

# Environmental Monitoring Report

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

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

Appendices (PART B)

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

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### Conclusion:-

Overall the Contractor's Compliance with the Environment and Health and Safety requirements of the Project needs improvement. Contractor maintained copy of IEE. Contracting agency has to conduct HIV AIDS awareness training programme for workers.

### 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"> <li>Site inspection Register must be maintained</li> </ul>	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"> <li>Institutional setup</li> <li>List of PPE provided and standards followed, Site specific OHS Equipped first aid station, Medical insurance. Hospitals recognized in emergency.</li> <li>Health Camps and Check -up should conducted for the workers</li> <li>Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.</li> <li>Electrical measures safety</li> <li>Fire safety measures should be reflect in OHS plan.</li> <li>Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register</li> </ul>	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"> <li>Type of waste generated (Solid and Hazardous)</li> <li>Quantity of different waste generated at site</li> <li>List and type of garbage bins provided</li> <li>Time of waste collection</li> <li>Location of Waste disposal site identified consultation with PIU</li> <li>If private land NOC from owner.</li> <li>Location of Waste disposal site mark on google map.</li> <li>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</li> </ul>	Comply with in 15 days

		<u>Solid Waste (Handling and Management) Rules, 2016.</u>	
5.	Complaints from sensitive receptors and public.	<ul style="list-style-type: none"> <li>Complaints register must be maintained at each site.</li> </ul>	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"> <li>Section-wise list of utilities to be shifted/ disturbed</li> <li>Submission Letters of Section-wise list of utilities to be shifted/ disturbed to PIU</li> <li>Plan to shift and contingency steps to be taken</li> </ul>	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"> <li>Identify the location consultation with PIU</li> <li>Letters of communications and finalization location</li> <li>Mark the location on google map.</li> </ul>	Complied - letter for finalization of the disposal site. The <b>letters</b> 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"> <li>Maintain Copy of Certification of authorized material sources</li> </ul>	Comply with in 5 days
10.	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	<ul style="list-style-type: none"> <li>During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory</li> </ul>	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
11.	Site observations	<ul style="list-style-type: none"> <li>Maintain Register for site observation at site</li> </ul>	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"> <li>During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory</li> </ul>	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
13.	Work Program Review	<ul style="list-style-type: none"> <li>Work plan must be prepared and review</li> </ul>	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	<ul style="list-style-type: none"> <li>List of walkways, wooden planks and foot bridges provided with location must be maintained</li> </ul>	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"> <li>Type and quantity of waste generated will be waste generated.</li> <li>Reuse of quantity of waste generated in any other projects or any other place</li> <li>Amount of waste disposed in identified disposal areas consultation with PIU</li> <li>If private land NOC from owner.</li> <li>Location of Waste disposal site mark on google map</li> </ul>	<p>Spoil Management Plan submitted – not adequate 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"> <li>Attendance registers of labour at each site.</li> <li>Register of payment to the workers at each site.</li> </ul>	<p><b>Attendance register is maintained. but Register of payment to the workers Not maintained</b> Comply with in 5 days</p>
18.	Site specific OHS Equipped first aid station	<ul style="list-style-type: none"> <li>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.</li> <li>Trained first aid personal will be available at the construction site.</li> <li>Emergency numbers will be displayed prominently at camp and construction site.</li> <li>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.</li> <li>The contractor shall identify nearby hospital, which could be used in case of emergency.</li> </ul> <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>Comply with in 10 days (when work is in progress all this facilities must be provided)</p>
19.	Potable water supply and clean eating area.	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Complied</p>

20.	PPE and medical insurance	<ul style="list-style-type: none"> <li>The Contractor shall provide and ensure enforcement with zero tolerance the following:</li> <li>Safety vests will be used by workers when on the construction site.</li> <li>Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/unloading operations</li> <li>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.</li> <li>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.</li> <li>Welder's protective eye-shields will be provided to workers who are engaged in welding works.</li> <li>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.</li> <li>Proper moving guards will be provided at all moving machines, like motors and pulleys.</li> <li>All workforces on the construction site shall be provided with identity cards.</li> <li>High risk areas are to be provided with warning signage.</li> </ul>	Complied
21.	List of selected sites. Written consent of land owner	<ul style="list-style-type: none"> <li>If any Activity related to project carrying out in private land written consent of land owner (NOC) must be taken.</li> </ul>	If any, Comply with in 20 days



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


## Annexure -1

### Site Observations for the month of 29<sup>th</sup> February 2020


S.N o	Observation		Recommendation
a	Proper barricading and Cautionary Sign. information		<p>Barricading is done at kunttikana site</p> <p>Instructed contracting agency to put hard barricading continuous without gap.</p>

<b>b</b>	Flag man at kunttikanna Work location		<p>Flagman provided t both side of the road to maintain traffic and avoid any accident and incident</p> <p>Again instructed to follow it properly</p>
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c	PPEs at work locations		<p>All workers are wear PPEs during site visit at kuttikana and kandatpalli locations</p> <p>Instructed to follow it properly 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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<b>d</b>	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp
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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>
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f	Material stocks at shakti nagara 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>
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<b>g</b>	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height
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i	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 20<sup>th</sup> January 2020


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

<b>b</b>	PPEs at work locations and hard barricading at konchady loaction		<p>All workers are wearing PPEs during site visit at konchady location</p> <p>Hard barricading should be maintained at work site</p>	Partially complied
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<b>c</b>	Safety helmets jackets, shoes and safety ear plug for drivers	 A photograph showing a yellow and black CASE road roller paving a road. The roller is moving from left to right, leaving a fresh layer of dark gravel behind it. A person in a blue shirt and brown pants stands near the roller. In the background, there are buildings and palm trees under a clear sky.	Safety helmets jackets, shoes and safety ear plug must be weared by drivers during working at site	
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<b>d</b>	Sign boards and hard barrication at work site		Work in progress sign board should be kept and hard barricading must be done during road restoration work to avoid public entrance to carry safe work	Partially complied
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<b>d</b>	One toilet was found damaged		Repair the Toilet	Not complied
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<b>e</b>	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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<b>g</b>	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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<b>h</b>	Sign Boards are not properly visible from the distance		Retro reflective sign boards with legible matter are to placed so that it may be visible from the considerable distance for the fast moving vehicles	Partially complied
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## Annexure -3

### Site Observations for the month of 19<sup>th</sup> December 2019

S.No	Observation		Recommendation	Status of observation
a.	PPEs at work locations	 <p>Latitude: 12.90781 Longitude: 74.850432 Elevation: 109.91m Accuracy: 1.9m Time: 19-12-2019 15:05 Note: Konchadi pipe laying</p> <p>Powered by NoteCam</p>	<p>All workers are wearing PPEs during site visit at kuttikana and kandatpalli locations</p> <p>Instructed to follow it properly 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>	<p>Complied</p> <p>Drinking water and 1nos Mobil toilets to be provided for 10nos workers at work site</p>



b	Project information board at work matadkani site	 <p><b>MANGALURU CITY CORPORATION / KUIDFC</b> <b>KIUMIP PROJECT</b> <b>WORK IN PROGRESS</b></p> <p>Implementing Agency : Replacement of Old Sewerage Pumping main and rehabilitation of sewerage system</p> <p>Name of Contractor : M/s GRS InfraTech Pvt.Ltd, Hyderabad</p> <p>Consultant : M/s EGIS India Ltd, Oahu</p> <p>Engineer in charge : Mob. 7318188457</p> <p>Consultant Engineer : Mob. 9600733297</p> <p>Project Manager : Mob. 2945921886</p> <p>Emergency Nos : Ambulance : 108 Police : 100 Fire : 101</p> <p>Latitude: 12.882412 Longitude: 74.82842 Elevation: 99.05m Accuracy: 2.2m Time: 19-12-2019 16:02 Note: Matatkani pipe laying</p>	Provided information board at matadkani work site	Project at Complied
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<b>c</b>	Labours are cooking food in their staying room	 <p>Latitude: 12.909333 Longitude: 74.876655 Elevation: 102.96m Accuracy: 2.8m Time: 19-12-2019 16:41 Note: Shakti Nagar Labour Camp</p> <p>Powered by NoteCam</p>	Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours  Rest room for workers should be separate	Not complied
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Latitude: 12.914864  
Longitude: 74.877576  
Accuracy: 1700.0m  
Time: 19-12-2019 16:50  
Note: Shakti Nagar Labour Camp

<b>e</b>	Loose electrical wires found		Electrical wires should be properly fitted with pipes and plugs are to be used instead loose connections.	Not complied
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f	Sign boards found and proper hard barricading	 <p>Latitude: 12.882322 Longitude: 74.828388 Elevation: 95.45m Accuracy: 2.1m Time: 19-12-2019 16:02 Note: Matatkani pipe laying</p> <p>Powered by NoteCam</p>	Proper sign boards are to be placed at open trench with Retro reflective sign boards and with hard barricading at matatkani site	Not complied
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h	Project Information Board is not proper	 <p>Latitude: 12.882412 Longitude: 74.82842 Elevation: 99.05m Accuracy: 2.2m Time: 19-12-2019 16:02 Note: Matatkali pipe laying</p>	<p>Project information board, Go slow boards, work in progress board is provided by contracting agency</p> <p>But project information board, Go slow boards, work in progress board is to be provided Retro reflective as per instructions</p>	Partially complied
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i	Fire Extinguisher at shakinagara labour camp site		Provided Fire Extinguisher at shakinagara labour camp and instructed safety person to keep one Fire Extinguisher at all work site for any emergency	Partially complied
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# DRS INFRA TECH PRIVATE LIMITED

Ref: DRSITPL/KUIDFC/ MNG/2019-20/ **31**

Dated: 13.11.2019

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangaluru.

Dear Sir,

Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02-  
**Submission of EMP Report for the Month of Sept'19 and Compliances report - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018

With reference to the above subject, here with submitting the EMP Report and Compliance report for the month of September'19

This is for your kind consideration

Thanking you,

Yours Truly,

For DRS Infratech Pvt Ltd,



Encl: 01 Set of EMP Report for the month of Sep'19



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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaint
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>Maintaining daily work records <b>Attached in annexure 5 a &amp; b</b></li> <li>Complied. <b>Attached in annexure 3</b></li> <li>Complied and PPEs are provided to workers on site. <b>Attached in annexure 1.v</b></li> <li>Contractor maintained registers for pumping main sites and</li> </ol>	<ol style="list-style-type: none"> <li>Daily maintaining the Labor work report and machinery vehicles report Attached the document in annexure 01</li> <li>Adopted.</li> <li>Adopted. PPEs are provided workers on site. attached annexure 2</li> <li>We are provided all site materials details. attached annexure 3</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaint
		<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>recommended to maintain for each site</p> <p>5. 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 <b>Annexure-11</b> in <b>May - 2019 report</b>. 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 provided.</p>	<p>5. Adopting.</p> <p>6. Debris disposed to the specified distinct.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Adopted accordingly.</p>

Daily



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>9. Typical site layout plan not prepared</p> <p>a) Barricades and security personals are provided on working 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</p> <p>Not prepared as per given mitigation Measures.</p>	<p>a) Adopting.</p> <p>b) Excavated soil is disposed pachady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted.</p> <p>e) The excavated soil is utilized for digestion of waste at pachady. As directed by environment engineer MCC Mangalore.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaint
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 electricity and telephone services are restored quickly</p>	Construction Contractor and PIU	<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. <b>Attached as Annexures-2, 3, 4 &amp; 5 in May - 2019 report</b></p> <p>12. Work is in progress and Recommended contractors to provide diversion of drains and provision of water tanker whenever and wherever</p>	<p>10. Primary inspected of alignment are made to assess utilities.</p> <p>11. Informed to PIU and local.</p> <p>12. Not applicable.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section		<p>Required on site.</p> <p>13 Work in progress</p> <p>and no such damage and restoration found in this month during Site visit.</p> <p>14 Work in progress</p> <p>and no such damage and restoration happened in this Month.</p> <p>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>	<p>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Streetman restored at the earliest.</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>15 Compiled</p> <p>16 Compiled – Advised contractor to mark dumping yard location on</p>	<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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>Google map which is complied. <b>Attached in annexure 4</b></p> <p>17 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is marked on Google map. <b>Attached in annexure 4</b></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. <b>Attached in annexure 4</b></p>	<p>17. Adopted.</p> <p>18. Not applicable .Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
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	<p>19 Contractor obtained material from authorized 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>	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23 Complied- Recommended contractor to maintain the copy of Document.</p> <p>24 Concrete road cutting work in progress. But no such exposed soil and stockpiled</p>	<p>23. Necessary test conducted.</p> <p>24. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	
		<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> <p>30. Carry out air quality monitoring.</p>		<p>were found but instructed contracting agency must spray water wherever necessary.</p> <p>25 Complied</p> <p>26 Complied</p> <p>27 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 all vehicles and equipments used in the construction.</p> <p>30 Not Complied.</p>	<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used for to cover the sand in vertical.</p> <p>27. Adopting.</p> <p>28. Adopted.</p> <p>29. Adopted.</p> <p>30. Air quality monitoring conducted on October month.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
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 jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and</p>	Construction Contractor	<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 minimized by using construction equipment by using vehicle silencers.  Recommended to fit jackhammers with noise-reducing mufflers, and portable street</p>	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		barriers at sensitive receptors.  35 Not complied Work in progress and contracting agency conducting noise monitoring in October 1 <sup>st</sup> week.	35. Test conducted on October month.
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>	Construction Contractor	<p>36 Contractor not carried out Major Construction works during monsoon season.</p> <p>Stockpiling of earth fill not observed during site visit.</p> <p>37 Work in progress and no such stockpiles found on work site.</p> <p>38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste</p> <p>management treatment plant</p>	<p>36. Test conducted.</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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> <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>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 provide storage yard if fuel stored in bulk.</p> <p>41 Complied  Followed by contracting agency</p> <p>42 Complied  Followed by contracting agency</p>	<p>39. Not applicable.</p> <p>40. Adopted.</p> <p>41. On day to day basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Compiled</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>Partially</p> <p>46. Complied-Waste Management Plan prepared by contractor needs to be updated.</p> <p>47. Complied</p> <p>Followed by contracting agency</p> <p>Complied</p> <p>48. Complied</p> <p>49. Complied</p>	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		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.		50 Construction work is in progress.	50. Adopted.
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 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 /</p>	Construction Contractor	<p>51 Traffic Management Plan prepared by Contractor attached as Annexure – 2 and</p> <p>it needs to update again.</p> <p>52 Complied</p> <p>53 Complied.</p> <p>54 Complied.</p> <p>55 Complied. (Attached in June 2019)</p>	<p>51. Traffic management plan prepared.</p> <p>52. Adopted.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<p>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 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>56 Complied work is carried out in low traffic hours in day time and; prior information given about the schedule of the work.</p> <p>57 Complied <b>(Attached in June 2019) and</b> no such work are executing near residential areas during site visit</p> <p>58 Caution board provided at work site. Entry restriction information; competent official's name and contact for public complaints provided. Recommended all sign board must be Retro reflective <b>(Attached in annexure 4 g, h, i, j, k and l)</b></p>	<p>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board provided.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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>59 Respective Engineers present on the site for continuous monitoring</p> <p>Traffic diversion boards, hard</p> <p>60 barricading and Caution boards provided. Recommended all sign board must be Retro reflective (<b>Attached in annexure 4 g, h, i, j, k and l</b>)</p>	<p>59. Adopted.</p>
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</p>	Construction Contractor	<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>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<p>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>		<p>Followed by contracting agency</p> <p>65 Complied – Recommended to maintain documentary Evidence</p>	<p>64. Adopted.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66 Complied.</p> <p>67 Complied – access provided by contractor. <b>(Attached in june 2019 )</b></p> <p>No such work are executing near residential areas during site visit but instructed contracting agency to provide whenever required.</p> <p>68 Complied - Public Consultation</p>	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>were conducted for the affected people to provide prior information about the work.</p> <p>69 Complied implementation Resettlement Plan to address these issues in progress (<b>Attached in June 2019</b>)</p> <p>70 Complied - Traffic diversion boards, Hard barricading and Caution boards provided(<b>Attached in June 2019</b>) work schedule not provided.</p> <p>71 Complied. Recommended all project information board and sign board must be Retro reflective (<b>Attached in annexure 4 g, h, i, j, k and l</b>)</p> <p>72 Site-Specific Traffic Management</p>	<p>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided.</p> <p>72. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
				Plan Prepared by contractor is not adequate and to update again. <b>Recommended to comply (Attached in June 2019)</b>	
Socio-Economic Employment	Impact on local employment generation	73. Employ local labour force to the maximum extent, if manpower is available	Construction Contractor	73 Complied	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work-related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74 Complied Site-specific Health and Safety (H&amp;S) Plan prepared by contractor. Proper implementation required.</p> <p>75 Not Complied.</p>	<p>74. Adopted.</p> <p>75. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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>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 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>Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided. <b>(Attach ed in annexure 1.v)</b> PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are provided</p> <p>Not Complied</p> <p>Oxygen masks for emergency not provided PPEs are provided</p>	<p>76. Adopted.</p> <p>77. Adopted.</p> <p>78. Adopted. Weekly training conducted for all staff and labors.</p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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>80 Not Complied Recommended</p> <p>81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers</p>	<p>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p>
		<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 &amp; 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>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 annexure 1.u)</p>	<p>82. Adopted.</p> <p>83. Adopted.</p> <p>84. Adopted. Provided clean eating area for workers.</p> <p>85. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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 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</p>		<p>86 Not Complied</p> <p>87 Complied.</p> <p>88 Complied</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- 8hours per day. Hearing protection is provided by contractor. <b>(Attached in annexure 1.v)</b></p> <p>92. Not Complied</p>	<p>86. Adopted.</p> <p>87. Adopted.</p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).			
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p><b>93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.</b></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><b>94</b> Partially Complied – waste management plan not prepared</p> <p><b>95</b> Complied. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions <b>but not maintained record of joint inspection.</b></p>	<p><b>93. Adopted. Traffic management plan submitted.</b></p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96 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>	<p>96. Adopted.</p> <p>97. Adopted.</p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), 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>	Construction Contractor	<p>99. Contractor Not operating the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation.</p> <p>100 Complied.</p>	<p>99. Adopted.</p> <p>100. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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 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>101 Complied.</p> <p>102 Proper Kitchen, bathrooms garbage room yet to be provided.</p> <p>103 Complied.</p> <p>104 Not Complied</p> <p>105. Not Complied.</p> <p>106. 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen provided.</p> <p>103. Adopted.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Implementation	Status of Complaints
		<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 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>109. Not complied.</p> <p>110. Complied.</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>	<p>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted.</p> <p>112. Adopted.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>

