parshuram	Rangappa	28	M
	Raddi	Kallappa	83	M
	Kumar	2	26	M
5/09/2020	Parashuram	Rangappa	28	M
	Ravi	Krishnappa	28	M
	Yamunappa	Hanumappa	35	M
	Shashi	Devappa	32	M
7/09/2020	Shashi	Hanumappa	22	M
	Akhar	Bhaskar	22	M
	Kiran	Mahesh	21	M

checking time	check out time	Labour's sign	Engineer's sign	Remarks
8:30am	5:30pm	ಶರಣರಾಯ		
		ಶರಣ		
		ಯಮುನಪ್ಪ	(Signature)	
		ಶಶಿ		
8:30am	5:30pm	ಶರಣ		
		ಯಮುನಪ್ಪ		
		ಶರಣ	(Signature)	
		ಶರಣರಾಯ		
		ಶಶಿ		
2:30am	5:30pm	ಶಶಿ		
		ಶರಣರಾಯ	(Signature)	
		ಶರಣ		
		ಹುಮರ		
8:30am	5:30pm	ಶರಣ		
		ಶಶಿ		
		ಶರಣರಾಯ	(Signature)	
		ಶರಣ		
		ಹುಮರ		
8:30am	5:30pm	ಶರಣರಾಯ		
		ಶರಣ		
		ಯಮುನಪ್ಪ	(Signature)	
		ಶಶಿ		
8:30am	5:30pm	ಶರಣ		
		ಶರಣ	(Signature)	
		ಶರಣ		

Date	labour Name	father Name	Age	Sex
8/09/2020	Boggu	Rama	45	M
	Vijaya	Raja	38	M
	Sundhara	Kutti	43	M
	Shekar	Sadanandha	39	M
	Manoja	Shashi	43	M
9/09/2020	Boggu	Rama	45	M
	Vijaya	Raja	38	M
	Sundhara	Kutti	43	M
10/09/2020	yaminappa	Madappa	30	M
	chandrashekar	yallappa	35	M
	Swamy	Mallappa	30	M
	Raigappa	shekappa	42	M
11/09/2020	Boggu	Rama	45	M
	Vijaya	Raja	38	M
	Sundhara	Kutti	43	M
	Shekar	Sadanandha	39	M
	Manoja	Shashi	43	M
12/09/2020	yaminappa	Madappa	45	M
	chandrashekar	yallappa	38	M
	Swamy	Mallappa	43	M
14/09/2020	Boggu	Rama	45	M
	Vijaya	Raja	38	M
	Sundhara	Kutti	43	M
	Shekar	Sadanandha	39	M
	Manoja	Shashi	43	M

check in time	check out time	Labour Sign	Engg sign	Remark
8:30am	5:30pm	ಬೊಗ್ಗು ವಿಜಯ ಸುಂದರಾ ಶೇಕರ್ ಮನೋಜ	(S)(V)	
8:30am	5:30pm	ಬೊಗ್ಗು ವಿಜಯ ಸುಂದರಾ	(S)(V)	
8:30am	5:30pm	ಯಮಿನಪ್ಪ ಚಂದ್ರಶೇಖರ್ ಸ್ವಾಮಿ ರಾಜಪ್ಪ	(S)(V)	
8:30am	5:30pm	ಬೊಗ್ಗು ವಿಜಯ ಸುಂದರಾ ಶೇಕರ್ ಮನೋಜ		
8:30am	5:30pm	ಯಮಿನಪ್ಪ ಚಂದ್ರಶೇಖರ್ ಸ್ವಾಮಿ		
8:30am	5:30pm	ಬೊಗ್ಗು ವಿಜಯ ಸುಂದರಾ ಶೇಕರ್ ಮನೋಜ		
8:30am	5:30pm	ಯಮಿನಪ್ಪ ಚಂದ್ರಶೇಖರ್ ಸ್ವಾಮಿ		
8:30am	5:30pm	ಬೊಗ್ಗು ವಿಜಯ ಸುಂದರಾ ಶೇಕರ್ ಮನೋಜ	(S)(V)	

	Date	Labana Name	Father's Name	Age	Sex
1)	15/9/2020	Balakram	Anandh	28	M
		Ravi Kumar	Narasimha	55	M
		Alok Kumar	Ravindas	45	M
		Akbar Ali	Asgar Ali	35	M
2)	16/9/2020	Balakram	Anandh	28	M
		Ravi Kumar	Narasimha	55	M
		Alok Kumar	Ravindas	45	M
3)	17/9/2020	Balakram	Anandh	28	M
		Ravi Kumar	Narasimha	55	M
		Alok Kumar	Ravindas	45	M
		Akbar Ali	Asgar Ali	35	M
4)	18/9/2020	Balakram	Anandh	28	M
		Akbar Ali	Narasimha	55	M
		Ravi Kumar	Ravindas	45	M
5)	19/9/2020	Balakram	Anandh	28	M
		Akbar Ali	Asgar Ali	35	M
		Ravi Kumar	Ravindas	55	M
6)	21/9/2020	Balakram	Anandh	28	M
		Akbar Ali	Asgar Ali	35	M
		Ravi Kumar	Ravindas	55	M
		Alok Kumar	Ravindas	55	M

Check in	Check out	Labana Sign	Remarks
8:30	5:30 PM	Balu	
		R.	
		Al.	
		Al.	
8:30	5:30	Balu	
		Ravi	
		Al.	
8:30	5:30	Balu	
		Ravi	
		Al.	
		Al.	
8:30	5:30	Balak.	
		Ravi	
		Al.	
8:30	5:30	Balak.	
		Al.	
		Ravi	
8:30	5:30	Bal.	
		Al.	
		Ravi	
		Ravi	
8:30	5:30	Bal.	
		Al.	
		Ravi	
		Ravi	

SL No.	Date	labore's Name	father's name	Age	Sex	check in time	check out time	labore's sign	Engineer's sign	Remarks
7)	22/09/2020	Shivappa	Keishnappa	28	M	8:30 am	5:30 pm	Shivappa		
		Yamanappa	Hannumappa	25	M			Yamanappa		
		Rangappa	Hannumappa	38	M			Rangappa		
		Chandrashekar	Rangappa	30	M			Chandrashekar		
		Shetkar	Devappa	32	M			Shetkar		
8)	23/09/2020	Gopal	Devappa	38	M	8:30	5:30 pm	Gopal		
		Phashhi	Devappa	32	M			Phashhi		
		Palash Kumar	Rangappa	38	M			Palash Kumar		
		Reddy	Kallappa	32	M			Reddy		
		Kumar								
9)	24/09/2020	Rangappa	Hannumappa	32	M	8:30	5:30 pm	Rangappa		
		Yamanappa	Hannumappa	35	M			Yamanappa		
		Chandrashekar	Rangappa	30	M			Chandrashekar		
		Shetkar	Devappa	32	M			Shetkar		
10)	25/09/2020	Gopal	Devappa	38	M	8:30	5:30 pm	Gopal		
		Palash Kumar	Rangappa	38	M			Palash Kumar		
		Phashhi	Devappa	32	M			Phashhi		
		Kumar								
11)	26/09/2020	Rangappa	Hannumappa	32	M	8:30	5:30 pm	Rangappa		
		Shivappa	Keishnappa	28	M			Shivappa		
		Reddy	Kallappa	32	M			Reddy		
		Palash Kumar	Rangappa	38	M			Palash Kumar		

Sl	Date	Labour's Name	Jobel Name	Age	Sex
12)	27/09/2020	Shashi	Devappa	32	M
		Yannappa	Hannunappa	25	M
		Chandda Shekal	Rangappa	30	M
		Reddy			
13)	28/09/2020	Gopala	Devappa	28	M
		Pabushulam	Rangappa	38	M
		Shashi	Devappa	32	M
		Kumar			
14)	29/09/2020	Rangappa	Hannunappa	32	M
		Shivappa	Krishnappa	28	M
		Pabushulam	Rangappa	38	M
		Reddy	Kallappa	32	M

Check in time	Check out time	Labour's sign	Engineer's sign	Remarks
8:30 AM	5:30 PM	88 000055 2505022	88	
8:30 AM	5:30 PM	8800 0000 88	88	
8:30 AM	5:30 PM	8800 8800 0000 8800	88	



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

URL for online Pre-Health assessment form is below <http://suezgis.com/Health-Safety/covid-19.html>

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

Covid Induction Attendance Sheet

Sl. No	Name	Dept.	Signature
1.	Suresh		Suresh T.
2.	Narayanan		N. Narayan
3.	L. Kollanona		L. Kollanona
4.	Nagesha		Nagesha
5.	Devraj		Devraj
6.	Farahma		T. L. K. E. S. B.
7.	Shanthamma		Shanthamma
8.	Davithra		P. Davithra
9.	Kagenolra		Kagenolra
10.	Sriramuj		Sriramuj
11.			
12.			
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20.			

Name & Sign. of Trainer


03/09/2020



Health Safety & Environment
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Covid Induction Attendance Sheet

07/09/2020

Sl. No	Name	Dept.	Signature
1.	Harish	OA Pipe Laying	
2.	Jagadeesh	"	
3.	Murali	"	M. Murali
4.	Sathesh	"	
5.			
6.			
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20.			

Name & Sign. of Trainer


Pradeep Shetty
7/09/20

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

Covid Induction Attendance Sheet

Sl. No	Name	Dept.	Signature
1.	Lava . S. Rathod	HSE	-007
2.	Shashi kumar . S. Rathod	HSC	Shashi
3.	Parushuram . R. Rathod	HSC	Parushuram
4.	Abhishek . G. Rathod	HSC	Abhishek
5.	Reddy . S. Rathod	HSC	Reddy
6.	Muthappa . P. Chawan	HSC	Muthappa
7.	Prakash . P. Chawan	HSC	Prakash
8.	Chopal . H. Chawan	HSC	Chopal
9.	Shankar . J. Chawan	HSC	Shankar
10.	Kumar . J. Nalpal	HSC	Kumar
11.			
12.			
13.			
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18.			
19.			
20.			

Name & Sign. of Trainer


8/09/20 Pooja Shetty



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Covid Induction Attendance Sheet

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

Covid Induction Attendance Sheet

09/09/2020

Sl. No	Name	Dept.	Signature
1.	Parashuram	PIPE Laying	
2.	Abhishek	"	
3.	Harish	"	
4.	Kireem	"	
5.	Jagadeesh	"	
6.	Murali	"	
7.			
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17.			
18.			
19.			
20.			

Name & Sign. of Trainer

Murali Shetty
09/09/20



Health Safety & Environment
Covid Induction Attendance Sheet

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

Covid Induction Attendance Sheet

10/01/20

Sl. No	Name	Dept.	Signature
1.	Ravi Kumar	pipe laying	रवी
2.	Balaram	"	बलराम
3.	Azamath Ali	"	अमर
4.	Shivu	"	शिवु
5.	Ajay Kumar		अजय
6.			
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16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer


10/01/2020

**SUEZ**Health Safety & Environment
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Sl. No	Name	Dept.	Signature
1.	Poojari Boamma	pipe laying	Bamma
2.	Pavithra	"	PAVIRA
3.	Nagendra	"	T. nagendra
4.	Farama	"	ಕಲವು
5.	Devanaj	"	ವಿಜಯರಾಜು
6.	Nagesha	"	ನಗೇಶ
7.	Kollanna	"	ಕಾ
8.	Nagaraj	"	ನಗರಾಜ
9.	Sri Ram	"	ಸರೀರಾಮ
10.	Suresha	"	Suresh. T.
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer


14/09/2020

**suez**

Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

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Covid Induction Attendance Sheet

19/09/2020

Sl. No	Name	Dept.	Signature
1.	Lava Raulood	Material Shitting	Lava
2.	Reddy	"	Reddy
3.	Mudappa	"	Mudappa
4.	Shankara	"	Shankara
5.	Manthasha	"	Manthasha
6.	Santhosh	"	Santhosh
7.			
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15.			
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18.			
19.			
20.			

Name & Sign. of Trainer

19/09/2020

suezHealth Safety & Environment
Covid Induction Attendance SheetDate: 20.4.2020
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iOS: <https://apps.apple.com/in/app/aarogya-setu/id1505325353>Android: <https://play.google.com/store/apps/details?id=nic.gov.aarogya-setu>

Covid Induction Attendance Sheet

17/09/2020

Sl. No	Name	Dept.	Signature
1.	Ramappa	HSC	[Signature]
2.	Shekara	HSC	[Signature]
3.	Rasappa	HSC	[Signature]
4.	Star Kantavaraj	HSC	[Signature]
5.	Yallappa	HSC	[Signature]
6.	Haruramappa	HSC	[Signature]
7.	Shivappa	HSC	[Signature]
8.	Ravindra	HSC	[Signature]
9.	Thomappa	HSC	[Signature]
10.	Ravi	HSC	[Signature]
11.	mahesh	HSC	[Signature]
12.	Suresh.	HSC	[Signature]
13.	Mahesh		
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer

[Signature]
17/09/2020

**suez**Health Safety & Environment
Covid Induction Attendance SheetDate: 20.4.2020
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Sl. No	Name	Dept.	Signature
1.	Hobalesh		...
2.	Hornama		...
3.	Chudappa		...
4.	Nagaraj		...
5.	Yenkaappa		...
6.			...
7.	Kanum anthappa.		...
8.	Basavarappa		...
9.	Nagappa		...
10.	Yenkaappa		...
11.			
12.			
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18.			
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Name & Sign. of Trainer


 23/09/2020



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

URL for online Pre-Health assessment form is below <http://suezgis.com/Health-Safety/covid-19.html>

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iOS: <https://apps.apple.com/in/app/aarogya-setu/id1505825357>

Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

Covid Induction Attendance Sheet

25/09/20

Sl. No	Name	Dept.	Signature
1.	Lokesh	APPE Learning	T. LOKESHA
2.	Nagendra	"	T. NAGENDRA
3.	Suresh	"	Suresh T.
4.	Evarana	"	
5.	Narayana	"	ಎರನಾ
6.	Sri Ram	"	Sri Ram
7.	Shanthamma	"	ಶಾಂತಮ್ಮ
8.	Pavithra	"	ಪವಿತ್ರಾ
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Name & Sign. of Trainer

 25/09/20



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

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Covid Induction Attendance Sheet

Sl. No	Name	Dept.	Signature
1.	Lova Reddy	HSC	Lova
2.	Reddy	HSC	Reddy
3.	Muthappa	HSC	Muthappa
4.	Shankara	HSC	Shankara
5.	Mamthesh	HSC	Mamthesh
6.	Samthosha	HSC	Samthosha
7.	Shashi	HSC	SHASHI
8.	Prashuram	HSC	Prashuram
9.	Apala	HSC	Apala
10.	Shankara		
11.			
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20.			

Name & Sign. of Trainer


Pradeep Shetty
30/09/2020

Safety Training and Good Practices Photos-September 2020

ready for the resource revolution





Safety Training for Workers



Safety Training for Workers



Thermal Screening for workers



Work Site Photos





Sanitizing for workers



Office Decontamination





Office and vehicle cleaning







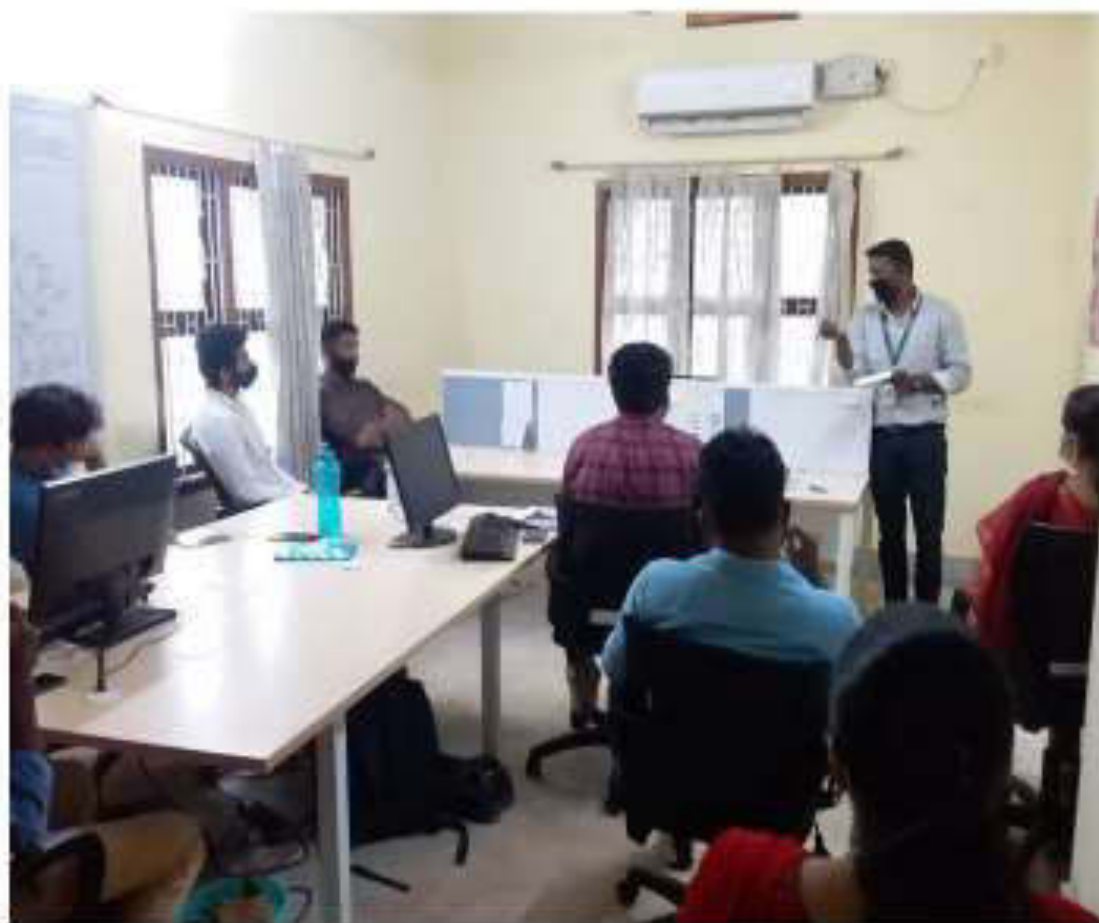
Suez Health Day Celebrating

UDUPI











Monthly Environmental Monitoring Report

Project Number: 43253-027
October 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



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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 Kundapura Taluk placed 92 km from Mangalore and 416 km from Bangalore (Figure 1). Geographically, Kundapura Town is located at a latitude of 13°08'N and longitude of 74°07'E at an average altitude of 80 m above the mean sea level (msl). The municipality spreads in an area of 14 square kilometer (km²) 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.

Kundapuram 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 Jambukeshwara Temple, 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 diameter mild steel (MS) rising main. Treated water from WTP is pumped through a 400mm diameter MS rising main to the 500

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

Figure 1: Existing Water Supply System in Kundapura

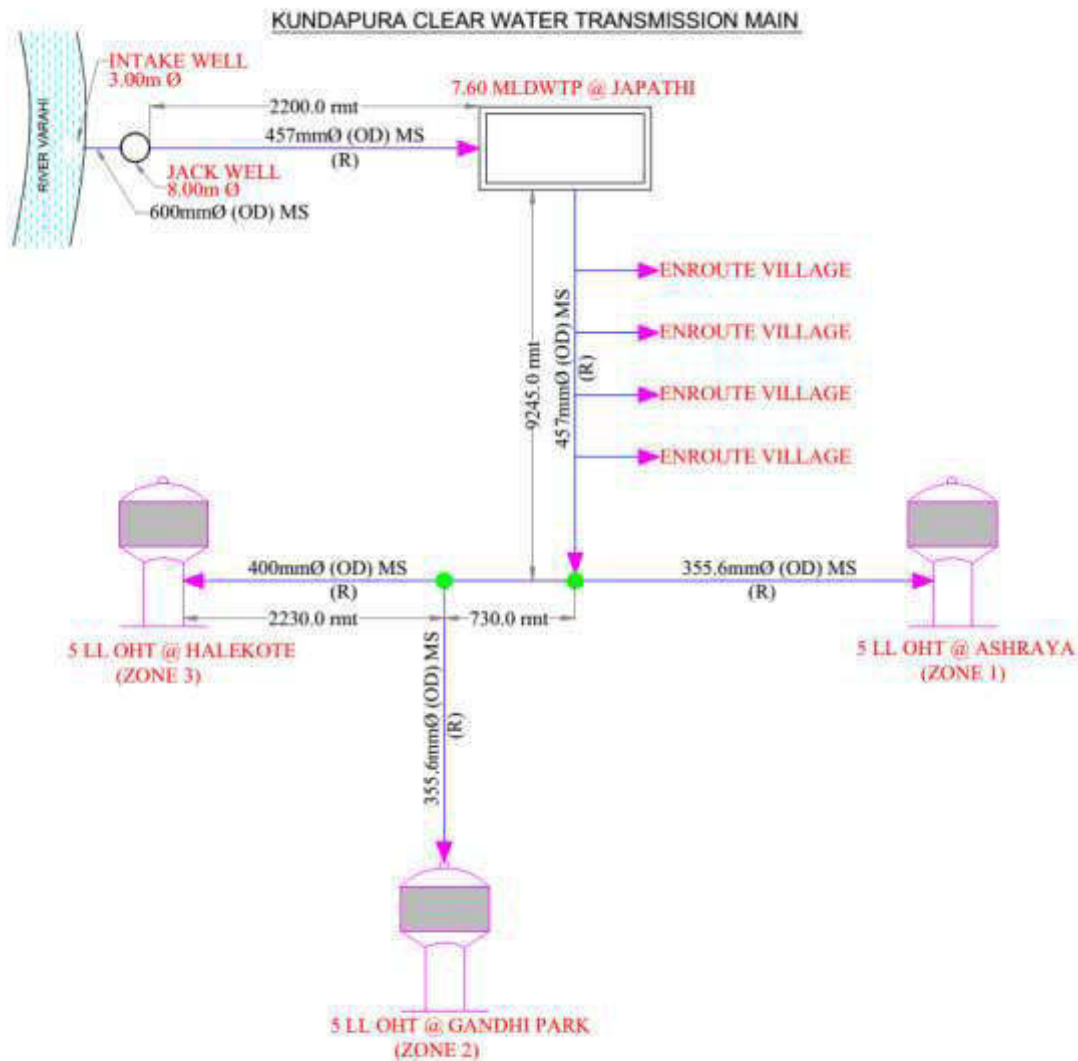


Table 1: Component of Existing Water Supply System in Kundapura

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 the subproject includes the following components:

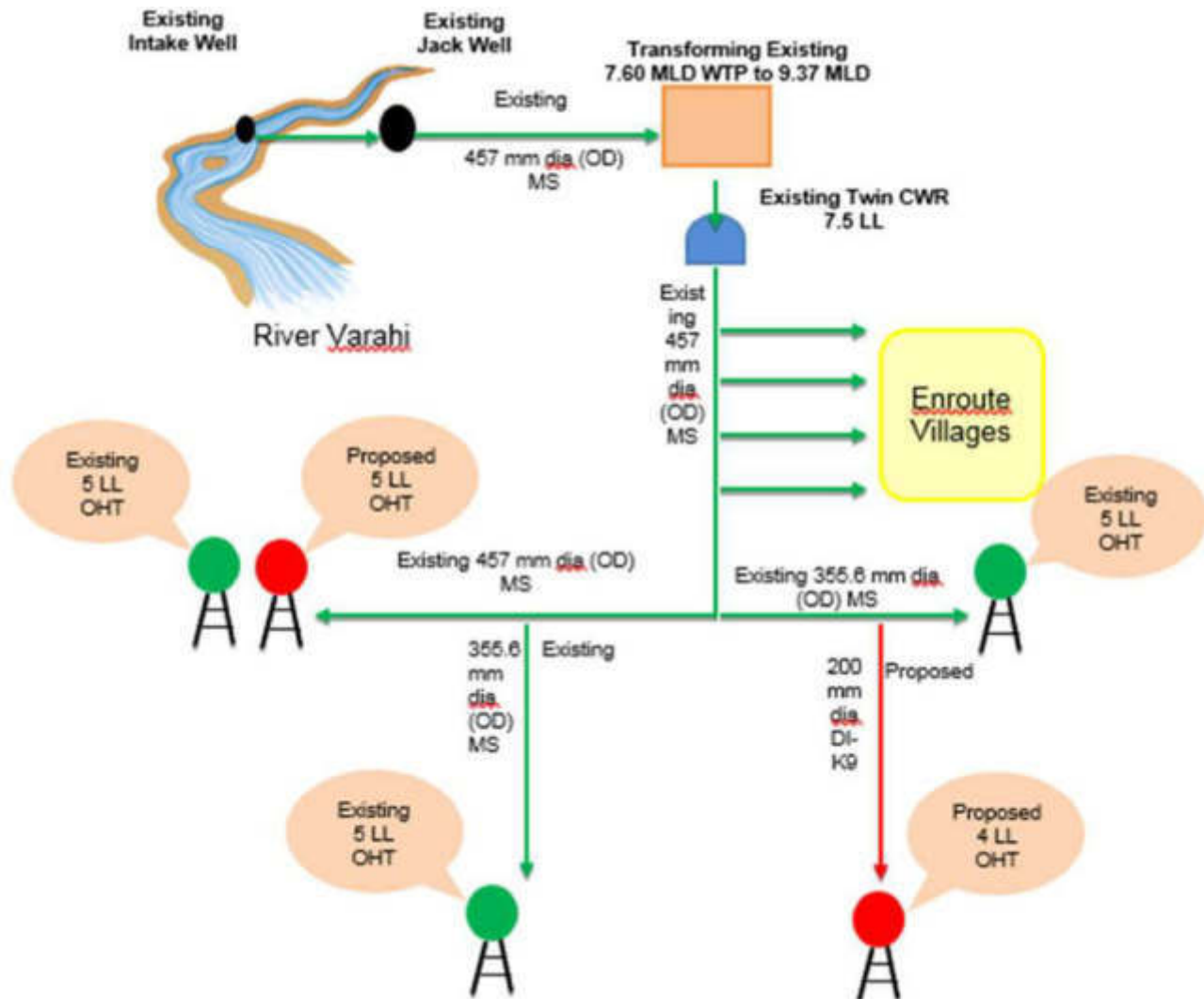
- (i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
- (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 metered house 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 section is 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, wherever it 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 = lakh 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: 27/10/2020	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	<ol style="list-style-type: none"> 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 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 (PMDSC)	<ol style="list-style-type: none"> Certificate of Completion (Safeguards Compliance Orientation) Posting of Certification of Completion at worksites 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.	<ol style="list-style-type: none"> Contractor has to update SOPs. OHS plan and Activities are going on as per company EHS Policies. 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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 report and recommended to

		<p>dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10);</p> <p>4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>5) Provide temporary bunds for stockpiles and materials;</p> <p>6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 100% capacity bund; and</p> <p>7) Dispose any wastes generated by construction activities in landfill or reuse in beneficial purposes</p>		<p>management measures;</p> <p>e) No visible degradation to nearby drainages, nallahs or water bodies due to civil works</p>		<p>update according to the suggestions given and submit Spoil Management Plan.</p> <p>updated /Corrected Spoil Management plan yet to be submitted by Contractor</p> <p>4) Surface Water bodies not found along the Project site.</p> <p>5) Partially Complied</p> <p>6) Fuels and lubricants in bulk are not stored by contractor at site.</p> <p>7) Debris generated by construction is disposed in the ULB designated areas. Waste is used to fill the low line area</p>
	Contamination of coastal water due to works in coastal zone	<p>In addition to the above measures following measures given below for piling works:</p> <p>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</p>			Cost for implementation of mitigation measures responsibility of contractor.	<p>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</p>

		in landfill safely				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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,	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1) Partially Complied 2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill.

	and other similar items.	<p>storage for future use or disposal in landfill</p> <p>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</p> <p>4) Prepare and implement spoils management plan;</p> <p>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</p> <p>6) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works have been adequately performed before acceptance of work.</p>		<p>solid waste such as removed concrete, wood, packaging materials, empty containers</p>		<p>3) Complied</p> <p>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</p> <p>5) Complied</p> <p>6) Used oil and lubricants not generated on site</p> <p>7) Complied</p> <p>8) Construction work under progress</p>
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Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1) Complied 2) Complied contingency services are provided and restoration is going on after the work. 3) Complied 4) Complied 5) Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ol style="list-style-type: none"> 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 	Construction Contractor	<ol style="list-style-type: none"> a) PMU/PMDSC to report in writing the number of trees cut and planted. 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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.

		3) altering the alignment. Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed				2) Complied 3) Compensation paid to the owner of the tree.
Accessibility	Traffic problems and conflicts near project locations and haul road	<p>1) Plan pipeline work in consultation with the traffic police; prepare a Traffic Management Plan – a template is provided for reference at Appendix 11.</p> <p>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;</p> <p>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;</p> <p>4) Schedule transport and hauling activities during non-peak hours;</p> <p>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</p>	Construction Contractor	<p>a) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix 11);</p> <p>b) Complaints from sensitive receptors; and</p> <p>c) Number of signages placed at project location.</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>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.</p> <p>Traffic management plan yet to be updated</p> <p>2) Complied</p> <p>3) Complied</p> <p>4) Complied</p> <p>5) Not complied Contractor has to provide traffic management plan for their all working areas to minimize the traffic in busy</p>

		<p>diversions;</p> <p>6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>7) Maintain safe pedestrian access at all times to the houses along the work site;</p> <p>8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board.</p> <p>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;</p> <p>10) Keep the site free from all unnecessary obstructions;</p> <p>11) Drive vehicles in a considerate manner</p> <p>In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work</p>				<p>and small congested areas</p> <p>6) Complied</p> <p>7) Complied</p> <p>8) Instructed to contracting agency to provide hard barricades for large depth trench or close all opened trenches Before rainy season</p> <p>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.</p> <p>10) Complied</p> <p>11) Partially Complied</p>
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Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1) Complied 2) Complied 3) Complied 4) Complied 5) Complied 6) Not Complied. instructed contracting agency to provide Project information board at all working areas.
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.), access disruptions etc.,	<ol style="list-style-type: none"> 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 	Construction Contractor	<ol style="list-style-type: none"> a) Visual site observations b) Public complaints 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 1) Complied 2) Contractor conducting work manually for all possible works to minimize the

		<p>use of equipment and vehicles;</p> <p>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;</p> <p>4) No work should be conducted near the religious places during religious congregations;</p> <p>5) Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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</p> <p>7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.</p>				<p>use of equipment.</p> <p>3) Complied</p> <p>4) Complied</p> <p>5) Complied</p> <p>6) Recommended contacting agency to provide information about project work and Proper record has to be maintained</p> <p>7) Improvement is required in Implementation.</p>
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<p>1) Employ local labor force to the maximum extent, if manpower is available; and</p> <p>2) Comply with labor laws</p>	Construction Contractor	<p>a) Employment records;</p> <p>b) Records of sources of materials; and</p> <p>c) Compliance to core labor laws (See Appendix 2 of this IEE)</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>1) Partially complied Register maintained by contractor attached as Annexure – 7 in May 2019 report.</p> <p>2) Contractor Obtained Labour</p>

						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	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> (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 	Construction Contractor	<ol style="list-style-type: none"> 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 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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) Partially complied First aid box is available but not adequate as per standards. The equipped first-aid station not provided.

		<p>times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>5) Provide medical insurance coverage for workers;</p> <p>6) Secure all installations from unauthorized intrusion and accident risks;</p> <p>7) Provide supplies of potable drinking water;</p> <p>8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances</p> <p>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;</p> <p>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;</p> <p>11) Ensure the visibility of</p>		<p>devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.</p> <p>k) Compliance to core labor laws (Appendix 2)</p>		<p>5) Employees Compensation Insurances for Workers (Skilled and unskilled).</p> <p>6) Complied</p> <p>7) Complied</p> <p>8) Separate clean eating areas not provided by contractor.</p> <p>9) H&S orientation training for workers not found during the work and proper documentation required need to be done</p> <p>10) Not Complied</p> <p>11) Complied</p>
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		<p>workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>12) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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;</p> <p>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</p> <p>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</p>				<p>12) Complied</p> <p>13) Not Complied</p> <p>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.</p> <p>15) Not complied</p>
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		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	<ol style="list-style-type: none"> 1) Provide protective shoring / 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; 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 	Construction Contractor	<ol style="list-style-type: none"> a) Traffic Management Plan; and b) Complaints from sensitive receptors 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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 6) Not complied- Register of Equipment and Vehicles maintenance certificates not

		<p>vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and</p> <p>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).</p>				<p>found at site during the site visit.</p> <p>7) Work in progress at Halekote OHT and sign boards provided at work site but no sign boards are provided at pipe execution work during inspection. Instructed contracting agency to keep necessary sign boards at pipe execution work</p> <p>8) Not Complied.</p>
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site;</p> <p>2) Minimize removal of vegetation and disallow cutting of trees;</p> <p>3) Labor camps shall include accommodation for workers/laborers along with</p>	Construction Contractor	<p>a) Complaints from sensitive receptors;</p> <p>b) Drinking water and sanitation facilities for employees</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>1) Partially Complied. Instructed contracting agency to provide H&S safety measures about COVID-19 to all worker and employees</p> <p>2) Removal of vegetation minimized by selecting best alignment.</p> <p>3) Labor camp facilities provided by</p>

		<p>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.</p> <p>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.</p> <p>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.</p> <p>6) Fire and electrical safety precautions shall be adhered to.</p> <p>7) Cooking, sanitation and washing areas shall be provided separately.</p> <p>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.</p> <p>9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.</p> <p>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.</p> <p>11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80</p>				<p>the Contractor needed to be improved.</p> <p>4) Not Complied</p> <p>5) Not Complied</p> <p>6) Fire Extinguisher not provided and electrical cable connections are not safely maintained.</p> <p>7) Separate Cooking areahas not been provided</p> <p>8) Gas Cylinder has been Provided by Contractor</p> <p>9) Complied</p> <p>10) Not complied</p> <p>11) Complied</p>
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		<p>lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination;</p> <p>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;</p> <p>13) Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>14) Recover used oil and lubricants and reuse or remove from the site;</p> <p>15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>16) Remove all wreckage, rubbish, or temporary structures which are no longer required;</p> <p>17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>12) Not Complied. The toilets are in unhygienic conditions.</p> <p>13) Not Complied</p> <p>14) Complied - reused.</p> <p>15) Complied</p> <p>16) Complied</p> <p>17) Still Construction Phase is in progress.</p>
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Social and Cultural Resources	Risk of archaeological chance finds	<p>18) Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>19) Stop work immediately if any finds are suspected to allow further investigation;</p> <p>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</p> <p>21) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	<p>18) Complied</p> <p>19) Till now no such suspected items found nor recorded</p> <p>20) Till now no such archaeological items recorded</p> <p>21) Till now no such change found nor recorded</p>
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) Not complied. Contractor agency not submitting monthly report timely
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	<p>24) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>25) All excavated roads shall be reinstated to original condition.</p> <p>26) All disrupted utilities restored.</p> <p>27) All affected structures rehabilitated/compensated.</p> <p>28) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these</p>	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.	<p>24) Complied</p> <p>25) Complied</p> <p>26) Complied</p> <p>27) Till now no structures affected</p> <p>28) Complied</p>

		<p>shall be cleaned up;</p> <p>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;</p> <p>30) The contractor must arrange the cancellation of all temporary services; and</p> <p>31) Request PMU/PMDSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>29) Construction Phase is in progress</p> <p>30) Construction Phase is in progress.</p> <p>31) Construction Phase is in progress</p>
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Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project is not satisfactory. Contractor is maintaining copy of IEE. **HIV AIDS Awareness Training programme** have to be conducted by the Contractor. Proper Safety precautions at site and **Safety against COVID-19** should be improved by the Contractor. **January, February, March, April, May, June, July, August, September and October 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board. 	Within 3 day of work Completion
3.	Posting of EMP at worksites.	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> To prepare the Google map of the Locations of identified stockpiles 	Comply with in 5 days
5.	Complaints from sensitive receptors;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> PUC certification for all vehicles/equipment used for/during construction and certification of users at site. 	Comply with in 7 days
7.	Certification that vehicles are compliant with Air Act	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> Prepare list of silt traps installed along trenches 	If applicable in 8 days
10	Records of surface water quality inspection;	<ul style="list-style-type: none"> 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.

			<p>The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report</p> <p>Instructed contracting agency to conduct water tests every quarterly. But till date contractor agency not conducted water test.</p>
11	Use of silencers in noise-producing equipment and sound barriers; and	<ul style="list-style-type: none"> • 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 	<p>Daily monitoring required at site during the work</p> <p>Comply during the work.</p>
12	Equivalent day and night time noise levels (Appendix 3)	<ul style="list-style-type: none"> • During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>For every 3 months, Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors to conduct the noise test every 3 months. The Noise level monitoring is done in January 2020 and attached as Annexure-5b in Jan 2020 report</p> <p>Instructed contracting agency to conduct air, noise and water test every quarterly but till date not conducted by CA.</p>
13	Records of Air quality inspection	<ul style="list-style-type: none"> • 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 	<p>For every 3 months, Complied (Jan to March Monitoring). Annexure-2during the work. Informed the contractors to conduct the air quality test every 3 months. The Air quality monitoring is done in</p>

			January 2020 and attached as Annexure-5a in Jan 2020 report Instructed contracting agency to conduct air, noise and water test every quarterly but till date not conducted by CA.
14	Worksite clear of hazardous wastes such as oil/fuel;	<ul style="list-style-type: none"> 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 	<p>Daily monitoring required at site during the work</p> <p>Comply during the work</p>
15	Solid waste such as removed concrete, wood, packaging materials, empty containers	<ul style="list-style-type: none"> 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 waste 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. 	<p>Daily monitoring required at site during the work</p> <p>Comply all the issues during the work</p>
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	<ul style="list-style-type: none"> Maintain copy of Section-wise list of utilities to be shifted / disturbed. 	<p>Partially Complied.</p> <p>Communication letter maintained by PIU attached as Annexures 3&4 in the May 2019 report. Contactor should also have copy with him</p> <p>Section-wise list of utilities to be shifted comply within 7 days.</p>
17	Record to confirm that contingency services are provided and all damaged utilities are restored after the work	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation. 	Complied attached as Annexures 10 in the May 2019 report
19	Number of signage's placed at project location.	<ul style="list-style-type: none"> Maintain the signages placed at project location 	Comply with in 5 days
20	Visual site observations	<ul style="list-style-type: none"> Register of official visiting the site and directions given if 	Comply with in 3 days

		any at each site.	
21	Employment records;	<ul style="list-style-type: none"> Attendance registers of labour at each site. 	Complied and attached as Annexure 7 in the May 2019 report and maintaining the attendance register.
22	Records of sources of materials; and	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Register of payment to the workers 	Comply Immediately
24	Site-specific OHS Plan;	<ul style="list-style-type: none"> Site-specific Occupational Health and Safety Plan 	Comply with in 4 days
25	Equipped first-aid stations;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> Weekly and monthly monitoring and safety training programs have to be documented properly including 	Complywith in 7 days

		mock drill register <ul style="list-style-type: none"> The list of PPEs to be provided. 	
31	Personal protective equipment;	<p>The Contractor shall provide and ensure enforcement with zero tolerance the following:</p> <ul style="list-style-type: none"> 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. 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. 	Comply with in 5 days
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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Certified and Experienced supervisor will be appointed by Contractor 	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	<ul style="list-style-type: none"> Contractor submitted Monthly report to PIU & PMU 	Not complied January, February, March, April, May, June , July, August, September and October 2020 Monthly

			report has to be submitted by contractor Will be Compiled Within 10days
36	Camp has been vacated and restored to pre-project conditions	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. H & S plan is to be prepared by contractors Comply with in 10 days



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

ANNEXURE-1

SITE OBSERVATIONS VISITED ON 27th October 2020

S.No	Observation		Recommendation
1	Barricading and Sign Boards at halekote valve chamber	 <p>Latitude: 13.635229 Longitude: 74.704146 Elevation: 15.66m Accuracy: 6.0m Time: 20-10-2020 11:05 Note: hale kote valve chamber rebar casting work in progress</p> <p>Latitude: 13.635173 Longitude: 74.704086 Elevation: 17.66m Accuracy: 15.0m Time: 21-10-2020 09:59 Note: hale kote valve chamber shuttering work in progress</p>	<p>Instructed to provide Project Information Board in English and Kannada.</p> <p>And instructed to contracting agency to do hard barricading around the excavated open valve chamber after work and to provide light during night to avoid accident at night time</p>

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
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3	DI materials stored at kodi OHT site		Instructed contracting agency to place material on wooden platform and to cover the material with tarpaulin to avoid the rusting
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4	Housekeeping at kodi OHT site		<p>Instructed contracting agency to provide safety jackets with safety belt to all workers working from the height of 2m from the ground</p> <p>And also instructed to do proper housekeeping at the site after work completion</p>
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5	Housekeeping near store room not maintained		The housekeeping near store room should be done properly
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6	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>
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7	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.
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8	Scrape materials stored at Halekote area.	 A photograph showing a pile of scrap materials, including metal rods, pipes, and debris, stored outdoors near a large tree and a concrete wall. The materials are scattered on the ground, with some yellow pipes and metal rods visible. The background shows a concrete wall and dense green foliage.	Instructed contracting agency to remove all scrape materials and sand, aggregates from OHT site.
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ANNEXURE -3

Status of site observations Visited on Aug 13th 2020

S.No	Observation		Recommendation	Status
a	Material storage at kodi OHT, Kundapura		Instructed contractor agency to dispose all loose earth stored to dumping yard	Partially complied
			Material at kodi OHT site were properly stored and banded	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
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C	Housekeeping at Kodi OHT Site , Kundapura	 	Instructed contractor agency to remove all material covers, cardboard boxes stored at Kodi OHT Store yard and also steel rods to keep in proper places and to maintain proper housekeeping near store and site	Partially complied
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d	One side of the Clariflocculator Ja pti 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
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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
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f	Housekeeping at OHT Site,Halekote				Instructed contractor agency maintain proper housekeeping at site and to keep valves and others important materials in store room instead of keeping outside in rain	Not complied
						


g	OHT Halkote work site	 <p>Latitude: 13.635485 Longitude: 74.704272 Elevation: 9.07m Accuracy: 4.3m Time: 02/27/2020 16:02 Note: OHT Halkote site, Kundapura</p>	Hard barricading by sheetmust be provided so that residential staying nearby and animals should not enter into the OHT site during work	Not complied
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H	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly	Not complied
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I	Store room at kodi beach		Instructed contractors to provide proper door for storing OHT and pipe work materials	Not complied
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Annexure-3

Status of Site Visit Observations on 17th September 2020

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

2	Barricading, PPEs and water facility to workers at pipe laying work site		<p>Instructed contractors to provide soft barricading at side of the excavation</p> <p>PPEs should be provided at all work site</p> <p>Drinking water facility should be provided at site for worker</p>	<p>Not complied</p> <p>Not complied</p> <p>Not complied</p>
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3	Electrical panel installation at kodi OHT and house service connection	 <p>Latitude: 13.618725 Longitude: 74.693284 Accuracy: 2400.0m GPSTime: 13.09.2020 16:40</p> 	Instructed contracting agency to provide hand gloves, shoes while interconnecting cables wires to avoid electric shock and also to provide safety gloves shoes and jackets to HSE connection persons at site.	Not complied
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4	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Partially complied
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5	Steel bars/iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		<p>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.</p> <p>Steel Reinforcement Work should be carried out in safe working location</p>	<p>Steel bars are used for work. Found no steel bars during our visit</p> <p>Not complied</p>
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6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Partially complied
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7	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>	<p>Not complied</p>
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8	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied
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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
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Monthly Environmental Monitoring Report

Project Number: 43253-027
October 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



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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 was built 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 25 km² with two sewerage districts 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 km² 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 km². Overall 60% of Mangalore, 75.60 km², 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, and 22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km². West district consists of 6 zones (city center of Mangalore) covers 30.82 km². South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km². East district consists of 1 zone (Pachanady, Bondel and Shakatinagara) covers 18.78 km².

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	12°87'N Latitude 74°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	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes
Total Number of Manholes	8000
Total Number of Wet Wells	8
Total area covered	25 km ²
Designed Population	2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network	245 km
Total Number of Manholes	8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments	24
Underground drainage Network	360 km - diameter varying from 150 mm to 900 mm
Total Number of Manholes	14,815
Total Number of Wet Wells	22
Total Area Covered	70%
Designed Population	624,432
Capacity and Technology of STP	
• STP at Kavour	43.5 MLD UASB
• STP at Pachanady	8.75 MLD ASP
• STP at Bajal	20 MLDASP
• STP at Surathkal	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, km² = 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 choked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

- 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavour sewage treatment plant (STP);
- 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
- 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
- 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 from wet wells to the STP. Table 2 shows the nature and size of the various components of the subproject, based on the detailed engineering design of the subproject. Figure 1 shows the location of four proposed pumping main sections in Mangalore City.

Figure 1 Key Plan Showing Pumping Main Alignments

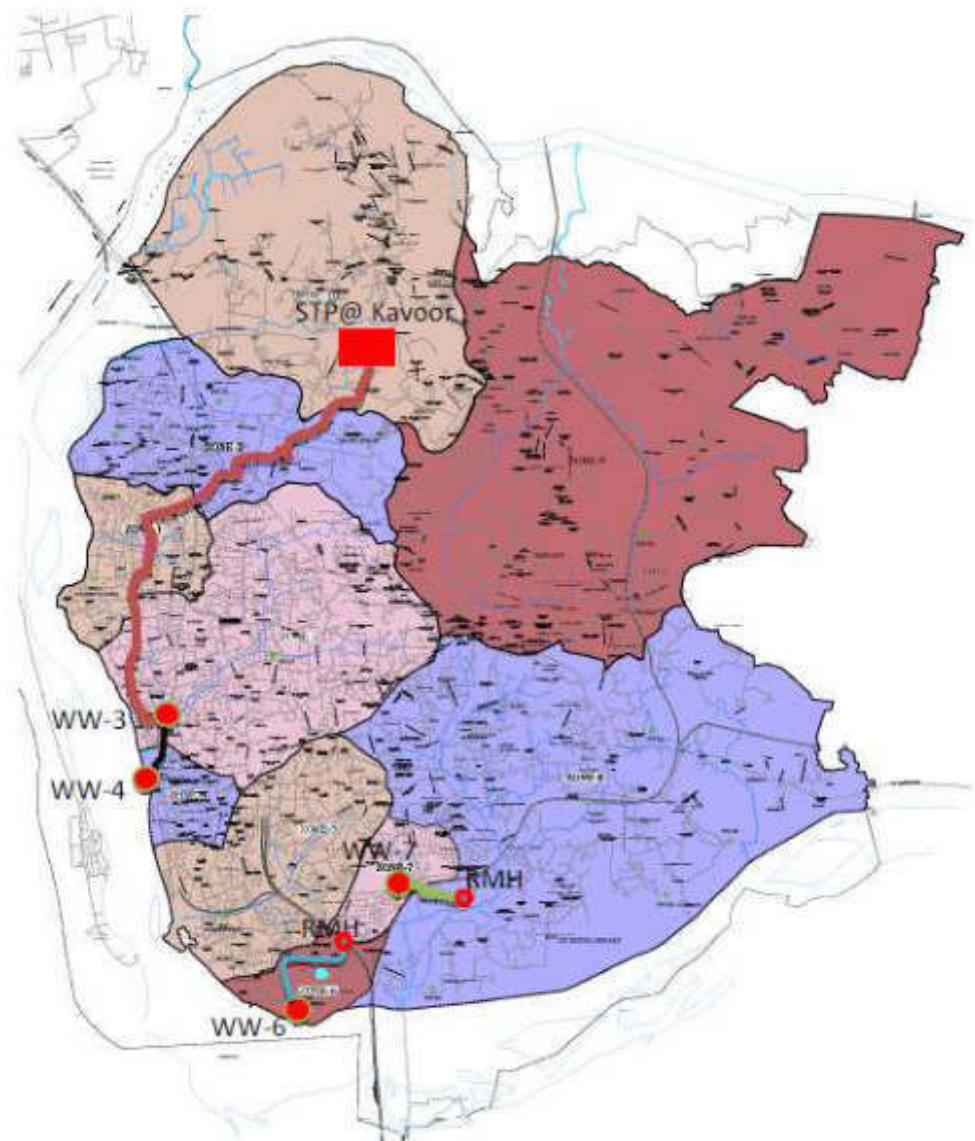


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	<p>Replacement of old pumping main of total length 11.4 km with new mains of ductile iron pipes at following section:</p> <ul style="list-style-type: none"> (i) From Kudroli wet 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: 0.95 km length and 900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate: 1.7 km length and 450 mm diameter (iv) From Jeppu Bappal wet well 7 to Ridge manhole near Yekkur, inside old STP: 1.1 km length and 450 mm diameter 	<p>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:</p> <p>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.</p>

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: 29/10/2020	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	<ul style="list-style-type: none"> Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and Occupational hazards which can occur to workers and public during work. 	<p>Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following:</p> <ol style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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
		<p>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.);</p> <p>6. Construction waste/debris generated (details and quantity);</p> <p>7. Detail the sequence of work process (step-by- step) including specific details of each work;</p> <p>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.</p> <p>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</p>				<p>pumping main sites and recommended to maintain for each site</p> <p>5. Building and infrastructure were not found near excavation area. But instructed contracting agency to put hard barricades.</p> <p>6. Contractor maintained register for damaged infrastructure. Attached as Annexure-11 in May - 2019 report. Recommended contracting agency to Updated work record monthly</p> <p>7. Not complied. Work plan has to be prepared.</p> <p>8. Not Complied. First aider not</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains.</p> <p>The following should be included in the site layout plan:</p> <ul style="list-style-type: none"> 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). 				<p>provided.</p> <p>9. Typical site layout plan not prepared</p> <p>a) Instructed to put hard barricading at work site</p> <p>b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU.</p> <p>c) Contractor is dumping surplus soil in the Pachanady Solid waste management.</p> <p>d) Complied.</p> <p>e) Site layout plan Not prepared as per given mitigation Measures.</p>

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)	<p>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;</p> <p>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</p> <p>12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)</p> <p>13. Coordinate with the respective department and ensure that</p>	Construction Contractor and PIU	<p>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</p> <p>Record to confirm that contingency services are provided and all damaged utilities are restored after the work</p>	Part of project cost	<p>10 Complied-Recommended Contractor to maintain list of utilities identified prior to start of work at any section.</p> <p>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</p> <p>12 Recommended contractors to provide diversion of drains and provision of water tanker whenever and wherever required on site.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>electricity and telephone services are restored quickly</p> <p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p>				<p>13 Instructed contractors to restore such damages in same condition as before.</p> <p>14 Instructed contractors to restore such damages in same condition as before.</p> <p>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.</p>
Construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>15. Prioritize areas within or nearest possible vacant space in the subproject location;</p> <p>16. Avoid locating construction work camps close (100 m away) to residential areas;</p>	Construction Contractor	<p>List of selected sites for construction work camp, storage area and disposal area.</p> <p>Complaints from sensitive receptors</p>	Good construction practice to be followed by contractor –no additional costs	<p>15 Compiled</p> <p>16 Compiled – Advised contractor to mark dumping yard location on google map which is complied.</p> <p>Attached in Sep</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>17. Do not consider residential areas; for stockpiling the waste/surplus soil; and</p> <p>18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.</p>				<p>2019annexure 4</p> <p>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</p> <p>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 annexure 4</p>
Source of construction	Extraction of materials can disrupt natural land	19. Contractor should obtain material from existing mines	Construction	Check Sources and	Good construction practice to be	19 Contractor obtained

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
materials	contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution	<p>approved/licensed by Mines and Geology Department/ Revenue Department only;</p> <p>20. Verify suitability of all material sources and obtain approval of implementing agency;</p> <p>21. No new quarry sites shall be developed for the subproject purpose; and</p> <p>22. Submit a monthly statement of construction material procured indicating material type, source and quantity.</p>	Contractor	approval	followed by contractor –no additional costs	<p>material from authorised agency but no supporting documents maintained by Contractor.</p> <p>20 Contractor has been recommended to maintain the Proper Documentation.</p> <p>21 Complied - No new quarry sites developed by contractor for this project</p> <p>22 Complied</p>
Air quality	Dust and emissions from construction activity may de-grade the air quality	<p>23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>24. Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</p> <p>25. Bring materials (aggregates, sand, etc. gravel) as and when required;</p> <p>26. Use tarpaulins to cover sand and other loose material when</p>	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)	<p>Good construction practice to be followed by contractor</p> <p>Contractor's cost – air quality monitoring (4 locations x 9 samples in construction x 5000 = INR 1,80,000)</p>	<p>23 Complied- Recommended contractor to maintain the copy of Document.</p> <p>24 No such exposed soil and stockpiled were found but instructed contracting agency must</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>transported by vehicles;</p> <p>27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation</p> <p>28. Clean wheels and undercarriage of vehicles prior to leaving construction site;</p> <p>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</p>				<p>spray water wherever necessary.</p> <p>25 Complied</p> <p>26 Instructed contractors to cover sand, gravel and aggregates with tarpaulins to avoid flow during rainy season</p> <p>27 Complied. Stockpile, sand and other loose material are kept in barricaded areas.</p> <p>28 Complied</p> <p>29 Not Complied. Recommended to Contractor to maintain Pollution under Control (PUC) Certificates for all vehicles and equipments used in the construction.</p> <p>30 Air, Noise and</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		30. Carry out air quality monitoring.				Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter. Instructed contractors to conduct all three tests quarterly.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	<p>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;</p> <p>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;</p> <p>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;</p> <p>34. Minimize noise from construction equipment by using vehicle silencers, fitting</p>	Construction Contractor	<p>Complaints from sensitive receptors</p> <p>Site observations</p> <p>Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)</p>	<p>Good construction practice to be followed by contractor</p> <p>Contractor's cost – noise level monitoring (4 locations x 9 samples in construction x 2500 = ₹90.000)</p>	<p>31 Complied.</p> <p>32 Complied.</p> <p>33 Till now such buildings are not found and will be complied when such sensitive buildings observed.</p> <p>34 However; noise will be</p>

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
	from construction areas in monsoon	<p>37. Stockpiles shall be provided with temporary bunds;</p> <p>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;</p> <p>39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;</p>			additional costs	<p>monsoon season. Stockpiling of earth fill not observed during site visit.</p> <p>37 No such stockpiles found on work site.</p> <p>38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant</p> <p>39 NA - Surface water bodies not observed along the Project alignment.</p> <p>40 Complied. Contractor not using fuels and lubricants in bulk. Whenever required fuel used on particular day onsite. But instructed contracting agency to</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>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 is not blocked / disturbed during the work</p>				<p>provide storage yard if fuel stored in bulk.</p> <p>41 Complied</p> <p>Followed by contracting agency</p> <p>42 Complied</p> <p>Followed by contracting agency</p>
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	<p>43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>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</p> <p>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;</p>	Construction Contractor	<p>Work site inspection</p> <p>Complaints from public</p>	Good construction practice to be followed by contractor – no additional costs	<p>43 Complied</p> <p>44 Compiled-disposed in the Pachanady Solid waste management treatment plant</p> <p>45 No such activities observed at the time of inspection</p> <p>46 Partially Complied-Waste</p>

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		compacting, at a stretch is completed in a minimum possible time				53 Complied.
		53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement;				54 Complied.
		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.				55 Complied. (Attached in june 2019)
		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				56 Complied. And 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
						58 Instructed to provide Caution board at work

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>provided</p> <p>57. Maintain safe pedestrian access at all times to the houses along the work site</p> <p>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.</p> <p>59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken.</p> <p>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</p>				<p>site if work starts. Entry 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)</p> <p>59 Respective Engineers present on the site for continuous monitoring</p> <p>60 Traffic diversion boards, hard barricading and Caution boards provided. Recommended all sign board must be Retro reflective (Attached in Sep 2019 annexure 4</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation 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 of such place)	<p>61. No material should be stocked in this area; material shall be brought to the site as and when required</p> <p>62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles</p> <p>63. No work should be conducted near the religious places during religious congregations</p> <p>64. Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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.</p>	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no additional costs	<p>61 Complied Followed by contracting agency</p> <p>62 Complied Followed by contracting agency</p> <p>63 Followed by contracting agency</p> <p>64 Complied Followed by contracting agency</p> <p>65 Complied – Recommended to maintain documentary Evidence</p>

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	Construction Contractor	<ul style="list-style-type: none"> 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. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required.				67 Complied – access provided by contractor. (Attached in june 2019)
		68. Consult affected business people to inform them in advance when work will occur				68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work.
		69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues				69 Complied implementation Resettlement Plan to address these issues in progress (Attached in June 2019)
		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				70 Complied -