## Annexure 1 - Site Observations for the month of 24<sup>th</sup> September 2019

S.N o	Observation		Recommendation	Status Of Complaints
a.	Toilet was not clean and tap water connections were not found.	 	Keep Toilets clean. Tap water connections to be provided.	<p>Water connection to be done and one person hiring for cleaning purposes in weekly basis .</p> <p>01) Toilet cleaning work completed and arrangements for tap water connection is under progress</p>




b	One toilet was found damaged	 	Repair the Toilet	<p>02) This toilet to be Wall rectification is completed work is and Toilet to be closed done .</p>
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c	Labors are cooking food in their staying room	 	<p>Separate Cooking facility is to be provided for the Contractor labors and sub- contractor labors.</p>	<p>We are providing one separate cooking room. And labour sleeping room is separate provided is done</p> <p>03) Separate kitchen provided for both Contractor and sub contractor's labour.</p>
---	---	--	--	--

d	First Aid Box is not adequate	 <p>Latitude: 12.908919 Longitude: 74.876485 Elevation: 53.97m Accuracy: 19.7m Time: 24-09-2019 12:38 Note: Labour Camp Shakti Nagar</p> <p>Powered by NoteCam</p>	First Aid Box with adequate materials as specified by ADB is to be provided at labor camp.	First Aid Box has been replaced with all adequate materials as specified by ADB
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<p>e</p> <p>Steel bar s observed f or barricading. Steel she ets coming out of barricaded area.</p>		<p>Remove steel bars with MS tubular pipe. Steel sheets are to be placed at proper place.</p>	<p>We are stacked yard properly steel bars and MS tubular . Same has been shifted to proper place</p>
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f	Loose electrical wires found	 	<p>Electrical wires should be properly fitted with pipes and plugs are to be used instead loose connections.</p>	<p>All electrical wires are properly fitted with pipes and plugs are properly connections.</p> <p>04) Proper electrical wiring and covered with pipes has been provided is done.</p>
---	------------------------------	--	--	--



g	<p>Sign Boards are not properly visible from the distance</p>		<p>Retro reflective sign boards with legible matter are to placed so that it may be visible from the considerable distance for the moving vehicles</p>	<p>We are already provided Retro reflective sign boards.</p> <p>05) Following the Retro reflective sign boards. At the site provided is done .</p>
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h	<p>Torn, muddy Banner sign boards found</p>	 <p>Latitude: 12.910524 Longitude: 74.853999 Elevation: 20.92m Accuracy: 13.7m Time: 24-09-2019 13:21 Note: Kuvor STP DI Pipeline</p> <p>Latitude: 12.91059 Longitude: 74.854184 Elevation: 19.92m Accuracy: 13.7m Time: 24-09-2019 13:22 Note: Kuvor STP DI Pipeline</p>	<p>Banner sign boards are to be replaced with Retro reflective sign boards</p>	<p>We are provided Retro reflective sign boards.</p> <p>06) Proper Sign boards replaced with retro reflective sin boards and ordered some more boards to site.</p>
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i	<p>Caution Sign Board visibility is poor during night time</p>	<div>  <p>Day Time Visibility</p> </div> <div>  <p>Night Time Visibility</p> </div> <div>  </div> <div>  </div>	<p>Provide Retro reflective sign Boards for better night time visibility</p>	<p>We are provided Retro Reflective sign boards.</p> <p>07) Proper Kept traffic signal lights at night time at sites for visibility and take diversion board is provided</p>
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08) Provided project information Retro reflective sin boards provided at ite and traffic signal is visibility

56



I	<p>Partial Caution Tape barricading found along With sign board along the road</p>	 	<p>Caution Tape barricading along with sign board is to be provided for all the DI pipes kept along the road</p>	<p>Caution tape barricading was done with sign boards.</p>
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09) Caution tape  
barricading is  
completed done

m	Flagman is finding difficulty for handling the traffic	 	Trained flagmen are to be provided for handling traffic.	We are provided trained flagmen for handling traffic.
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n	Temporary Road Restoration work has been done at Urva Store	 <p>Latitude: 12.999587 Longitude: 74.835703 Elevation: 28.88m Accuracy: 4.6m Time: 24-09-2019 17:40 Note: Urva store Powered by NoteCam</p>  <p>Latitude: 12.899774 Longitude: 74.835857 Elevation: 27.6m Accuracy: 9.6m Time: 27-09-2019 08:42 Note: concrete Road is full Powered by NoteCam</p>	Permanent Road Restoration work is to be done as the earliest	Permanent Concrete road was completed at Urva store.
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<p>o</p>	<p>Temporary Road Restoration work has been done by providing interlocking tiles at Ashok Nagar</p>		<p>Permanent Road Restoration work is to be done as the earliest in order to remove the inconvenience causing to the traffic.</p>	<p>We are waiting for clearance from EE for the permanent road.</p>
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p	DI Pipes are kept open without barricading done	 	<p>The DI pipes are to be barricaded with caution tapes and caution boards. No vehicle should be allowed to park adjacent to the stocked pipes.</p>	<p>We are provided soft barricade for DI pipes stacking area and also provide No Parking board at DI pipes stacking area</p> <p>Provided with caution tape barricading. Is completed done .</p>
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q	The DI pipes stored at Urva ground reclining to the wall of the house	 	<p>The pipes which are reclining to the wall of the house are to be removed from that area and store elsewhere and ensure the safety of the wall of the house</p>	<p>All pipes are removed from wall of the area and also stacked properly.</p> <p>All pipes reclined to wall shifted to other place and barricading is completed done</p>
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r	The various Sign Boards are not visible during night time	 	The retro reflective sign boards as per the instructions are to be provided for better night time visibility.	<p>Retro reflective sign boards are provided.</p> <p>Traffic signal lights provided at site for visibility .traffic signal light better night only visibility at site</p>
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s	The Continuous hard barricading not found	 	Continuous barricading along the work site is to be provided.	<p>hard barricades are provided continuous hard barricades and balance barricades are making at our labor camp.</p> <p>Continuous barricading provided. And traffic signal light batter is visibility at the site</p>
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t	<p>The barricading for the working area is having minimum visibility</p>	 	<p>Retro reflective sign boards along with delineators with light may also be provided along the curve portion of the road.</p>	<p>We are provided Retro reflective sign boards for the curve portion of the road.</p> <p>Traffic signal lights kept at night time and reflective sign sticker for provided</p>
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### 1.u) Tool Box and Work Safety Induction Training onsite for Workers from Safety Person



### 1.v) Workers Wearing PPEs on the Working Sites











## Annexure 2 - Compliance status against Site Observations done on August 2019

S.No	Observation		Recommendation	Status of observation	Status Of Complaints
a	Proper barricading and Cautionary Sign boards not found. Cautionary information provided on banner got torn.		<p>Proper hard barricading is to be provided as earliest.</p> <p>Proper Cautionary sign boards to be provided on frame and stand on either sides of the working area.</p>	<p>Partially complied</p> <p>Recommended all project information board and sign board must be Retro Reflective</p>	<p>We are provided Retro reflective tape for project information boards and sign board.</p>

b	Pipes lying adjacent to the road without any barricading.	 	<p>Proper barricading along with cautionary sign board is to be done.</p>	<p>Partially Complied. But contracting agency must soft barricade wherever pipes are stocked along road side. Recommended to paste Retro Reflective stickers on stocked pipes for proper visibility during night time.</p>	<p>We are provided soft barricades for pipes stacked area and also provide retro reflective sign boards.</p> <p>Caution tape barricading is provided</p>
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c	Material stockpiled during the site visit without bund.	 	<p>Material stockpiles shall be protected by</p> <p>Bunds during the monsoon to arrest the silt laden runoff into drains.</p>	Not Complied	<p>We are provided bunds</p> <p>Materials shifted and road cleaned. Work is completed done</p>
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d	<p>Caution Sign Boards on either side of the road</p> <p>Restoration work not in good Condition at Bharath Beedi Kudroli</p>	 	<p>Caution Sign Boards</p> <p>on either</p> <p>Side of the Road restoration work Should be firmly Provided on Proper Frame and Stand</p>	<p>Not Complied</p>	<p>Properly dabber road restoration works cleaned.is completed done . at site.</p>
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e	Labor Camp at Shakti Nagar	<div><p>Latitude: 12.908877 Longitude: 74.876609 Elevation: 59.76m Accuracy: 3.2m Time: 08-31-2019 12:32 Note: labour camp at Shakti nagar 3</p><p>Powered by NoteCam</p></div> <div></div>	Proper labour camp is daily clinging
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f	Gas stove is being used for cooking food	 	Gas cylinder is to be provided for cooking	Not complied	<p>Gas cylinder provided for cooking at labour camp. At shankti nagar</p>
---	--	--	--	--------------	---




g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not Complied	Properly Arrangements will be done to keep water tank at proper height..
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h	Toilets have been provided for Labours		Toilet room use the labour and daily clinging the toilet room is done
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i	Separate Toilets for Gents and Ladies are provided	 <p>Latitude: 12.90915 Longitude: 74.876439 Elevation: 54.77m Accuracy: 3.2m Time: 08-31-2019 12:27 Note: labour toilet at Shakti nagar 1</p> <p>Powered by NoteCam</p>	<p>Properly 3 toilet room is gents Separate and 3 toilet room is ladies Separate .is done</p>
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j	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied	Water connection provided and also electricity connections. Is completed is done
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I	Pipes are stored at Shakti Nagar	 	<p>Proper Barricading along with Sign Boards are to be provided</p>	<p>Steel bars observed for barricading. Steel sheets coming out of Barricaded area. Remove steel bars with MS tubular pipe. Steel sheets are to be placed at proper place</p>
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<b>Physical and financial progress of ADB projects implemented in Tranche-2 towns up to Dec-2019 ( Month wise)</b>									
<b>I. Name of work: Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city.</b>									
<b>Package No: 02MNG02</b>					<b>Contract Amount:93.55 Cr</b>				
<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>BOQ Qty</b>	<b>Claimed Qty Up to Aug-19</b>	<b>Balance Qty as on August-19</b>	<b>Sep-19</b>	<b>Oct-19</b>	<b>Nov-19</b>	<b>Dec-19</b>
<b>1100 mm dia</b>									
	Supply	Rmt	7650.00	7548.50	101.50				
	Laying and jointing (In Mtrs)	Rmt	7650.00	3356.71	4293.29	487.00	487.00	487.00	487.00
	Hydrotesting (In Mtrs)	Rmt	7650.00	1819.60	5830.40		487.00	487.00	487.00
	Restoration	Rmt	7650.00	1620.00	6030.00		500.00	500.00	600.00
<b>900 mm dia</b>									
4	Supply	Rmt	950.00	948.00	2.00				
5	Laying and jointing (In Mtrs)	Rmt	950.00	487.80	462.20	110.00	110.00	110.00	110.00
6	Hydrotesting (In Mtrs)	Rmt	950.00	0.00	950.00		110.00	110.00	110.00
7	Restoration	Rmt	950.00	0.00	950.00		200.00	200.00	
<b>450 mm dia</b>									
1	Supply	Rmt	2800.00	2800.00	0.00				
2	Laying and jointing (In Mtrs)	Rmt	2800.00	1821.67	978.33	150.00	150.00	150.00	150.00
3	Hydrotesting (In Mtrs)	Rmt	2800.00	505.00	2295.00		150.00	150.00	150.00
4	Restoration	Rmt	2800.00	679.00	2121.00		200.00	200.00	100.00



**Physical and financial progress of ADB projects implemented in Tranche-2 towns up to Dec-2019 ( Month wise)**

**I. Name of work: Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city.**

**Package No: 02MNG02**

**Contract Amount:93.55 Cr**

Sl. No	Description	Unit	BOQ Qty	Claimed Qty Up to Aug-19	Balance Qty as on August-19	Sep-19	Oct-19	Nov-19	Dec-19
<b>1100 mm dia</b>									
	<b>PVC Pipes</b>								
3	Supply	Rmt	3000.00	726.00	2274.00				
4	Laying & Jointing	Rmt	3000.00	573.70	2426.30	123.00	123.00	123.00	123.00
	<b>DI Pipes</b>								
1	Supply	Rmt	350.00	10.00	340.00				
4	Laying & Jointing	Rmt	350.00	10.00	340.00	18.00	18.00	18.00	18.00
	Manholes	Nos	309.00	0.00	309.00	15.00	15.00	15.00	15.00
	110 House Service connection(Supply)	Rmt	4000.00	636.00	3364.00				
	110 House Service connection(Laying)	Rmt	4000.00	247.00	3753.00	197.00	197.00	197.00	197.00
	Sewer Temporary Diversion	Nos	311.00	91.00	220.00				
	<b>Water Rectification's</b>								
	GI Pipe - 15mm	Rmt	500.00	146.00	354.00		50.00	50.00	50.00
	GI Pipe - 20mm	Rmt	500.00	190.00	310.00		10.00	50.00	50.00
	HSC	Nos	800.00	121.00	679.00	50.00	50.00	50.00	50.00

**Physical and financial progress of ADB projects implemented in Tranche-2 towns up to Dec-2019 ( Month wise)**

**I. Name of work: Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city.**

**Package No: 02MNG02**

**Contract Amount:93.55 Cr**

[illegible]





## **Annexure 5**

- a) Worker attendance Register**
- b) List of PPEs provided to Workers**
- c) List of machinery Register**



### MUSTER ROLL FOR THE

Name of the Establishment

Name of the Establishment											
S. No	NAME	Father's Husband's name AGE	Sex	Nature of work							
					1	2	3	4	5	6	7
1)	KRISHAN	35	M	Jeopk	2	3	4	5	6	7	
2)	RAVI	38	M	Helping	2	3	4	5	6	7	
3)	KALHAPA	35	M	Labour	2	3	4	5	6	7	
4)	BALHAPA	40	M	Labour	2	3	4	5	6	7	
5)	ASAVARAT	30	M	Labour	2	3	4	5	6	7	
6)	VIJAYA KUMAR	35	M	Labour	2	3	4	5	6	7	
7)	Ravi chaya	38	M	Fitter							
8)	Basender	24	M	Fitter							
9)	Socioran	25	M	Fitter							
10)	Kesan Patel	38	M	Helping							
11)	Rasendra	21	M	Labour							
12)	Bhagiraj Patel	19	M	Labour							
13)	Sayaram	28	M	Labour							
14)	chetoram	19	M	Labour							
15)	man. Say Kol	20	M	Labour							
16)	T.D. Patil	48	M	Fitter							
17)	lal Singh	21	M	Labour							

MONTH OF SEPTEMBER - 2019

SPPL No. 002

Form No. VII (MVA)  
See Rule 29 (6)

piaco

District

[illegible]

# Labour PPE Report

Date 24/09/19

S/L	Date	Worker Name	PPE provided	Signature
1	24/09/19	Halla	yellow helmet Red Jacket Gum boots Hand Gloves cloth Dust mask (nose) white Goggles	SS3
2	24/09/19	Ganendra	yellow helmet Red Jacket Gum boots Hand Gloves cloth Dust mask (nose) white Goggles	SS3
3	24/09/19	Srinam	yellow helmet Red Jacket Gum boots Hand Gloves cloth Dust mask (nose) white Goggles	SS3
4	24/09/19	Kesava Patil	yellow helmet Red Jacket Gum boots Hand Gloves cloth Dust mask (nose) white goggles	SS3
5	24/09/19	Nasaay	yellow helmet Red Jacket Gum boots Hand Gloves cloth Dust mask white goggles	SS3



② 24/09/19 pandora

yellow Helment green  
Red Jacket  
Gum boots  
Hand gloves cloth  
Dust mask. Earses  
White goggles

③ 24/09/19 sendra

yellow Helment green  
Red Jacket  
Gum boots  
Hand gloves cloth  
Dust mask. Earses  
White goggles

④ 24/09/19 Rhugisatru

yellow Helment green  
Red Jacket  
Gum boots  
Hand gloves cloth  
Dust mask. Earses  
White goggles

⑤ 24/09/19 makendata

yellow Helment green  
Red Jacket  
Gum boots  
Hand gloves cloth  
Dust mask. Earses  
White goggles

⑥ 24/09/19 pandora

yellow Helment green  
Red Jacket  
Gum boots  
Hand gloves cloth  
Dust mask. Earses  
White goggles

⑦ 24/09/19 vira

yellow Helment green  
Red Jacket  
Gum boots  
Dust mask  
Hand gloves  
White goggles

⑧ 24/09/19 vira

yellow Helment green  
Red Jacket  
Gum boots  
Dust mask  
Hand gloves  
White goggles

⑨ 24/09/19 samru

yellow Helment green  
Red Jacket  
Gum boots  
Dust mask  
Hand gloves  
White goggles

⑩ 24/09/19 makendata

yellow Helment green  
Red Jacket  
Gum boots  
Dust mask  
Hand gloves  
White goggles

⑪ 24/09/19 shruvama

yellow Helment green  
Red Jacket  
Dust mask  
Gum boots  
Hand gloves  
White goggles

16) 24/09/19 Tese

yellow Helment  
Red Jacket  
Gum boots  
Dust mask  
Hand Gloves  
white Goggles

17) 24/09/19 Rama

yellow Helment  
Red Jacket  
Gum boots  
Dust mask  
Hand Gloves  
white Goggles

18) 24/09/19 Bhoma

yellow Helment  
Red Jacket  
Gum boots  
Dust mask  
Hand Gloves  
white Goggles

19) 24/09/19 Roomvudra

yellow Helment  
Red Jacket  
Gum boots  
Dust mask  
Hand Gloves  
white Goggles

20) 24/09/19 Chant Singh

yellow Helment  
Red Jacket  
Gum boots  
Dust mask  
white Goggles  
Hand Gloves

21) 24/09/19 Golu

yellow Helment  
Red Jacket  
Hand Gloves  
white Goggles  
Dust mask  
Gum boots

22) 24/09/19 Jagatama

yellow Helment  
Red Jacket  
Hand Gloves  
Dust mask  
white Goggles  
Gum boots

23) 24/09/19 Chitaram

yellow Helment  
Red Jacket  
Dust mask  
Hand Gloves  
white Goggles  
Gum boots

24) 24/09/19 Lal Singh

yellow Helment  
Red Jacket  
Dust mask  
Hand Gloves  
white Goggles  
Gum boots

25) 25/09/19 Pancham Lal

yellow Helment  
Red Jacket  
Dust mask  
Hand Gloves  
Gum boots  
white Goggles







# DRS INFRA TECH PRIVATE LIMITED

Ref: DRSITPL/KUIDFC/ MNG/2019-20/ 37

Dated: 12.12.2019

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangalore.