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p> <p>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.</p>				<p>Traffic diversion boards, Hard barricading and Caution boards provided(Attached in June 2019) Work schedule not provided.</p> <p>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)</p> <p>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)</p>
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
		<p>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;</p> <p>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;</p> <p>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;</p> <p>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</p>		<p>Potable water supply and clean eating area.</p> <p>PPE and medical insurance</p>	<p>additional costs</p>	<p>contractor. Proper implementation required.</p> <p>75 Not Complied.</p> <p>76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided. (Attached Sep 2019 in annexure 1.v)</p> <p>77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		hazardous working conditions				provided
		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;				78 Complied
		79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use;				79 Oxygen masks for emergency not provided PPEs are provided
		80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;				80 Not Complied
		81. Provide medical insurance coverage for workers;				81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers
		82. Secure all installations from unauthorized intrusion and				

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>accident risks;</p> <p>83. Provide supplies of potable drinking water;</p> <p>84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>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;</p> <p>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;</p> <p>87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>88. Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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.</p> <p>90. Signage shall be in accordance</p>				<p>82 Complied.</p> <p>83 Complied.</p> <p>84 Specific eating area not provided.</p> <p>85 Safety and Tool box meeting conducted. (Attached in Sep 2019 annexure 1.u)</p> <p>86 Not Complied</p> <p>87 Complied.</p> <p>88 Compiled</p> <p>89 Not Complied.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate;</p> <p>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</p> <p>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).</p>				<p>90 Signage are Provided but not in accordance with international standards</p> <p>91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. (Attached in Sep 2019 annexure 1.v)</p> <p>92. Not Complied</p>
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;	Construction Contractor	<ul style="list-style-type: none"> Traffic Management Plan Complaints from public 	Good construction practice to be followed by contractor – no additional costs	<p>93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.</p> <p>No such deep trench found during site visit but instructed contracting agency to Provide sheet piling</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>94. Plan material and waste routes to avoid times of peak-pedestrian activities;</p> <p>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;</p> <p>96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and</p> <p>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%2B</p>				<p>for shoring and strutting if depth is more than 2m.</p> <p>94 Partially Complied – waste management plan not prepared</p> <p>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.</p> <p>96 Partially Complied</p> <p>97 Complied Followed by contracting agency</p> <p>98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		Safety.pdf?MOD=AJPERES).				
Worker Camps	Temporary worker camps	<p>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:</p> <p>100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site;</p> <p>101 Minimize removal of vegetation and disallow cutting of trees;</p> <p>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.</p> <p>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.</p> <p>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</p>	Construction Contractor	<p>List of selected sites. Written consent of land owner</p> <p>Waste Management plan</p>	Good construction practice to be followed by contractor – no additional costs	<p>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 on site and in their camps</p> <p>100 Complied.</p> <p>101 Complied.</p> <p>102 Proper Kitchen, bathrooms garbage room yet to be provided.</p> <p>103 Complied.</p> <p>104 Not Complied</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>head or as per the relevant regulation, whichever is higher.</p> <p>105 Fire and electrical safety pre-cautions shall be adhered to.</p> <p>106 Cooking, sanitation and washing areas shall be provided separately.</p> <p>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.</p> <p>108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.</p> <p>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.</p> <p>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;</p> <p>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</p>				<p>105. Not Complied.</p> <p>106. Not Complied Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms.</p> <p>107. Partially Complied</p> <p>108. Such depressions not found during site visit</p> <p>109. Not complied.</p> <p>110. Complied.</p> <p>111. Complied.</p>

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

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 to conduct HIV AIDS awareness training programme and **H and S Training** to workers at site. Contracting agency has not submitted **April, June, July, August, September and October 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	<ul style="list-style-type: none"> 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;	<p>Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety)</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Type of waste generated (Solid and Hazardous) Quantity of different waste generated at site List and type of garbage bins provided 	Comply with in 15 days

		<ul style="list-style-type: none"> • 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 Solid Waste (Handling and Management) Rules, 2016. 	
5.	Complaints from sensitive receptors and public.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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, SO _x , NO _x)	<ul style="list-style-type: none"> • 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 And instructed contractors to do quarterly
11.	Site observations	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory 	<p>Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.</p> <p>And instructed contractors to do quarterly</p>
13.	Work Program Review	<ul style="list-style-type: none"> Work plan must be prepared and review 	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	<ul style="list-style-type: none"> 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	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 	<p>Spoil Management Plan submitted – not adequate</p> <p>Comply with in 5 days</p>
16.	Traffic Management plan		<p>Traffic Management Plan submitted – not adequate and recommended the contractor to update the same and submit</p> <p>Comply with in 5 days</p>
17.	Employment Records Compliance to labour laws	<ul style="list-style-type: none"> Attendance registers of labour at each site. Register of payment to the workers at each site. 	<p>Attendance register is maintained. but Register of payment to the workers Not maintained Comply with in 5 days</p>
18.	Site specific OHS Equipped first aid station	<ul style="list-style-type: none"> 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 	<p>Comply with in 10 days (when work is in progress all this facilities must be provided)</p>

		<p>person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site.</p> <ul style="list-style-type: none"> The contractor shall identify nearby hospital, which could be used in case of emergency. <p>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.</p>	
19.	Potable water supply and clean eating area.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Daily Contractor as to provide awareness to all office staffs and site workers to follow H& S measures of COVID-19 	<p>Not Complied.</p> <p>Comply with in 3 days</p>
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Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

Annexure -1

Site Observations for the month of 29th Oct 2020

S.No	Observation		Recommendation
a	PPEs for workers at work locations		<p>All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site</p> <p>Instructed contractors to provided PPEs to all worker at site</p> <p>Drinking Water facility should be provided to workers at all site</p>

b	DI pipe laying at kanddatpalli area		<p>Instructed contractor agency to do sheet piling to avoid fall loose earth if depth is more then 2m</p> <p>Also instructed to backfill the earth immediately after pipe laying and to dump excess earth to the dumping yard</p>
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b	Sign boards and hard barricading at work site		<p>Road restoration Work in progress sign board should be kept and hard barricading must be done during road restoration work to avoid accidents</p> <p>Flag mans should be kept on either side of the road if JCB, road roller are being used</p>
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c	One toilet was found damaged		Repair the Toilet
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d	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
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e	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard
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f	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.
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Annexure -3

Status of site observations for the month of 20th August 2020

S.N o	Observation		Recommendation	Status
a	Proper hard barricading and Cautionary Sign. information	 	<p>Hard Barricading is to be done at Mulihitlu valve chamber work site</p> <p>Instructed contracting agency to put hard barricading all around the excavated area to avoid human and animal fall.</p>	Partially complied

b	PPEs at work locations		<p>Instructed to provide PPEs at all work site</p> <p>Drinking water must be provided at all working locations for workers</p> <p>One mobil toilet should be provided site site</p>	Partially complied
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d	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Not complied
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e	Gas stove is being used for cooking food	 	<p>Gas cylinder is to be provided for cooking</p> <p>Kitchen must be separate for cooking</p> <p>Lose electrical cables or boards must be replaced to avoid from electric shocks</p>	Not complied
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f	Material stocks at shaktinagara locations		<p>Proper sign board in frame with stand should be at site</p> <p>And soft barricading should be done for every stocked materials</p>	<p>Pipes are used for execution purpose but instructed to do barricading if pipes stocked again</p>
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g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not complied
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i	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied
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Annexure -3

Site Observations for the month of 22nd September 2020

S.No	Observation		Recommendation	Status
a	Barricadding and sign boards at mulihitlu valve chamber construction		<p>Instructed contractor agency to provide hard barrication around the excavated area</p> <p>Instructed to provide PPEs for workers at working site and to provide water can to the labours at work site.</p>	<p>Not complied</p> <p>Not complied</p>



b	Open trenches and earth stocked at work site		<p>Instructed contracting agency to fill earth immediately after pipe laying and excess earth should not be stocked at site and must dumped in dumping yard</p> <p>Drinking Water facility should be provided to workers at all site</p>	<p>Work was in progress</p> <p>Not complied</p>
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c	One toilet was found damaged		Repair the Toilet	Not complied
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d	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
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e	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not complied
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f	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
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Monthly Environmental Monitoring Report

Project Number: 43253-027
October 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



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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 Udipi 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 Nekkilady 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

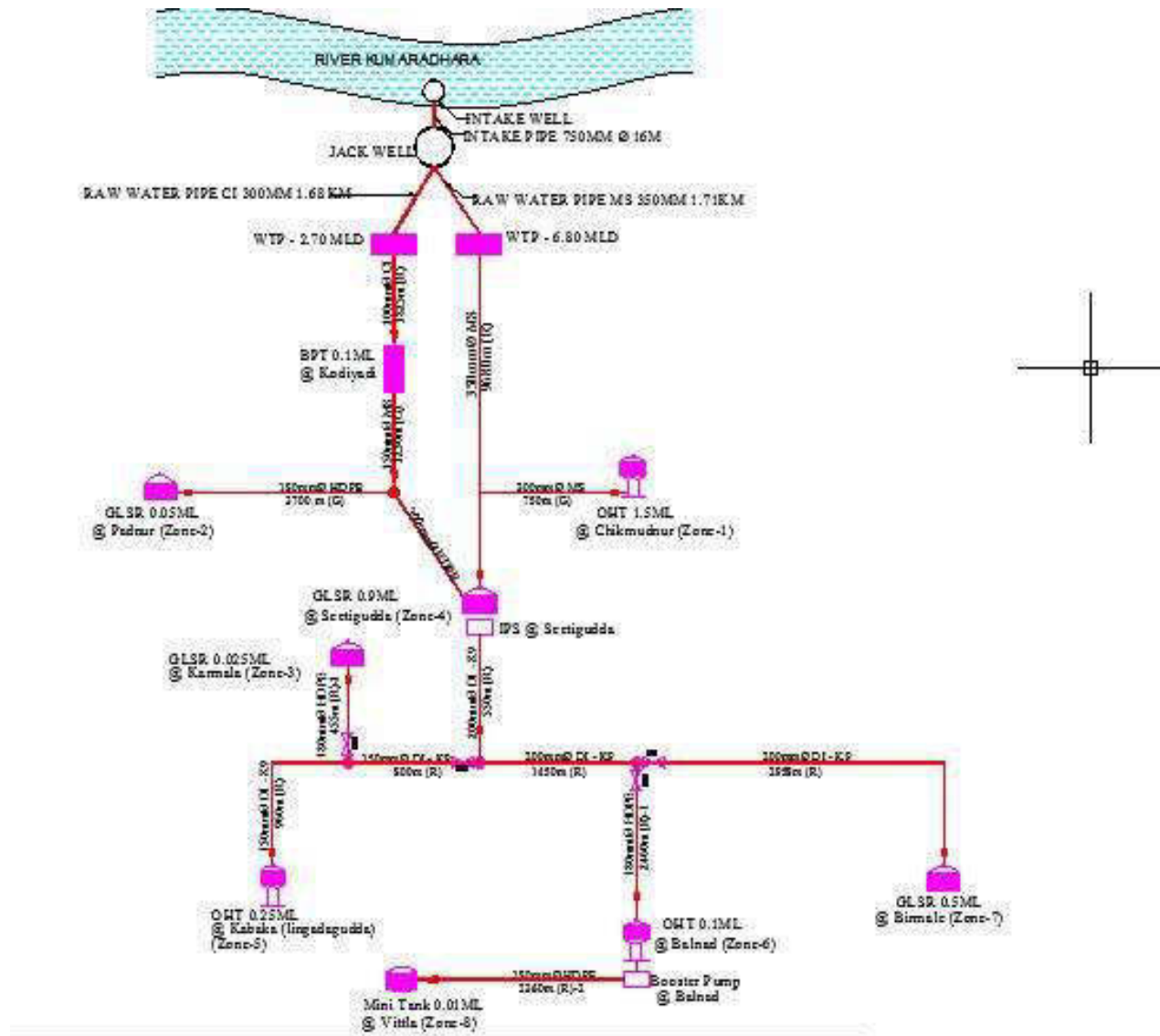


Table 1: Proposed Components for 24x7 Water Supply System

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
Water service reservoirs	Water storage for supply	<p>DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km</p> <p>Six OHTs and two GLSRs of RCC including compound walls at the selected sites:</p> <p>OHT 300KL for Zone-2 at Mura Shantinagra, Padnur</p> <p>100KL for Zone-3 at Karmala near Microwave station 600KL for Zone-4A at CTO, Darbe 250KL for Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at, Balnad Kelyadi, Vitla Road1</p> <p>GLSR 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila</p>	<p>OHT Existing within ULB Properties. No non-title users are present at these sites</p> <p>GLSR Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.</p>
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	<p>Intermediate pumping station at Tenkila Pump capacities: 65m³/h and 85 m head for zone 3 and 5 (1+1) 82 m³/h and 33 m head for zone 4A, (1+1) 119 m³/h and 100 m head for zone 6, 6A and 7, (1+1)</p> <p>Booster pumping station at Balnad Pump capacity 11 m³/h and 80 m head (1+1)</p>	<p>Pumping station will be located within Tenkila GLSR site</p> <p>Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad</p>
Distribution system	Supply of water from service reservoirs to consumers	<p>142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes)</p> <p>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</p>	<p>In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW</p>

	250 mm – 0.362 km	
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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, m³/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: 28/10/2020	Name of Environment, Health And Safety (EHS) engineer :- Mr.YAmruth

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
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Date of monthly monitoring: 28/10/2020	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) nTraining	Impacts on the environment, workers, and community due to improper implementation of EMP	<p>1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and</p> <p>2) appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work</p>	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMD/CSC)	(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 Other costs Responsibility	<p>1) Spoil management submitted but it needs to be updated</p> <p>2) EHS Engineer appointed</p>

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of	Cost and Source of	Status of Implementation
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				Mitigation	Funds	
Environmental Management Plan (EMP) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	<p>1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and</p> <p>2) appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work</p>	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDSC)	<p>(i) Certificate of Completion (Safeguards Compliance Orientation);</p> <p>(ii) Posting Certification Completion</p> <p>(iii) Posting of EMP at worksites</p>	Cost of EMP Implementation Orientation Training to contractor is Responsibility Other costs Responsibility	<p>1) Spoil management submitted but it needs to be updated</p> <p>2) EHS Engineer appointed</p>
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.	<p>3) Consult with PIU/PMDSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4) Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dry weather;</p> <p>5) Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dust generation;</p> <p>6) Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>7) Clean wheels and undercarriage of vehicles prior to leaving construction site; and</p> <p>8) Fit all heavy equipment and machinery with air pollution control devices which</p>	Construction Contractor	<p>(i) Location of stockpiles;</p> <p>(ii) Complaints from sensitive receptors;</p> <p>(iii) Heavy equipment and machinery with air pollution</p> <p>(iv) Certification that vehicles are compliant with Air Act.</p>	Cost for implementation of mitigation measures responsibility	<p>3) Complied</p> <p>4) Instructed contracting agency to remove stock piled at work site and to spray water at commercial and residential areas if stock piled on-site to avoid dust generation.</p> <p>5) Not complied</p> <p>6) Not complied. Instructed to cover sand and loose earth with tarpaulins is transported</p> <p>7) Complied</p>

		are operating correctly.				8) 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.	<p>9) Prepare and implement a spoils management plan as the part of the Construction Management Plan;</p> <p>10) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</p> <p>11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>12) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;</p>	Construction Contractor	<p>(i) Areas for stockpiles, storage of fuels and lubricants and waste materials;</p> <p>(ii) Number of silt traps installed along trenches leading to water bodies;</p> <p>(iii) Records of surface water</p> <p>(iv) Effectiveness of water management measures; and</p> <p>(v) No visible degradation to nearby drainages, nallahs or</p>	Cost for implementation of mitigation measures responsibility	<p>9) Spoil management plan is submitted during preconstruction stage. Update is to be done for construction stage</p> <p>10) Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season</p> <p>11) No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found</p> <p>12) Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity</p>

		<p>13) Dispose any wastes generated by installation of pipeline in designated sites; and</p> <p>14) Conduct surface quality inspection according to the Environmental Management Plan (EMP).</p>		waterbodies due to civil works.		<p>13) Complied</p> <p>14) Not complied</p>
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<p>15) 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;</p> <p>16) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p> <p>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 sensitive receptor;</p> <p>18) Properly enclose the dismantling area with temporary noise barriers; and</p> <p>19) Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s.</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Use of silencers in noise-producing equipment and sound barriers; and</p> <p>(iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).</p>	Cost for implementation of mitigation measures responsibility	<p>15) Complied</p> <p>16) Complied</p> <p>17) Complied</p> <p>18) Complied</p> <p>19) Complied</p>

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, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	<p>20) Prepare and implement spoils management plan;</p> <p>21) Avoid stockpiling of excess excavated soils;</p> <p>22) Coordinate with Puttur CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p> <p>23) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>24) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>25) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>26) Request PIU/PMD CSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work. C&D materials after dismantling of the old WTP and old GLSR shall be managed as per C&D Rules 2016,</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel; and Worksite clear of any excess excavated earth, and solid waste such as removed concrete, wood, packaging materials, empty containers.</p>	Cost for implementation of mitigation measures responsibility	<p>20) Spoil management plan is prepared (attached in annexure 3a July 2019 but updation is to be done) and contractor agency following and found no surplus soil found in sites</p> <p>21) Complied</p> <p>22) Complied (attached in annexure 4 September 2019)</p> <p>23) Used oil and lubricants not generated on site</p> <p>24) Complied (attached in annexure 4 september 2019)</p> <p>25) Complied</p> <p>26) Instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>
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Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<p>27) Obtain from PIU/PMDcsc the list of affected utilities and operators if any;</p> <p>28) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service; and</p> <p>29) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p>	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility	<p>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.</p> <p>28) Not complied</p> <p>29) Complied</p>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<p>30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented;</p> <p>(a) Minimize removal of vegetation and disallow cutting of trees;</p>	Construction Contractor	PMU/PMDcsc to report in writing the no of trees cut and planted.	Cost for implementation of mitigation measures responsibility	<p>30) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p>
		<p>b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department; and</p> <p>c) Plant two native trees for every one that is removed.</p>				<p>b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>c) Instructed contracting agency</p>

Accessibility	Traffic problems and conflicts near project locations and haul road	<p>31) Traffic Management Plan (TMP) should be part of the Construction Management Plan.</p> <p>a) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>b) Schedule transport and hauling activities during non-peak hours;</p> <p>c) Locate entry and exit points in areas where there is low potential for traffic congestion;</p> <p>d) Keep the site free from all unnecessary obstructions;</p> <p>e) Drive vehicles in a considerate manner;</p> <p>f) Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours;</p> <p>g) Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints;</p> <p>h) Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum; and</p> <p>i) Provide pedestrian access in all the locations until normalcy is restored.</p>	Construction Contractor	<p>(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12);</p> <p>(ii) Complaints from sensitive receptors; and</p> <p>(iii) Number of signages placed at project location.</p>	Cost for implementation of mitigation measures responsibility	<p>31) Traffic Management Plan is prepared by contracting agency (attached in annexure 3b July 2019 but updation is to be done)</p> <p>a) Not complied. Instructed to prepare plan</p> <p>b) Complied</p> <p>c) Complied</p> <p>d) Complied</p> <p>e) Complied</p> <p>f) Instructed contracting agency to inform traffic department for temporary road diversion before two days start of the work.</p> <p>g) Complied</p> <p>h) Complied</p> <p>i) Instructed contracting agency to provide pedestrian wherever required</p>
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Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<p>32) Prepare and implement spoils management plan;</p> <p>33) Leave spaces for access between mounds of soil;</p> <p>34) Provide walkways and metal sheets where required for people;</p> <p>35) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools;</p> <p>36) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and</p> <p>37) Provide sign boards for pedestrians to inform nature and duration of construction works and contact</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Spoils management plan; and</p> <p>(iii) Number of walkways, signages, and metal sheets placed at project location.</p>	Cost for implementation of mitigation measures responsibility	<p>32) Spoil management plan is prepared (attached in annexure 3a july 2019 but updation is to be done)</p> <p>33) Complied</p> <p>34) Complied</p> <p>35) Complied</p> <p>36) Complied</p> <p>37) Complied</p>
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<p>38) Employ local labor force to the maximum extent, if manpower is available; and</p> <p>39) Comply with core labor laws</p>	Construction Contractor	<p>(i) Employment records; and</p> <p>(ii) Compliance to core labor laws (See Appendix 2 of this IEE).</p>	Cost for implementation of mitigation measures responsibility	<p>38) Register maintained by contractor attached as Annexure – 4 in dec 2019</p> <p>39) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).</p>

Occupational Health and Safety	Occupational hazards which can arise during work	<p>40) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE);</p> <p>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:</p> <p>(a) excluding public from the site; (b) ensuring all workers are provided with and use</p>	Construction Contractor	<p>(i) Site-specific OHS Plan;</p> <p>(ii) Equipped first-aid stations;</p> <p>(iii) Medical insurance coverage for workers;</p> <p>(iv) Number of accidents;</p> <p>(v) Supplies of potable drinking water;</p>	Cost for implementation of mitigation measures responsibility	<p>40) Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor.</p> <p>41) Contractor following Company EHS Policy-PPE'S provided by Contractor.</p> <p>a) Complied</p> <p>b) Complied. PPE'S provided by Contractor to workers and tool box training provided at site.</p>
		<p>personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs;</p> <p>(c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;</p> <p>42) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>43) Provide medical insurance coverage for workers;</p> <p>44) Secure all installations from unauthorized intrusion and accident risks;</p> <p>45) Provide supplies of potable drinking water;</p> <p>46) Provide clean eating areas where workers are not exposed to hazardous or</p>		<p>(vi) Clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) record of health and safety orientation trainings;</p> <p>(viii) personal protective equipment;</p> <p>(ix) % of moving equipment outfitted with audible back-up alarms;</p> <p>(x) permanent sign boards for hazardous areas such as</p>		<p>c) Complied</p> <p>d) Not complied</p> <p>e) Accident and incident register maintained</p> <p>42) Partially Complied. Instructed to keep first-aid box at each working sites separately Annexure-4 in Dec 2019</p> <p>43) Not complied</p> <p>44) Complied</p> <p>45) Complied</p> <p>46) Complied</p>

		<p>noxioussubstances;</p> <p>47) Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of workatthesite,personalprotect ive protection, and preventing injuring to fellowworkers;</p> <p>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;</p> <p>49) Ensure the visibility of workers through their use of highvisibility</p>		<p>energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and</p> <p>(xi) Compliance to core labor laws (See Appendix 2 of this IEE).</p>		<p>47) Not complied. Instructed to Provide health and safety orientation training to all workers</p> <p>48) Not complied</p> <p>49) Complied Annexure-1 in dec 2019</p>
		<p>vests when working in or walking through heavy equipment operating areas;</p> <p>50) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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</p> <p>52) Disallow worker exposure to noise level greater than 85 dBAfor</p>				<p>50) Complied</p> <p>51) Complied</p> <p>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</p>

		aduration of more than 8 hours per day without the ring protection. 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	<p>53) Plan routes to avoid times of peak-pedestrian activities.</p> <p>54) Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps.</p> <p>55) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.</p> <p>56) Provide road signs and flag persons to warn of on-going trenching activities.</p>	Construction Contractor	(i) Traffic Management Plan; and (ii) Complaints from sensitive receptors.	Cost for implementation of mitigation measures responsibility	<p>53) Not complied And instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and to office staffs</p> <p>54) Not complied</p> <p>55) Not complied</p> <p>56) Complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation	57) Consult with PIU before locating workers camps/sheds, and construction plants; as far as	Construction Contractor	(i) Complaints from sensitive receptors;	Cost for implementation of mitigation measures	57) Complied Contractor informed to PIU office regarding labor camp construction at mottetadka opposite NCRC but they not having letter from PIU. And also instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and camps

	<p>water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers.</p>	<p>possible located at least 200 m from residential areas;</p> <p>58) Minimize removal of vegetation and disallow cutting of trees;</p> <p>59) Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p>60) The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p>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;</p> <p>62) Provide separate facilities for men and women; sanitary facilities shall be properly built and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;</p> <p>63) Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>64) Recover used oil and lubricants and reuse or remove from the site;</p> <p>65) Manage solid waste</p>	<p>(ii) Drinking water and sanitation facilities for employees.</p>	<p>responsibility</p>	<p>58) Removal of vegetation Minimize by selecting best alignment.</p> <p>59) Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area. And also instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and camps</p> <p>60) Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area.</p> <p>61) Instructed contracting agency to provide drinking water as per the standards at camp</p> <p>62) Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p>63) Instructed contracting agency to provide training of solid and liquid materials handling at camp</p> <p>64) Instructed to contracting agency</p>
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		<p>according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>66) Remove all wreckage, rubbish, or temporary structures which are no longer required;</p> <p>67) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work; and</p> <p>68) The work camp details should be included in the Construction Management Plan.</p>				<p>65) Complied</p> <p>66) Complied</p> <p>67) Construction work is in progress.</p> <p>68) Not complied</p>
Social and Cultural Resources	Risk of archaeological chance finds	<p>69) Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>70) Stop work immediately if any finds are suspected to allow further investigation;</p> <p>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</p> <p>72) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility	<p>69) Till now no such suspected items found nor recorded</p> <p>70) Till now no such suspected items found nor recorded</p> <p>71) Till now no such archaeological items recorded</p> <p>72) No such damages recorded during the visit. But instructed to maintain if such damages happens.</p>

Submission of EMP implementation report	Unsatisfactory compliance to EMP	73) Appointment of EHS Engineer to ensure EMP implementation; and 74) 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	73) EHS Engineer appointed 74) Not Complied
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 original condition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to	Cost for implementation 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 utilities restored; 78) All affected structures rehabilitated/compensated; 79) 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; 80) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be topsoiled and regressed using the		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

		<p>guidelines set out in the revegetation specification that forms part of this document;</p> <p>81) The contractor must arrange the cancellation of all temporary services; and</p> <p>82) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>clean surface area free of oil and paints for construction camp</p> <p>80) Not complied</p> <p>81) Not complied</p> <p>82) Construction work is in progress</p>
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Conclusion:-

Construction stage is in progress. Health and safety training 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, March, April, May, June, July, August, September and October 2020 month** with PIU letter, Puttur. Overall the work in the projects for health and safety needs improvement.

Recommendation:-

Sl.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.	<ul style="list-style-type: none"> Construction status or compliance report 	Contractor has to submit Site specific EMP of January, Feb, March, April, May, June, July, August, September and October 2020 Month Comply with in 7 days
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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 for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	<ul style="list-style-type: none"> 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 disposal areas.) Before start of Construction work
12	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	<ul style="list-style-type: none"> If any private land is selected NOC from owner has to be taken 	Comply with in 15 days
13	List of selected sites for disposal	<ul style="list-style-type: none"> 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 quarry Sites and Sources of materials; and		Before start of Construction work
15	Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.		Before start of Construction work
16	Method of statement in table format	<ul style="list-style-type: none"> As mention in mitigation measures 	Comply with in 10 days
17	Spoil Management Plan	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 update plan 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 3b August 2019 report but updation is to be done and informed contractors to update plan 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 update plan once construction phase starts Comply with in 7 days
20	Site specific OHS Plan	<ul style="list-style-type: none"> 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. <p>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.</p>	Comply with in 7 days
21	Equivalent day and night time noise levels	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>Partially Complied.</p> <p>Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors</p> <p>Instructed contractors to conduct noise test every quarterly.</p> <p>Comply with in 10 days</p>
22	Records of Air quality inspection	<ul style="list-style-type: none"> 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 	<p>Complied. Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors</p> <p>Instructed contractors to conduct Air monitoring test</p>

			every quarterly. Comply with in 10 days
23	H & S Plan for COVID-19 implementation	<ul style="list-style-type: none"> 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. H & S plan is to be prepared by contractors Comply with in 3 days




Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1

Site Visit observations on 28th October 2020

1	PPEs to workers at Nekkeladi WTP work site.	 <p>Latitude: 12.828105 Longitude: 75.233868 Accuracy: 2400.0 m Time: 10-03-2020 11:12 Note: Chemical house foundation steel fabrication starting</p>	<p>Instructed contracting agency to Project information Board is to be provided both in English and Kannada.</p> <p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Labour attendance register, labour wages register, grievance redressal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>
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2	Barricading and sign boards at shanti nagar pipe laying, puttur	 <p>Latitude: 12.815188 Longitude: 75.215999 Accuracy: 2800.0 m Time: 10-03-2020 10:57 Note: CWTM 400mm DI Pipe laying near shanthi nagar</p> <p>Powered by NoteCam</p>	<p>Go slow board, work in progress board and project information board must be placed at the work site.</p> <p>Instructed to put two flagmans on either side of the excavated site and to provide cones for proper maintenance of traffic on the main road</p>
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4

Housekeeping
at work sites,
puttur



Instructed
contracting agency
to maintain proper
housekeeping at
work sites. Rods,
wooden, sheets
should be kept at
safe place after its
usage to avoid any
cuts to works or
publics during visits

5	Excavation of earth for DI clear water transmission mains laying				<p>Instructed contractors not to stock earth on site after laying and backfilling the pipe and the excess loose earth must be dumped in dumping yard</p>
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Annexure-2


Status of Site Visit observations on 19th August 2019

1	Project information board and sign boards must be provided at work site.		<p>Provide project information board related to the particular project work and place at entrance of the all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p>	<p>Not complied</p> <p>Partially complied</p>
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3	Bunding materials of		Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope	Not complied
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4	Scrap and materials storage at work locations		Instructed contracting agency to avoid scarp steel and other materials storage at works sites	Not complied
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5	Labour Camp at mottetadka site, puttur	 	<p>Labour camp is properly maintained</p> <p>Toilets are provided to workers</p> <p>Drinking water tap connection provided at the camp</p>	<p>Partially complied</p> <p>Complied</p> <p>Complied</p>
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			<p>Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp</p>	<p>Not complied</p>
			<p>Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases</p>	<p>Partially complied</p>

Annexure-3


Status of Site Visit on 18th September 2020

1	PPEs provided at work site.	 <p>Latitude: 12.756583 Longitude: 75.172088 Elevation: 323.41 m Accuracy: 1.7 m Time: 09-05-2020 15:19 Note: Kalyadi Column above 1st bracing beam concreting</p>  <p>Latitude: 12.78099 Longitude: 75.177867 Elevation: 231.71 m Accuracy: 2.4 m Time: 09-07-2020 11:45 Note: 75mm Hdpe laying in zone Sat Padnur</p>	<p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p> <p>Labour attendance register, labour wages register, grievance redresal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>	<p>Complied</p> <p>Not complied</p> <p>Partially complied</p> <p>Not complied</p>
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2	Excavated trench for pipe laying, puttur	 <p>Time: 09-21-2020 16:12 Note: zone 2 hdpe</p> <p>Praveen K. M. S. S.</p>	Instructed contractors to close the open trench immediately after pipe laying in rainy season. And to provide soft barricading and sign boards near open trench to avoid accidents	Complied
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3	Bunding of materials at all OHT sites, Puttur		Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope	Not complied
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4	Scrap, steel rods and materials storage at all OHT work sites,Puttur	 <p>Latitude: 12.756568 Longitude: 75.172308 Elevation: 419.46 m Accuracy: 1.8 m Time: 09-21-2020 16:25 Note: Kelyadi OHT</p> <p>Powered by NoteCam</p>	Instructed contracting agency to avoid scarp steel and other materials storage at works sites	Partially complied
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Monthly Environmental Monitoring Report

Project Number: 43253-027
November 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



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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 Kundapura Taluk placed 92 km from Mangalore and 416 km from Bangalore (Figure 1). Geographically, Kundapura Town is located at a latitude of 13°08'N and longitude of 74°07'E at an average altitude of 80 m above the mean sea level (msl). The municipality spreads in an area of 14 square kilometer (km²) 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.

Kundapuram 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 Jambukeshwara Temple, 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 diameter mild steel (MS) rising main. Treated water from WTP is pumped through a 400mm diameter MS rising main to the 500

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

Figure 1: Existing Water Supply System in Kundapura

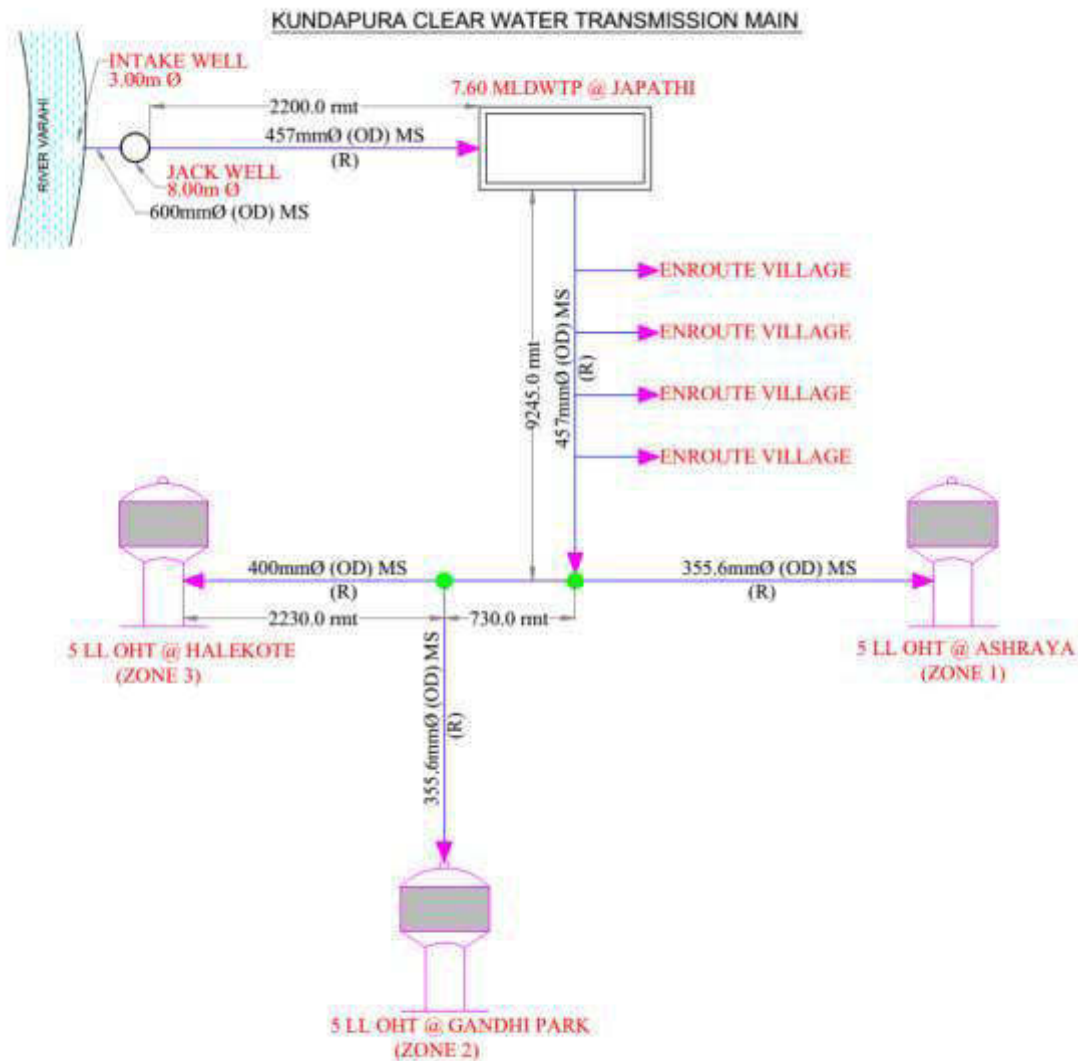


Table 1: Component of Existing Water Supply System in Kundapura

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 the subproject includes the following components:

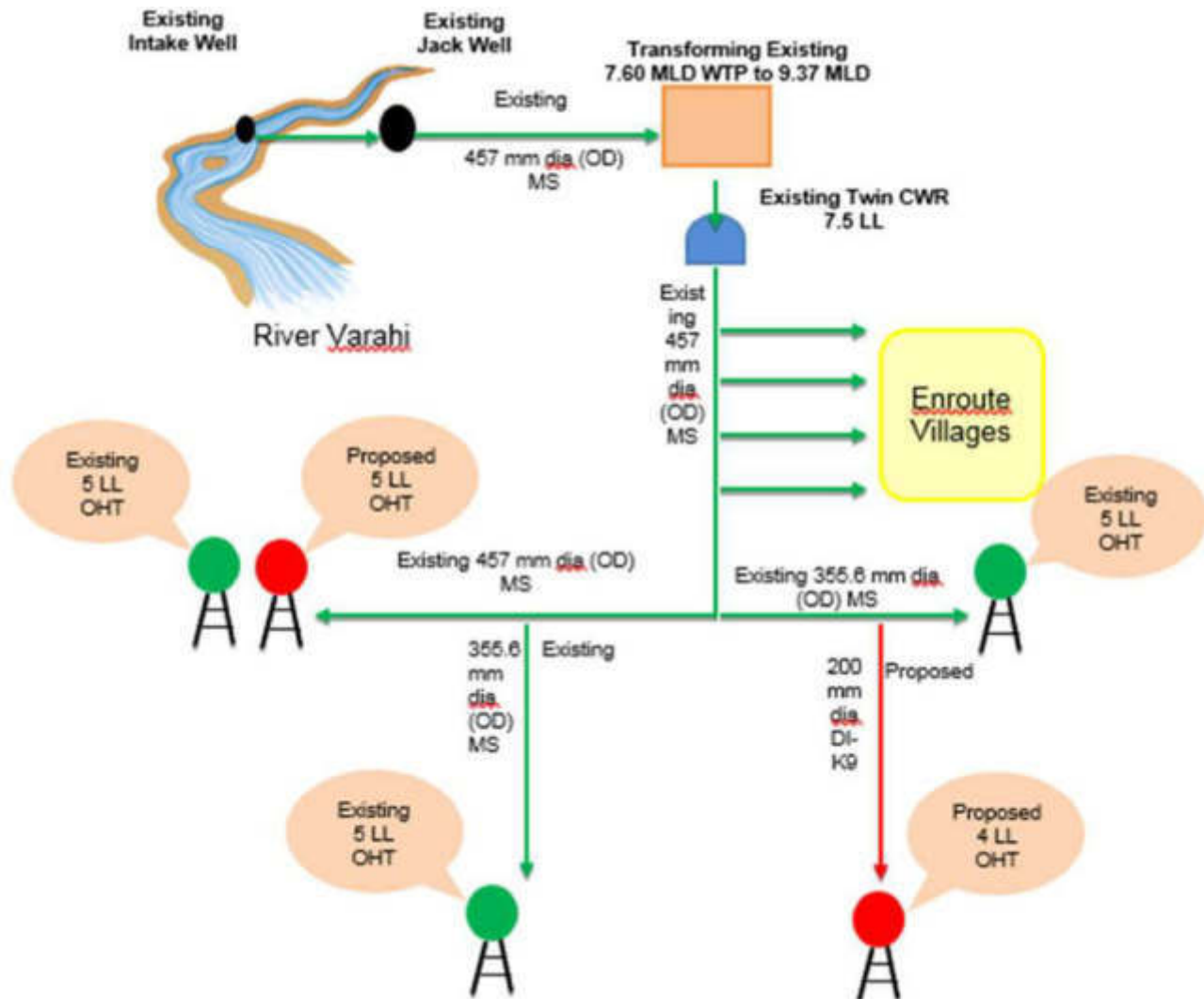
- (i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
- (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 metered house 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 section is 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, wherever it 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 = lakh 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: 18/11/2020	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	<ol style="list-style-type: none"> 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 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 (PMDSC)	<ol style="list-style-type: none"> Certificate of Completion (Safeguards Compliance Orientation) Posting of Certification of Completion at worksites 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.	<ol style="list-style-type: none"> Contractor has to update SOPs. OHS plan and Activities are going on as per company EHS Policies. 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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 report and recommended to

		<p>dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10);</p> <p>4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>5) Provide temporary bunds for stockpiles and materials;</p> <p>6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 100% capacity bund; and</p> <p>7) Dispose any wastes generated by construction activities in landfill or reuse in beneficial purposes</p>		<p>management measures;</p> <p>e) No visible degradation to nearby drainages, nallahs or water bodies due to civil works</p>		<p>update according to the suggestions given and submit Spoil Management Plan.</p> <p>updated /Corrected Spoil Management plan yet to be submitted by Contractor</p> <p>4) Surface Water bodies not found along the Project site.</p> <p>5) Partially Complied</p> <p>6) Fuels and lubricants in bulk are not stored by contractor at site.</p> <p>7) Debris generated by construction is disposed in the ULB designated areas. Waste is used to fill the low line area</p>
	Contamination of coastal water due to works in coastal zone	<p>In addition to the above measures following measures given below for piling works:</p> <p>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</p>			Cost for implementation of mitigation measures responsibility of contractor.	<p>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</p>

		in landfill safely				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 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,	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1) Partially Complied 2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill.

	and other similar items.	<p>storage for future use or disposal in landfill</p> <p>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</p> <p>4) Prepare and implement spoils management plan;</p> <p>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</p> <p>6) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works have been adequately performed before acceptance of work.</p>		<p>solid waste such as removed concrete, wood, packaging materials, empty containers</p>		<p>3) Complied</p> <p>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</p> <p>5) Complied</p> <p>6) Used oil and lubricants not generated on site</p> <p>7) Complied</p> <p>8) Construction work under progress</p>
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Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1) Complied 2) Complied contingency services are provided and restoration is going on after the work. 3) Complied 4) Complied 5) Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ol style="list-style-type: none"> 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 	Construction Contractor	<ol style="list-style-type: none"> a) PMU/PMDSC to report in writing the number of trees cut and planted. 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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.

		3) altering the alignment. Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed				2) Complied 3) Compensation paid to the owner of the tree.
Accessibility	Traffic problems and conflicts near project locations and haul road	<p>1) Plan pipeline work in consultation with the traffic police; prepare a Traffic Management Plan – a template is provided for reference at Appendix 11.</p> <p>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;</p> <p>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;</p> <p>4) Schedule transport and hauling activities during non-peak hours;</p> <p>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</p>	Construction Contractor	<p>a) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix 11);</p> <p>b) Complaints from sensitive receptors; and</p> <p>c) Number of signages placed at project location.</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>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.</p> <p>Traffic management plan yet to be updated</p> <p>2) Complied</p> <p>3) Complied</p> <p>4) Complied</p> <p>5) Not complied Contractor has to provide traffic management plan for their all working areas to minimize the traffic in busy</p>

		<p>diversions;</p> <p>6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>7) Maintain safe pedestrian access at all times to the houses along the work site;</p> <p>8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board.</p> <p>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;</p> <p>10) Keep the site free from all unnecessary obstructions;</p> <p>11) Drive vehicles in a considerate manner</p> <p>In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work</p>				<p>and small congested areas</p> <p>6) Complied</p> <p>7) Complied</p> <p>8) Instructed to contracting agency to provide hard barricades for large depth trench or close all opened trenches Before rainy season</p> <p>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.</p> <p>10) Complied</p> <p>11) Partially Complied</p>
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Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1) Complied 2) Complied 3) Complied 4) Complied 5) Complied 6) Not Complied. instructed contracting agency to provide Project information board at all working areas.
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.), access disruptions etc.,	<ol style="list-style-type: none"> 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 	Construction Contractor	<ol style="list-style-type: none"> a) Visual site observations b) Public complaints 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 1) Complied 2) Contractor conducting work manually for all possible works to minimize the

		<p>use of equipment and vehicles;</p> <p>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;</p> <p>4) No work should be conducted near the religious places during religious congregations;</p> <p>5) Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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</p> <p>7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.</p>				<p>use of equipment.</p> <p>3) Complied</p> <p>4) Complied</p> <p>5) Complied</p> <p>6) Recommended contacting agency to provide information about project work and Proper record has to be maintained</p> <p>7) Improvement is required in Implementation.</p>
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<p>1) Employ local labor force to the maximum extent, if manpower is available; and</p> <p>2) Comply with labor laws</p>	Construction Contractor	<p>a) Employment records;</p> <p>b) Records of sources of materials; and</p> <p>c) Compliance to core labor laws (See Appendix 2 of this IEE)</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>1) Partially complied Register maintained by contractor attached as Annexure – 7 in May 2019 report.</p> <p>2) Contractor Obtained Labour</p>

						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	<ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> (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 	Construction Contractor	<ol style="list-style-type: none"> 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 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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) Partially complied First aid box is available but not adequate as per standards. The equipped first-aid station not provided.

		<p>times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>5) Provide medical insurance coverage for workers;</p> <p>6) Secure all installations from unauthorized intrusion and accident risks;</p> <p>7) Provide supplies of potable drinking water;</p> <p>8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances</p> <p>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;</p> <p>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;</p> <p>11) Ensure the visibility of</p>		<p>devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.</p> <p>k) Compliance to core labor laws (Appendix 2)</p>		<p>5) Employees Compensation Insurances for Workers (Skilled and unskilled).</p> <p>6) Complied</p> <p>7) Complied</p> <p>8) Separate clean eating areas not provided by contractor.</p> <p>9) H&S orientation training for workers not found during the work and proper documentation required need to be done</p> <p>10) Not Complied</p> <p>11) Complied</p>
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		<p>workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>12) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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;</p> <p>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</p> <p>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</p>				<p>12) Complied</p> <p>13) Not Complied</p> <p>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.</p> <p>15) Not complied</p>
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		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	<ol style="list-style-type: none"> 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; 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 	Construction Contractor	<ol style="list-style-type: none"> a) Traffic Management Plan; and b) Complaints from sensitive receptors 	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> 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 6) Not complied- Register of Equipment and Vehicles maintenance certificates not

		<p>vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and</p> <p>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).</p>				<p>found at site during the site visit.</p> <p>7) Work in progress at Halekote OHT and sign boards provided at work site but no sign boards are provided at pipe execution work during inspection. Instructed contracting agency to keep necessary sign boards at pipe execution work</p> <p>8) Not Complied.</p>
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site;</p> <p>2) Minimize removal of vegetation and disallow cutting of trees;</p> <p>3) Labor camps shall include accommodation for workers/laborers along with</p>	Construction Contractor	<p>a) Complaints from sensitive receptors;</p> <p>b) Drinking water and sanitation facilities for employees</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>1) Partially Complied. Instructed contracting agency to provide H&S safety measures about COVID-19 to all worker and employees</p> <p>2) Removal of vegetation minimized by selecting best alignment.</p> <p>3) Labor camp facilities provided by</p>

		<p>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.</p> <p>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.</p> <p>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.</p> <p>6) Fire and electrical safety precautions shall be adhered to.</p> <p>7) Cooking, sanitation and washing areas shall be provided separately.</p> <p>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.</p> <p>9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.</p> <p>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.</p> <p>11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80</p>				<p>the Contractor needed to be improved.</p> <p>4) Not Complied</p> <p>5) Not Complied</p> <p>6) Fire Extinguisher not provided and electrical cable connections are not safely maintained.</p> <p>7) Separate Cooking areahas not been provided</p> <p>8) Gas Cylinder has been Provided by Contractor</p> <p>9) Complied</p> <p>10) Not complied</p> <p>11) Complied</p>
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		<p>lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination;</p> <p>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;</p> <p>13) Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>14) Recover used oil and lubricants and reuse or remove from the site;</p> <p>15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>16) Remove all wreckage, rubbish, or temporary structures which are no longer required;</p> <p>17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>12) Not Complied. The toilets are in unhygienic conditions.</p> <p>13) Not Complied</p> <p>14) Complied - reused.</p> <p>15) Complied</p> <p>16) Complied</p> <p>17) Still Construction Phase is in progress.</p>
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Social and Cultural Resources	Risk of archaeological chance finds	<p>18) Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>19) Stop work immediately if any finds are suspected to allow further investigation;</p> <p>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</p> <p>21) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	<p>18) Complied</p> <p>19) Till now no such suspected items found nor recorded</p> <p>20) Till now no such archaeological items recorded</p> <p>21) Till now no such change found nor recorded</p>
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) Not complied. Contractor agency not submitting monthly report timely
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	<p>24) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>25) All excavated roads shall be reinstated to original condition.</p> <p>26) All disrupted utilities restored.</p> <p>27) All affected structures rehabilitated/compensated.</p> <p>28) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these</p>	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.	<p>24) Complied</p> <p>25) Complied</p> <p>26) Complied</p> <p>27) Till now no structures affected</p> <p>28) Complied</p>

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Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project is not satisfactory. Contractor is maintaining copy of IEE. **HIV AIDS Awareness Training programme** have to be conducted by the Contractor. Proper Safety precautions at site and **Safety against COVID-19** should be improved by the Contractor. **January, February, March, April, May, June, July, August, September, October and November 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board. 	Within 3 day of work Completion
3.	Posting of EMP at worksites.	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> To prepare the Google map of the Locations of identified stockpiles 	Comply with in 5 days
5.	Complaints from sensitive receptors;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> PUC certification for all vehicles/equipment used for/during construction and certification of users at site. 	Comply with in 7 days
7.	Certification that vehicles are compliant with Air Act	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> Prepare list of silt traps installed along trenches 	If applicable in 8 days
10	Records of surface water quality inspection;	<ul style="list-style-type: none"> 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.


			<p>The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report</p> <p>Instructed contracting agency to conduct water tests every quarterly. But till date contractor agency not conducted water test. Comply with in 10 days</p>
11	Use of silencers in noise-producing equipment and sound barriers; and	<ul style="list-style-type: none"> 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 	<p>Daily monitoring required at site during the work</p> <p>Comply during the work.</p>
12	Equivalent day and night time noise levels (Appendix 3)	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>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</p> <p>Instructed contracting agency to conduct air, noise and water test every quarterly but till date not conducted by CA. Comply with in 10 days</p>
13	Records of Air quality inspection	<ul style="list-style-type: none"> 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 	<p>For every 3 months, Complied (Jan to March Monitoring). Annexure-2during the work.Informed the contractors to conduct the air quality test every 3</p>

			<p>months. The Air quality monitoring is done in January 2020 and attached as Annexure-5a in Jan 2020 report</p> <p>Instructed contracting agency to conduct air, noise and water test every quarterly but till date not conducted by CA. Comply with in 10 days</p>
14	Worksite clear of hazardous wastes such as oil/fuel;	<ul style="list-style-type: none"> 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 	<p>Daily monitoring required at site during the work</p> <p>Comply during the work</p>
15	Solid waste such as removed concrete, wood, packaging materials, empty containers	<ul style="list-style-type: none"> 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 waste 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. 	<p>Daily monitoring required at site during the work</p> <p>Comply all the issues during the work</p>
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	<ul style="list-style-type: none"> Maintain copy of Section-wise list of utilities to be shifted / disturbed. 	<p>Partially Complied. Communication letter maintained by PIU attached as Annexures 3&4 in the May 2019 report. Contactor should also have copy with him</p> <p>Section-wise list of utilities to be shifted comply within 7 days.</p>
17	Record to confirm that contingency services are provided and all damaged utilities are restored after the work	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation. 	Complied attached as Annexures 10 in the May

			2019 report
19	Number of signage's placed at project location.	<ul style="list-style-type: none"> • Maintain the signages placed at project location 	Comply with in 5 days
20	Visual site observations	<ul style="list-style-type: none"> • Register of official visiting the site and directions given if any at each site. 	Comply with in 3 days
21	Employment records;	<ul style="list-style-type: none"> • Attendance registers of labour at each site. 	Complied and attached as Annexure 7 in the May 2019 report and maintaining the attendance register.
22	Records of sources of materials; and	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • Register of payment to the workers 	Comply Immediately
24	Site-specific OHS Plan;	<ul style="list-style-type: none"> • Site-specific Occupational Health and Safety Plan 	Comply with in 4 days
25	Equipped first-aid stations;	<ul style="list-style-type: none"> • 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;	<ul style="list-style-type: none"> • 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;	<ul style="list-style-type: none"> • 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;	<ul style="list-style-type: none"> • 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;	<ul style="list-style-type: none"> • 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;	<ul style="list-style-type: none"> Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register The list of PPE to be provided. 	Comply with in 7 days
31	Personal protective equipment;	<p>The Contractor shall provide and ensure enforcement with zero tolerance the following:</p> <ul style="list-style-type: none"> 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. 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. 	Comply with in 5 days
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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Certified and Experienced supervisor will be appointed by Contractor 	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	<ul style="list-style-type: none"> Contractor submitted Monthly report to PIU & PMU 	Not complied January, February, March, April, May, June , July,

			August, September, October and November 2020 Monthly report has to be submitted by contractor Will be Compiled Within 10days
36	Camp has been vacated and restored to pre-project conditions	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. H & S plan is to be prepared by contractors Comply with in 10 days



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

Annexure -1

Site observations Visited on November 18th 2020

S.No	Observation		Recommendation
a	Baricadding, PPEs and drinking water for workers at zone 2, kundapura		<p>Instructed contractors to provide PPEs for workers at site</p> <p>To provide soft baricadding and sign boards near open trenches for pipe laying</p> <p>To provide drinking water 60 liter can for labours at site</p>

b	Material storage at kodi OHT, Kundapura		<p>Instructed contractor agency to dispose all loose earth stored to dumping yard</p> <p>Material at kodi OHT site were properly stored and banded</p>
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c	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.
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d	Housekeeping at Kodi OHT Site , Kundapura		Instructed contractor agency to remove all material covers, cardboard boxes stored at Kodi OHT Store yard and also steel rods to keep in proper places and to maintain proper housekeeping near store and site
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d	One side of the ClariflocculatorJa pti 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.
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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.
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f	Housekeeping at OHT Site, Halekote			<p>Instructed contractor agency maintain proper housekeeping at site and to keep valves and others important materials in store room instead of keeping outside in rain</p>
				


g	OHT Halkote work site	 <p>Latitude: 13.635465 Longitude: 74.704272 Elevation: 9.07m Accuracy: 4.3m Time: 02-27-2020 16:02 Note: OHT halkote site, kundapura</p>	Hard barricading by sheetmust be provided so that residential staying nearby and animals should not enter into the OHT site during work
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H	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly
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I	Store room at kodi beach		Instructed contractors to provide proper door for storing OHT and pipe work materials
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Annexure-2

Status of Site Visit Observations on 17th September 2020

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

2	Barricading, PPEs and water facility to workers at pipe laying work site		<p>Instructed contractors to provide soft barricading at side of the excavation</p> <p>PPEs should be provided at all work site</p> <p>Drinking water facility should be provided at site for worker</p>	<p>Not complied</p> <p>Not complied</p> <p>Not complied</p>
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3	Electrical panel installation at kodi OHT and house service connection	 <p>Latitude: 13.618725 Longitude: 74.693284 Accuracy: 2400.0m GPSTime: 13.09.2020 16:40</p> 	Instructed contracting agency to provide hand gloves, shoes while interconnecting cables wires to avoid electric shock and also to provide safety gloves shoes and jackets to HSE connection persons at site.	Not complied
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4	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Partially complied
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5	Steel bars/iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		<p>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.</p> <p>Steel Reinforcement Work should be carried out in safe working location</p>	<p>Steel bars are used for work. Found no steel bars during our visit</p> <p>Not complied</p>
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6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Partially complied
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7	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>	<p>Not complied</p>
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8	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied
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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
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Annexure-3

Status of the site observations visited ON 27th October 2020

S.No	Observation		Recommendation	Status
1	Barricading and Sign Boards at halekote valve chamber	 <p>Latitude: 13.635229 Longitude: 74.704146 Elevation: 15.66m Accuracy: 6.0m Time: 20-10-2020 11:05 Note: hale kote valve chamber (left) casting work in progress</p> <p>Latitude: 13.635171 Longitude: 74.704086 Elevation: 17.66m Accuracy: 15.0m Time: 21-10-2020 09:59 Note: hale kote valve chamber shuttering work in progress</p>	<p>Instructed to provide Project Information Board in English and Kannada.</p> <p>And instructed to contracting agency to do hard barricading around the excavated open valve chamber after work and to provide light during night to avoid accident at night time</p>	<p>Not complied</p> <p>Not complied</p>

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	Not complied
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3	DI materials stored at kodi OHT site		Instructed contracting agency to place material on wooden platform and to cover the material with tarpaulin to avoid the rusting	Not complied
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4	Housekeeping at kodi OHT site		<p>Instructed contracting agency to provide safety jackets with safety belt to all workers working from the height of 2m from the ground</p> <p>And also instructed to do proper housekeeping at the site after work completion</p>	Not complied
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5	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not complied
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6	<p>Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote</p>		<p>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.</p>	<p>Not complied</p>
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7	Toilet is not properly maintained at OHT Halekote,Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied
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8	Scrape materials stored at Halekote area.		Instructed contracting agency to remove all scrape materials and sand, aggregates from OHT site.	Not complied
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Monthly Environmental Monitoring Report

Project Number: 43253-027
November 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



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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 was built 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 25 km² with two sewerage districts 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 km² 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 km². Overall 60% of Mangalore, 75.60 km², 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, and 22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km². West district consists of 6 zones (city center of Mangalore) covers 30.82 km². South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km². East district consists of 1 zone (Pachanady, Bondel and Shakatinagara) covers 18.78 km².