Dear Sir,



Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02-  
**Submission of EMP Report for the Month of Oct'19 and Compliances report - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018

With reference to the above subject, here with submitting the EMP Report and Compliance report for the month of October '19

This is for your kind consideration

Thanking you,

Yours Truly,

For **DRS Infratech Pvt Ltd,**

Authorised Signatory

## Monthly Environmental Monitoring Report

Project Number: 43253-027 October 2019

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

Package No. 02MNG02

Prepared by



DRS INFRATECH PVT LTD



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infra Tech Pvt ,Ltd.,
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 24/10/2019	<b>Name of Environment, Health and Safety (EHS);</b> Mr. Madhukar Shetty S

REV	Date	Prepared By	Checked By	For Approval
002		MADHUKAR SHETTY	RAKESH SUVARNA	Submission Purpose



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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>4. Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>1. Daily maintaining the Labor work report and machinery, vehicles report Attached the document in <b>annexure 01</b></li> <li>2. Adopted.</li> <li>3. Adopted. PPEs are provided workers on site. <b>attached annexure 2</b></li> <li>4. Materials details registers maintained at site.</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>5. Near excavated area building and infrastructure not found and also excavated area fully hard barricaded done.</p> <p>6. Debris disposed specified place and also maintained register for damaged infrastructure.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Typical site layout plan prepared and also properly maintained.</p>

Daily



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with worker's/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>a) Adopting. barricades provided and security personal available at working place.</p> <p>b) Excavated soil is disposed panchady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted.</p> <p>e) The excavated soil is utilized for digestion of waste at panchady. As directed by environment engineer MCC Mangalore.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 electricity and telephone services are restored quickly</p>	Construction Contractor and PIU	<p>10. Primary utility identifies properly conducted one weeks before start the work.</p> <p>11. Each department and public communication letter properly maintained.</p> <p>12. Not applicable.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p> <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>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Streetman restored at the earliest.</p>
				<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>17. Adopted.</p> <p>18. Not applicable. Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23. Necessary test conducted.</p> <p>24. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status Of Complaints
		<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> <p>30. Carry out air quality monitoring.</p>		<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used for to cover the sand in vertical.</p> <p>27. Adopting. barricades provided for stockpile, sand and other loose materials.</p> <p>28. Adopted. Properly maintained wheel wash system for vehicles before leaving construction site.</p> <p>29. Adopted. PUC test done and certificate also available for all machinery.</p> <p>30. Air quality monitoring conducted on 18 October 2019. <b>Attached annexure 3</b></p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and</p>	Construction Contractor	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		35. Test conducted on October month.
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>	Construction Contractor	<p>36. Test conducted.</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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> <p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>42. Ensure that there is no spillover 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>39. Not applicable.</p> <p>40. Not applicable.</p> <p>41. Daily basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		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.		50. Adopted.
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 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 minimize 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 /</p>	Construction Contractor	<p>51. Traffic management plan prepared.</p> <p>52. Adopted. Properly maintained.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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 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>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board provided.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>59. Adopted. Engineers are all time available at site for monitoring.</p> <p>60. Retro reflective barricading and caution boards are provided at site. (<b>Attached Annexure 4</b>)</p>
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</p>	Construction Contractor	<p>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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>		<p>64. Adopted. Properly maintained timings.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided. <b>(Attached Annexure 4)</b></p> <p>72. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic Employment	Impact on local employment generation	73. Employ local labor force to the maximum extent, if manpower is available	Construction Contractor	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work-related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74. Adopted.</p> <p>75. Adopted. Dewatering continuously ongoing and also sheet pile was provided for collapse area.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 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>76. Adopted.</p> <p>77. Adopted.</p> <p>78. Adopted. Weekly training conducted for all staff and labors.</p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 &amp; 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>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p> <p>82. Adopted.</p> <p>83. Adopted.</p> <p>84. Adopted. Clean eating area provided for labor.</p> <p>85. Adopting. Induction training for new labors and daily tool box talk conducted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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</p>		<p>86. Adopted. Safety training conducted for visitors.</p> <p>87. Adopted. Reflective jacket provided.</p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).		
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p>93. Adopted. Traffic management plan submitted.</p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96. Adopted. Vehicles regularly inspection conducted.</p> <p>97. Adopted.</p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), including the following:</p> <p>100 Consult with PIU before locating worker's 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>	Construction Contractor	<p>99. Adopted.</p> <p>100. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>102 Labor camps shall include accommodation for workers/laborer's 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 labor 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 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen, toilets, bathrooms and washing place provided.</p> <p>103. Adopted. Proper thickness concrete floor to be provided.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted. Separate toilet, rooms are provided for men and women.</p> <p>112. Adopted. Trained store helper engaged for store work only.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>



## Annexure - 01

### Labor's Attendance Register

**MUSTER ROLL FOR THE**

Name of the Establishment \_\_\_\_\_

Place \_\_\_\_\_ District \_\_\_\_\_

Form No. 20 (B) See Rule 29 (5)

S. No.	NAME	AGE	Sex	Nature of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Remarks
17	Halla	24	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
2	Gandha Singh	24	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
3	Shrivastava	22	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
4	Banna	28	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
5	Rajgopal	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
6	Dar Singh	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
7	Sh. S. S. S.	25	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
8	Maya S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
9	T. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
10	S. S. S. S.	21	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
11	T. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
12	M. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
13	S. S. S. S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
14	N. S. S. S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
15	K. S. S. S.	32	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
16	R. S. S. S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
17	G. S. S. S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
18	M. S. S. S.	24	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
19	V. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
20	U. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
21	S. S. S. S.	20	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
22	M. S. S. S.	19	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
23	T. S. S. S.	48	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
24	V. S. S. S.	30	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
25	B. S. S. S.	38	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
26	S. S. S. S.	48	M	Filter	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			

Scanned with CamScanner



## Annexure 02

### PPEs Register

Kishan Mahadev Gailwad [Balaji]					PPEs Register				
[Contractor]					[Contractor]				
Date	Description of item	unit	Qty	Contractor Signature	Date	Description of item	unit	Qty	Contractor Signature
24/10/19	yellow helmet	nos	20		24/10/19	Rubber Gloves	pair	10	
24/10/19	Red Jacket	nos	30		24/10/19	First aid box	nos	02	
24/10/19	Gum boots	nos	20		24/10/19	Dust mask (old)	nos	09	
24/10/19	Hand Gloves (cloth)	nos	100		24/10/19	Cloth Hand Glove	nos	08	
24/10/19	Dust mask (new)	nos	30		24/10/19	Red Jacket	nos	01	
24/10/19	White Goggles	nos	20		24/10/19	Safety shoes	pair	01	
24/10/19	Green Jacket	nos	03		24/10/19	Yellow Helment	nos	05	
24/10/19	White Helment	nos	01		24/10/19	Red Jacket	nos	02	
24/10/19	Safety shoes size 8	pair	01		24/10/19	Cloth hand Glove	pair	02	
24/10/19	Red Jacket	nos	09		24/10/19	Gum boots	pair	1	
24/10/19	Cloth hand Glove	pair	08		24/10/19	Water can with	nos	05	
24/10/19	Safety shoes (old)	pair	01		24/10/19	Water galls	nos	05	
24/10/19	Yellow Helment	nos	02		24/10/19	Dust mask	nos	09	
24/10/19	Orange Jacket	nos	02		24/10/19	Hand gloves	nos	08	
24/10/19	Gum boots	pair	02		24/10/19	Red Jacket	nos	08	
24/10/19	Cloth hand Glove	nos	02		24/10/19	Shoes	nos	01	
24/10/19	Red Jacket	nos	02		24/10/19	Safety shoes	nos	02	
24/10/19	Yellow Helment	nos	06		24/10/19	Size 02, 03			
24/10/19	Gum boots	pair	06						
24/10/19	Yellow Helment	nos	01						
24/10/19	Red Jacket	nos	01						
24/10/19	Safety shoes	pair	02						
24/10/19	Hand gloves	nos	01						
24/10/19	Gum boots	pair	05						

Date	Name	PPE	Signature
26 13/10/19	Balaji [6 nos]	Red Jacket [06]	
	[6 nos]	Yellow Helment [06]	
	[6 nos]	Gum Boots [06]	
	[1 nos]	Hand Goggles	
	[6 nos]	Goggles	

## Annexure - 03

### Air quality monitoring





## Annexure 04

### Retro Reflective Signs and Barricades boards



## Road Rectification Work

Interlock tiles are removed and permanent concrete road work done at ashoknagar site.



After



Before



# DRS INFRATECH PRIVATE LIMITED

Ref: DRSITPL/KUIDFC/ MNG/2019-20/49

Dated: 18.02.2020

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangalore.

Dear Sir,

Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02-  
**Submission of EMP Report for the Month of Dec'19 and**  
**Compliances report - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018

With reference to the above subject, here with submitting the EMP Report and Compliance report for the month of December '19

This is for your kind consideration

Thanking you,

Yours Truly,

For DRS Infratech Pvt Ltd,





## Monthly Environmental Monitoring Report

Project Number: 43253-027 December 2019

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

Package No. 02MNG02

Prepared by



DRS INFRATECH PVT LTD



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infra Tech Pvt ,Ltd.,
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 24/12/2019	<b>Name of Environment, Health and Safety (EHS);</b> Mr. Madhukar Shetty S

REV	Date	Prepared By	Checked By	For Approval
003		MADHUKAR SHETTY	RAKESH SUVARNA	Submission Purpose



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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>Daily maintaining the Labor work report and machinery, <b>Attached Annexure 01</b></li> <li>Adopted.</li> <li>Adopted. PPEs are provided workers on site. <b>Attached Annexure 02</b></li> <li>Materials details registers maintained at site.</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>5. Near excavated area building and infrastructure not found and also excavated area fully hard barricaded done.</p> <p>6. Debris disposed specified place and also maintained register for damaged infrastructure.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Typical site layout plan prepared and also properly maintained.</p>

Daily



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with worker's/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>a) Adopting. barricades provided and security personal available at working place.</p> <p>b) Excavated soil is disposed panchady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted. Daily two times water sprinkling going on at working site for dust control</p> <p><b>Attached Annexure 03</b></p> <p>e) The excavated soil is utilized for digestion of waste at panchady. As directed by environment engineer MCC Mangalore.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 electricity and telephone services are restored quickly</p>	Construction Contractor and PIU	<p>10. Primary utility identifies properly conducted one weeks before start the work.</p> <p>11. Each department and public communication letter properly maintained.</p> <p>12. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section	Construction Contractor	<p>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Compound walls and Drains are reconstruction going on while work completed. <b>Attached Annexure 04</b></p>
		<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>		<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>17. Adopted.</p> <p>18. Not applicable. Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23. Adopting</p> <p>24. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status Of Complaints
		<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> <p>30. Carry out air quality monitoring.</p>		<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used to cover for loose materials vehicles. <b>Attached Annexure 05</b></p> <p>27. Adopting. barricades provided for stockpile, sand and other loose materials.</p> <p>28. Adopted. Properly maintained wheel wash system for vehicles before leaving construction site.</p> <p>29. Adopted. PUC test done and certificate also available for all machinery.</p> <p>30. Air quality monitoring conducted. <b>Attached Annexure 06</b></p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 chiseling;</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>	Construction Contractor	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		35. Test conducted.
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>	Construction Contractor	<p>36. Adopting</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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> <p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>42. Ensure that there is no spillover 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>39. Not applicable.</p> <p>40. Not applicable.</p> <p>41. Daily basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		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.		50. Adopted.
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 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 minimize 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 (Jamie Masjid- Road, Ashok Nagara road, and old port /</p>	Construction Contractor	<p>51. Traffic management plan prepared.</p> <p>52. Adopted. Properly maintained.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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 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>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board and projects details boards are provided.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>59. Adopted. Engineers are all time available at site for monitoring.</p> <p>60. Retro reflective barricading and caution boards are provided at site. (<b>Attached Annexure 07</b>)</p>
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</p>	Construction Contractor	<p>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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>		<p>64. Adopted. Properly maintained timings.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided. <b>(Attached Annexure 07)</b></p> <p>72. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic Employment	Impact on local employment generation	73. Employ local labor force to the maximum extent, if manpower is available	Construction Contractor	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work- related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74. Adopted. All workers used PPEs at working area and Training conducting for workers. <b>Attached Annexure 08</b></p> <p>75. Adopted. Dewatering continuously ongoing and also sheet plate was provided for collapse area.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 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>76. Adopted.</p> <p>77. Adopted.</p> <p>78. Adopted. Weekly training conducted for all staff and labors.</p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 &amp; 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>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p> <p>82. Adopted.</p> <p>83. Adopted.</p> <p>84. Adopted. Clean eating area provided for workers</p> <p>85. Adopting. Induction training for new labors and daily tool box talk conducted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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</p>		<p>86. Adopted. Safety training conducted for visitors.</p> <p>87. Adopted. Reflective jacket provided.</p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).		
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p>93. Adopted. Traffic management plan submitted.</p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96. Adopted. Vehicles regularly inspection conducted.</p> <p>97. Adopted.</p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), including the following:</p> <p>100 Consult with PIU before locating worker's 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>	Construction Contractor	<p>99. Adopted.</p> <p>100. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>102 Labor camps shall include accommodation for workers/laborer's 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 labor 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 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen, toilets, bathrooms and washing place provided.</p> <p>103. Adopted. Proper thickness concrete floor to be provided.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted. Separate toilet, rooms are provided for men and women.</p> <p>112. Adopted. Trained store helper engaged for store work only.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>

## Annexure - 01

### Labor's Attendance Register

MUSTER ROLL FOR THE									
Name of the Establishment: LABOR									
S. No.	NAME	Age	Sex	Religion	1	2	3	4	5
10	Indrakumar	38	M	Hindu	P	P	P	P	P
11	Ravi	38	M	Hindu	P	P	P	P	P
12	Rakesh	35	M	Hindu	P	P	P	P	P
13	Munish	33	M	Hindu	P	P	P	P	P
14	Munish	33	M	Hindu	P	P	P	P	P
15	Munish	33	M	Hindu	P	P	P	P	P
16	Munish	33	M	Hindu	P	P	P	P	P
17	Munish	33	M	Hindu	P	P	P	P	P
18	Munish	33	M	Hindu	P	P	P	P	P
19	Munish	33	M	Hindu	P	P	P	P	P
20	Munish	33	M	Hindu	P	P	P	P	P
21	Munish	33	M	Hindu	P	P	P	P	P
22	Munish	33	M	Hindu	P	P	P	P	P
23	Munish	33	M	Hindu	P	P	P	P	P
24	Munish	33	M	Hindu	P	P	P	P	P
25	Munish	33	M	Hindu	P	P	P	P	P
26	Munish	33	M	Hindu	P	P	P	P	P
27	Munish	33	M	Hindu	P	P	P	P	P
28	Munish	33	M	Hindu	P	P	P	P	P
29	Munish	33	M	Hindu	P	P	P	P	P
30	Munish	33	M	Hindu	P	P	P	P	P
31	Munish	33	M	Hindu	P	P	P	P	P
32	Munish	33	M	Hindu	P	P	P	P	P
33	Munish	33	M	Hindu	P	P	P	P	P
34	Munish	33	M	Hindu	P	P	P	P	P
35	Munish	33	M	Hindu	P	P	P	P	P
36	Munish	33	M	Hindu	P	P	P	P	P
37	Munish	33	M	Hindu	P	P	P	P	P
38	Munish	33	M	Hindu	P	P	P	P	P
39	Munish	33	M	Hindu	P	P	P	P	P
40	Munish	33	M	Hindu	P	P	P	P	P
41	Munish	33	M	Hindu	P	P	P	P	P
42	Munish	33	M	Hindu	P	P	P	P	P
43	Munish	33	M	Hindu	P	P	P	P	P
44	Munish	33	M	Hindu	P	P	P	P	P
45	Munish	33	M	Hindu	P	P	P	P	P
46	Munish	33	M	Hindu	P	P	P	P	P
47	Munish	33	M	Hindu	P	P	P	P	P
48	Munish	33	M	Hindu	P	P	P	P	P
49	Munish	33	M	Hindu	P	P	P	P	P
50	Munish	33	M	Hindu	P	P	P	P	P



## Annexure 02

### PPEs Register

<u>December Month</u>			
31	05/12/19	Nov Sub	Yellow Handkerchief
		(For Nalla Kuvam) Orange Jacket	Nov 05
		Handkerchief	Nov 05
32	23/12/19	Dec Sub	Orange Jacket
		Rubber Hand gloves	Nov 08
			Dec 03

## Annexure - 03

### Water Sprinkling





## Annexure 04

### Damaged Compound Wall Rectification Work



## Annexure 05



## Annexure 06

### Air Quality Test



## **Annexure 07**

### Retro Reflective Sign Boards





## Annexure 08

### PPEs and Safety Training





## Road Restoration Work



## Health Checkup Camp at Shakthinagar Labors Camp







### CAMP REPORT

To  
The vice president  
AIMS

Through  
The Dean  
AIMS

Respected Sir,

Subject: - Camp Report

Date of Camp - 01/12/2019  
Organiser - DRS INFRATECH PVT-Ltd.  
Place of Camp - SHAKTHINAGARA  
Departments - 1 OPHTHALMOLOGY  
- 2 GENERAL MEDICINE  
- 3 DERMATOLOGY  
- 4 ENT

Total Number of PATIENTS - 58

Total Number of Patients Referred To AIMS AND RC- 18

DEPARTMENTS	NUMBER OF PATIENTS SEEN	NUMBER OF PATIENTS REFERRED
OPHTHALMOLOGY	38	10
GENERAL MEDICINE	20	-
DERMATOLOGY	35	06
ENT	15	02

Forwarded to you  
2.12.19


### DOCTORS ATTENDED

DEPARTMENTS	CONSULTANTS	POST GRADUATES	INTERNS
OPHTHALMOLOGY	DR PRIYA	DR. PRERANA DR. AISHWARYA	DR. ANIRUDH DR. TEENA
GENERAL MEDICINE	DR. PRASHANTH	DR. THEJASVI	DR. SWATHI
ENT	DR. MAHESH	DR. AYUSHA	DR. ROOPANJAN DR. ANVITHA
DERMATOLOGY	DR. VINMA SHETTY	DR. RAMYA	DR. RUCHITHA

MEDICAL SOCIAL WORKER: JAYARAJ SUVARNA

KRITHI B.H

THANKING YOU

  
YOURS SINCERELY

DATE - 02/12/2019

PLACE - MANGALORE



# DRS INFRA TECH PRIVATE LIMITED

Ref: DRSITPL/KUIDFC/ MNG/2019-20/ 57

Dated: 12.03.2020

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangalore.