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	12°87'N Latitude 74°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	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes
Total Number of Manholes	8000
Total Number of Wet Wells	8
Total area covered	25 km ²
Designed Population	2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network	245 km
Total Number of Manholes	8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments	24
Underground drainage Network	360 km - diameter varying from 150 mm to 900 mm
Total Number of Manholes	14,815
Total Number of Wet Wells	22
Total Area Covered	70%
Designed Population	624,432
Capacity and Technology of STP	
• STP at Kavour	43.5 MLD UASB
• STP at Pachanady	8.75 MLD ASP
• STP at Bajal	20 MLDASP
• STP at Surathkal	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, km² = 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 choked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

- 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavour sewage treatment plant (STP);
- 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
- 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
- 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 from wet wells to the STP. Table 2 shows the nature and size of the various components of the subproject, based on the detailed engineering design of the subproject. Figure 1 shows the location of four proposed pumping main sections in Mangalore City.

Figure 1 Key Plan Showing Pumping Main Alignments

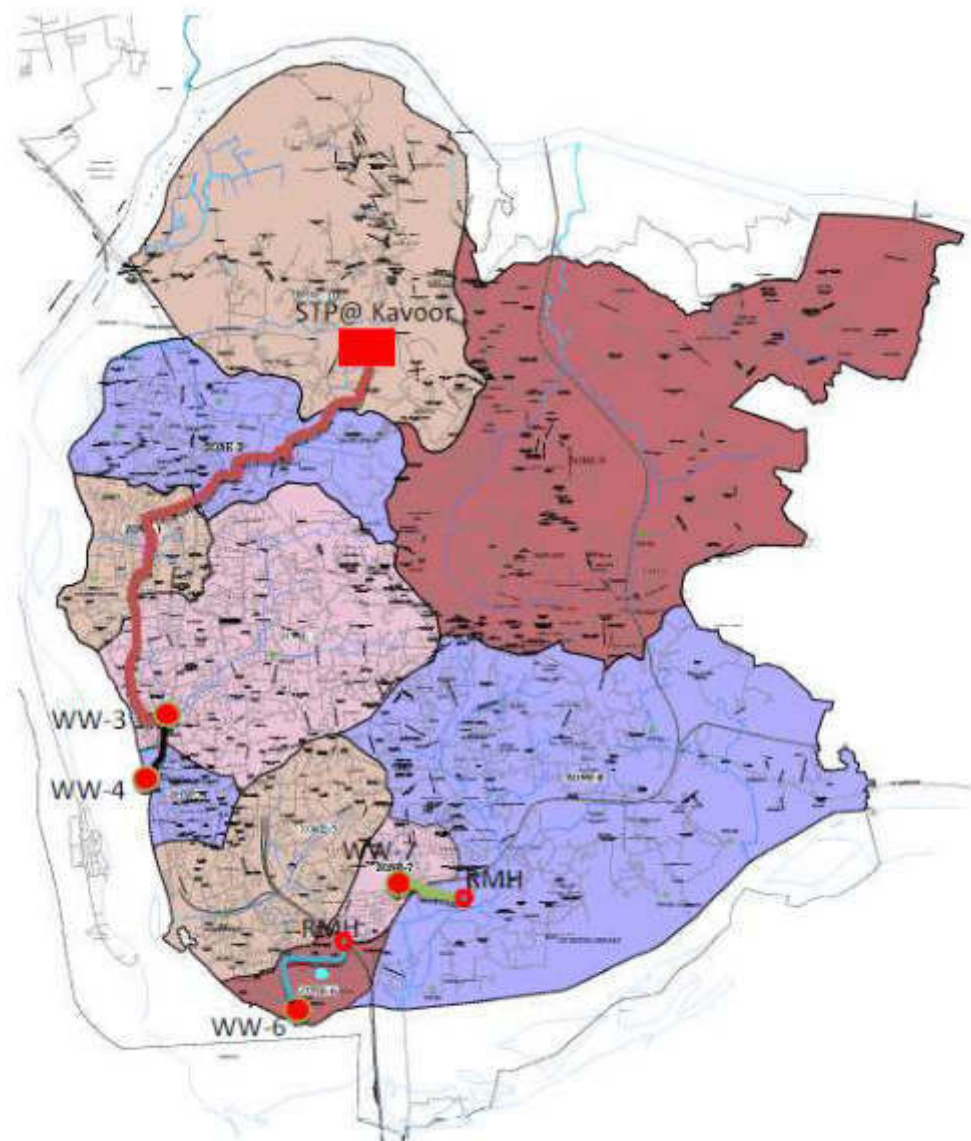


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	<p>Replacement of old pumping main of total length 11.4 km with new mains of ductile iron pipes at following section:</p> <ul style="list-style-type: none"> (i) From Kudroli wet 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: 0.95 km length and 900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate: 1.7 km length and 450 mm diameter (iv) From Jeppu Bappal wet well 7 to Ridge manhole near Yekkur, inside old STP: 1.1 km length and 450 mm diameter 	<p>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:</p> <p>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.</p>

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: 20/11/2020	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	<ul style="list-style-type: none"> Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and Occupational hazards which can occur to workers and public during work. 	<p>Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following:</p> <ol style="list-style-type: none"> Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; Details of materials at each site (type and quantity); 	Construction Contractor	<ul style="list-style-type: none"> 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	<ol style="list-style-type: none"> Maintaining daily work records Attached in Jan 2020 annexure 5 a & b Complied. Attached in Sep 2019 annexure 3 Complied and PPEs are provided to workers on site. Attached in annexure Sep 2019 1.v Contractor maintained registers for

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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.);</p> <p>6. Construction waste/debris generated (details and quantity);</p> <p>7. Detail the sequence of work process (step-by- step) including specific details of each work;</p> <p>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.</p> <p>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</p>				<p>pumping main sites and recommended to maintain for each site</p> <p>5. Building and infrastructure were not found near excavation area. But instructed contracting agency to put hard barricades.</p> <p>6. Contractor maintained register for damaged infrastructure. Attached as Annexure-11 in May - 2019 report. Recommended contracting agency to Updated work record monthly</p> <p>7. Not complied. Work plan has to be prepared.</p> <p>8. Not Complied. First aider not</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains.</p> <p>The following should be included in the site layout plan:</p> <ul style="list-style-type: none"> 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). 				<p>provided.</p> <p>9. Typical site layout plan not prepared</p> <p>a) Instructed to put hard barricading at work site</p> <p>b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU.</p> <p>c) Contractor is dumping surplus soil in the Pachanady Solid waste management.</p> <p>d) Complied.</p> <p>e) Site layout plan Not prepared as per given mitigation Measures.</p>

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)	<p>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;</p> <p>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</p> <p>12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)</p> <p>13. Coordinate with the respective department and ensure that</p>	Construction Contractor and PIU	<p>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</p> <p>Record to confirm that contingency services are provided and all damaged utilities are restored after the work</p>	Part of project cost	<p>10 Complied-Recommended Contractor to maintain list of utilities identified prior to start of work at any section.</p> <p>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</p> <p>12 Recommended contractors to provide diversion of drains and provision of water tanker whenever and wherever required on site.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>electricity and telephone services are restored quickly</p> <p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p>				<p>13 Instructed contractors to restore such damages in same condition as before.</p> <p>14 Instructed contractors to restore such damages in same condition as before.</p> <p>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.</p>
Construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>15. Prioritize areas within or nearest possible vacant space in the subproject location;</p> <p>16. Avoid locating construction work camps close (100 m away) to residential areas;</p>	Construction Contractor	<p>List of selected sites for construction work camp, storage area and disposal area.</p> <p>Complaints from sensitive receptors</p>	Good construction practice to be followed by contractor –no additional costs	<p>15 Compiled</p> <p>16 Compiled – Advised contractor to mark dumping yard location on google map which is complied.</p> <p>Attached in Sep</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>17. Do not consider residential areas; for stockpiling the waste/surplus soil; and</p> <p>18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.</p>				<p>2019annexure 4</p> <p>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</p> <p>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 annexure 4</p>
Source of construction	Extraction of materials can disrupt natural land	19. Contractor should obtain material from existing mines	Construction	Check Sources and	Good construction practice to be	19 Contractor obtained

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
materials	contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution	<p>approved/licensed by Mines and Geology Department/ Revenue Department only;</p> <p>20. Verify suitability of all material sources and obtain approval of implementing agency;</p> <p>21. No new quarry sites shall be developed for the subproject purpose; and</p> <p>22. Submit a monthly statement of construction material procured indicating material type, source and quantity.</p>	Contractor	approval	followed by contractor –no additional costs	<p>material from authorised agency but no supporting documents maintained by Contractor.</p> <p>20 Contractor has been recommended to maintain the Proper Documentation.</p> <p>21 Complied - No new quarry sites developed by contractor for this project</p> <p>22 Complied</p>
Air quality	Dust and emissions from construction activity may de-grade the air quality	<p>23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>24. Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</p> <p>25. Bring materials (aggregates, sand, etc. gravel) as and when required;</p> <p>26. Use tarpaulins to cover sand and other loose material when</p>	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)	<p>Good construction practice to be followed by contractor</p> <p>Contractor's cost – air quality monitoring (4 locations x 9 samples in construction x 5000 = INR 1,80,000)</p>	<p>23 Complied- Recommended contractor to maintain the copy of Document.</p> <p>24 No such exposed soil and stockpiled were found but instructed contracting agency must</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>transported by vehicles;</p> <p>27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation</p> <p>28. Clean wheels and undercarriage of vehicles prior to leaving construction site;</p> <p>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</p>				<p>spray water wherever necessary.</p> <p>25 Complied</p> <p>26 Instructed contractors to cover sand, gravel and aggregates with tarpaulins to avoid flow during rainy season</p> <p>27 Complied. Stockpile, sand and other loose material are kept in barricaded areas.</p> <p>28 Complied</p> <p>29 Not Complied. Recommended to Contractor to maintain Pollution under Control (PUC) Certificates for all vehicles and equipments used in the construction.</p> <p>30 Air, Noise and</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		30. Carry out air quality monitoring.				Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter. Instructed contractors to conduct all three tests quarterly.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	<p>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;</p> <p>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;</p> <p>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;</p> <p>34. Minimize noise from construction equipment by using vehicle silencers, fitting</p>	Construction Contractor	<p>Complaints from sensitive receptors</p> <p>Site observations</p> <p>Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)</p>	<p>Good construction practice to be followed by contractor</p> <p>Contractor's cost – noise level monitoring (4 locations x 9 samples in construction x 2500 = ₹90.000)</p>	<p>31 Complied.</p> <p>32 Complied.</p> <p>33 Till now such buildings are not found and will be complied when such sensitive buildings observed.</p> <p>34 However; noise will be</p>

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
	from construction areas in monsoon	<p>37. Stockpiles shall be provided with temporary bunds;</p> <p>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;</p> <p>39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;</p>			additional costs	<p>monsoon season. Stockpiling of earth fill not observed during site visit.</p> <p>37 No such stockpiles found on work site.</p> <p>38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant</p> <p>39 NA - Surface water bodies not observed along the Project alignment.</p> <p>40 Complied. Contractor not using fuels and lubricants in bulk. Whenever required fuel used on particular day onsite. But instructed contracting agency to</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>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 is not blocked / disturbed during the work</p>				<p>provide storage yard if fuel stored in bulk.</p> <p>41 Complied</p> <p>Followed by contracting agency</p> <p>42 Complied</p> <p>Followed by contracting agency</p>
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	<p>43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>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</p> <p>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;</p>	Construction Contractor	<p>Work site inspection</p> <p>Complaints from public</p>	Good construction practice to be followed by contractor – no additional costs	<p>43 Complied</p> <p>44 Compiled-disposed in the Pachanady Solid waste management treatment plant</p> <p>45 No such activities observed at the time of inspection</p> <p>46 Partially Complied-Waste</p>

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		compacting, at a stretch is completed in a minimum possible time				53 Complied.
		53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement;				54 Complied.
		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.				55 Complied. (Attached in june 2019)
		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				56 Complied. And 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
						58 Instructed to provide Caution board at work

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>provided</p> <p>57. Maintain safe pedestrian access at all times to the houses along the work site</p> <p>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.</p> <p>59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken.</p> <p>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</p>				<p>site if work starts. Entry 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)</p> <p>59 Respective Engineers present on the site for continuous monitoring</p> <p>60 Traffic diversion boards, hard barricading and Caution boards provided. Recommended all sign board must be Retro reflective (Attached in Sep 2019 annexure 4</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation 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 of such place)	<p>61. No material should be stocked in this area; material shall be brought to the site as and when required</p> <p>62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles</p> <p>63. No work should be conducted near the religious places during religious congregations</p> <p>64. Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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.</p>	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no additional costs	<p>61 Complied Followed by contracting agency</p> <p>62 Complied Followed by contracting agency</p> <p>63 Followed by contracting agency</p> <p>64 Complied Followed by contracting agency</p> <p>65 Complied – Recommended to maintain documentary Evidence</p>

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	Construction Contractor	<ul style="list-style-type: none"> 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. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required.				67 Complied – access provided by contractor. (Attached in june 2019)
		68. Consult affected business people to inform them in advance when work will occur				68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work.
		69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues				69 Complied implementation Resettlement Plan to address these issues in progress (Attached in June 2019)
		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				70 Complied -

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p> <p>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.</p>				<p>Traffic diversion boards, Hard barricading and Caution boards provided(Attached in June 2019) Work schedule not provided.</p> <p>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)</p> <p>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)</p>
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
		<p>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;</p> <p>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;</p> <p>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;</p> <p>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</p>		<p>Potable water supply and clean eating area.</p> <p>PPE and medical insurance</p>	additional costs	<p>contractor. Proper implementation required.</p> <p>75 Not Complied.</p> <p>76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided. (Attached Sep 2019 in annexure 1.v)</p> <p>77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		hazardous working conditions				provided
		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;				78 Complied
		79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use;				79 Oxygen masks for emergency not provided PPEs are provided
		80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;				80 Not Complied
		81. Provide medical insurance coverage for workers;				81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers
		82. Secure all installations from unauthorized intrusion and				

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>accident risks;</p> <p>83. Provide supplies of potable drinking water;</p> <p>84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>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;</p> <p>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;</p> <p>87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>88. Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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.</p> <p>90. Signage shall be in accordance</p>				<p>82 Complied.</p> <p>83 Complied.</p> <p>84 Specific eating area not provided.</p> <p>85 Safety and Tool box meeting conducted. (Attached in Sep 2019 annexure 1.u)</p> <p>86 Not Complied</p> <p>87 Complied.</p> <p>88 Compiled</p> <p>89 Not Complied.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate;</p> <p>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</p> <p>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).</p>				<p>90 Signage are Provided but not in accordance with international standards</p> <p>91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. (Attached in Sep 2019 annexure 1.v)</p> <p>92. Not Complied</p>
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;	Construction Contractor	<ul style="list-style-type: none"> Traffic Management Plan Complaints from public 	Good construction practice to be followed by contractor – no additional costs	<p>93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.</p> <p>No such deep trench found during site visit but instructed contracting agency to Provide sheet piling</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>94. Plan material and waste routes to avoid times of peak-pedestrian activities;</p> <p>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;</p> <p>96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and</p> <p>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%2B</p>				<p>for shoring and strutting if depth is more than 2m.</p> <p>94 Partially Complied – waste management plan not prepared</p> <p>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.</p> <p>96 Partially Complied</p> <p>97 Complied Followed by contracting agency</p> <p>98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		Safety.pdf?MOD=AJPERES).				
Worker Camps	Temporary worker camps	<p>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:</p> <p>100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site;</p> <p>101 Minimize removal of vegetation and disallow cutting of trees;</p> <p>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.</p> <p>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.</p> <p>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</p>	Construction Contractor	<p>List of selected sites. Written consent of land owner</p> <p>Waste Management plan</p>	Good construction practice to be followed by contractor – no additional costs	<p>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 on site and in their camps</p> <p>100 Complied.</p> <p>101 Complied.</p> <p>102 Proper Kitchen, bathrooms garbage room yet to be provided.</p> <p>103 Complied.</p> <p>104 Not Complied</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>head or as per the relevant regulation, whichever is higher.</p> <p>105 Fire and electrical safety pre-cautions shall be adhered to.</p> <p>106 Cooking, sanitation and washing areas shall be provided separately.</p> <p>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.</p> <p>108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.</p> <p>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.</p> <p>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;</p> <p>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</p>				<p>105. Not Complied.</p> <p>106. Not Complied Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms.</p> <p>107. Partially Complied</p> <p>108. Such depressions not found during site visit</p> <p>109. Not complied.</p> <p>110. Complied.</p> <p>111. Complied.</p>

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

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 to conduct HIV AIDS awareness training programme and **H and S Training** to workers at site. Contracting agency has not submitted **April, June, July, August, September, October and November 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	<ul style="list-style-type: none"> 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;	<p>Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety)</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Type of waste generated (Solid and Hazardous) Quantity of different waste generated at site List and type of garbage bins provided 	Comply with in 15 days

		<ul style="list-style-type: none"> 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 Solid Waste (Handling and Management) Rules, 2016. 	
5.	Complaints from sensitive receptors and public.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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, SO _x , NO _x)	<ul style="list-style-type: none"> 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 And instructed contractors to conducted Air monitoring quarterly
11.	Site observations	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory 	<p>Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.</p> <p>And instructed contractors to conduct noise test quarterly</p>
13.	Work Program Review	<ul style="list-style-type: none"> Work plan must be prepared and review 	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	<ul style="list-style-type: none"> 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	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 	<p>Spoil Management Plan submitted – not adequate</p> <p>Comply with in 5 days</p>
16.	Traffic Management plan		<p>Traffic Management Plan submitted – not adequate and recommended the contractor to update the same and submit</p> <p>Comply with in 5 days</p>
17.	Employment Records Compliance to labour laws	<ul style="list-style-type: none"> Attendance registers of labour at each site. Register of payment to the workers at each site. 	<p>Attendance register is maintained. but Register of payment to the workers Not maintained Comply with in 5 days</p>
18.	Site specific OHS Equipped first aid station	<ul style="list-style-type: none"> 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 	<p>Comply with in 10 days (when work is in progress all this facilities must be provided)</p>

		<p>person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site.</p> <ul style="list-style-type: none"> The contractor shall identify nearby hospital, which could be used in case of emergency. <p>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.</p>	
19.	Potable water supply and clean eating area.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Daily Contractor as to provide awareness to all office staffs and site workers to follow H& S measures of COVID-19 	<p>Not Complied.</p> <p>Comply with in 3 days</p>
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Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.


Annexure -1

Site observations for the month of 20th November 2020

S.No	Observation		Recommendation
a	Proper hard barricading and Cautionary Sign. information		Instructed contracting agency to put hard barricading all around the excavated area to avoid human and animal fall.

b	PPEs at work locations		<p>Instructed to provide PPEs at all work site</p> <p>Drinking water must be provided at all working locations for workers</p> <p>One mobil toilet should be provided site site</p>
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c	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp
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d	Gas stove is being used for cooking food		<p>Gas cylinder is to be provided for cooking</p> <p>Kitchen must be separate for cooking</p> <p>Lose electrical cables or boards must be replaced to avoid from electric shocks</p>
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e	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height
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f	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided
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Annexure -2

Status of Site Observations for the month of 22nd September 2020

S.No	Observation		Recommendation	Status
a	Barricadding and sign boards at mulihitlu valve chamber construction		<p>Instructed contractor agency to provide hard barrication around the excavated area</p> <p>Instructed to provide PPEs for workers at working site and to provide water can to the labours at work site.</p>	<p>Not complied</p> <p>Not complied</p>




b	Open trenches and earth stocked at work site		<p>Instructed contracting agency to fill earth immediately after pipe laying and excess earth should not be stocked at site and must dumped in dumping yard</p> <p>Drinking Water facility should be provided to workers at all site</p>	<p>Work was in progress</p> <p>Not complied</p>
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c	One toilet was found damaged		Repair the Toilet	Not complied
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d	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
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e	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not complied
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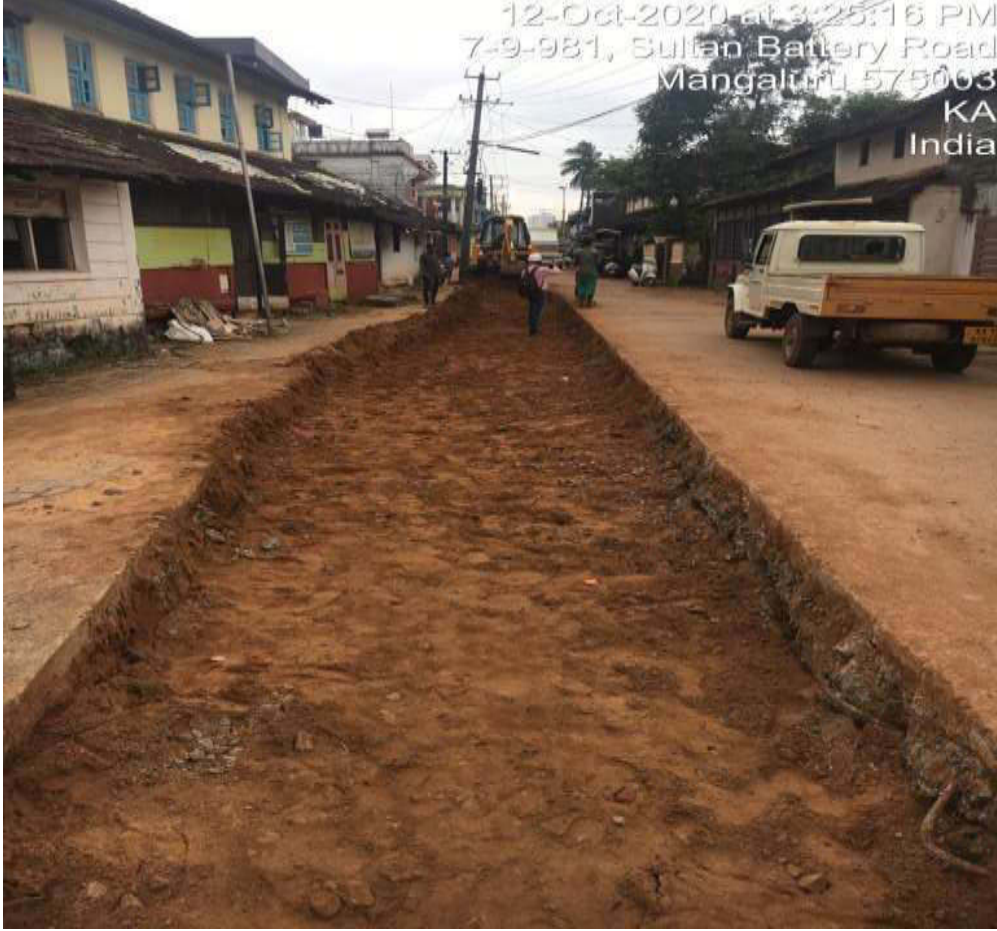
f	Poor Housekeeping at shakti nagar labour camp of subcontractor		Labour camp of subcontractor at shaktinagar is not properly maintained. Housekeeping should be done properly to keep surrounding area clean.	Partially complied
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Annexure -3

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


S.No	Observation		Recommendation	Status
a	PPEs for workers at work locations		<p>All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site</p> <p>Instructed contractors to provided PPEs to all worker at site</p> <p>Drinking Water facility should be provided to workers at all site</p>	<p>Not complied</p> <p>Partially complied</p> <p>Not complied</p>

b	DI pipe laying at kanddatpalli area			<p>Instructed contractor agency to do sheet piling to avoid fall loose earth if depth is more then 2m</p> <p>Also instructed to backfill the earth immediately after pipe laying and to dump excess earth to the dumping yard</p>	<p>Work completed</p> <p>Complied</p>
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b	Sign boards and hard barricading at work site		<p>Road restoration Work in progress sign board should be kept and hard barricading must be done during road restoration work to avoid accidents</p> <p>Flag mans should be kept on either side of the road if JCB, road roller are being used</p>	Work completed
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c	One toilet was found damaged		Repair the Toilet	Not complied
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d	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
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e	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not complied
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f	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
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Monthly Environmental Monitoring Report

Project Number: 43253-027
November 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



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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 Nekkilady 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

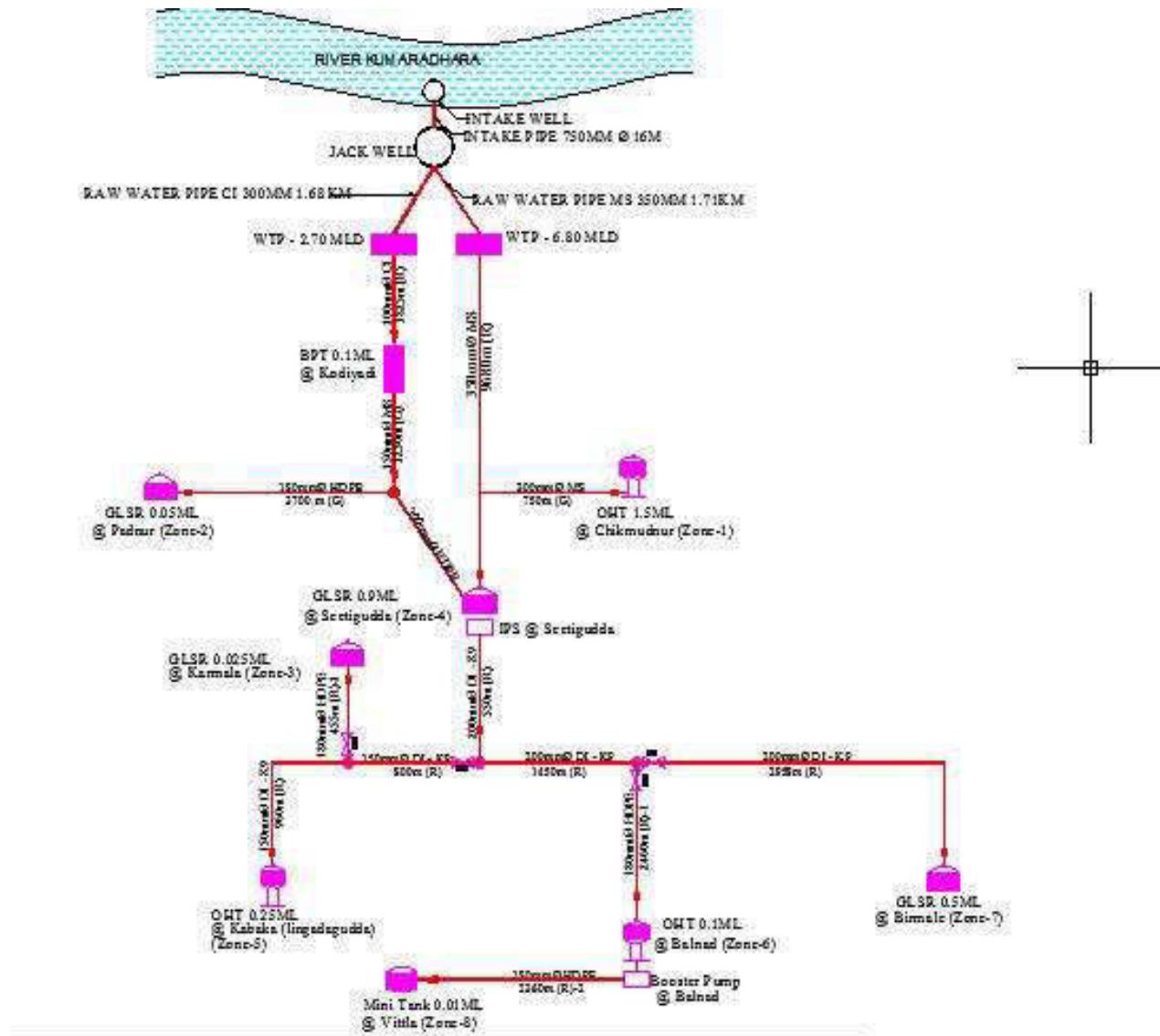


Table 1: Proposed Components for 24x7 Water Supply System

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
Water service reservoirs	Water storage for supply	<p>DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km</p> <p>Six OHTs and two GLSRs of RCC including compound walls at the selected sites:</p> <p>OHT 300KL for Zone-2 at Mura Shantinagra, Padnur</p> <p>100KL for Zone-3 at Karmala near Microwave station 600KL for Zone-4A at CTO, Darbe 250KL for Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at, Balnad Kelyadi, Vitla Road1</p> <p>GLSR 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila</p>	<p>OHT Existing within ULB Properties. No non-title users are present at these sites</p> <p>GLSR Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.</p>
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	<p>Intermediate pumping station at Tenkila Pump capacities: 65m³/h and 85 m head for zone 3 and 5 (1+1) 82 m³/h and 33 m head for zone 4A, (1+1) 119 m³/h and 100 m head for zone 6, 6A and 7, (1+1)</p> <p>Booster pumping station at Balnad Pump capacity 11 m³/h and 80 m head (1+1)</p>	<p>Pumping station will be located within Tenkila GLSR site</p> <p>Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad</p>
Distribution system	Supply of water from service reservoirs to consumers	<p>142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes)</p> <p>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</p>	<p>In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW</p>

	250 mm – 0.362 km	
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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, m³/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: 19/11/2020	Name of Environment, Health And Safety (EHS) engineer :- Mr.YAmruth

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
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Date of monthly monitoring: 19/11/2020	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) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	<p>1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and</p> <p>2) appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work</p>	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMD/CSC)	(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 Other costs Responsibility	<p>1) Spoil management submitted but it needs to be updated</p> <p>2) EHS Engineer appointed</p>

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) Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	<p>1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and</p> <p>2) appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work</p>	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDCSC)	<p>(i) Certificate of Completion (Safeguards Compliance Orientation);</p> <p>(ii) Posting Certification Completion</p> <p>(iii) Posting of EMP at worksites</p>	Cost of EMP Implementation Orientation Training to contractor is Responsibility Other costs Responsibility	<p>1) Spoil management submitted but it needs to be updated</p> <p>2) EHS Engineer appointed</p>
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.	<p>3) Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4) Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dry weather;</p> <p>5) Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dust generation;</p> <p>6) Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>7) Clean wheels and undercarriage of vehicles prior to leaving construction site; and</p> <p>8) Fit all heavy equipment and machinery with air</p>	Construction Contractor	<p>(i) Location of stockpiles;</p> <p>(ii) Complaints from sensitive receptors;</p> <p>(iii) Heavy equipment and machinery with air pollution</p> <p>(iv) Certification that vehicles are compliant with Air Act.</p>	Cost for implementation of mitigation measures responsibility	<p>3) Complied</p> <p>4) Instructed contracting agency to remove stock piled at work site and to spray water at commercial and residential areas if stock piled on-site to avoid dust generation.</p> <p>5) Not complied</p> <p>6) Not complied. Instructed to cover sand and loose earth with tarpaulins is transported</p> <p>7) Complied</p>

		pollution control devices which are operating correctly.				8) 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.	<p>9) Prepare and implement a spoils management plan as the part of the Construction Management Plan;</p> <p>10) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</p> <p>11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;</p> <p>12) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;</p>	Construction Contractor	<p>(i) Areas for stockpiles, storage of fuels and lubricants and waste materials;</p> <p>(ii) Number of silt traps installed along trenches leading to water bodies;</p> <p>(iii) Records of surface water</p> <p>(iv) Effectiveness of water management measures; and</p> <p>(v) No visible degradation to nearby drainages, nallahs or</p>	Cost for implementation of mitigation measures responsibility	<p>9) Spoil management plan is submitted during preconstruction stage. Updation is to be done for construction stage</p> <p>10) Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season</p> <p>11) No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found</p> <p>12) Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity</p>

		<p>13) Dispose any wastes generated by installation of pipeline in designated sites; and</p> <p>14) Conduct surface quality inspection according to the Environmental Management Plan (EMP).</p>		waterbodies due to civil works.		<p>13) Complied</p> <p>14) Not complied</p>
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<p>15) 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;</p> <p>16) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p> <p>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 sensitive receptor;</p> <p>18) Properly enclose the dismantling area with temporary noise barriers; and</p> <p>19) Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s.</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Use of silencers in noise-producing equipment and sound barriers; and</p> <p>(iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).</p>	Cost for implementation of mitigation measures responsibility	<p>15) Complied</p> <p>16) Complied</p> <p>17) Complied</p> <p>18) Complied</p> <p>19) Complied</p>

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, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	<p>20) Prepare and implement spoils management plan;</p> <p>21) Avoid stockpiling of excess excavated soils;</p> <p>22) Coordinate with Puttur CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p> <p>23) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>24) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>25) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>26) Request PIU/PMD CSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work. C&D materials after dismantling of the old WTP and old GLSR shall be managed as per C&D Rules 2016,</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel; and Worksite clear of any excess excavated earth, and solid waste such as removed concrete, wood, packaging materials, empty containers.</p>	Cost for implementation of mitigation measures responsibility	<p>20) Spoil management plan is prepared (attached in annexure 3a July 2019 but updation is to be done) and contractor agency following and found no surplus soil found in sites</p> <p>21) Complied</p> <p>22) Complied (attached in annexure 4 September 2019)</p> <p>23) Used oil and lubricants not generated on site</p> <p>24) Complied (attached in annexure 4 september 2019)</p> <p>25) Complied</p> <p>26) Instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>
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Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<p>27) Obtain from PIU/PMDcSC the list of affected utilities and operators if any;</p> <p>28) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service; and</p> <p>29) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p>	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility	<p>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.</p> <p>28) Not complied</p> <p>29) Complied</p>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<p>30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented;</p> <p>(a) Minimize removal of vegetation and disallow cutting of trees;</p>	Construction Contractor	PMU/PMDcSC to report in writing the no of trees cut and planted.	Cost for implementation of mitigation measures responsibility	<p>30) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p>
		<p>b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department; and</p> <p>c) Plant two native trees for every one that is removed.</p>				<p>b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work</p> <p>c) Instructed contracting agency</p>

Accessibility	Traffic problems and conflicts near project locations and haul road	<p>31) Traffic Management Plan (TMP) should be part of the Construction Management Plan.</p> <p>a) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>b) Schedule transport and hauling activities during non-peak hours;</p> <p>c) Locate entry and exit points in areas where there is low potential for traffic congestion;</p> <p>d) Keep the site free from all unnecessary obstructions;</p> <p>e) Drive vehicles in a considerate manner;</p> <p>f) Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours;</p> <p>g) Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints;</p> <p>h) Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum; and</p> <p>i) Provide pedestrian access in all the locations until normalcy is restored.</p>	Construction Contractor	<p>(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12);</p> <p>(ii) Complaints from sensitive receptors; and</p> <p>(iii) Number of signages placed at project location.</p>	Cost for implementation of mitigation measures responsibility	<p>31) Traffic Management Plan is prepared by contracting agency (attached in annexure 3b July 2019 but updation is to be done)</p> <p>a) Not complied. Instructed to prepare plan</p> <p>b) Complied</p> <p>c) Complied</p> <p>d) Complied</p> <p>e) Complied</p> <p>f) Instructed contracting agency to inform traffic department for temporary road diversion before two days start of the work.</p> <p>g) Complied</p> <p>h) Complied</p> <p>i) Instructed contracting agency to provide pedestrian wherever required</p>
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Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	32) Prepare and implement spoils management plan; 33) Leave spaces for access between mounds of soil; 34) Provide walkways and metal sheets where required for people; 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 sensitive receptors; (ii) Spoils management plan; and (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility	32) Spoil management plan is prepared (attached in annexure 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 for implementation 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 during work	<p>40) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE);</p> <p>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:</p> <p>(a) excluding public from the site; (b) ensuring all workers are provided with and use</p>	Construction Contractor	<p>(i) Site-specific OHS Plan;</p> <p>(ii) Equipped first-aid stations;</p> <p>(iii) Medical insurance coverage for workers;</p> <p>(iv) Number of accidents;</p> <p>(v) Supplies of potable drinking water;</p>	Cost for implementation of mitigation measures responsibility	<p>40) Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor.</p> <p>41) Contractor following Company EHS Policy-PPE'S provided by Contractor.</p> <p>a) Complied</p> <p>b) Complied. PPE'S provided by Contractor to workers and tool box training provided at site.</p>
		<p>personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask and ear plugs;</p> <p>(c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;</p> <p>42) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>43) Provide medical insurance coverage for workers;</p> <p>44) Secure all installations from unauthorized intrusion and accident risks;</p> <p>45) Provide supplies of potable drinking water;</p> <p>46) Provide clean eating areas where workers are not exposed to hazardous or</p>		<p>(vi) Clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) record of health and safety orientation trainings;</p> <p>(viii) personal protective equipment;</p> <p>(ix) % of moving equipment outfitted with audible back-up alarms;</p> <p>(x) permanent sign boards for hazardous areas such as</p>		<p>c) Complied</p> <p>d) Not complied</p> <p>e) Accident and incident register maintained</p> <p>42) Partially Complied. Instructed to keep first-aid box at each working sites separately Annexure-4 in Dec 2019</p> <p>43) Not complied</p> <p>44) Complied</p> <p>45) Complied</p> <p>46) Complied</p>

		<p>noxioussubstances;</p> <p>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;</p> <p>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;</p> <p>49) Ensure the visibility of workers through their use of highvisibility</p>		<p>energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and</p> <p>(xi) Compliance to core labor laws (See Appendix 2 of this IEE).</p>		<p>47) Not complied. Instructed to Provide health and safety orientation training to all workers</p> <p>48) Not complied</p> <p>49) Complied Annexure-1 in dec 2019</p>
		<p>vests when working in or walking through heavy equipment operating areas;</p> <p>50) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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</p> <p>52) Disallow worker exposure to noise level greater than 85 dBAfor</p>				<p>50) Complied</p> <p>51) Complied</p> <p>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</p>

		aduration of more than 8 hours per day without the ring protection. 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	<p>53) Plan routes to avoid times of peak-pedestrian activities.</p> <p>54) Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps.</p> <p>55) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.</p> <p>56) Provide road signs and flag persons to warn of on-going trenching activities.</p>	Construction Contractor	(i) Traffic Management Plan; and (ii) Complaints from sensitive receptors.	Cost for implementation of mitigation measures responsibility	<p>53) Not complied And instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and to office staffs</p> <p>54) Not complied</p> <p>55) Not complied</p> <p>56) Complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation	57) Consult with PIU before locating workers camps/sheds, and construction plants; as far as	Construction Contractor	(i) Complaints from sensitive receptors;	Cost for implementation of mitigation measures	57) Complied Contractor informed to PIU office regarding labor camp construction at mottetadka opposite NCRC but they not having letter from PIU. And also instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and camps

	<p>water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers.</p>	<p>possible located at least 200 m from residential areas;</p> <p>58) Minimize removal of vegetation and disallow cutting of trees;</p> <p>59) Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p>60) The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p>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;</p> <p>62) Provide separate facilities for men and women; sanitary facilities shall be properly built and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons;</p> <p>63) Train employees in the storage and handling of materials which can potentially cause soil contamination;</p> <p>64) Recover used oil and lubricants and reuse or remove from the site;</p> <p>65) Manage solid waste</p>		<p>(ii) Drinking water and sanitation facilities for employees.</p>	<p>responsibility</p>	<p>58) Removal of vegetation Minimize by selecting best alignment.</p> <p>59) Complied.</p> <p>instructed to provide proper sheet shed bathroom and drinking water for daily use and awareness to follow H&S measures of COVID-19 to the worker at site and camps</p> <p>60) Complied</p> <p>61) Instructed contracting agency to provide drinking water as per the standards at camp</p> <p>62) Partially complied Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p>63) Instructed contracting agency to provide training of solid and liquid materials handling at camp</p> <p>64) Instructed to contracting agency</p>
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		<p>according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>66) Remove all wreckage, rubbish, or temporary structures which are no longer required;</p> <p>67) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work; and</p> <p>68) The work camp details should be included in the Construction Management Plan.</p>				<p>65) Complied</p> <p>66) Complied</p> <p>67) Construction work is in progress.</p> <p>68) Not complied</p>
Social and Cultural Resources	Risk of archaeological chance finds	<p>69) Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>70) Stop work immediately if any finds are suspected to allow further investigation;</p> <p>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</p> <p>72) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility	<p>69) Till now no such suspected items found nor recorded</p> <p>70) Till now no such suspected items found nor recorded</p> <p>71) Till now no such archaeological items recorded</p> <p>72) No such damages recorded during the visit. But instructed to maintain if such damages happens.</p>

Submission of EMP implementation report	Unsatisfactory compliance to EMP	73) Appointment of EHS Engineer to ensure EMP implementation; and 74) 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	73) EHS Engineer appointed 74) Not Complied
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 original condition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to	Cost for implementation 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 utilities restored; 78) All affected structures rehabilitated/compensated; 79) 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; 80) All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be topsoiled and regressed using the		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

		<p>guidelines set out in the revegetation specification that forms part of this document;</p> <p>81) The contractor must arrange the cancellation of all temporary services; and</p> <p>82) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>clean surface area free of oil and paints for construction camp</p> <p>80) Not complied</p> <p>81) Not complied</p> <p>82) Construction work is in progress</p>
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Conclusion:-

Construction stage is in progress. Health and safety training 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, March, April, May, June, July, August, September and October 2020 month** with PIU letter, Puttur. Overall the work in the projects for health and safety needs improvement.

Recommendation:-

Sl.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		Not complied Before start of Construction work Comply with in 7days
3.	Submission of monthly reports.	<ul style="list-style-type: none"> Construction status or compliance report 	Not complied Contractor has to submit Site specific EMP of January, Feb, March, April, May, June, July, August, September, October and November 2020 Month Comply with in 5 days
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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;	<ul style="list-style-type: none"> Storage of materials like fuel, chemicals, and cement shall be 	Comply with in 7 days

		done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	
11	List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	<ul style="list-style-type: none"> 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 disposal areas.) Before start of Construction work
12	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	<ul style="list-style-type: none"> If any private land is selected NOC from owner has to be taken 	Comply with in 15 days
13	List of selected sites for disposal	<ul style="list-style-type: none"> 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 quarry Sites and Sources of materials; and		Before start of Construction work
15	Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.		Before start of Construction work
16	Method of statement in table format	<ul style="list-style-type: none"> As mention in mitigation measures 	Comply with in 10 days
17	Spoil Management Plan	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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 update plan 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 3b August 2019 report but updation is to be done and informed contractors to update plan once construction phase starts

			Comply with in 7 days
19	Environmental management plan		<p>Draft copy shown and submitted attached as an annexure 3c in August 2019 report but updation is to be done and informed contractors to update plan once construction phase starts</p> <p>Comply with in 7 days</p>
20	Site specific OHS Plan	<ul style="list-style-type: none"> 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. <p>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.</p>	Comply with in 7 days
21	Equivalent day and night time noise levels	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>Partially Complied. Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors</p> <p>Conducted Noise test in November 2020. But Instructed contractors to submit previous reports of November 2019 and Feb 2020 and this month noise report as earliest</p> <p>Comply with in 1 days</p>
22	Records of Air quality inspection	<ul style="list-style-type: none"> If contractor carrying out Construction activities near sensitive 	Complied.

		receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	<p>Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors</p> <p>Conducted Air test in November 2020. But Instructed contractors to submit previous reports of November 2019 and Feb 2020 and this month Air report as earliest</p> <p>Comply with in 10 days</p>
23	H & S Plan for COVID-19 implementation	<ul style="list-style-type: none"> Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19 	<p>Partially complied. Implementation of H & S at work site is done. H & S plan is to be prepared by contractors</p> <p>Comply with in 3 days</p>



Mahammad Rapiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1

Site Visit observations on 19th November 2020


1	Air and noise test conducted by contracting agency	 <p>Latitude: 12.771012 Longitude: 75.190068 Elevation: 221.7 m Accuracy: 2.1 m Time: 11-04-2020 12:04 Note: Noise & Pollution testing at site</p>  <p>Puttur Karnataka India 35°C 90°F 2020-11-04 (Fri) 01:30 (PM)</p>	Air and Noise test conducted by contracting agency at different location
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2	Project information board and sign boards must be provided at work site		<p>Provide project information board related to the particular project work and place at entrance of the all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p>
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3	Sign boards , barricading should be provided at work site		<ul style="list-style-type: none">• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site.• Drinking Water can must be provided at all work site
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4	Bunding of materials		<p>Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope</p>
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5	Scrap and materials storage at work locations		Instructed contracting agency to avoid scarp steel and other materials storage at works sites
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6	Labour Camp at mottetadka site, puttur	 	<p>Labour camp is properly maintained</p> <p>Toilets are provided to workers</p> <p>Drinking water tap connection provided at the camp</p>
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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

Annexure-2


Status of Site Visit on 18th September 2020

1	PPEs provided at work site.	 <p>Latitude: 12.756583 Longitude: 75.172088 Elevation: 323.41 m Accuracy: 1.7 m Time: 09-05-2020 15:19 Note: Kalyadi Column above 1st bracing beam concreting</p>  <p>Latitude: 12.78099 Longitude: 75.177867 Elevation: 231.71 m Accuracy: 2.4 m Time: 09-07-2020 11:45 Note: 75mm Hdpe laying in zone Sat Padnur</p>	<p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand</p> <p>Labour attendance register, labour wages register, grievance redresal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>	<p>Complied</p> <p>Not complied</p> <p>Partially complied</p> <p>Not complied</p>
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2	Excavated trench for pipe laying, puttur	 <p>Time: 09-21-2020 16:12 Note: zone 2 hdpe</p> <p>Prepared by: M. S. S. S.</p>	Instructed contractors to close the open trench immediately after pipe laying in rainy season. And to provide soft barricading and sign boards near open trench to avoid accidents	Complied
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3	Bunding of materials at all OHT sites, Puttur		Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope	Not complied
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4	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	Partially complied
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Annexure-3

Status of Site Visit observations on 28th October 2020

1	PPEs to workers at Nekkeladi WTP work site.	 <p>Latitude: 12.828105 Longitude: 75.233868 Accuracy: 2400.0 m Time: 10-03-2020 11:12 Note: Chemical house foundation steel fabrication starting</p>	<p>Instructed contracting agency to Project information Board is to be provided both in English and Kannada.</p> <p>PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site</p> <p>Labour attendance register, labour wages register, grievance redressal register and accident and incident register compulsory be at all work site.</p> <p>Drinking Water can must be provided at all work site</p>	<p>Not complied</p> <p>Complied</p> <p>Partially complied</p> <p>Not complied</p>
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2	Barricading and sign boards at shanti nagar pipe laying, puttur		<p>Go slow board, work in progress board and project information board must be placed at the work site.</p> <p>Instructed to put two flagmans on either side of the excavated site and to provide cones for proper maintenance of traffic on the main road</p>	<p>Not complied</p> <p>Not complied</p>
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4	Housekeeping at work sites, puttur		Instructed contracting agency to maintain proper housekeeping at work sites. Rods, wooden, sheets should be kept at safe place after its usage to avoid any cuts to works or publics during visits	Partially complied
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5	Excavation of earth for DI clear water transmission mains laying		Instructed contractors not to stock earth on site after laying and backfilling the pipe and the excess loose earth must be dumped in dumping yard	Complied
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Monthly Environmental Monitoring Report

Project Number: 43253-027
November 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



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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)	<p>7.47 km length 150 mm – 355 mm diameter Ductile Iron Pipes</p> <ul style="list-style-type: none"> 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 <p>Mild Steel Pipes</p> <ul style="list-style-type: none"> 60 m - 219 mm diameter for zone -7C OHT at Kolambe 	Along the public roads within the road right of way

No.	Component	Details	Location
		<ul style="list-style-type: none"> 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 	
2	OHTs	<p>7 OHTs of total storage capacity 5.2 ml</p> <ul style="list-style-type: none"> 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	<p>358.16 km pipes of diameter 63 mm to 350 mm High Density Poly Ethylene (HDPE) pipes</p> <ul style="list-style-type: none"> 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 <p>DI PIPES:</p> <ul style="list-style-type: none"> 150 mm dia - 0.252 km 300 mm dia - 10.282 km 350 mm dia- 3.098 km 	<p>Pipes will be laid along the public roads within the road right of way.</p> <p>Rider lines will be laid parallel to the existing pipes, and within the road right of way.</p> <p>Pipes will be mostly laid in earthen shoulder to avoid road cuttings</p>
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

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

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: 17-11-2020				Name of Environment, Health And Safety (EHS) Engineer :- Mr.Pradeep Sheety		
Field	Anticipated Impact	Mitigation Measures	Responsible for 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 at work sites	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 oxides, and hydrocarbons .	<p>3) Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</p> <p>4) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</p> <p>5) Use tarpaulins to cover sand and other loose material when transported by trucks;</p> <p>6) Clean wheels and undercarriage of vehicles prior to leaving construction site</p> <p>7) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p>	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.	<p>3) Complied</p> <p>4) Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site.</p> <p>5) Not complied</p> <p>6) Complied</p> <p>7) Complied</p>
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.	<p>8) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets.</p> <p>9) 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.</p> <p>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).</p> <p>11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies</p>	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water quality inspection; (iv) Effectiveness of water management measures; (v) No visible	Cost for implementation of mitigation measures responsibility of contractor.	<p>8) Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season</p> <p>9) Instructed contracting agency to fill the excavated trenches at all locations before rainy season</p> <p>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</p>

		<p>12) Provide temporary bunds for stockpiles and materials</p> <p>13) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund</p> <p>14) Dispose any wastes generated by construction activities in designated sites.</p> <p>15) Conduct surface quality inspection and monitoring.</p>		<p>degradation to near by drainages, nallahs or water bodies due to civil works</p>		<p>11) No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found</p> <p>12) Not complied</p> <p>13) Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity</p> <p>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</p> <p>15) Not complied</p>
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Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<p>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;</p> <p>17) Construction work shall be limited to day light hours (6 AM to 6PM)</p> <p>18) Provide prior information to the local public about the work schedule;</p> <p>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 by chiseling;</p> <p>20) Minimize noise from construction equipment/pneumatic drills by using silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and</p> <p>21) Maintain maximum sound levels not exceeding 80 decibels (db A) when measured at a distance of 10 m or more from the vehicle/s.</p> <p>22) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>i) Use of silencers in noise-producing equipment and sound barriers;</p> <p>(iii) Equivalent day and night time noise levels (See Appendix 3 of this IEE)</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>16) Complied</p> <p>17) Complied</p> <p>18) Complied</p> <p>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</p> <p>20) Complied</p> <p>21) Complied</p> <p>22) Complied</p>
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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.	<p>23) Prepare and implement spoils management plan</p> <p>24) Avoid stockpiling of excess excavated soils;</p> <p>25) Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p> <p>26) Recover used oil and lubricants and reuse or remove from the sites;</p> <p>27) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>28) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>29) Request PMU/PMDCSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel</p> <p>(iv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers</p>	Cost for implementation of mitigation measures responsibility of contractor.	<p>23) Spoil management plan is prepared (attached in annexure 2a august 2019 but updation is to be done).</p> <p>24) No such surplus and stockpiling of soils found in sites</p> <p>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</p> <p>26) Used oil and lubricants not generated on site</p> <p>27) Contracting agency reusing by backfilling and dumping excess solid waste to the designated areas</p> <p>28) Complied</p> <p>29) Instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>
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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	<p>30) Obtain from PIU/PMDCSC the list of affected utilities and operators if any;</p> <p>31) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service</p> <p>32) (iii) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p> <p>33) Plan pipeline work in consultation with the traffic police</p> <p>34) Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;</p> <p>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;</p> <p>36) Schedule transport and hauling activities during non-peak hours;</p> <p>37) Do not close the road completely, allow traffic to move on one line;</p> <p>38) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>39) In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;</p> <p>40) At all work sites public</p>	Construction Contractor Construction Contractor	Existing Utilities Contingency Plan (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. Cost for implementation of mitigation measures responsibility of contractor.	<p>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.</p> <p>31) Not complied</p> <p>32) No accidental breaking of any properties yet recorded but instructed contracting agency to rectify immediately</p> <p>33) Contractor should inform and take permission from traffic police for any pipe line laying/execution on roads.</p> <p>34) Complied</p> <p>35) Instructed to contractor agency to backfill and restore the excavated area immediately to avoid traffic</p> <p>36) Complied</p> <p>37) Complied</p> <p>38) Not Complied</p> <p>39) Instructed contract agency to provide one separate person at site to give route information to public</p> <p>40) Partially complied. Project information board should be both in</p>
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		<p>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.</p> <p>41) Keep the site free from all unnecessary obstructions;</p> <p>42) Drive vehicles in a considerate manner;</p> <p>43) Prepare a Traffic Management Plan –a Template is provided for reference at Appendix 7.</p>				<p>Kannada and English format.</p> <p>41) Complied</p> <p>42) Complied</p> <p>43) Traffic Management Plan is prepared by contracting agency (attached in annexure 2b august 2019 but updation is to be done).</p>
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<p>44) Prepare and implement spoils management plan</p> <p>45) Leave spaces for access between mounds of soil; and Provide walkways and metal sheets where required for people;</p> <p>46) Increase work force in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools;</p> <p>47) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and</p> <p>48) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p>	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.	<p>44) Spoil management plan is prepared (attached in annexure 3c august 2019 but updation is to be done)</p> <p>45) Complied</p> <p>46) Complied</p> <p>47) Complied</p> <p>48) Complied</p>

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.,	<p>brought to the site as and when required.</p> <p>49) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles</p> <p>50) No work should be conducted near the religious places during religious congregations</p> <p>51) Material transport to the site should be arranged considering school timings; material should be in place before school starts;</p> <p>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</p> <p>53) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly a the sites.</p>		(i) Public complaints	Measures responsibility of contractor.	<p>49) Complied</p> <p>50) Complied and instructed to follow</p> <p>51) Complied and instructed to follow</p> <p>52) Partially complied</p> <p>53) Not complied</p>
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<p>54) Employ local labor force to the maximum extent, if manpower is available;</p> <p>55) Comply with labor laws</p>	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.	<p>54) Register maintained by contractor</p> <p>55) Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).</p>
Occupational Health and Safety	Occupational hazards which can arise	56) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE)	Construction Contractor	(i) Site-specific OHS Plan;	Cost for implementation of mitigation measures responsibility of	56) Contractor following Company EHS Policy Site-specific OHS Plan Have to

	during work	<p>57) 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:</p> <p>(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;</p> <p>58) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>59) Provide medical insurance coverage for workers;</p> <p>60) Secure all installations from unauthorized intrusion and accident risks;</p> <p>61) Provide supplies of potable drinking water;</p> <p>62) Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p>	<p>(ii) Equipped first-aid stations;</p> <p>(iii) Medical insurance coverage for workers;</p> <p>(iv) Number of accidents;</p> <p>(v) Supplies of potable drinking water;</p> <p>(vi) Clean eating areas where workers are not exposed to hazardous or noxious substances;</p> <p>(vii) record of health and safety orientation trainings</p> <p>(viii) personal protective equipment;</p> <p>(ix) % of moving equipment outfitted with audible back-up alarms;</p> <p>(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.</p> <p>(xii) Compliance to core labor laws</p>	contractor.	<p>be prepared by Contractor. Instructed contracting agency to provide H&S safety measures about COVID-19 to all worker and employees</p> <p>57) Contractor following Company EHS Policy- PPE'S provided by Contractor.</p> <p>a) Complied</p> <p>b) Complied. PPE'S provided by Contractor to workers</p> <p>c) Complied</p> <p>d) Not complied</p> <p>e) Accident and incident register maintained</p> <p>58) Partially Complied. Instructed to keep first-aid box at each working sites separately</p> <p>59) Not complied</p> <p>60) Complied</p> <p>61) Partially Complied</p> <p>62) Not Complied</p>
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		<p>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 fellow workers;</p> <p>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;</p> <p>65) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>66) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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</p> <p>68) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.</p> <p>69) Overall, the contractor should comply with International Finance Corporation (IFC) EHS</p>	(See appendix 2 of this IEE)		<p>63) Complied. Instructed to Provide health and safety orientation training on COVID-19 on site daily to all workers</p> <p>64) Not complied</p> <p>65) Complied</p> <p>66) Complied</p> <p>67) Complied</p> <p>68) Not complied</p> <p>69) Not complied</p>
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		Guidelines on Occupational Health and Safety				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<p>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</p> <p>71) Plan material and waste routes to avoid times of peak-pedestrian activities</p> <p>72) Liaise with Udupi CMC in identifying risk areas on route cards/maps</p> <p>73) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure</p> <p>74) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads</p> <p>75) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety</p>	Construction Contractor	(i) Traffic Management Plan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	<p>70) Instructed contracting agency to put hard barricading if trenches are more than 1.5m depth</p> <p>71) Not complied</p> <p>72) Not complied</p> <p>73) Not complied</p> <p>74) Complied</p> <p>75) Not complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants	<p>76) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas.</p> <p>77) Minimize removal of vegetation and disallow cutting of trees</p> <p>78) Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge</p>	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.	<p>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</p> <p>77) Removal of vegetation Minimize by selecting best</p>