Dear Sir,

Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02-  
**Submission of EMP Report for the Month of Jan'2020 and Compliances report - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018


With reference to the above subject, here with submitting the EMP Report and Compliance report for the month of January '2020

This is for your kind consideration

Thanking you,

Yours Truly,

For **DRS Infratech Pvt Ltd,**

  
Authorised Signatory





## Monthly Environmental Monitoring Report

Project Number: 43253-027 January 2020

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

Package No. 02MNG02

Prepared by



DRS INFRATECH PVT LTD



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infratech Pvt Ltd.
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 24/01/2020	<b>Name of Environment, Health and Safety (EHS);</b> Mr. Madhukar Shetty S

REV	Date	Prepared By	Checked By	For Approval
004		MADHUKAR SHETTY	RAKESH SUVARNA	Submission Purpose



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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>Daily maintaining the Labor work report and machinery, <b>Attached Annexure 01</b></li> <li>Adopted.</li> <li>Adopted. PPEs are provided workers on site. <b>Attached Annexure 02</b></li> <li>Materials details registers maintained at site.</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>5. Near excavated area building and infrastructure not found and also excavated area fully hard barricaded done.</p> <p>6. Debris disposed specified place and also maintained register for damaged infrastructure.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Typical site layout plan prepared and also properly maintained.</p>

Daily



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with worker's/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>a) Adopting. barricades provided and security personal available at working place. <b>Attached Annexure 03</b></p> <p>b) Excavated soil is disposed panchady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted. Daily two times water sprinkling going on at working site for dust control <b>Attached Annexure 04</b></p> <p>e) The excavated soil is utilized for digestion of waste at panchady. As directed by environment engineer MCC Mangalore.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Utilities	<p>Disturbance/ damage to existing utilities on the sites</p> <p>(Telephone lines, electric poles and wires, water lines within proposed project sites)</p>	<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 electricity and telephone services are restored quickly</p>	<p>Construction Contractor and PIU</p>	<p>10. Primary utility identifies properly conducted one weeks before start the work.</p> <p>11. Each department and public communication ongoing before starting work and also rectified all utility issues at same day.</p> <p>12. Adopted. Water tank supply provided while required.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section	Construction Contractor	<p>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Compound walls and Drains are reconstruction going on while work completed. <b>Attached Annexure 05</b></p>
		<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>		<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>17. Adopted.</p> <p>18. Not applicable. Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23. Adopting</p> <p>24. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status Of Complaints
		<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> <p>30. Carry out air quality monitoring.</p>		<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used to cover for loose materials vehicles. <b>Attached Annexure 06</b></p> <p>27. Adopting. barricades provided for stockpile, sand and other loose materials.</p> <p>28. Adopted. Properly maintained wheel wash system for vehicles before leaving construction site.</p> <p>29. Adopted. PUC test done and certificate also available for all machinery.</p> <p>30. Air quality monitoring conducted on December month.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 chiseling;</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>	Construction Contractor	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		35. Test conducted.
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>	Construction Contractor	<p>36. Adopting</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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> <p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>42. Ensure that there is no spillover 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>39. Not applicable.</p> <p>40. Not applicable.</p> <p>41. Daily basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		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.		50. Adopted.
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 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 minimize 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 (Jamie Masjid- Road, Ashok Nagara road, and old port /</p>	Construction Contractor	<p>51. Traffic management plan prepared.</p> <p>52. Adopted. Properly maintained.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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 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>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board and projects details boards are provided. <b>Attached Annexure 07</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>59. Adopted. Engineers are all time available at site for monitoring.</p> <p>60. Retro reflective barricading and caution boards are provided at site. (<b>Attached Annexure 07</b>)</p>
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</p>	Construction Contractor	<p>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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>		<p>64. Adopted. Properly maintained timings.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided. <b>(Attached Annexure 07)</b></p> <p>72. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic Employment	Impact on local employment generation	73. Employ local labor force to the maximum extent, if manpower is available	Construction Contractor	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work- related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74. Adopted. All workers used PPEs at working area and Training conducting for workers.</p> <p>75. Adopted. Dewatering continuously ongoing and also sheet plate was provided for collapse area.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 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>76. Adopted.</p> <p>77. Adopted.</p> <p>78. Adopted. Weekly training conducted for all staff and labors.</p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 &amp; 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>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p> <p>82. Adopted.</p> <p>83. Adopted.</p> <p>84. Adopted. Clean eating area provided for workers</p> <p>85. Adopting. Induction training for new labors and daily tool box talk conducted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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</p>		<p>86. Adopted. Safety training conducted for visitors.</p> <p>87. Adopted. Reflective jacket provided.</p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).		
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p>93. Adopted. Traffic management plan submitted.</p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96. Adopted. Vehicles regularly inspection conducted.</p> <p>97. Adopted.</p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), including the following:</p> <p>100 Consult with PIU before locating worker's 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>	Construction Contractor	<p>99. Adopted.</p> <p>100. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>102 Labor camps shall include accommodation for workers/laborer's 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 labor 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 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen, toilets, bathrooms and washing place provided.</p> <p>103. Adopted. Proper thickness concrete floor to be provided.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted. Separate toilet, rooms are provided for men and women.</p> <p>112. Adopted. Trained store helper engaged for store work only.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>

## Annexure - 01

### Labor's Attendance and Machinery Register

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MACHINERY & EQUIPMENT									
JANUARY - 2020									
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	28	29	30	31	Remarks				
Ashtanagar Site	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex 30 Hitch	✓	✓	✓	✓	✓	✓	✓	✓	✓
T & B	✓	✓	✓	✓	✓	✓	✓	✓	✓
TIPPER	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydra	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Pump	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manikaville Site	✓	✓	✓	✓	✓	✓	✓	✓	✓
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TIPPER	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Pump	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydra	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manikaville Site	✓	✓	✓	✓	✓	✓	✓	✓	✓
T & B	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hitch	✓	✓	✓	✓	✓	✓	✓	✓	✓
TIPPER	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Pump	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydra	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manikaville Site	✓	✓	✓	✓	✓	✓	✓	✓	✓
T & B	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hitch	✓	✓	✓	✓	✓	✓	✓	✓	✓
TIPPER	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Pump	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydra	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manikaville Site	✓	✓	✓	✓	✓	✓	✓	✓	✓
T & B	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hitch	✓	✓	✓	✓	✓	✓	✓	✓	✓
TIPPER	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Pump	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydra	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manikav									

## Annexure 02

### PPEs Register

PPE'S ISSUED REGISTER

SL NO	DATE	NAME	MATERIALS DESCRIPTION	UNIT	QTY	H/B SIGN	Remarks
46	15/01/20	Venkatash Sl. No - 2025/20	White Helmet	No	01	Mark	
47	18/01/20	Manoj - kr Labour Cont Sl. No - 2050/20	Hand gloves	Pair	03	Mark	
48	28/01/20	Manoj kr Labour Cont Sl. No - 2144/20	Green boot	Pair	05	Mark	
49	28/01/20	Venkatash For Naka Labour Sl. No - 2150/20	Orange Jacket Green boot	No Pair	06 06	Mark	
50	28/01/20	Siddik Cont	Yellow helmet	No	05	Mark	
51	31/01/20	Rajesh kumar Sl. No - 2183/20	Yellow Helmet Orange Jacket	No No	01 01	Mark	

Scanned with CamScanner



## Annexure 03

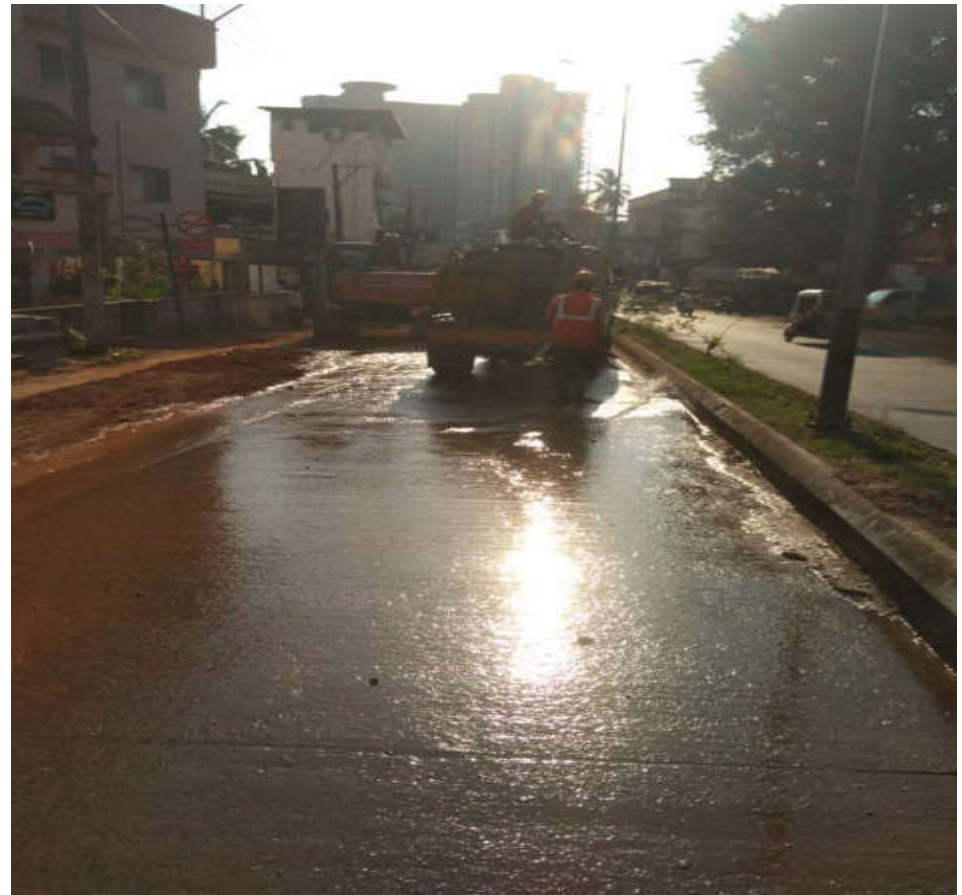
### Barricades and Security(Flagman)





## Annexure - 04

### Water Sprinkling



## **Annexure 05**

Damaged Drainage and Manholes Are Rectification work



## Annexure 06





## Annexure 07

### Retro Reflective Sign Boards





# DRS INFRA TECH PRIVATE LIMITED

Ref: DRSITPL/KUIDFC/ MNG/2019-20/ 58

Dated: 12.03.2020

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangalore.

Dear Sir,

Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02  
**Submission of EMP Report for the Month of Feb'2020 and Compliances report - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018

With reference to the above subject, here with submitting the EMP Report and Compliance report for the month of February '2020

This is for your kind consideration

Thanking you,

Yours Truly,

For **DRS Infratech Pvt Ltd,**

Authorised Signatory






## Monthly Environmental Monitoring Report

Project Number: 43253-027 February 2020

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

Package No. 02MNG02

Prepared by



DRS INFRATECH PVT LTD



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infratech Pvt Ltd.
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 24/02/2020	<b>Name of Environment, Health and Safety (EHS);</b> Mr. Madhukar Shetty S

REV	Date	Prepared By	Checked By	For Approval
004		MADHUKAR SHETTY	RAKESH SUVARNA	Submission Purpose

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>Daily maintaining the Labor work report and machinery report. <b>Attached Annexure 01</b></li> <li>Adopted.</li> <li>Adopted. PPEs are provided workers on site. <b>Attached Annexure 02</b></li> <li>Materials details registers maintained at site.</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>5. Near excavated area building and infrastructure not found and also excavated area fully hard barricaded done.</p> <p>6. Debris disposed specified place and also maintained register for damaged infrastructure.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Typical site layout plan prepared and also properly maintained.</p>

Daily



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with worker's/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>a) Adopting. barricades provided and security personal available at working place.</p> <p>b) Excavated soil is disposed panchady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted. Daily two times water sprinkling going on at working site for dust control</p> <p><b>Attached Annexure 03</b></p> <p>e) The excavated soil is utilized for digestion of waste at panchady. As directed by environment engineer MCC Mangalore.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 electricity and telephone services are restored quickly</p>	Construction Contractor and PIU	<p>10. Primary utility identifies properly conducted one weeks before start the work.</p> <p>11. Each department and public communication ongoing before starting work and also rectified all utility issues at same day.</p> <p>12. Adopted. Water tank supply provided while required. <b>Attached Annexure 04</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p> <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>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Compound walls and Drains are reconstruction going on while work completed. <b>Attached Annexure 05</b></p>
				<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>17. Adopted.</p> <p>18. Not applicable. Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23. Adopting</p> <p>24. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status Of Complaints
		<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> <p>30. Carry out air quality monitoring.</p>		<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used to cover for loose materials vehicles.</p> <p>27. Adopting. barricades provided for stockpile, sand and other loose materials.</p> <p>28. Adopted. Properly maintained wheel wash system for vehicles before leaving construction site.</p> <p>29. Adopted. PUC test done and certificate also available for all machinery.</p> <p>30. Air quality monitoring conducted on December month and also report to be submitted to PIU. <b>Attached Annexure 06</b></p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 chiseling;</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>	Construction Contractor	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		35. Test conducted and also report to be submitted to PIU.
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>	Construction Contractor	<p>36. Adopting</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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> <p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>42. Ensure that there is no spillover 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>39. Not applicable.</p> <p>40. Not applicable.</p> <p>41. Daily basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		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.		50. Adopted.
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 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 minimize 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 (Jamie Masjid- Road, Ashok Nagara road, and old port /</p>	Construction Contractor	<p>51. Traffic management plan prepared.</p> <p>52. Adopted. Properly maintained.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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 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>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board and projects details boards are provided. <b>Attached Annexure 07</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>59. Adopted. Engineers are all time available at site for monitoring.</p> <p>60. Retro reflective barricading and caution boards are provided at site. (<b>Attached Annexure 07</b>)</p>
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</p>	Construction Contractor	<p>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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>		<p>64. Adopted. Properly maintained timings.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted. <b>Attached Annexure 08</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided. <b>(Attached Annexure 07)</b></p> <p>72. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic Employment	Impact on local employment generation	73. Employ local labor force to the maximum extent, if manpower is available	Construction Contractor	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work- related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74. Adopted. All workers used PPEs at working area and Training conducting for workers. <b>Attached Annexure 09</b></p> <p>75. Adopted. Dewatering continuously ongoing and also sheet plate was provided for collapse area.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 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>76. Adopted.</p> <p>77. Adopted.</p> <p>78. Adopted. Weekly training conducted for all staff and labors.</p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 &amp; 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>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p> <p>82. Adopted.</p> <p>83. Adopted. Drinking Water to be provided at working site. <b>Attached Annexure 10</b></p> <p>84. Adopted. Clean eating area provided for workers</p> <p>85. Adopting. Induction training for new labors and daily tool box talk conducted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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</p>		<p>86. Adopted. Safety training conducted for visitors.</p> <p>87. Adopted. Reflective jacket provided. <b>Attached Annexure 11</b></p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).		
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p>93. Adopted. Traffic management plan submitted.</p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96. Adopted. Vehicles regularly inspection conducted.</p> <p>97. Adopted. <b>Attached Annexure 12</b></p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), including the following:</p> <p>100 Consult with PIU before locating worker's 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>	Construction Contractor	<p>99. Adopted.</p> <p>100. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>102 Labor camps shall include accommodation for workers/laborer's 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 labor 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 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen, toilets, bathrooms and washing place provided.</p> <p>103. Adopted. Proper thickness concrete floor to be provided.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted. Separate toilet, rooms are provided for men and women.</p> <p>112. Adopted. Trained store helper engaged for store work only.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>

## Annexure - 01

### Labor's Attendance and Machinery Register

MUSTER ROLL FOR THE									
DRS Infratech PVT LTD									
S. No	Name	Age	Sex	Category	Work	1	2	3	4
01	Manoj	23	M	Laborer		P	P	P	P
02	Beebo	19	M	—	—	P	P	P	P
03	Srinivas	20	M	—	—	P	P	P	P
04	Manoj, Logo	21	M	—	—	P	P	P	P
05	Abhishek	19	M	—	—	P	P	P	P
06	Kamalesh	20	M	—	—	P	P	P	P
07	Rajesh	21	M	—	—	P	P	P	P
08	Nicolas	22	M	—	—	P	P	P	P
09	Murugesu	19	M	Laborer		P	P	P	P
10	Prachinath	25	M	Editor		P	P	P	P
11	Ramesh	35	M	—	—	P	P	P	P
12	Ravi	28	M	Operator		P	P	P	P
13	Krishnamurthy	35	M	—	—	P	P	P	P
14	Swaladevi	24	M	Operator		P	P	P	P
15	Haru	20	M	Editor		P	P	P	P
16	Shankarappa	20	M	—	—	P	P	P	P
17	Kamalesh	31	M	—	—	P	P	P	P
18	Pranav	22	M	—	—	P	P	P	P
19	Hannur		M	Operator		P	P	P	P
20	Ravi		M	Operator		P	P	P	P
21	Siddu		M	Operator		P	P	P	P
22	Anuradha		M	Editor		P	P	P	P
23	Jagdish		M	Laborer		P	P	P	P
24	Devaru		M	Laborer		P	P	P	P
25	Subhan		M	Laborer		P	P	P	P
26	Shweta		M	Laborer		P	P	P	P
27	Shilpa		M	Laborer		P	P	P	P
28	Katu Sudat		M	Laborer		P	P	P	P
29	Shweta		M	Laborer		P	P	P	P

MONTH OF FEBRUARY - 2020									
Mangalore									
Attendance for the Period Ending									
S. No	Name	1	2	3	4	5	6	7	8
01	Manoj	P	P	P	P	P	P	P	P
02	Beebo	P	P	P	P	P	P	P	P
03	Srinivas	P	P	P	P	P	P	P	P
04	Manoj, Logo	P	P	P	P	P	P	P	P
05	Abhishek	P	P	P	P	P	P	P	P
06	Kamalesh	P	P	P	P	P	P	P	P
07	Rajesh	P	P	P	P	P	P	P	P
08	Nicolas	P	P	P	P	P	P	P	P
09	Murugesu	P	P	P	P	P	P	P	P
10	Prachinath	P	P	P	P	P	P	P	P
11	Ramesh	P	P	P	P	P	P	P	P
12	Ravi	P	P	P	P	P	P	P	P
13	Krishnamurthy	P	P	P	P	P	P	P	P
14	Swaladevi	P	P	P	P	P	P	P	P
15	Haru	P	P	P	P	P	P	P	P
16	Shankarappa	P	P	P	P	P	P	P	P
17	Kamalesh	P	P	P	P	P	P	P	P
18	Pranav	P	P	P	P	P	P	P	P
19	Hannur	P	P	P	P	P	P	P	P
20	Ravi	P	P	P	P	P	P	P	P
21	Siddu	P	P	P	P	P	P	P	P
22	Anuradha	P	P	P	P	P	P	P	P
23	Jagdish	P	P	P	P	P	P	P	P
24	Devaru	P	P	P	P	P	P	P	P
25	Subhan	P	P	P	P	P	P	P	P
26	Shweta	P	P	P	P	P	P	P	P
27	Shilpa	P	P	P	P	P	P	P	P
28	Katu Sudat	P	P	P	P	P	P	P	P
29	Shweta	P	P	P	P	P	P	P	P

## Annexure 02

### PPEs Register

SI. No - 2150/20				
SO. 28/01/20	Siddik Contr	Yellow Helmet	no. 05	Mantle
		Orange Jacket		
SI 31/01/20	Rajesh kumar	Yellow Helmet	no. 01	Mantle
SI. No - 2183/20		Orange Jacket	no. 01	
S2 03/02/20	Siddik Divakar	Orange Jacket	no. 05	Mantle
SI. No - 2221/20				



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CamScanner



## Annexure 03

### Water Sprinkling at Site



## Annexure - 04

### Water Provided for affected house





## Annexure 05

Damaged Drainage and Compound Wall Are Rectification work



## Annexure 06

### Air Quality Monitoring Report Submitted Letter



**DRS INFRATECH PRIVATE LIMITED**

Ref: DRSITPL/KUIDFC/ MNG/2019-20/ 50      Dated: 18.02.2020

To,

The Executive Engineer,  
KUIDFC-KIUWMIP-PIU,  
Mangalore City Corporation,  
Mangalore.

Dear Sir,

Sub: Replacement of Old Sewerage pumping mains and rehabilitation of sewerage system for Mangalore City- Contract package No 02MNG02-  
**Submission of Air Quality Monitoring, Noise Monitoring, Surface Water and Ground Water Test Reports - reg.**

Ref: 1) Letter No: KUIWMIP/PIU-MNG/CR-02/2017-18/189, Dated: 19.07.2018, issued by Executive Engineer approving work program with date of commencement as 06.06.2018

With reference to the above subject, here with submitting the Air, Noise and Water Quality Test Report.

This is for your kind consideration.

Thanking you,  
Yours Truly,

 DRS Infratech Pvt Ltd,  
Authorized Signatory



# Flat No. S1, Priya Apartments, Rajbhawan Road, Somajiguda, Hyderabad - 500 082.  
Ph: 040 - 23418236, Fax: 040 - 23418939, E-mail : info@drsinftratech.com  
CamScanner www.drsinftratech.com    CIN U45200TG2007PTC052456

## Annexure 07

### Retro Reflective Sign Boards





## Annexure 08

### Advance Information for Business People



## Annexure 09

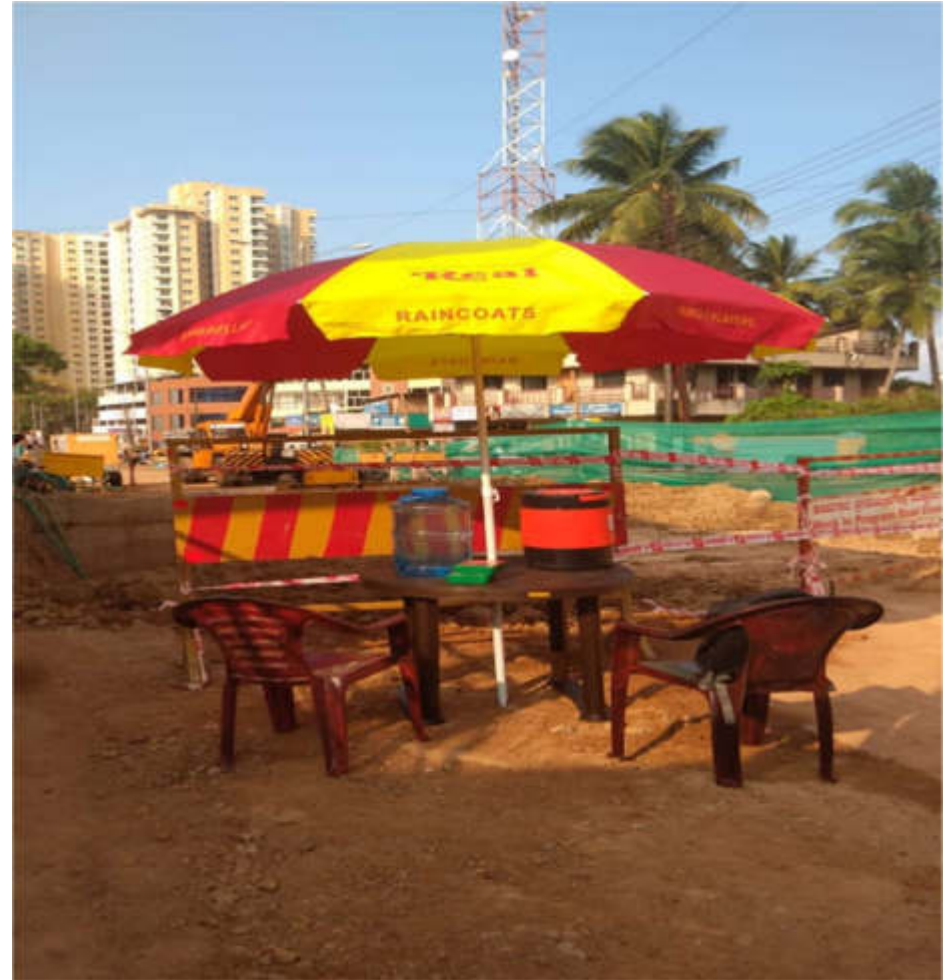
Workers are with PPEs and Tool Box Talk for Workers





## Annexure 10

### Drinking Water Facilities at Working Location





## Annexure 11

### Reflective Jacket



## Annexure 12

### Flagman for Traffic Diversion





## Road Restoration Work



# Monthly Environmental Monitoring Report

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Project Number: 43253-027  
February 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:

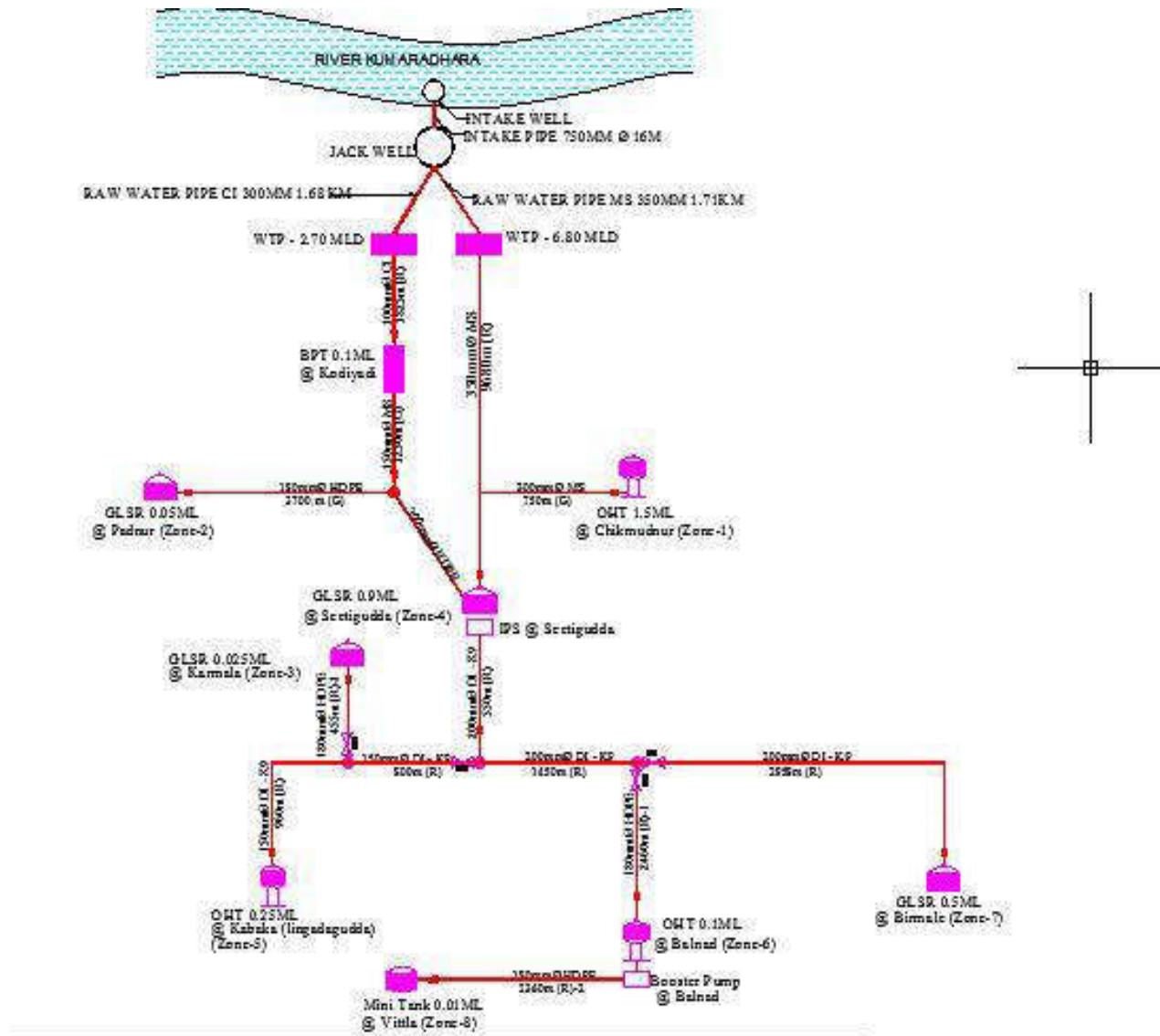
This subproject includes the following components:

- (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 <sup>3</sup> /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 <sup>3</sup> /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><b>OHT</b> 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><b>GLSR</b> 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila</p>	<p><b>OHT</b> Existing within ULB Properties. No non-title users are present at these sites</p> <p><b>GLSR</b> Seethigudda 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: 65m<sup>3</sup>/h and 85 m head for zone 3 and 5 (1+1) 82 m<sup>3</sup>/h and 33 m head for zone 4A, (1+1) 119 m<sup>3</sup>/h and 100 m head for zone 6, 6A and 7, (1+1)</p> <p>Booster pumping station at Balnad Pump capacity 11 m<sup>3</sup>/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	
--	-------------------	--

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

CMC = City Municipal Council, m<sup>3</sup>/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	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur	<b>Name of the Contractor:</b> Suez Civil Engineering services Pvt, LTD
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Puttur	<b>Name of SE/EE/AE Of concerned division PIU :-</b> Mr.Shamath, AE
<b>Date of monthly monitoring:</b> 28/02/2020	<b>Name of Environment, Health And Safety (EHS) engineer :-</b> Mr.Y Amruth



**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	<p>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>	<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>	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 spray water at commercial and residential areas if stock piled on-site.</p> <p>5) Not complied</p> <p>6) Not complied</p> <p>7) Complied</p> <p>8) Complied</p>

		8) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				
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><b>13)</b> Dispose any wastes generated by installation of pipeline in designated sites; and</p> <p><b>14)</b> Conduct surface quality inspection according to the Environmental Management Plan (EMP).</p>		waterbodies due to civil works.		<p><b>13)</b> Complied</p> <p><b>14)</b> 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><b>15)</b> 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><b>16)</b> Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</p> <p><b>17)</b> 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><b>18)</b> Properly enclose the dismantling area with temporary noise barriers; and</p> <p><b>19)</b> 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><b>15)</b> Complied</p> <p><b>16)</b> Complied</p> <p><b>17)</b> Complied</p> <p><b>18)</b> Complied</p> <p><b>19)</b> 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	<p><b>20)</b> Prepare and implement spoils management plan;</p> <p><b>21)</b> Avoid stockpiling of excess excavated soils;</p> <p><b>22)</b> Coordinate with Puttur CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas;</p>	Construction Contractor	<p>(i) Complaints from sensitive receptors;</p> <p>(ii) Worksite clear of hazardous wastes such as oil/fuel; and</p> <p>(iii) Worksite clear of any excess excavated earth,</p>	Cost for implementation of mitigation measures responsibility	<p><b>20)</b> Spoil management plan is prepared (<b>attached in annexure 3a july 2019 but updation is to be done</b>) and contractor agency following and found no surplus soil found in sites</p> <p><b>21)</b> Complied</p> <p><b>22)</b> Complied (<b>attached in annexure 4 september 2019</b>)</p>
	containers, spoils, oils, lubricants, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	<p><b>23)</b> Recover used oil and lubricants and reuse or remove from the sites;</p> <p><b>24)</b> Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</p> <p><b>25)</b> Remove all wreckage, rubbish, or temporary structures which are no longer required; and</p> <p><b>26)</b> Request PIU/PMDCSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work.</p> <p>C &amp; D materials after dismantling of the old WTP and old GLSR shall be managed as per C &amp; D Rules 2016,</p>		and solid waste such as removed concrete, wood, packaging materials, empty containers.		<p><b>23)</b> Used oil and lubricants not generated on site</p> <p><b>24)</b> Complied (<b>attached in annexure 4 september 2019</b>)</p> <p><b>25)</b> Complied</p> <p><b>26)</b> No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.</p>

Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<p><b>27)</b> Obtain from PIU/PMDCSC the list of affected utilities and operators if any;</p> <p><b>28)</b> Prepare a contingency plan to include actions to be done in case of unintentional interruption of service; and</p> <p><b>29)</b> 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><b>27)</b> 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><b>28)</b> Not complied</p> <p><b>29)</b> Complied</p>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<p><b>30)</b> 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><b>30)</b> 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><b>31)</b> Traffic Management Plan (TMP) should be part of the Construction Management Plan.</p> <p><b>a)</b> Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p><b>b)</b> Schedule transport and hauling activities during non-peak hours;</p> <p><b>c)</b> Locate entry and exit points in areas where there is low potential for traffic congestion;</p> <p><b>d)</b> Keep the site free from all unnecessary obstructions;</p> <p><b>e)</b> Drive vehicles in a considerate manner;</p> <p><b>f)</b> 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><b>g)</b> 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><b>h)</b> Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum; and</p> <p><b>i)</b> 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><b>31)</b> Traffic Management Plan is prepared by contracting agency <b>(attached in annexure 3b july 2019 but updation is to be done)</b></p> <p><b>a) Not complied.</b> Instructed to prepare plan</p> <p><b>b) Complied</b></p> <p><b>c) Complied</b></p> <p><b>d) Complied</b></p> <p><b>e) Complied</b></p> <p><b>f)</b> Instructed contracting agency to inform traffic department for temporary road diversion before two days start of the work.</p> <p><b>g) Complied</b></p> <p><b>h) Complied</b></p> <p><b>i)</b> No such execution work found near any commercials or residential areas. 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	<b>32)</b> Prepare and implement spoils management plan; <b>33)</b> Leave spaces for access between mounds of soil; <b>34)</b> Provide walkways and metal sheets where required for people; <b>35)</b> Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; <b>36)</b> Consult businesses and institutions regarding operating hours and factoring this in work schedules; and <b>37)</b> 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	<b>32)</b> Spoil management plan is prepared ( <b>attached in annexure 3a july 2019 but updation is to be done</b> ) <b>33)</b> Complied <b>34)</b> Complied  <b>35)</b> Complied <b>36)</b> Complied  <b>37)</b> Complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	<b>38)</b> Employ local labor force to the maximum extent, if manpower is available; and <b>39)</b> 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	<b>38)</b> Register maintained by contractor attached as <b>Annexure – 4 in dec 2019</b>  <b>39)</b> 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><b>40)</b> Comply with all national, state and local core labor laws (See Appendix 2 of this IEE);</p> <p><b>41)</b> 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><b>40)</b> Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor.</p> <p><b>41)</b> Contractor following Company EHS Policy- PPE'S provided by Contractor.</p> <p>a) <b>Complied</b></p> <p>b) <b>Complied.</b> PPE'S provided by Contractor to workers and tool box training provided at site.</p> <p><b>Annexure-4</b></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><b>42)</b> Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p><b>43)</b> Provide medical insurance coverage for workers;</p> <p><b>44)</b> Secure all installations from unauthorized intrusion and accident risks;</p> <p><b>45)</b> Provide supplies of potable drinking water;</p> <p><b>46)</b> 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><b>42)</b> Partially Complied. Instructed to keep first-aid box at each working sites separately</p> <p><b>Annexure-4 in dec 2019</b></p> <p><b>43)</b> Not complied</p> <p><b>44)</b> Complied</p> <p><b>45)</b> Complied</p> <p><b>46)</b> Complied</p>

		<p>noxious substances;</p> <p><b>47)</b> 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><b>48)</b> 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><b>49)</b> Ensure the visibility of workers through their use of high visibility</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><b>47)</b> Not complied. Instructed to Provide health and safety orientation training to all workers</p> <p><b>48)</b> Not complied</p> <p><b>49)</b> Complied <b>Annexure-1 in dec 2019</b></p>
		<p>vests when working in or walking through heavy equipment operating areas;</p> <p><b>50)</b> Ensure moving equipment is outfitted with audible back-up alarms;</p> <p><b>51)</b> 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><b>52)</b> Disallow worker exposure to noise level greater than 85 dBA for a duration of more</p>				<p><b>50)</b> Complied</p> <p><b>51)</b> Complied</p> <p><b>52)</b> 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>

		than 8 hours per day without hearing 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><b>53)</b> Plan routes to avoid times of peak-pedestrian activities.</p> <p><b>54)</b> Liaise with PIU/PMDSC in identifying high-risk areas on route cards/maps.</p> <p><b>55)</b> Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.</p> <p><b>56)</b> 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><b>53)</b> Not complied</p> <p><b>54)</b> Not complied</p> <p><b>55)</b> Not complied</p> <p><b>56)</b> Complied</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation	<p><b>57)</b> Consult with PIU before locating workers camps/sheds, and construction plants; as far as</p>	Construction Contractor	(i) Complaints from sensitive receptors;	Cost for implementation of mitigation measures	<p><b>57)</b> Complied Contractor informed to PIU office regarding labour camp construction at mottetadka opposite NCRC but they not having letter from PIU.</p>