	Unsanitary and poor living conditions for workers	<p>79) The camp site should be adequately drained to avoid the accumulation of stagnant water</p> <p>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</p> <p>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</p> <p>82) Train employees in the storage and handling of materials which can</p>				<p>alignment.</p> <p>78) Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area and drinking water.</p> <p>79) Instructed contracting agency to built camp in dry and plan area where there is no water logging and must hygienic area.</p> <p>80) Instructed contracting agency to provide drinking water as per the standards at camp</p> <p>81) Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p>82) Instructed contracting agency to provide training of solid and liquid materials handling to the persons at campcare fully to avoid soil contamination</p>
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		<p>potentially cause soil contamination;</p> <p>83) Recover used oil and lubricants and reuse or remove from the site;</p> <p>84) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p>85) Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>86) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.</p> <p>87) The work camp details should be included in the Construction Management Plan.</p>				<p>83) Instructed to contracting agency to train persons not to spill oil and lubricant and use carefully to avoid soil contamination</p> <p>84) Instructed to contracting agency to follow at camp</p> <p>85) Instructed to contracting agency to follow at camp</p> <p>86) Construction work is in progress</p> <p>87) Not complied</p>
Social and Cultural Resources	Risk of archaeological chance finds	<p>88) Create awareness among the workers and supervisors about the chance finds during excavation work</p> <p>89) Stop work immediately if any finds are suspected to allow further investigation</p> <p>90) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ.</p> <p>91) Adjacent to important religious sites, undertake excavation and Construction work in such a way that no structural damage is caused to the building.</p>	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	<p>88) Till now no such suspected items found nor recorded</p> <p>89) Till now no such suspected items found nor recorded</p> <p>90) Till now no such archaeological items recorded</p> <p>91) No such damages recorded during the visit. But instructed to maintain if such damages happen.</p>

Submission of EMP implementation report Post-construction clean-up	Unsatisfactory compliance to EMP Damage due to debris, spoils, excess construction materials	<p>92) Appointment of EHS engineer to ensure EMP implementation</p> <p>93) Timely submission of monitoring reports including pictures</p> <p>94) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and</p> <p>95) All excavated roads shall be reinstated to original condition.</p> <p>96) All disrupted utilities restored</p> <p>97) All affected structures rehabilitated/compensated</p> <p>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.</p> <p>99) 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.</p>	Construction contractor Construction Contractor	<p>Availability and competency of appointed EHS engineer</p> <p>Monthly report PMU/PMDSC 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.</p>	<p>Cost for implementation of mitigation measures responsibility of contractor.</p> <p>Cost for implementation of mitigation measures responsibility of contractor.</p>	<p>92) EHS Engineer appointed</p> <p>93) Complied</p> <p>94) Complied</p> <p>95) But instructed to restore road same as it was before damage</p> <p>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</p> <p>97) Till now no structures affected</p> <p>98) Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp</p> <p>99) Not complied</p>
		<p>100) The contractor must arrange the cancellation of all temporary services.</p> <p>101) Request PMU/PMDSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>				<p>100) Not complied</p> <p>101) Construction work is in progress</p>

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** as similar to the construction stage table 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.	<ul style="list-style-type: none"> Construction status or complacence report 	Contractor has to submit Site specific 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> If any private land is selected NOC from owner have to be taken 	Comply with in 5days
10.	List of selected sites for disposal	<ul style="list-style-type: none"> 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		Comply with in 7 days

	materials; and		
12.	Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.		Comply with in 5 days
13.	Method of statement in table format	<ul style="list-style-type: none"> As mention in mitigation measures 	Comply with in 10 days
14.	Spoil Management Plan	<p>Waste material brought up during the course of an excavation or a dredging or mining operation.</p> <ul style="list-style-type: none"> 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		<p>Draft copy shown, submitted and attached as annexure 3b in Aug 2019 report and informed contractor to update plan once construction phase starts</p> <p>Comply with in 5 days</p>
16.	Environmental management plan		<p>Draft copy shown, submitted and attached as annexure 3c in Aug 2019 report and informed contractor to update plan once construction phase starts</p> <p>Comply with in 5 days</p>
17.	Site specific OHS Plan	<ul style="list-style-type: none"> Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be 	Comply with in 5 days

		<p>provided in all work zones.</p> <ul style="list-style-type: none"> 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. <p>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.</p> <p>International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety attached in june 2019 month</p>	
18.	Equivalent day and night time noise levels	<ul style="list-style-type: none"> During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory. 	<p>Complied. Construction test conducted in Jan 2020 and noise report attached as annexure 5 in feb 2020</p> <p>Informed contractor agency to carryout Noise test every quarterly but still not done at site</p> <p>Comply with in 10 days</p>
19.	Records of Air quality inspection	<ul style="list-style-type: none"> 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 	<p>Complied. Construction test conducted in Jan 2020 and air report attached as annexure 5 in feb 2020</p> <p>Informed contractor agency to carryout Air test every quarterly but still not done at site</p> <p>Comply with in 10 days</p>
20.	H & S Plan for COVID-19 implementation	<ul style="list-style-type: none"> Daily Contractor as to provide awareness all office staffs and site 	Complied.

		workers to follow H& S measures of COVID-19	Implementation of H & S at work site is done. H & S plan is to be prepared by contractors Comply with in 5 days
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Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2



Annexure 1

Site visit observations of 17th November 2020

S.No	Observation		Recommendation
1	Barricading and Sign board at laxmi nagara kadavor site, udupi		<p>Instructed contractors to provide proper barricading along the road side and provide traffic management sign boards</p> <p>And two flag mans at both the ends of the road for vehicle management from both side</p>

2	Excess earth at lokmanya tilak road, udupi	 <p>Latitude: 13.34987 Longitude: 74.753388 Elevation: -70.34 m Accuracy: 8.0 m Time: 12-11-2020 13:31 Note: HSC connection work</p> <p>Powered by NoteC</p>	Instructed contractors to remove excess loose earth after HSC trench filling from the site
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3	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
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4	Labour camp at Manchi OHT site	 <p>Latitude: 13.323364 Longitude: 74.772463 Elevation: 30.2m Accuracy: 3.2m Time: 08-13-2020 11:56 Note: At Manchu OHT site, Urban</p>  <p>Powered by NaniCam</p>	<p>Instructed contractor agency to provide cooking gas for cooking purpose</p> <p>And also instructed to provide proper light connection inside camp and to concrete the room properly for cooking and resting.</p> <p>Drinking water can facility should be provided at OHT site for workers</p> <p>Mobil toilets facility should be provided for workers at site</p>
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5	PPEs for workers at site and Housekeeping at manchi OHT for work site	 <p>Latitude: 13.3232 Longitude: 74.772913 Elevation: 41.61 m Accuracy: 13.0 m Time: 03-11-2020 11:09 Note: Manchi OHT Shaft Wall 5th Lift concreting</p> <p>Latitude: 13.323258 Longitude: 74.772378 Elevation: 36.61 m Accuracy: 9.0 m Time: 11-11-2020 12:30 Note: Manchi OHT Shaft Wall 6th Lift concreting</p>	<p>Instructed contracting agency to provide PPEs to workers and safety belts for labours working above 2ms from ground</p> <p>Proper housekeeping should be done at work site</p>
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Annexure-2

Status of site visit observations of 21th September 2020

S.No	Observation		Recommendation	Status
1	Sign board, hard barricading and project information board at santtekatte OHT site		Instructed contractors to provided Sign board, hard barricading around deep excavated area and project information board at the entrance of the all OHT sites	Partially complied

2	PPEs to workers at working site	 <p>Latitude: 13.367372 Longitude: 74.70281 Elevation: 8.37 m Accuracy: 5.0 m Time: 08-09-2020 11:56 Note: HDPE 200mm dia Pipe Laying work in Thottam, Malavalli Zone 1</p> <p>Latitude: 13.359604 Longitude: 74.741255 Elevation: 29.51 m Accuracy: 5.0 m Time: 08-09-2020 12:25 Note: HSC connection at Kottakere, Malavalli Zone 2</p>	<p>Complied. PPEs are provided to all workers at site</p> <p>Instructed contractors to provide water can at all working site and one mobil toilet for 10 members working in one site</p>	<p>Complied</p> <p>Not complied</p>
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3	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose	Not complied
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4	Waste scrape and loose earth at santekatte OHT for work site		Instructed contracting agency to remove all scrap and loose earth material to dumping yard and steel rods should be not use as fencing of the excavated OHT	Not complied
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5	Barricading and flagman at pipe excavation at main road site		<p>Instructed contractors to do soft barricading near excavated length</p> <p>Instructed to put two flag mans at both the end of the main road to maintain the traffic</p> <p>Instructed to provide project information board and sign boards at both the ends of the excavated length.</p>	<p>Partially complied</p> <p>Not complied</p> <p>Not complied</p>
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Annexure 3

Status of the site visit observations on 26th October 2020

S.No	Observation		Recommendation	Status
1	HSE connection at zone 9 , udupi	 <p>Latitude: 13.359463 Longitude: 74.739055 Elevation: 23.5 m Accuracy: 4.0 m Time: 03-10-2020 15:17 Note: HSC connection at Kodankur Zone 9 Puttur Sub Office</p>	<p>Instructed contractors to provide project information board, Sign board at working site</p> <p>And instructed to close the open trench immediately after HSC connection and to dump excess earth to dumping yard.</p>	<p>Partially complied</p> <p>Complied</p>

2	PPEs and soft barricading during pipe execution at malpe road, udupi	 <p>Latitude: 13.356032 Longitude: 74.709024 Elevation: 6.59 m Accuracy: 4.0 m Time: 05-10-2020 12:56 Note: HDPE Pipe Laying work in RA Kodavoor to Malpe Road (Manual Excavation)</p> <p>Powered by NoteCam</p>	<p>PPEs are provided at site to labours.</p> <p>Instructed contracting agency to put two flag mans at both the ends of the road to control traffic</p> <p>And to provide sign boards, cones on both sides of the road</p>	<p>Complied</p> <p>Not complied</p> <p>Not complied</p>
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3	Housekeeping at OHT sites, udupi	 <p>Latitude: 13.345127 Longitude: 74.771291 Elevation: 24.57 m Accuracy: 4.0 m Time: 27-10-2020 10:24 Note: Indrali OHT Shaft Wall 4th OHT concreting</p>	<p>Instructed contracting agency to remove scrap materials after work at all OHT working site and to keep proper housekeeping at site to avoid any harm to labours</p> <p>Instructed to wear safety jackets with belts if working above 2m from the ground</p>	<p>Partially complied</p> <p>Not complied</p>
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4	Water tank at santekatte OHT for worker usage, udupi	 <p>Latitude: 13.387485 Longitude: 74.738342 Elevation: 30.55m Accuracy: 4.3m Time: 06-23-2020 15:52 Note: At santekatte OHT site, udupi</p> <p>Powered by NoteCam</p>	Instructed contracting agency to provide separate water can for drinking purpose	Not complied
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O/c



SPPL-SIPL-DRS JV/KUIDFC/ UCMC/319/2020-21

14 December 2020

To,

The Executive Engineer,
KUIDFC-KIUWMIP-PIU,
Tranche-2, Udupi.

Sub.: KUIDFC & KIUWMIP – “Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Udupi City- Package No.02UDP01”: **Submission of EMP Reports for Month of November 2020, Udupi.**

Ref.:

- 1) LOA Letter No: UCMC/Udupi/KUIDFC/ADB/UDP03/2017-18 Dated 10th October 2018.
- 2) Contract Agreement for Package No. 02UDP01, Dated 16th November 2018.

Dear Sir,

With reference to the above subject, we are submitting the “Environmental Monitoring Plans (EMP) Reports” as follows for your reference and needful records.

1. Submission HSE Report for Month of November 2020.
2. Accident Records and Grievance Register copy.
3. Induction and Toolbox Training Attendance Sheet.
4. Environmental Monitoring Report.
5. Safety Events & Site Photos.
6. COVID 19 Awareness Program.

Thanking you and assuring you of our best services at all times.

For SPPL-SIPL-DRS JV

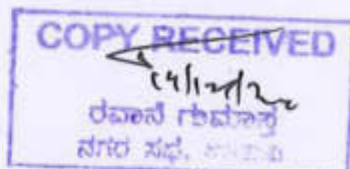

(Authorized Signatory)



CC:

- 1) Deputy Project Director, KUIDFC; Mangaluru, for kind information.
- 2) The Commissioner, City Municipal Council; Udupi, for Kind information.
- 3) Team Leader, Egis India Consulting Engineers Pvt Ltd; Mangaluru.

Encl: EMP Reports month of November 2020.



Monthly Environmental Monitoring Report

Document stage: Draft for Consultation Project Number: 43253-027 May 2018

IND: Karnataka Integrated Urban Water Management Investment Program
(Tranche 2) – Improvements for 24x7 Water Supply System – Distribution
System for City Municipal Council, Udupi

Package No: 02UDP01

Prepared by



Karnataka Urban Infrastructure Development and Finance Corporation, Government of Karnataka for the Asian Development Bank.	
Name of the Work: Improvements for 24x7 Water Supply System – Distribution System for City Municipal Council, Udupi	Name of the Contractor: SPPL-SIPL DRS INFRA JV
Package No: 02UDP01	
Name of the city: UDUPI	Name of SE/EE/AE Of concerned division PIU :-Executive Engineer – Mr. Umashankar
Month -November 2020	Name of Environment, Health and Safety (EHS)- Mr. Pradeep Shetty

REV	Date	Prepared By	Checked By	For Approval
00		Pradeep Shetty	Ramesh Patil	Submission Purpose

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
EMP Implementation Training	Impacts on the environment, workers, and community due to improper implementation	<p>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.;</p> <p>2. Appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work.</p>	Construction Contractor / PIU/PMD CSC	<p>1. SOP Training organized on daily basis at site</p> <p>2. Appointed Safety Officer (Mr. Pradeep Shetty)</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 oxides, and hydrocarbons.	<p>3. Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials.</p> <p>4. Damp down exposed soil and any stockpiled-on site by spraying with water when necessary during dry weather.</p> <p>5. Use tarpaulins to cover sand and other loose material when transported by trucks.</p> <p>6. Clean wheels and undercarriage of vehicles prior to leaving construction site;</p> <p>7. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</p>	Construction Contractor	<p>3. Consulted with PIU and informed well in advance regarding stock piling of clay soils, gravels etc</p> <p>4. Water spray system in place (On the basis of its necessity)</p> <p>5. Covered with green net</p> <p>6. Maintained cleanliness of vehicle</p> <p>7. PUC (Pollution Under Control) Certificate in place</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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.	<p>8. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets.</p> <p>9. Lay 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.</p> <p>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 (Appendix 6).</p> <p>11. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies.</p> <p>12. Provide temporary bunds for stockpiles and materials.</p> <p>13. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund.</p> <p>14. Dispose any wastes generated by construction activities in designated sites.</p> <p>15. Conduct surface quality inspection and monitoring</p>	Construction Contractor	<p>8. Materials stocked in Store shed</p> <p>9. The system of clearing the trenches at the end of every day is followed</p> <p>10. Debris- Dumping yard situated at Alevoor village</p> <p>11. Not Applicable to this scheme</p> <p>12. Not Applicable to this scheme</p> <p>13. Not Applicable to this scheme</p> <p>14. Disposed at Alevoor Debris Dumping yard site</p> <p>15. Water testing done</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Noise Levels	Increase in noise level due to earthmoving and excavation equipment, and the transportation of equipment, materials, and people	<p>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.</p> <p>17. Construction work shall be limited to day light hours (6 AM to 6 PM).</p> <p>18. Provide prior information to the local public about the work schedule.</p> <p>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 by chiseling.</p> <p>20. Minimize noise from construction equipment/ pneumatic drills by using silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor.</p> <p>21. Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicles.</p> <p>22. Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach.</p>	Construction Contractor	<p>16. Noise Test conducted periodically. Latest test done on 2nd November 2020.</p> <p>17. From 08: 30 AM to 05: 30 PM. (Sometimes maximum up to 06: 00 PM only.</p> <p>18. The system of informing the public about the commencement of works at least 02 days before is in place.</p> <p>19. Not Applicable to this scheme</p> <p>20. Machines with advanced technology were used in drilling other activities (HILTI)</p> <p>21. Maximum care is taken</p> <p>22. Strictly followed</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>23. Prepare and implement spoils management plan.</p> <p>24. Avoid stockpiling of excess excavated soils.</p> <p>25. Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas.</p> <p>26 Recover used oil and lubricants and reuse or remove from the sites.</p> <p>27 Manage solid waste according to the following preference hierarchy: reuse, recycling, and disposal to designated areas.</p> <p>28 Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p>29 Request PMU/PMDSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.</p>	Construction Contractor	<p>23. Plan in place</p> <p>24. Stock piling is avoided</p> <p>25. Excess soil disposed to designated area at Alevoor</p> <p>26. Servicing of machineries and vehicles took place at garage only</p> <p>27. Soil disposed at Alevoor dumping yard only</p> <p>28. Demolished items were shifted at dumping yard only</p> <p>29. Requested to PIU Udupi</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<p>30 Obtain from PMU/PMDSC the list of affected utilities and operators if any;</p> <p>31 Prepare a contingency plan to include actions to be done in case of unintentional interruption of service.</p> <p>The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.</p>	Construction Contractor	<p>30.List of utilities obtained from PIU</p> <p>31.Detecting ensured. i.e. Cable detection and Metal detection</p> <p>32.Public were informed accordingly</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Accessibility	Traffic problems and conflicts near projections and haul road	<p>33 Plan pipeline work in consultation with the traffic police;</p> <p>34 Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;</p> <p>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;</p> <p>36 Schedule transport and hauling activities during non- peak hours;</p> <p>37 Do not close the road completely, allow traffic to move on one line;</p> <p>38 Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>39 In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;</p>	Construction Contractor	<p>33. Not yet crossed such situation</p> <p>34. Compaction done</p> <p>35. Restoration took place</p> <p>36. Scheduled during non-busy hours</p> <p>37. One line was opened with proper barricading</p> <p>38. Planned accordingly</p> <p>39. Road diversion measures in place</p>

		<p>40 At all work sites public information/caution boards shall be provided – information shall 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;</p> <p>41 Keep the site free from all unnecessary obstructions;</p> <p>42 Drive vehicles in a considerate manner;</p> <p>43 Prepare a Traffic Management Plan – a template is provided for reference at Appendix.</p>		<p>40. Board displayed in both Kannada and English language</p> <p>41. Kept the site free</p> <p>42. Vehicle checklist followed</p> <p>43. Plan for alternative way was ensured</p>
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Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	<p>44. Prepare and implement spoils management plan;</p> <p>45. Leave spaces for access between mounds of soil;</p> <p>46. Provide walkways and metal sheets where required for people;</p> <p>47. Increase workforces in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools;</p> <p>48. Consult businesses and institutions regarding operating hours and factoring this in work schedules;</p> <p>49. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.</p>	Construction Contractor	<p>44. Prepared plan</p> <p>45. Trench access provided</p> <p>46. Trench access provided</p> <p>47. Not yet crossed such situation</p> <p>48. Works completed within standard working hours</p> <p>49. Displayed sign boards</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio cultural resources	Disturbance to socio cultural resources (religious, educational, health care etc.), access disruptions etc.,	<p>50 No material should be stocked close to these areas; material shall be brought to the site as and when required.</p> <p>51 Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles;</p> <p>52.No work should be conducted near the religious places during religious congregations;</p> <p>53 Material transport to the site should be arranged considering school timings; material should be in place before school starts</p>	Construction Contractor	<p>50.Materials were brought from store yard as and when required</p> <p>51.Preferred for completion of the works manually</p> <p>52.Avoided works during religious congregation</p> <p>53.Transportation of materials was ensured before and after school hours.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	54. Localists were preferred for the labor works 55. Not adopted

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Occupational Health and Safety	Occupational hazards which can arise during work	<p>56 Comply with all national, state and local core labor laws (See Appendix 2 of this EE);</p> <p>57 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:</p> <ul style="list-style-type: none"> (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 earplugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; <p>58 Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>59 Provide medical insurance coverage for workers;</p> <p>60 Secure all installations from unauthorized intrusion and accident risks;</p> <p>61 Provide supplies of potable drinking water;</p> <p>62 Provide clean eating areas where workers are not exposed to hazardous or noxious substances;</p>	Construction Contractor	<p>56. Adopted</p> <p>57. OHS plan in place</p> <p>58. First Aid Kit available in all working place</p> <p>59. Provided Medical Group Insurance</p> <p>60. Not adopted</p> <p>61. Provided</p> <p>62. Maintained</p>

		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 fellow workers;		63. Trained and PPE Kit provided
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Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Occupational Health and Safety	Occupational hazards which can arise during work	<p>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;</p> <p>65 Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>66 Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>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;</p> <p>68 Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively;</p> <p>69 Overall, the contractor should comply with International Finance Corporation (IFC) EHS Guidelines on Occupational Health and Safety.</p>	Construction Contractor	<p>64. Oriented.</p> <p>65. Reflective Jackets provided</p> <p>66. Adopted as per vehicle check list</p> <p>67. Electrical sign boards were displayed at stores</p> <p>68. Ear Plugs were provided</p> <p>69. Followed.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation.	<p>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;</p> <p>71 Plan material and waste routes to avoid times of peak pedestrian activities;</p> <p>72 Liaise with Udupi CMC identifying risk areas on route cards/maps;</p> <p>73 Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure;</p> <p>74 Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and</p> <p>75 Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety.</p>	Construction Contractor	<p>70. Provided hard barricading</p> <p>71. Planned</p> <p>72. Coordinated</p> <p>73. Manufacturer approved parts only used</p> <p>74. Road signs and flag persons in place was ensured</p> <p>75. Followed EHS Guidelines</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>76 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas;</p> <p>77 Minimize removal of vegetation and disallow cutting of trees;</p> <p>78 Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p>79 The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p>80 Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 LP D); all water storage structures must be cleaned regularly and covered properly to avoid any contamination;</p> <p>81 Provide separate facilities for men and women; sanitary facilities shall be properly built and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons.</p>	Construction Contractor	<p>76. Work Camps are away from residential areas about 200 meters</p> <p>77. Maintained</p> <p>78. Followed</p> <p>79. Followed</p> <p>80. Sufficient water provided</p> <p>81. Provided rented houses with all facilities to Women worker</p>

		<p>82 Train employees in the storage and handling of materials high can potentially cause soil contamination.</p> <p>83 Recover used oil and lubricants and reuse or remove from the site:</p> <p>84 Manage solid waste according to the following preference hierarchy: reuse, recycling, and disposal to designated areas;</p> <p>85 Remove all wreckage, rubbish, or temporary structures which are no longer required;</p>		<p>82.Trained periodically on daily basis</p> <p>83. Not Applicable</p> <p>84. Solid Waste shifted to Alevoor designated dumping yard.</p> <p>85. Removed.</p>
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Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Work Camps and worksites	<p>Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>86 Report in writing that the camp has been vacated and restored to pre-project Condition before acceptance of work.</p> <p>87 The work camp details should be included in the Construction Management Plan</p>	Construction Contractor	<p>86. Reported</p> <p>87. Plan in place</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Social and Cultural Resources	Risk of archaeological chance finds	<p>88 Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p>89 Stop work immediately if any finds are suspected to allow further investigation; 89 Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ; and</p> <p>90 Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building</p>	Construction Contractor	<p>88. Trainings conducted</p> <p>89. Followed</p> <p>90. Followed</p>

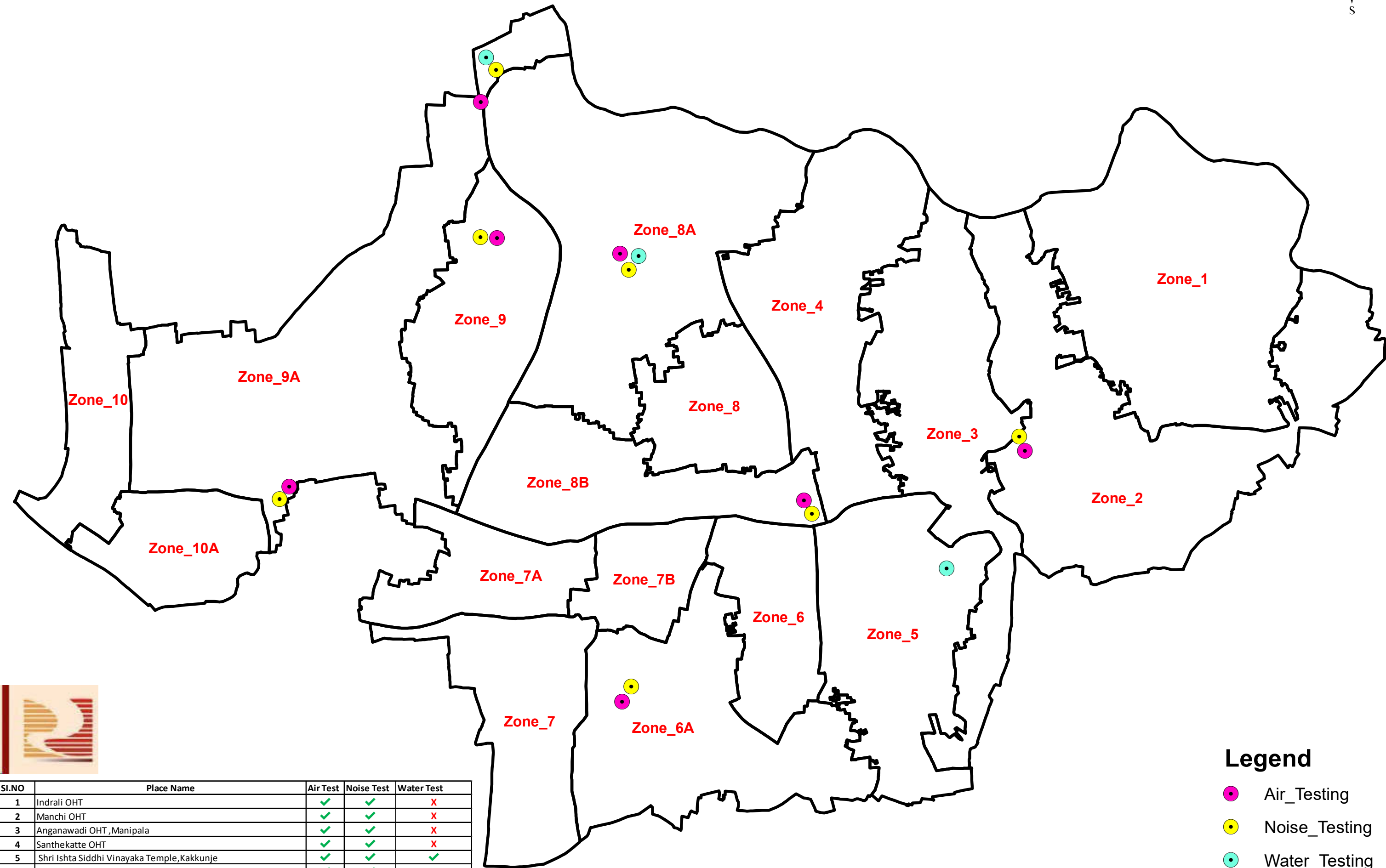
Submission of EMP implementation report	Damage due to debris, spoils, excess construction materials	<p>91 Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>92 All excavated roads shall be reinstated to original condition;</p> <p>93 All disrupted utilities restored;</p> <p>94 All affected structures rehabilitated/co menaced;</p> <p>95 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;</p> <p>96 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 this document;</p>	Construction Contractor	<p>91. Removed</p> <p>92. Restored</p> <p>93. Restored</p> <p>94. Restored</p> <p>95. Cleared accordingly</p> <p>96. Followed</p>
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Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>97.The contractor must arrange the cancellation of all temporary services;</p> <p>98 Request PMU/PMD CSC to report in writing that worksites and camps have been vacated and restored to pre-project</p>		<p>97. Cancelled temporary services</p> <p>98. Requested PIU/ PMDCSC.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	<p>99 Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p>100 All excavated roads shall be reinstated to original condition;</p> <p>101 All disrupted utilities restored;</p> <p>102. All affected structures rehabilitated/compensated;</p> <p>103The 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;</p> <p>104 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;</p> <p>105 The contractor must arrange the cancellation of all temporary services;</p> <p>106Request PMU/PMDSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.</p>	Construction Contractor	<p>99. Removed</p> <p>100 Reinstated to original condition</p> <p>101. Reinstated to original condition</p> <p>102. Reinstated to original condition</p> <p>103. Reinstated to original condition</p> <p>104. Followed</p> <p>105. Cancelled all temporary services</p> <p>106. Requested PMU/PMDSC</p>



Environmental Monitoring Survey-UDUPI



Sl.NO	Place Name	Air Test	Noise Test	Water Test
1	Indrali OHT	✓	✓	✗
2	Manchi OHT	✓	✓	✗
3	Anganawadi OHT,Manipala	✓	✓	✗
4	Santhekatte OHT	✓	✓	✗
5	Shri Ishta Siddhi Vinayaka Temple,Kakkunje	✓	✓	✓
6	Stella Maris Church, Kalmady	✓	✓	✗
7	Arithodu Janardhana Subramanya Temple, Subramanya Nagara	✓	✓	✗
8	Manipala Lake (Lake Water)	✗	✗	✓
9	Shri Adishakthi Veerabhadra Temple, Santhekatte (well water)	✗	✗	✓

Legend

Air_Testing

Noise_Testing

Water_Testing

Zone_Boundary



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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvlabellary.com



MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015818F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Veerabhadra Temple Santhekatte OHT
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BL.
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	73.9	71.7	69.8	µg / m ³	71.8	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	26.7	25.4	24.4	µg / m ³	25.5	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	11.8	10.9	9.8	µg / m ³	10.8	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) – 2006	18.6	17.7	16.6	µg / m ³	17.6	80

INFERENCE	As per NAAQS Standards
	Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P. M.