	<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><b>58)</b> Minimize removal of vegetation and disallow cutting of trees;</p> <p><b>59)</b> Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge;</p> <p><b>60)</b> The camp site should be adequately drained to avoid the accumulation of stagnant water;</p> <p><b>61)</b> 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><b>62)</b> Provide separate facilities for men and women; sanitary facilities shall be properly build and</p>		<p>(ii) Drinking water and sanitation facilities for employees.</p>	responsibility	<p><b>58)</b> Removal of vegetation Minimize by selecting best alignment.</p> <p><b>59)</b> Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area.</p> <p><b>60)</b> Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area.</p> <p><b>61)</b> Instructed contracting agency to provide drinking water as per the standards at camp</p> <p><b>62)</b> Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites</p> <p><b>63)</b> Instructed contracting agency to provide</p>

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

Social and Cultural Resources	Risk of archaeological chance finds	<p><b>69)</b> Create awareness among the workers and supervisors about the chance finds during excavation work;</p> <p><b>70)</b> Stop work immediately if any finds are suspected to allow further investigation;</p> <p><b>71)</b> 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><b>72)</b> 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><b>69)</b> Till now no such suspected items found nor recorded</p> <p><b>70)</b> Till now no such suspected items found nor recorded</p> <p><b>71)</b> Till now no such archaeological items recorded</p> <p><b>72)</b> 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	<p><b>73)</b> Appointment of EHS Engineer to ensure EMP implementation; and</p> <p><b>74)</b> Timely submission of monitoring reports including pictures.</p>	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost for implementation of mitigation measures responsibility	<p><b>73)</b> EHS Engineer appointed</p> <p><b>74)</b> Complied <b>Annexure-5 in dec 2019</b></p>

Post-construction clean-up	Damage due to debris, spoils, excess construction materials	<p><b>75)</b> Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</p> <p><b>76)</b> All excavated roads shall be reinstated to original condition.</p>	Construction Contractor	<p>PIU/PMDSC report in writing that</p> <p>(i) worksite is restored to original conditions;</p> <p>(ii) camp has been vacated and restored to</p>	Cost for implementation of mitigation measures responsibility	<p><b>75)</b> Complied</p> <p><b>76)</b> No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage</p>
		<p><b>77)</b> All disrupted utilities restored;</p> <p><b>78)</b> All affected structures rehabilitated/compensated;</p> <p><b>79)</b> 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><b>80)</b> 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><b>81)</b> The contractor must arrange the cancellation of all temporary services; and</p> <p><b>82)</b> 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>pre-project conditions; and</p> <p>(iii) all construction related structures not relevant to O&amp;M are removed; and</p> <p>(iv) worksite clean-up is satisfactory.</p>		<p><b>77)</b> 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><b>78)</b> Till now no structures affected</p> <p><b>79)</b> Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp</p> <p><b>80)</b> Not complied</p> <p><b>81)</b> Not complied</p> <p><b>82)</b> Construction work is in progress</p>

### Conclusion:-

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

### Recommendation:-

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)engineer		Complied
2.	Submission of Site specific EMP		Before start of Construction work Comply with in 7days
3.	Submission of monthly reports.	<ul style="list-style-type: none"> <li>Construction status or compliance report</li> </ul>	Contractor has to submit Site specific EMP of January 2020 Comply with in 7 days
4.	Telephone lines, electric Poles and wires, water Lines within proposed project area	<ul style="list-style-type: none"> <li>List of utilities going to effect will be submitted to PIU</li> </ul>	Before start of Construction work
5.	Heavy equipment and machinery with air pollution control devices;	<ul style="list-style-type: none"> <li><b>PUC certification for all vehicles/equipment used for/during construction and certification of users at site.</b></li> </ul>	Comply with in 7days
6.	Certification that vehicles are compliant with Air Act	<ul style="list-style-type: none"> <li><b>Register of Equipment and Vehicles maintenance certificates at site</b></li> </ul>	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"> <li>If any of the tree is getting affected, it is to be noted in the survey and its permission has to be taken</li> </ul>	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"> <li>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.</li> </ul>	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"> <li>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.</li> </ul>	Complied Attached as <b>Annexure –2 &amp; 3 in may 2019.</b> 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"> <li>If any private land is selected NOC from owner has to be taken</li> </ul>	Comply with in 15 days
13.	List of selected sites for disposal	<ul style="list-style-type: none"> <li>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.</li> <li>If any private land is selected ,NOC from owner have to be taken</li> </ul>	Debris disposal land location identified and Permission letter has been issued by PIU. <b>Attached as annexure 4 in September 2019.</b>
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"> <li>As mention in mitigation measures</li> </ul>	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"> <li>Type and quantity of waste generated.</li> <li>Identify the impact</li> <li>Spoil Transportation Methodology</li> <li>Reuse of quantity of waste generated in any other projects or any other place</li> <li>Amount of waste disposed in identified disposal areas consultation with PIU</li> <li>If private land NOC from owner.</li> <li>Location of Waste disposal site mark on Google map</li> </ul>	<p>Draft copy shown and submitted attached as an <b>annexure 3a in August 2019 report but updation is to be done</b> and informed contractors to update plan once construction phase starts</p> <p>Debris disposal land location identified and Permission letter has been issued by PIU. <b>Attached as annexure 4 in September 2019.</b></p>
18.	Traffic management plan		<p>Draft copy shown and submitted attached as <b>annexure 3b August 2019 report but updation is to be done</b> and informed contractors to update plan once construction phase starts</p> <p>Comply with in 7 days</p>
19.	Environmental management plan		<p>Draft copy shown and submitted attached as an <b>annexure 3c in August 2019 report but updation is to be done</b> and informed contractors to update plan once construction phase</p>

			starts Comply with in 7 days
20.	Site specific OHS Plan	<ul style="list-style-type: none"> <li>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.</li> <li>Trained first aid personal will be available at the construction site.</li> <li>Emergency numbers will be displayed prominently at camp and construction site.</li> <li>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.</li> <li>The contractor shall identify nearby hospital, which could be used in case of emergency.</li> </ul> <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"> <li>During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.</li> </ul>	Complied. <b>Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors</b>
22.	Records of Air quality inspection	<ul style="list-style-type: none"> <li>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</li> </ul>	Complied. <b>Pre-construction and construction test conducted in November 2019 and February 2020. Air report has to submit by contractors</b>

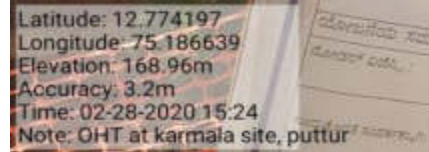


**Mahmad Raphiyoddin Shaphiyoddin Malik**  
**Environmental Specialist**  
**KIUWMIP – Tranche 2**

## Annexure-1

### Site Visit observations on 28<sup>th</sup> February 2019

1	Project information board and sign boards must be provided at work site.	 <p>Latitude: 12.782035 Longitude: 75.175814 Elevation: 149.31m Accuracy: 3.2m Time: 02-28-2020 15:00 Note: OHT at padnoor site, puttur</p>	<p>Provide project information board related to the particular project work and place 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>
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2	Sign boards , barricading should be provided at work site	 <p>Latitude: 12.772377 Longitude: 75.213101 Elevation: 84.78m Accuracy: 3.2m Time: 02-28-2020 17:43 Note: 110mm dia Distribution line laying at zone 1, puttur</p> <p>Powered by NoteCam</p>	<ul style="list-style-type: none"><li>• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site.</li><li>• Labour attendance register, labour wages register, grievance redressal register and accident and incident register compulsory be at all work site.</li><li>• Drinking Water can must be provided at all work site</li></ul>
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3	Bunding materials of	 <p>Latitude: 12.756595 Longitude: 75.172078 Elevation: 238.65m Accuracy: 3.2m Time: 02-28-2020 16:05 Note: OHT at balnad kelledi site, puttur</p> <p>Powered by NoteCam</p>	<p>Materials like sand, aggregates should be properly banded with sand bags to avoid flow along slope</p>
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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
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5	Labour Camp at mottetadka site, puttur	 <p>Latitude: 12.741233 Longitude: 75.228483 Elevation: 99.01m Accuracy: 4.3m Time: 02-28-2020 16:50 Note: OHT at CTO darbe site, puttur</p>  <p>Latitude: 12.741326 Longitude: 75.22837 Elevation: 107.05m Accuracy: 3.2m Time: 02-28-2020 16:41 Note: Labour camp mottetadka site, puttur</p>	<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>Instructed contracting</p>
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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



6	PPEs workers work site	<p>for at</p>  <p>Latitude: 12.747124 Longitude: 75.1867 Elevation: 183.91m Accuracy: 3.2m Time: 02-28-2020 15:53 Note: OHT at bainad helipad site, gubbi</p> <p>Powered by Notel</p>	Workers wearing PPEs at works site
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## Annexure 2

### Status of the Site Visit on 22<sup>nd</sup> January 2020

1	Project information board and sign boards and hard barricading must be provided all OHT Sites	 	<p>Instructed contracted agency to provide hard barricading for such deep trenches</p> <p>Provide project information board related to the particular project work and place at all working OHT site</p> <p>Project information Board is to be provided both in English and Kannada language along with contact numbers</p>	<p>Not complied</p> <p>Partially complied</p> <p>Partially complied</p>
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2	Loose earth at OHT work site	 	<ul style="list-style-type: none"> <li>• Project information board must be framed in proper frame</li> <li>• All excess loose earth and debris must be removed from work site to dumping yard</li> <li>• Proper bunding should be done to stored sand and aggregates</li> </ul>	<p>Not complied</p> <p>Not complied</p> <p>Not complied</p>
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3	Pedestrian to be provided		Instructed contractors to restore and provide steel or wooden pedestrians in front of residential doors if work delayed to next day	Partially complied
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4	Barricading and sign boards at distribution work		<p>Instructed contractors to provide project information boards, full hard barricade and to keep go slow sign boards, work in progress sign boards and two flag men at both road ends to maintain traffic and to avoid accidents when work is progress in main road area</p>	Not complied
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5	Steel rods used for barricading at OHT sites		Instructed contractors to use wooden planks and remove steel rods used for barricading propose at all OHT sites	Not complied
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6	PPEs for worker and drinking water		Contracting agency provided PPEs but instructed them to provide Drinking Water facility and one mobil toilet to worker at all working site	Partially complied
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### Annexure 3

#### Status of Site Visit observations of 19<sup>th</sup> December 2019

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



2	Project Information Board at padnur, kabaka	 <p>Shot on Y83 Pro vivo dual camera</p>	Contracting agency provided Project information Board sign boards at padnur OHT in kannada But instructed to be provided both in English and Kannada language	Not complied
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3	Material Bunding at work site		<p>Sand should be properly bunded with sand bags to avoid flow of sand due to slope</p> <p>And also aggregates should be bunded if stocking in future at sites</p> <p>Sign boards should be placed on ground should be properly framed with stand</p>	Not complied
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4	Loose earth stocking at site		Loose earth must be disposed off to the landfills, it should not be stocked at the working places	Not complied
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5	Workers wearing PPEs at work places		<p>Worker wearing PPEs at all work places but also found some are not wearing. So instructed safety person, workers must wear PPEs at work places</p> <p>Drinking Water can must be provided to workers at sites</p> <p>Mobil toilet for workers 1nos should be provide at work places</p>	<p>Complied</p> <p>Drinking water can is not provided at site for workers And no mobil toilets provided at site for workers</p>
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6	Project information board, Safety sign and Barricading and flagman at pipe laying at Nekkeladi road		<p>No sign boards provided at Nekkeladi main road.</p> <p>No proper hard barricading.</p> <p>No flagman at road side for management of vehicles movement</p>	Not complied
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# Monthly Environmental Monitoring Report

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Project Number: 43253-027  
February 2020

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

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 (km<sup>2</sup>) 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:

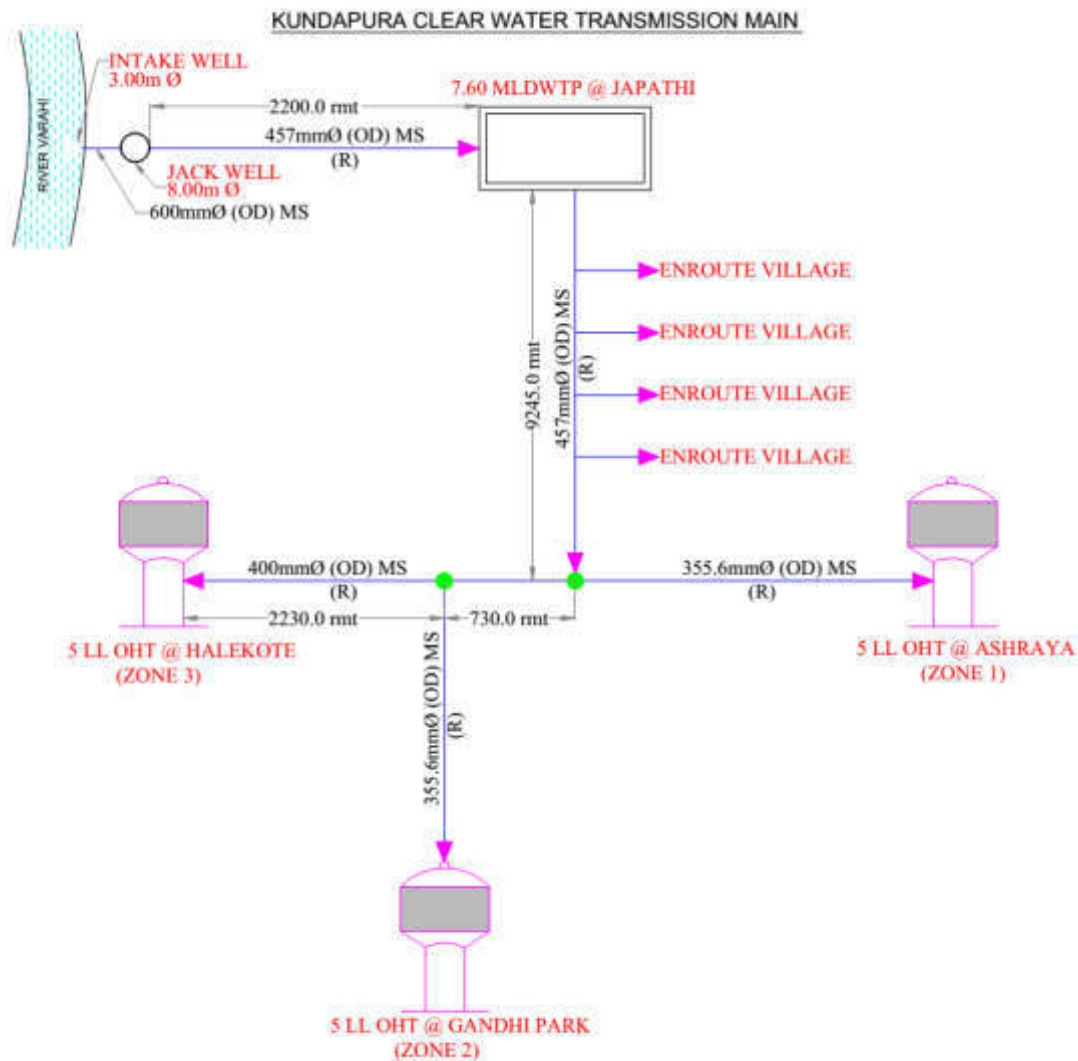
- (i) Best Urban Local Body in the year of 1996-1997;
- (ii) Best Urban Local Body Award in the 2009-2010;
- (iii) Second Best Practices Award in the year 2010 for Reduction of Nonrevenue Water Supply;
- (iv) Third Best Practices Award-2010 for Solid Waste Management (SWM) for providing excellent Municipal 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-enroutevillages viz., Japhthi, Balkur, Basrur and Koni. A Schematic diagram of the existing water supply systemis shown in the Figure 1.

**Figure 1: Existing Water Supply System in Kundapura**



**Table 1: Component of Existing Water Supply System in Kundapura**

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

#### 4. The proposed subproject:

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

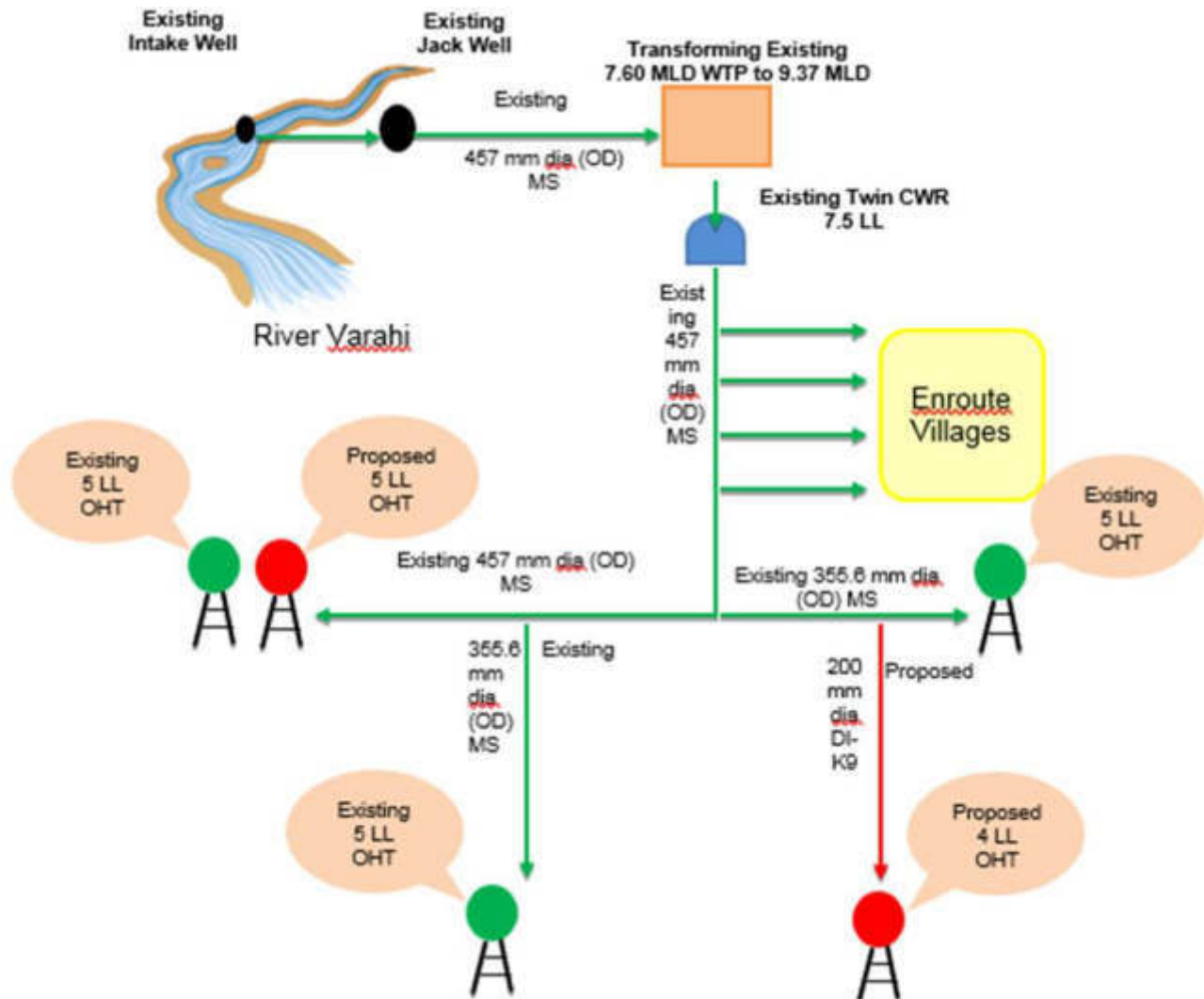
Following Table 2 provides details of the KIUWMIP Tranche 2 subproject components in Kundapura based on the detailed engineering design of the subproject. Schematic diagram of water supply system in Kundapura is shown in Figure 2. Locations of proposed components in Kundapura are shown. The position 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.