Authorized Signature

P. M.



Note: 1. The results listed only to the tested samples & applicable parameters.

2. Water samples will be destroyed after 10 days, Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified, ILC sample will be destroyed after 1 month from the date of test certificate issue.

3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the court of law & should not be used in any advertising media without our special permission in writing.

4. Total liability of our laboratory is limited to the invoice amount. Any dispute arising out of this report is subject to Bellary Jurisdiction only.

5. Sampling is not done by us unless otherwise specified. 6. The tests and/or calibrations marked with an are not accredited by NABL.



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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvlabellary.com

MSVAL/W/F/13/03

ANALYSIS REPORT OF WATER QUALITY

Test Report No : MSVAL/2020/4103

Issued Date : 09.11.2020

1. Name of the Client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Name of the Sample : Bore well water Near Shri ishta siddhi vinayaka temple Kukkunje
5. Sample Collected By : MSV Analytical Laboratories, Bellary
6. Particulars of Sample Collected : Grab sample
7. Sample Quantity : 2 Liters
8. Sample Description/condition : Good Satisfactory
9. Date of sample Receipt : 03.11.2020
10. Analysis Starting Date : 04.11.2020
11. Analysis Completion Date : 09.11.2020
12. Sample Tested as Received

S.No	Parameters	Protocol	Unit	Result	IS 10500-2012	
					Acceptable limit	Permissible limit
Physical parameters						
1	Color	Is : 3025(PART-4)	---	Colorless	5	15
2	Odor	Is : 3025(PART-5)	---	Agreeable	Agreeable	Agreeable
3	pH	Is : 3025(PART-11)	---	6.78	6.5-8.5	No Relaxation
4	Turbidity	Is : 3025(PART-10)	NTU	0.96	1	5
Chemical parameters						
5	Alkalinity	Is : 3025(PART-23)	mg/L	74	200	600
6	Total Dissolved Solids	Is : 3025(PART-16)	mg/L	136	500	2000
7	Total Hardness as CaCO ₃	Is : 3025(PART-21)	mg/L	87.4	200	600
8	Calcium as Ca	Is : 3025(PART-40)	mg/L	26.8	75	200
9	Magnesium as Mg	Is : 3025(PART-46)	mg/L	4.9	30	100
10	Sulphate as SO ₄	Is : 3025(PART-24)	mg/L	20.4	200	400
11	Chloride as Cl	Is : 3025(PART-32)	mg/L	46.2	250	1000
12	Nitrate as NO ₃	Is : 3025(PART-34)	mg/L	2.2	45	No Relaxation
13	Iron as Fe	Is : 3025(PART-53)	mg/L	BDL	0.3	No Relaxation
14	Fluoride as F	Is : 3025(PART-60)	mg/L	0.28	1.0	1.5
15	Copper	Is : 3025(PART-42)	mg/L	BDL(0.012)	0.05	1.5
16	Manganese	Is : 3025(PART-59)	mg/L	BDL(0.004)	0.1	0.3
17	Mercury	Is : 3025(PART-48)	mg/L	BDL(0.005)	0.001	No Relaxation
18	Cadmium	Is : 3025(PART-41)	mg/L	BDL(0.003)	0.01	No Relaxation
19	Lead	Is : 3025(PART-47)	mg/L	BDL(0.003)	0.05	No Relaxation
20	Chromium	Is : 3025(PART-52)	mg/L	BDL(0.002)	0.05	No Relaxation
21	Selenium	Is : 3025(PART-56) or IS -15303	mg/L	BDL	0.01	No Relaxation
22	Zinc	Is : 3025(PART-49)	mg/L	BDL	5	15
23	Phenols	Is : 3025(PART-43)	mg/L	BDL(0.002)	0.001	0.002
24	Arsenic as As*	Is : 3025(PART-37)	mg/L	BDL(0.002)	0.01	0.05

Note: 1. The results listed only to the tested samples & applicable parameters.

2. Water samples will be destroyed after 10 days. Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, **Website :** www.msvlabellary.com

25	Silica*	IS : 3025(part-35)	mg/L	BDL(0.001)	---	---
26	phosphorus	IS : 3025(part-31)	mg/L	0.46	---	---
Biological Parameters						
27	Total Coliform	IS 1622:1981	Present/Absent	Absent	MPN/100ml	---
28	E-coli	IS 1622:1981	Present/Absent	Absent	MPN/100ml	---

INFERENCE	IS 10500 – 2012 Standards BDL – Below Detectable Limit Report Status :- The analyzed values for above measured parameters has been within the Permissible limits .
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Verified by

P.h

Authorized Saignature

P.h



Note: 1. The results listed only to the tested samples & applicable parameters,

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, **Website** : www.msvlabellary.com

MSVAL/W/F/13/03

ANALYSIS REPORT OF WATER QUALITY

Test Report No : MSVAL/2020/4104

Issued Date : 10.11.2020

1. Name of the Client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Name of the Sample : Well water near shri adishakthivccrabhadra temple Santhekatte
5. Sample Collected By : MSV Analytical Laboratories, Bellary
6. Particulars of Sample Collected : Grab sample
7. Sample Quantity : 2 Liters
8. Sample Description/condition : Good Satisfactory
9. Date of sample Receipt : 04.11.2020
10. Analysis Starting Date : 05.11.2020
11. Analysis Completion Date : 10.11.2020
12. Sample Tested as Received

S.No	Parameters	Protocol	Unit	Result	IS 10500-2012	
					Acceptable limit	Permissible limit
Physical parameters						
1	Color	Is : 3025(PART-4)	---	Colorless	5	15
2	Odor	Is : 3025(PART-5)	---	Agreeable	Agreeable	Agreeable
3	pH	Is : 3025(PART-11)	---	6.61	6.5-8.5	No Relaxation
4	Turbidity	Is : 3025(PART-10)	NTU	0.79	1	5
Chemical parameters						
5	Alkalinity	Is : 3025(PART-23)	mg/L	62	200	600
6	Total Dissolved Solids	Is : 3025(PART-16)	mg/L	78	500	2000
7	Total Hardness as CaCO ₃	Is : 3025(PART-21)	mg/L	80.2	200	600
8	Calcium as Ca	Is : 3025(PART-40)	mg/L	14.8	75	200
9	Magnesium as Mg	Is : 3025(PART-46)	mg/L	10.4	30	100
10	Sulphate as SO ₄	Is : 3025(PART-24)	mg/L	1.3	200	400
11	Chloride as Cl	Is : 3025(PART-32)	mg/L	34.7	250	1000
12	Nitrate as NO ₃	Is : 3025(PART-34)	mg/L	0.96	45	No Relaxation
13	Iron as Fe	Is : 3025(PART-53)	mg/L	BDL	0.3	No Relaxation
14	Fluoride as F	Is : 3025(PART-60)	mg/L	0.24	1.0	1.5
15	Copper	Is : 3025(PART-42)	mg/L	BDL(0.008)	0.05	1.5
16	Manganese	Is : 3025(PART-59)	mg/L	BDL(0.003)	0.1	0.3
17	Mercury	Is : 3025(PART-48)	mg/L	BDL(0.002)	0.001	No Relaxation
18	Cadmium	Is : 3025(PART-41)	mg/L	BDL(0.005)	0.01	No Relaxation
19	Lead	Is : 3025(PART-47)	mg/L	BDL(0.001)	0.05	No Relaxation
20	Chromium	Is : 3025(PART-52)	mg/L	BDL(0.002)	0.05	No Relaxation
21	Selenium	Is : 3025(PART-56) or IS -15303	mg/L	BDL(0.001)	0.01	No Relaxation
22	Zinc	Is : 3025(PART-49)	mg/L	BDL	5	15
23	Phenols	Is : 3025(PART-43)	mg/L	BDL(0.002)	0.001	0.002

Note : 1. The results listed only to the tested samples & applicable parameters.

2. Water samples will be destroyed after 10 days. Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvalbellary.com



MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015821F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Arithodu Subramanya Temple
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BL
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	69.2	68.4	67.5	µg / m ³	68.3	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	25.4	24.6	23.7	µg / m ³	24.5	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	12.2	11.4	10.2	µg / m ³	11.2	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) - 2006	18.6	17.5	16.4	µg / m ³	17.5	80

INFERENCE

As per NAAQS Standards

Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P.K.



Authorized Signature

Pankaj

Note: 1. The results listed only to the tested samples & applicable parameters.
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MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015816F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Manchi OHT
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BL
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	73.4	72.6	71.7	µg / m ³	72.5	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	28.4	27.5	26.6	µg / m ³	27.5	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	13.8	12.6	11.7	µg / m ³	12.7	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) - 2006	20.2	19.4	18.3	µg / m ³	19.3	80

INFERENCE	As per NAAQS Standards
	Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P. M.

Authorized Signature

[Signature]



Note : 1. The results listed only to the tested samples & applicable parameters.

2. Water samples will be destroyed after 10 days, Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.

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MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015815F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Indrahalli OHT
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BL
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	74.8	73.7	72.8	µg / m ³	73.7	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	28.9	27.7	26.5	µg / m ³	27.7	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	14.2	13.6	12.5	µg / m ³	13.4	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) - 2006	21.4	20.6	19.7	µg / m ³	20.5	80

INFERENCE

As per NAAQS Standards

Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P. K.



Authorized Signature

P. K.

Note : 1. The results listed only to the tested samples & applicable parameters.

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5. Sampling is not done by us unless otherwise specified. 6. The tests and/or calibrations marked with an are not accredited by NABL.



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C.M.C Ward No 18 & C.T.C W.No.16 T.S No. 695/A/32/B1, Block No 19 (1" & 2" Floor)

Sanganakallu Road, KEB Circle, Bellary - 583103 Contact No : Mob : 94498 03895, (0) : 08392-255169,

E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvalbellary.com



MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No :TC720720000015817F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Manipal Anganwadi OHT.
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BI.
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	75.6	74.8	73.4	µg / m ³	74.6	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	28.4	27.5	26.7	µg / m ³	27.5	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	14.2	13.7	12.9	µg / m ³	13.6	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) – 2006	21.8	20.7	19.8	µg / m ³	20.7	80

INFERENCE	As per NAAQS Standards
	Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P. Jm

Authorized Signature

P. Jm



Note: 1. The results listed only to the tested samples & applicable parameters.

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MSV Analytical Laboratories

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvlabellary.com



MSVAL/A/F/16/03

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015820F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample location : Stella Maris Church Kalmady
6. Particulars of the sample collected : Sample collected with FDS & RDS 460BI.
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	71.6	70.7	69.5	µg / m ³	70.6	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	27.8	26.9	25.7	µg / m ³	26.8	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	13.4	12.3	11.5	µg / m ³	12.4	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) - 2006	19.8	18.7	17.6	µg / m ³	18.7	80

INFERENCE	As per NAAQS Standards
	Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P. L.

Authorized Signature

P. L.



Note: 1. The results listed only to the tested samples & applicable parameters.
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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, Website : www.msvlabellary.com



MSVAL/A/F/16/15-7207

ANALYSIS REPORT OF AMBIENT AIR QUALITY

Test Report No : TC720720000015819F

Issue Date : 07.11.2020

1. Name of the client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Sample Collected By : MSV Analytical Laboratories, Bellary.
5. Name of the sample : KakkunjeSiddhivinayaka Temple location
6. Particulars of the sample : Sample collected with FDS & RDS 460BL collected
7. Date of Sample Receipt : 02.11.2020
8. Analysis Starting Date : 03.11.2020
9. Analysis Completion Date : 07.11.2020
10. Sample tested as received

S.No	Parameter	Protocols	Shift wise results			Units	Result in Avg.	Tolerance limits
			1	2	3			
1	Particulate Matter PM ₁₀ µg/m ³	IS-5182(Part-23) – 2006	70.9	69.8	68.7	µg / m ³	69.8	100
2	Particulate Matter or PM _{2.5} µg/m ³	LAB SOP	26.7	25.5	24.6	µg / m ³	25.6	60
3	Sulphur Dioxide as SO ₂	IS-5182(Part-2) – 2001	13.3	12.4	11.1	µg / m ³	12.2	80
4	Oxides of Nitrogen as NO _x	IS-5182(Part-6) - 2006	20.3	19.2	18.2	µg / m ³	19.2	80

INFERENCE	As per NAAQS Standards
	Report Status :- The analyzed values for above measured parameter are within the limits

Verified by

P.m

Authorized Signature

END OF REPORT

Note : 1. The results listed only to the tested samples & applicable parameters;

2. Water samples will be destroyed after 10 days, Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, **Website :** www.msvlabellary.com

MSVAL/W/F/13/03

ANALYSIS REPORT OF WATER QUALITY

Test Report No : MSVAL/2020/4102

Issued Date : 09.11.2020

1. Name of the Client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMIP
4. Name of the Sample : Manipal Lake
5. Sample Collected By : MSV Analytical Laboratories, Bellary
6. Particulars of Sample Collected : Grab sample
7. Sample Quantity : 2 Liters
8. Sample Description/condition : Good Satisfactory
9. Date of sample Receipt : 03.11.2020
10. Analysis Starting Date : 04.11.2020
11. Analysis Completion Date : 09.11.2020
12. Sample Tested as Received

S.No	Parameters	Protocol	Unit	Result	IS 10500-2012	
					Acceptable limit	Permissible limit
Physical parameters						
1	Color	Is : 3025(PART-4)	---	Colorless	5	15
2	Odor	Is : 3025(PART-5)	---	Agreeable	Agreeable	Agreeable
3	pH	Is : 3025(PART-11)	---	6.92	6.5-8.5	No Relaxation
4	Turbidity	Is : 3025(PART-10)	NTU	0.92	1	5
Chemical parameters						
5	Alkalinity	Is : 3025(PART-23)	mg/L	70	200	600
6	Total Dissolved Solids	Is : 3025(PART-16)	mg/L	132	500	2000
7	Total Hardness as CaCO ₃	Is : 3025(PART-21)	mg/L	85.2	200	600
8	Calcium as Ca	Is : 3025(PART-40)	mg/L	24.7	75	200
9	Magnesium as Mg	Is : 3025(PART-46)	mg/L	5.6	30	100
10	Sulphate as SO ₄	Is : 3025(PART-24)	mg/L	19.4	200	400
11	Chloride as Cl	Is : 3025(PART-32)	mg/L	43.6	250	1000
12	Nitrate as NO ₃	Is : 3025(PART-34)	mg/L	2.1	45	No Relaxation
13	Iron as Fe	Is : 3025(PART-53)	mg/L	BDL	0.3	No Relaxation
14	Fluoride as F	Is : 3025(PART-60)	mg/L	0.25	1.0	1.5
15	Copper	Is : 3025(PART-42)	mg/L	BDL(0.006)	0.05	1.5
16	Manganese	Is : 3025(PART-59)	mg/L	BDL(0.002)	0.1	0.3
17	Mercury	Is : 3025(PART-48)	mg/L	BDL(0.004)	0.001	No Relaxation
18	Cadmium	Is : 3025(PART-41)	mg/L	BDL(0.001)	0.01	No Relaxation
19	Lead	Is : 3025(PART-47)	mg/L	BDL(0.003)	0.05	No Relaxation
20	Chromium	Is : 3025(PART-52)	mg/L	BDL(0.002)	0.05	No Relaxation
21	Selenium	Is : 3025(PART-56) or IS -15303	mg/L	BDL(0.00)	0.01	No Relaxation



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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, **Website :** www.msvlabellary.com

22	Zinc	IS : 3025(PART-49)	mg/L	BDL(0.004)	5	15
23	Phenols	IS : 3025(PART-43)	mg/L	BDL(0.002)	0.001	0.002
24	Arsenic as As*	IS : 3025(PART-37)	mg/L	0.001	0.01	0.05
25	Silica*	IS : 3025(part-35)	mg/L	BDL(0.002)	---	---
26	phosphorus	IS : 3025(part-31)	mg/L	0.5	---	---
Biological Parameters						
27	Total Coliform	IS 1622:1981	Present/Absent	Absent	MPN/100ml	--
28	E-coli	IS 1622:1981	Present/Absent	Absent	MPN/100ml	--

INFERENCE	IS 10500 - 2012 Standards BDL - Below Detectable Limit Report Status :- The analyzed values for above measured parameters has been within the acceptable limits
------------------	---

Verified by

P. In

Authorized Saignature

[Signature]



Note : 1. The results listed only to the tested samples & applicable parameters.

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E-mail : msv.lab01@gmail.com, labmsv@gmail.com, **Website :** www.msvalbellary.com

24	Arsenic as As*	IS : 3025(PART-37)	mg/L	BDL	0.01	0.05
25	Silica*	IS : 3025(part-35)	mg/L	BDL(0.001)	---	---
26	phosphorus	IS : 3025(part-31)	mg/L	0.65	---	---
Biological Parameters						
27	Total Coliform	IS 1622:1981	Present/Absent	Absent	MPN/100ml	--
28	E-coli	IS 1622:1981	Present/Absent	Absent	MPN/100ml	--

INFERENCE	IS 10500 – 2012 Standards BDL – Below Detectable Limit Report Status :- The analyzed values for above measured parameters has been within the acceptable limits .
------------------	---

Verified by

P. L.

Authorized Saignature

B. L.



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TC-7207

MSVAL/W/F/13/04

NOISE LEVEL MONITORING REPORT

Test Report No :TC720720000015822F

Issue Date : 07.11.2020

1. Name of the Client : Suez Project Pvt Ltd, Suez India Pvt Ltd, Drs Infratech (JV)
2. Name of The Work : Construction of distribution system for 24x7 water supply including services for operation and management for Udupi city.
3. Name Of The Project : KIUWMP
4. Sample Collected By : MSV Analytical Laboratories, Bellary
5. Date of Monitoring : 02.11.2020
6. Report Date : 07.11.2020
7. Particulars of Sample Collected : Noise meter
8. Method Adopted : Instrument Manual Method

		Instrument Manual Method				
S.No	Sample Location	Time Frequency	Result			Permissible limits in dB(A) Leq
			Max. in dB(A) Leq	Min in dB(A) Leq	Avg. in dB(A) Leq	
1	Indhralli	6.00AM to 6.00PM	57.4	53.2	55.3	75
2	Manipal anganwadi		55.7	51.3	53.5	
3	Manchi		57.2	53.6	55.4	
4	Kakkunje		58.1	54.8	56.4	
5	Santhakate		61.3	57.4	59.3	
6	Oritodujanardhan temple		52.4	48.6	50.5	
7	Stella maris church		56.8	52.3	54.5	
Night Time						
1	Indhralli	6.00PM to 6.00AM	56.2	51.8	54.0	70
2	Manipal anganwadi		54.4	50.2	52.3	
3	Manchi		51.7	47.4	49.5	
4	Kakkunje		50.6	57.2	53.9	
5	Santhakate		52.2	47.8	50.0	
6	Oritodujanardhan temple		48.4	46.2	47.3	
7	Stella maris church		51.6	47.7	49.6	

INFERENCE

As per KSPCB Standards,

Report Status :- In the all locations Noise level is within the limits.

Verified by

P.K.

Authorized Signature

[Signature]



Note: 1. The results listed only to the tested samples & applicable parameters.

2. Water samples will be destroyed after 10 days. Filter papers & Thimbles will be destroyed 3 months from the date of issue of test certificate unless otherwise specified. ILC sample will be destroyed after 1 month from the date of test certificate issue.

3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the court of law & should not be used in any advertising media without our special permission in writing.

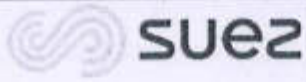
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[illegible]

November - 2020

S.No	Date	Description of Accident	Severity	Damage to	Infrastructure	Loss of Manhours	Zone / Ward No	Address	Responsible person Name	Remarks
1.	17/11/2020	Mr. devaras (23) while doing excavation work ^{flat time} on Chow bar is slipped the right Leg and damaged injury to leg	Low	NO		NO	Zone - 9A	moodubety	Crasendra	



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

URL for online Pre-Health assessment form is below <http://suezgis.com/Health-Safety/covid-19.html>

Link for downloading Aarogya Setu app in my cell phone

iOS: <https://apps.apple.com/in/app/aarogya-setu/id1505825357>

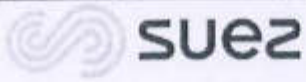
Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

Covid Induction Attendance Sheet

03/11/20

Sl. No	Name	Dept.	Signature
1.	Chondappa	HSC/Filter	250225
2.	Chenmakreshva	"	250225
3.	mangy	"	250225
4.	Chaitra	"	Chaitra
5.	Laxmi	"	Lakshmi.
6.	Hanumantappa	"	250225
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

URL for online Pre-Health assessment form is below <http://suezgis.com/Health-Safety/covid-19.html>

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iOS: <https://apps.apple.com/in/app/aarogyasetu/id1505825357>

Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

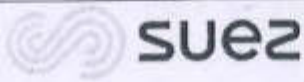
Covid Induction Attendance Sheet

04/11/2020

Sl. No	Name	Dept.	Signature
1.	Shivanand	Pipelining	[Signature]
2.	Azath Ali	"	[Signature]
3.	B Shwara	"	B Shwara
4.	Asay	"	[Signature]
5.	Mansurath.	"	[Signature]
6.			
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18.			
19.			
20.			

Name & Sign. of Trainer

[Signature]



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

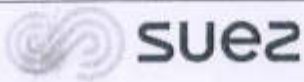
Covid Induction Attendance Sheet

5/11/20

Sl. No	Name	Dept.	Signature
1.	Chandappa	Helper	Chandappa
2.	Kumara	"	Kumara
3.	Thinnamma	"	KBT (Suzhi)
4.	Vishnappa	"	Chand
5.	Nagendra	"	Nagendra
6.	Hannumathi Ray	"	Ray
7.			
8.			
9.			
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11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer

5/11/20



Health Safety & Environment
Covid Induction Attendance Sheet

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Doc. No. SIPL/HSE/HD

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Link for downloading Aarogya Setu app in my cell phone

iOS: <https://apps.apple.com/in/app/aarogyasetu/id1505825357>

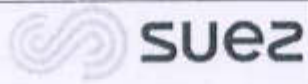
Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

Covid Induction Attendance Sheet

07/11/2020

Sl. No	Name	Dept.	Signature
1.	Mansu		Mansu
2.	Shankar		Shankar
3.	Bikramdas		Bikramdas
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Name & Sign. of Trainer



Health Safety & Environment
Covid Induction Attendance Sheet

Date: 20.4.2020
Doc. No. SIPL/HSE/HD

URL for online Pre-Health assessment form is below <http://suezgis.com/Health-Safety/covid-19.html>

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iOS: <https://apps.apple.com/in/app/aarogyasetu/id1505825357>

Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

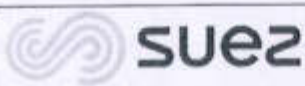
Covid Induction Attendance Sheet

09/11/20

Sl. No	Name	Dept.	Signature
1.	Chandrasa	HSC / Helper	[Signature]
2.	Krishna	"	[Signature]
3.	Mohan	HSC / Helper	[Signature]
4.	Mansunath	"	[Signature]
5.	Panchakshari	"	[Signature]
6.	Hulugappa	HSC / Helper	[Signature]
7.	Mantli	"	[Signature]
8.	Veerasha	"	[Signature]
9.	Hulugappa	"	[Signature]
10.	Gangappa	"	[Signature]
11.	Gangamma	"	[Signature]
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Name & Sign. of Trainer

[Signature]



Health Safety & Environment
Covid Induction Attendance Sheet

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Doc. No. SIPL/HSE/HD

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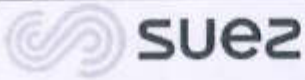
Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogya-setu>

Covid Induction Attendance Sheet

11/11/2020

Sl. No	Name	Dept.	Signature
1.	Srinivas	HSC	Trainer
2.	MD. Rafik	"	M. Ramayya
3.	Thosif	"	Trainer
4.	Naidu	"	Trainer
5.	Chittimma	"	Trainer
6.	Hennuru Swami	"	Trainer
7.	Mohammad	"	Trainer
8.	Raja	"	Trainer
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Name & Sign. of Trainer



Health Safety & Environment
Covid Induction Attendance Sheet

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iOS: <https://apps.apple.com/in/app/aarogyasetu/id1505825357>

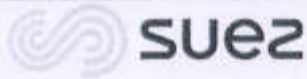
Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

Covid Induction Attendance Sheet

13/11/20

Sl. No	Name	Dept.	Signature
1.	Manju	HSC	WJ0231
2.	Chennakeshava	"	292013W
3.	Chandkrappa	"	200131
4.	Hanumanthappa	"	200131
5.	Laxmi	"	Lakshmi.
6.	Chaithra	"	ChaiThra
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Name & Sign. of Trainer



Health Safety & Environment
Covid Induction Attendance Sheet

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Android: <https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu>

Covid Induction Attendance Sheet

18/11/20

Sl. No	Name	Dept.	Signature
1.	Abdul Sharukhan		Sharukh
2.	Akbar Basha		650278
3.	Hagish		650278
4.	Jayaram		H. Self
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Name & Sign. of Trainer

18/11/20


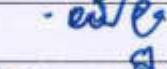

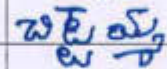
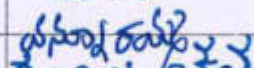
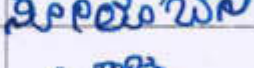
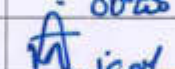
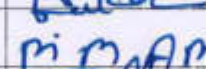
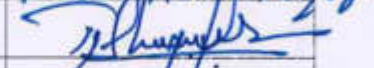

**suez**Health Safety & Environment
Covid Induction Attendance SheetDate: 20.4.2020
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Covid Induction Attendance Sheet

19/11/20

Sl. No	Name	Dept.	Signature
1.	Srinivas	Hsc / Helper	
2.	Natu	"	
3.	Honnuru Swami	"	
4.	Chittima	"	
5.	Hannabramma	"	
6.	Sulochana	"	
7.	Raja	Hsc / Fitter	
8.	Mohamad	Hsc / Fitter	
9.	Mo Rafik	Hsc / Fitter	
10.	Thosif	"	
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Name & Sign. of Trainer