<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura	<b>Name of the Contractor:</b> Laxmi Civil Engineering Services Pvt,Ltd
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city : Kundapura</b>	<b>Name of SE/EE/AE of concerned division PIU :-</b> Mr.HarishWalmiki, AEE
<b>Date of monthly monitoring:</b> 27/02/2020	<b>Name of Environment, Health And Safety (EHS) Engineer :-</b> 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"> <li>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</li> <li>Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.</li> </ol>	Construction Contractor/ project implementation unit (PIU)/ Project Management Design and Construction Supervision Consultant (PMDSC)	<ol style="list-style-type: none"> <li>Certificate of Completion (Safeguards Compliance Orientation)</li> <li>Posting of Certification of Completion at worksites</li> <li>Posting of EMP at worksites.</li> </ol>	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"> <li>Contractor prepared SOPs.OHS plan and Activities are going on as per company EHS Policies.</li> <li>Complied Environmental, Health and Safety (EHS) Engineer appointed by contractor.</li> </ol>

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"> <li>1) Consult with PMU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</li> <li>2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</li> <li>3) Use tarpaulins to cover sand and other loose material when transported by trucks; and</li> <li>4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation</li> <li>5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and</li> <li>6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Location of stockpiles;</li> <li>b) Complaints from sensitive receptors;</li> <li>c) Heavy equipment and machinery with air pollution control devices;</li> <li>d) Certification that vehicles are compliant with Air Act</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Instructed to contracting agency to Spray water on exposed soil and stock piled mainly in commercial and residential area</li> <li>3) Complied</li> <li>4) Partially Complied.</li> <li>5) Complied</li> <li>6) Complied</li> </ol>
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"> <li>1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</li> <li>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;</li> <li>3) Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed,</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Areas for stockpiles, storage of fuels and lubricants and waste materials;</li> <li>b) Number of silt traps installed along trenches leading to water bodies;</li> <li>c) Records of surface water quality inspection;</li> <li>d) Effectiveness of water</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Stockpiling of earth fill not found during the site visit</li> <li>2) Instructed to contracting agency to close all opened trenches Before rainy season</li> <li>3) Partially Complied - Spoil Management plan prepared by Contractor Annexure attached in Feb 2019 report and recommended to</li> </ol>

		<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 waterbodies 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 beendone 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"> <li>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;</li> <li>2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</li> <li>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</li> <li>4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Complaints from sensitive receptors;</li> <li>b) Use of silencers in noise-producing equipment and sound barriers; and</li> <li>c) Equivalent day and night time noise levels (Appendix 3)</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Complied</li> <li>3) Complied</li> <li>4) Complied</li> </ol>
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"> <li>1) Manage surplus soil, debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</li> <li>2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Complaints from sensitive receptors;</li> <li>b) Worksite clear of hazardous wastes such as oil/fuel; and</li> <li>c) Worksite clear of any excess excavated earth, excess construction materials, and</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied. No excess excavated earth at work site.</li> <li>2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill.</li> </ol>

	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/PMDSC 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) Restoration work is going on and when work gets completed, joint site inspection will be</p>
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						conducted and report / letter will be issued.
Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<ol style="list-style-type: none"> <li>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;</li> <li>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</li> <li>3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)</li> <li>4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly</li> <li>5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section</li> </ol>	Construction Contractor and PIU	<ol style="list-style-type: none"> <li>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</li> <li>b) Record to confirm that contingency services are provided and all damaged utilities are restored after the work</li> </ol>	Part of project cost	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Complied contingency services are provided and restoration is going on after the work.</li> <li>3) Complied</li> <li>4) Complied</li> <li>5) Complied</li> </ol>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ol style="list-style-type: none"> <li>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.</li> <li>2) Trees in the pipeline</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) PMU/PMD/CSC to report in writing the number of trees cut and planted.</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied. 6 trees got felled and Compensations were paid to the owners.  Attached as <b>Annexure 10 in the May 2019 report.</b> And also ADB Social safeguard team visited on 23/9/2019 to particular affected persons to provide</li> </ol>

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

		<p>provide alternative route, and ensure that public is informed about such traffic 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) MS tubular barricades are provided by Contractor at HaleKote OHT and Kodi OHT Site.</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>
Socio-Economic –	Impede the	1) Strictly follow the pipe	Construction	a) Complaints from	Cost for	1) Complied



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

	resources (religious, educational, health care etc.), access disruptions etc.,	<p>areas; material shall be brought to the site as and when required;</p> <p>2) Conduct work manually with small group of workers and less noise; minimize 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>		b) Public complaints	n of mitigation measures responsibility of contractor.	<p>2) Contractor conducting work manually for all possible works to minimize the 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	1) Employ local labor force to the maximum extent, if manpower is available; and	Construction Contractor	<p>a) Employment records;</p> <p>b) Records of sources of</p>	Cost for implementation of mitigation measures	1) Register maintained by contractor attached as

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

		<p>irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures</p> <p>4) Ensure that qualified first-aid can be provided at all 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&amp;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>audible back-up alarms;</p> <p>j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.</p> <p>k) Compliance to core labor laws (Appendix 2)</p>		<p>implement the mitigation measure when such deep trenches are to be executed.</p> <p>4) First aid box is available but not adequate as per standards. The equipped first-aid station not provided.</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) <b>H&amp;S</b> orientation training for workers not found during the work and proper documentation required need to be done</p> <p>10) Not Complied</p>
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		<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 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>11) Complied</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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		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 <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES</a> )				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<ol style="list-style-type: none"> <li>1) Provide protective shoring / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (&gt;1m);</li> <li>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.</li> <li>3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work;</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Traffic Management Plan; and</li> <li>b) Complaints from sensitive receptors</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Recommended contractor to implement the mitigation measure when such deep trench were executed.</li> <li>2) Complied</li> <li>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</li> <li>4) Complied</li> </ol>

		<p>4) Plan material and waste routes to avoid times of peak-pedestrian activities;</p> <p>5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps;</p> <p>6) Maintain regularly the 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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES</a>).</p>				<p>5) Complied</p> <p>6) Not complied- Register of Equipment and Vehicles maintenance certificates not 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 pipe execution work was in progress during inspection. Instructed contracting agency to keep necessary sign boards when pipe execution work starts.</p> <p>8) Not Complied.</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation, water	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within	Construction Contractor	<p>a) Complaints from sensitive receptors;</p> <p>b) Drinking water and sanitation facilities</p>	Cost for implementation of mitigation measures	1) Complied.

	<p>pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>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 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>		for employees	responsibility of contractor.	<p>2) Removal of vegetation minimized by selecting best alignment.</p> <p>3) Labor camps facilities provided by the Contractor 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 areas has not been provided</p> <p>8) Gas Cylinder has been Provided by Contractor</p> <p>9) Complied</p>
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		<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 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>10) Not complied</p> <p>11) Complied</p> <p>12) NotComplied. 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) Monthly report submitted by Contractor.
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 should be improved by Contractor. January and February 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"> <li><b>Register of Clearances required /status</b></li> </ul>	1) CRZ Clearance attached as <b>Annexures 2,3 &amp; 4 in June 2019 report</b> 2) Tree cutting permission from tree officer not provided yet.
2.	Posting of Certification of Completion at worksites	<ul style="list-style-type: none"> <li>If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board.</li> </ul>	Within 3 day of work Completion
3.	Posting of EMP at worksites.	<ul style="list-style-type: none"> <li><b>Project Information board should also be in Kannada Language along with contact numbers for grievance Redressal</b></li> </ul>	Comply with in 15 days
4.	Location of stockpiles;	<ul style="list-style-type: none"> <li>To prepare the Google map of the Locations of identified stockpiles</li> </ul>	Comply with in 5 days
5.	Complaints from sensitive receptors;	<ul style="list-style-type: none"> <li><b>Complaints/Grievance Redressal Registers should be maintained at each work site.</b></li> </ul>	<b>Compiled and maintaining grievance registers at site</b>
6.	Heavy equipment and machinery with air pollution control devices;	<ul style="list-style-type: none"> <li><b>PUC certification for all vehicles/equipment used for/during construction and certification of users at site.</b></li> </ul>	Comply with in 7 days
7.	Certification that vehicles are compliant with Air Act	<ul style="list-style-type: none"> <li><b>Register of Equipment and Vehicles maintenance certificates at site</b></li> </ul>	Comply with in 5 days
8.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	<ul style="list-style-type: none"> <li>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.</li> </ul>	Comply with in 7 days
9.	Number of silt traps installed along trenches leading to water bodies;	<ul style="list-style-type: none"> <li>Prepare list of silt traps installed along trenches</li> </ul>	If applicable in 8 days
10	Records of surface water quality inspection;	<ul style="list-style-type: none"> <li>If any surface water body is Present nearby project area during</li> </ul>	For every 3 months,

		the construction phase, the contractor will carry out environmental monitoring and testing for Surface water engaging NABL approved laboratory.	<b>Complied (Jan to March Monitoring).Annexure 2 in May 2019 report.</b>  <b>The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report</b>
11	Use of silencers in noise-producing equipment and sound barriers; and	<ul style="list-style-type: none"> <li>• <b>Only acoustic enclosures fitted DG set will be allowed at the construction site and camp sites.</b></li> <li>• 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.</li> <li>• <b>Barricading- Hard Barricade should be provided to protect from unauthorized access of common people</b></li> </ul>	Daily monitoring required at site during the work  Comply during the work.
12	Equivalent day and night time noise levels (Appendix 3)	<ul style="list-style-type: none"> <li>• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.</li> </ul>	For every 3 months, <b>Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors toconduct the noise test every 3 months.</b> The Noise level monitoring is done in January 2020 and attached as <b>Annexure-5b in Jan 2020 report</b>
13	Records of Air quality inspection	<ul style="list-style-type: none"> <li>• 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</li> </ul>	For every 3 months, <b>Complied (Jan to March Monitoring).</b> <b>Annexure-2</b> during the work. <b>Informed the contractors to conduct the air quality test every 3 months.</b> The Air quality monitoring is done in January 2020 and attached as <b>Annexure-5a in Jan 2020 report</b>
14	Worksite clear of hazardous wastes such as oil/fuel;	<ul style="list-style-type: none"> <li>• Used oil generated from vehicles/DG set at plant/camp site will be collected in closed containers and sold to MoEF&amp;CC/SPCB approved used oil recyclers.</li> </ul>	Daily monitoring required at site during the work

		<ul style="list-style-type: none"> <li>No solid or hazardous wastes (such as oil contaminated waste) will be dumped in drains or in open areas</li> </ul>	Comply during the work
15	solid waste such as removed concrete, wood, packaging materials, empty containers	<ul style="list-style-type: none"> <li>Burning of wastes will not be allowed.</li> <li>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.</li> <li>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.</li> </ul>	<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"> <li><b>Maintain copy of Section-wise list of utilities to be shifted / disturbed.</b></li> </ul>	<p>Partially Complied. Communication letter maintained by PIU <b>attached as Annexures 3&amp;4 in the May 2019 report.</b> Contactor should also have copy with him <b>Section-wise list of utilities to be shifted</b> 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"> <li><b>Register of damaged infrastructure</b></li> <li><b>Register of reinstated infrastructure</b></li> </ul>	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"> <li><b>Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation.</b></li> </ul>	<b>Complied attached as Annexures 10 in the May 2019 report</b>
19	Number of signage's placed at project location.	<ul style="list-style-type: none"> <li><b>Maintain the signages placed at project location</b></li> </ul>	Comply with in 5 days
20	Visual site observations	<ul style="list-style-type: none"> <li><b>Register of official visiting the site and directions given if any at each site.</b></li> </ul>	Comply with in 3 days
21	Employment records;	<ul style="list-style-type: none"> <li><b>Attendance registers of labour at each site.</b></li> </ul>	<b>Complied and attached as Annexure 7 in the May 2019 report and maintaining the attendance register.</b>
22	Records of sources of materials; and	<ul style="list-style-type: none"> <li><b>Maintain separate record of quantity of materials used and with all authorized certificates of suppliers</b></li> </ul>	Comply with in 5 days
23	Compliance to core labor laws (See Appendix 2 of this IEE)	<ul style="list-style-type: none"> <li><b>Register of payment to the workers</b></li> </ul>	Comply Immediately
24	Site-specific OHS Plan;	<ul style="list-style-type: none"> <li><b>Site-specific Occupational Health and Safety Plan</b></li> </ul>	Comply with in 4 days

25	Equipped first-aid stations;	<ul style="list-style-type: none"> <li>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.</li> <li>Trained first aid personal will be available at the construction site.</li> <li>Emergency numbers will be displayed prominently at camp and construction site.</li> <li>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.</li> <li>The contractor shall identify nearby hospital, which could be used in case of emergency.</li> <li>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.</li> </ul>	Comply with in 7 days
26	Medical insurance coverage for workers;	<ul style="list-style-type: none"> <li><b>File of insurance as per 13.1 PCC with contents showing the validity.</b></li> <li>Health Camps and Check -up should be conducted for the workers</li> <li><b>Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.</b></li> </ul>	Comply with in 12 days
27	Number of accidents;	<ul style="list-style-type: none"> <li><b>Accident and Incident register will be maintained by Contractor at each work site.</b></li> </ul>	<b>Complied. Attached in Annexure 1 in Aug 2019</b>
28	Supplies of potable drinking water;	<ul style="list-style-type: none"> <li>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.</li> </ul>	<b>Complied</b>
29	Clean eating areas where workers are not exposed to hazardous or noxious substances;	<ul style="list-style-type: none"> <li>Since a common mess is not provided/operated, separate space for cooking and eating shall be provided.</li> </ul>	Comply with in 4 days
30	Record of H&S orientation trainings personal protective equipment;	<ul style="list-style-type: none"> <li><b>Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register</b></li> <li><b>The list of PPEs to be provided.</b></li> </ul>	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"> <li>Safety vests will be used by workers whenever on the construction site.</li> <li>Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations</li> <li>Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These</li> </ul>	Comply with in 5 days



		<p>shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Welder's protective eye-shields will be provided to workers who are engaged in welding works.</li> <li>• 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.</li> <li>• Proper moving guards will be provided at all moving machines, like motors and pulleys.</li> <li>• All workforces on the construction site shall be provided with identity cards.</li> <li>• High risk areas are to be provided with warning signage.</li> </ul>	
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"> <li>• <b>The contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. Guidelines.</b></li> </ul>	Comply with in 10 days
33	Records of chance finds	<ul style="list-style-type: none"> <li>• Concerned records should be maintained if any chance find transpires.</li> </ul>	Comply immediately as soon as chance find occurs.
34	Availability and competency of appointed supervisor	<ul style="list-style-type: none"> <li>• Certified and Experienced supervisor will be appointed by Contractor</li> </ul>	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	<ul style="list-style-type: none"> <li>• <b>Contractor submitted Monthly report to PIU &amp; PMU</b></li> </ul>	January 2020 Monthly report has to be submitted
36	Camp has been vacated and restored to pre-project conditions	<ul style="list-style-type: none"> <li>• All construction related structures not relevant to operation and maintenance (O&amp;M) are removed; and</li> <li>• Worksite clean-up must be satisfactory.</li> </ul>	Will be Compiled Within 2 days of Work Completion




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

## ANNEXURE -1

### SITE OBSERVATIONS VISITED ON FEB 27<sup>th</sup> 2020

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

<b>b</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.
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<b>C</b>	Housekeeping at Kodi OHT Site , Kundapura	 <p>Latitude: 13.6305 Longitude: 74.67027 Elevation: -0.72m Accuracy: 4.3m Time: 02-27-2020 15:23 Note: OHT Kodi site, kundapura</p> <p>Latitude: 13.630577 Longitude: 74.669838 Elevation: -0.38m Accuracy: 4.3m Time: 02-27-2020 15:21 Note: OHT Kodi site, kundapura</p>	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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<b>d</b>	<p>One side of the Clariflocculator Japti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator.</p>		<p>One side Opening is required with proper channel/Gate/tubular rods.</p>
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<b>e</b>	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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<b>f</b>	Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site, Halekote	 <p>Latitude: 13.635578 Longitude: 74.704483 Elevation: 6.66m Accuracy: 9.6m Time: 02-27-2020 15:59 Note: OHT hallekote site, kundapura</p> <p>Powered by NoteCam</p>	Hard Barricading is to be done at river side near Water Tank in order to prevent fall of any person. Proper bathroom and washing platform need to be provided.
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<b>g</b>	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 hallekote site, kundapura</p> <p>Powered by NoteCam</p>	Hard barricading by sheet must 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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## ANNEXURE-2

### SITE VISIT OBSERVATIONS VISITED ON 23<sup>rd</sup> JANURAY 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>	Complied



2	Material storage area not barricaded and bunding is done partially	 <p>Latitude: 13.630742 Longitude: 74.669433 Elevation: 81.52m Accuracy: 1.7m</p> <p>Latitude: 13.63073 Longitude: 74.669569 Elevation: -2.81m Accuracy: 3.2m Time: 02-27-2020 15:27 Note: OHT Kodi site, kundapura</p> <p>Powered by NoteCam</p>	Material storage area is to be barricaded and proper bunding is to be done around the stored material	Complied
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3	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Complied
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4	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>	Partially complied
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5	Housekeeping at work Halikote OHT		Materials after use must be shifted to their yards. Proper housekeeping should be done at work site to avoid injuries	Not complied
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6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not 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 SITE OBSERVATIONS VISITED ON DECEMBER 2019

S.No	Observation		Recommendation	Status of Observations
1	PPEs at work site	 <p>Latitude: 13.630407 Longitude: 74.669418 Elevation: 86.12m Accuracy: 7.6m Time: 17-12-2019 12:45 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	Workers wearing PPEs at kodi OHT site and instructed to wear PPEs regularly at working sites	Complied

2	Project information board at kodi OHT Site to be provided in English as well			Project information board in English must be provided.  Contact number must be provided for emergency and for public complaints in English and Kannada language as well	Complied
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3	Material storage area not barricaded and not provided sign board at Kodi OHT at material stocks	 <p>Latitude: 13.630742 Longitude: 74.669433 Elevation: 81.52m Accuracy: 1.7m Time: 17-12-2019 13:04 Note: Kodi Beach OHT</p>	Material storage area is to be barricaded properly and sign boards must be provided at stock yard	Complied
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4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause vehicular accidents by passing traffic	 <p>Latitude: 13.630648 Longitude: 74.669873 Elevation: 86.02m Accuracy: 1.8m Time: 17-12-2019 12:59 Note: Kodi Beach OHT</p> <p>Latitude: 13.630622 Longitude: 74.669887 Elevation: 3.02m Accuracy: 3.2m Time: 02-27-2020 15:25 Note: OHT Kodi site, kundapur</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.	Partially Complied
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5	Pipes and other material stockpiled along the access roads	 <p>The left photograph shows a large coil of black pipes with a white sign in front that reads 'PIPE STOCKING HARD'. The right photograph shows a larger area with black pipes stacked in rows and blue pipes scattered in the foreground. Both images are dated '11/7-2014' in the bottom right corner.</p>	Provide a designated area for material stockpile away from access ways to maintain flow of the traffic and proper barricading is to be done for the stored material along with sign board	Partially complied
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6	Housekeeping near store room not maintained	 <p>Latitude: 13.63047 Longitude: 74.670185 Elevation: 84.22m Accuracy: 1.9m Time: 17-12-2019 13:06 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	The housekeeping near store room should be done properly	Not Complied
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7	Worker cutting steel without safety	 <p>Latitude: 13.630457 Longitude: 74.669705 Elevation: 92.52m Accuracy: 2.1m Time: 17-12-2019 12:47 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	Worker must wear face shield or safety glasses or goggles and protective hand gloves	Partially complied
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8	OHT Hallekote work site is barricaded except a small portion which is for material transportation	 <p>Latitude: 13.635018 Longitude: 74.70436 Elevation: 235.27m Accuracy: 5.3m Time: 17-12-2019 14:27 Note: Hallekote OHT</p> <p>Powered by NoteCam</p>	<p>Provide Corrugated metal sheets only to a portion adjacent to the houses in order to prevent entry of any person/animal into the work site.</p> <p>Loose materials should be disposed off to their landfills area</p>	Complied
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9	Steel bars coming out of the storage area posing a risk of injury to the workers near labour room	 <p>Latitude: 13.636012 Longitude: 74.7039 Elevation: 236.26m Accuracy: 4.6m Time: 17-12-2019 14:24 Note: Hallekote OHT</p> <p>Powered by NoteCam</p>	<p>Immediately remove the steel bars from the area and store it at a proper place.</p> <p>And proper housekeeping should be maintained after work at work sites</p>	Complied
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10	The distribution board provided for the clari-flocculator is found open during raining condition			<p>The distribution board should be kept closed and only authorised electrician is allowed to operate it. Necessary warning with distribution board number should be displayed on it for awareness of others</p> <p>The distribution board should be protected from weather. ELCB should be fixed on the DB for the safety of employees from electric shock.</p>	Not Complied
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11	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.		It should be replaced with another cable of required specifications and with no damage	Not Complied
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12	A small portion is left out of barricading	 <p>Latitude: 13.610837 Longitude: 74.759177 Elevation: 137.53m Accuracy: 2.3m Time: 17-12-2019 14:51 Note: Japti WTP</p> <p>Powered t</p>	The left out portion of barricading is to be done	Complied
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13	One side of the Clariflocculator Japti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator		One side Opening is required with proper channel/Gate/tubular rods.	Not Complied
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14	Hard Barricading has been completed as per the instructions near GL Water Reservoir at Japti WTP Site Kundapura		The remaining Hard Barricading is done near GL Water Reservoir at Japti WTP Site , Kundapura	Complied
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15	Stones are lying in the premises	 <p>Latitude: 13.613219 Longitude: 74.757898 Accuracy: 135.6m Time: 17-12-2019 14:54 Note: Japti WTP</p> <p>Powered by Not</p>	It should be either used or disposed off appropriately.	Not complied
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# Monthly Environmental Monitoring Report

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Project Number: 43253-027  
March 2020

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

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 (km<sup>2</sup>) 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:

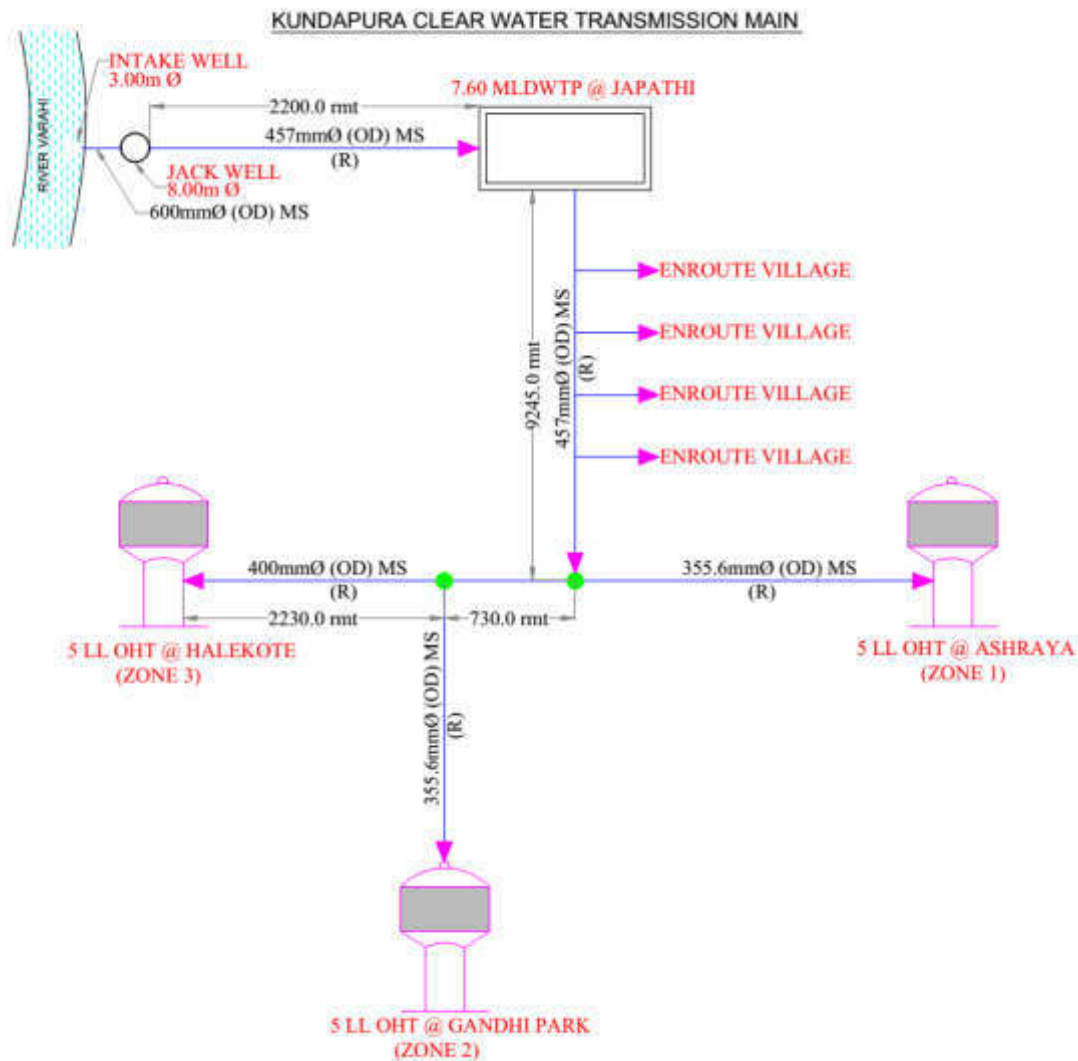
- (i) Best Urban Local Body in the year of 1996-1997;
- (ii) Best Urban Local Body Award in the 2009-2010;
- (iii) Second Best Practices Award in the year 2010 for Reduction of Nonrevenue Water Supply;
- (iv) Third Best Practices Award-2010 for Solid Waste Management (SWM) for providing excellent Municipal 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:

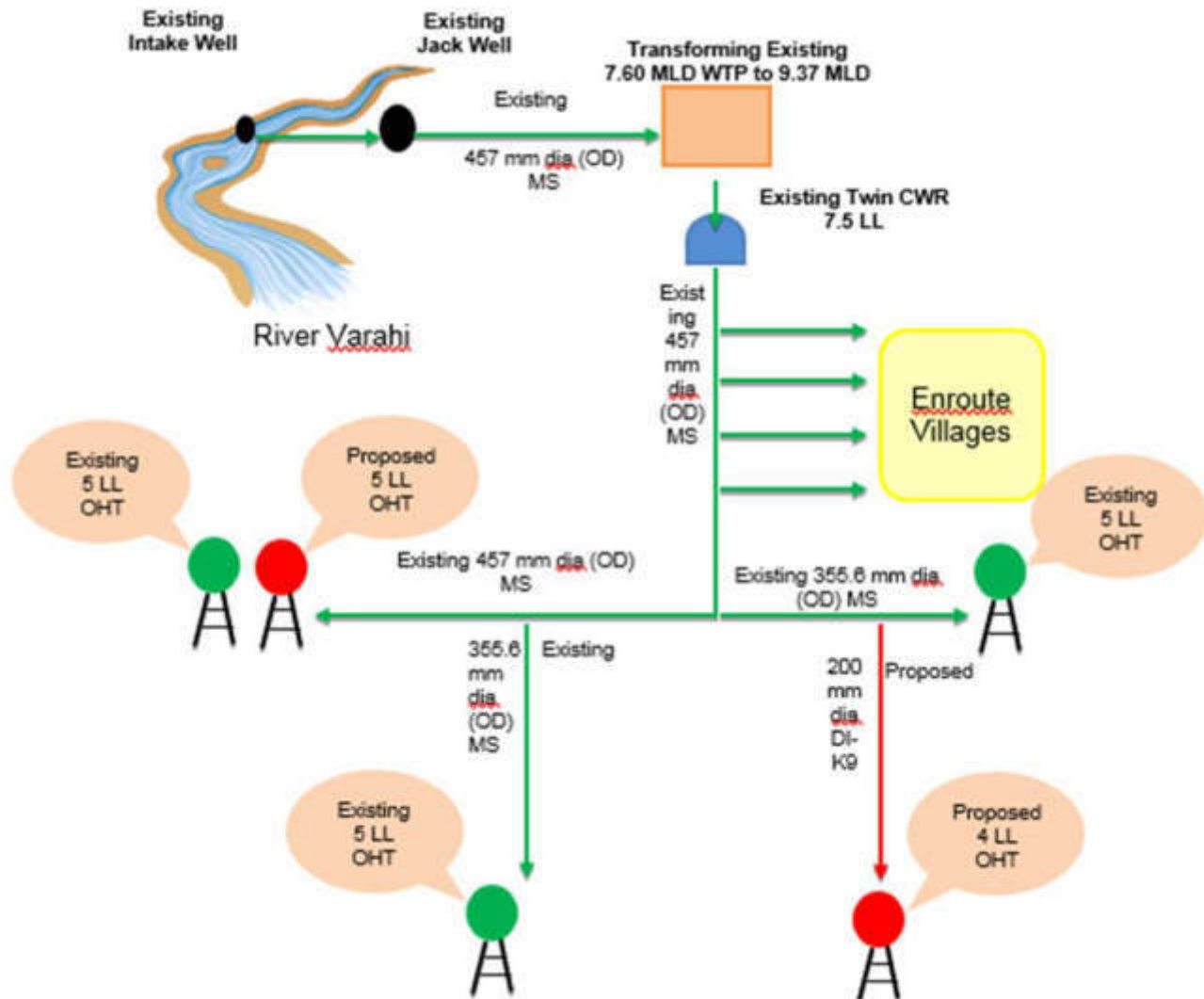
- (i) rehabilitation works and replacement of electromechanical equipment in Jack well at Jambu (Japthi village) to sufficiently supply 9.37 million liters per day (MLD) of raw water to the water treatment plant (WTP), and provision of a new diesel generator set for the un-interrupted power supply;
- (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.



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura	<b>Name of the Contractor:</b> Laxmi Civil Engineering Services Pvt,Ltd
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city : Kundapura</b>	<b>Name of SE/EE/AE of concerned division PIU :-</b> Mr.HarishWalmiki, AEE
<b>Date of monthly monitoring:</b> 04/03/2020	<b>Name of Environment, Health And Safety (EHS) Engineer :-</b> 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"> <li>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</li> <li>Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.</li> </ol>	Construction Contractor/ project implementation unit (PIU)/ Project Management Design and Construction Supervision Consultant (PMDSC)	<ol style="list-style-type: none"> <li>Certificate of Completion (Safeguards Compliance Orientation)</li> <li>Posting of Certification of Completion at worksites</li> <li>Posting of EMP at worksites.</li> </ol>	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"> <li>Contractor prepared SOPs.OHS plan and Activities are going on as per company EHS Policies.</li> <li>Complied Environmental, Health and Safety (EHS) Engineer appointed by contractor.</li> </ol>

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"> <li>1) Consult with PMU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;</li> <li>2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;</li> <li>3) Use tarpaulins to cover sand and other loose material when transported by trucks; and</li> <li>4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation</li> <li>5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and</li> <li>6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Location of stockpiles;</li> <li>b) Complaints from sensitive receptors;</li> <li>c) Heavy equipment and machinery with air pollution control devices;</li> <li>d) Certification that vehicles are compliant with Air Act</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Instructed to contracting agency to Spray water on exposed soil and stock piled mainly in commercial and residential area</li> <li>3) Complied</li> <li>4) Partially Complied.</li> <li>5) Complied</li> <li>6) Complied</li> </ol>
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"> <li>1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;</li> <li>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;</li> <li>3) Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed,</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Areas for stockpiles, storage of fuels and lubricants and waste materials;</li> <li>b) Number of silt traps installed along trenches leading to water bodies;</li> <li>c) Records of surface water quality inspection;</li> <li>d) Effectiveness of water</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Stockpiling of earth fill not found during the site visit</li> <li>2) Instructed to contracting agency to close all opened trenches Before rainy season</li> <li>3) Partially Complied - Spoil Management plan prepared by Contractor Annexure attached in Feb 2019 report and recommended to</li> </ol>

		<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 waterbodies 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 beendone 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"> <li>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;</li> <li>2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</li> <li>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</li> <li>4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Complaints from sensitive receptors;</li> <li>b) Use of silencers in noise-producing equipment and sound barriers; and</li> <li>c) Equivalent day and night time noise levels (Appendix 3)</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Complied</li> <li>3) Complied</li> <li>4) Complied</li> </ol>
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"> <li>1) Manage surplus soil, debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;</li> <li>2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Complaints from sensitive receptors;</li> <li>b) Worksite clear of hazardous wastes such as oil/fuel; and</li> <li>c) Worksite clear of any excess excavated earth, excess construction materials, and</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied. No excess excavated earth at work site.</li> <li>2) Complied - Contractor Coordinated with PIU / Kundapura TMC and surplus soils Disposed in Authorized landfill.</li> </ol>

	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/PMDSC 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) Restoration work is going on and when work gets completed, joint site inspection will be</p>
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						conducted and report / letter will be issued.
Utilities - existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	<ol style="list-style-type: none"> <li>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;</li> <li>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</li> <li>3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)</li> <li>4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly</li> <li>5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section</li> </ol>	Construction Contractor and PIU	<ol style="list-style-type: none"> <li>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</li> <li>b) Record to confirm that contingency services are provided and all damaged utilities are restored after the work</li> </ol>	Part of project cost	<ol style="list-style-type: none"> <li>1) Complied</li> <li>2) Complied contingency services are provided and restoration is going on after the work.</li> <li>3) Complied</li> <li>4) Complied</li> <li>5) Complied</li> </ol>
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ol style="list-style-type: none"> <li>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.</li> <li>2) Trees in the pipeline</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) PMU/PMD/CSC to report in writing the number of trees cut and planted.</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Complied. 6 trees got felled and Compensations were paid to the owners.  Attached as <b>Annexure 10 in the May 2019 report.</b> And also ADB Social safeguard team visited on 23/9/2019 to particular affected persons to provide</li> </ol>

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

		<p>provide alternative route, and ensure that public is informed about such traffic 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) MS tubular barricades are provided by Contractor at HaleKote OHT and Kodi OHT Site.</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>
Socio-Economic –	Impede the	1) Strictly follow the pipe	Construction	a) Complaints from	Cost for	1) Complied

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

	resources (religious, educational, health care etc.), access disruptions etc.,	<p>areas; material shall be brought to the site as and when required;</p> <p>2) Conduct work manually with small group of workers and less noise; minimize 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>		b) Public complaints	n of mitigation measures responsibility of contractor.	<p>2) Contractor conducting work manually for all possible works to minimize the 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	1) Employ local labor force to the maximum extent, if manpower is available; and	Construction Contractor	<p>a) Employment records;</p> <p>b) Records of sources of</p>	Cost for implementation of mitigation measures	1) Register maintained by contractor attached as



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

		<p>irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures</p> <p>4) Ensure that qualified first-aid can be provided at all 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&amp;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>audible back-up alarms;</p> <p>j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.</p> <p>k) Compliance to core labor laws (Appendix 2)</p>		<p>implement the mitigation measure when such deep trenches are to be executed.</p> <p>4) First aid box is available but not adequate as per standards. The equipped first-aid station not provided.</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) <b>H&amp;S</b> orientation training for workers not found during the work and proper documentation required need to be done</p> <p>10) Not Complied</p>
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		<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 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>11) Complied</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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		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 <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES</a> )				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<ol style="list-style-type: none"> <li>1) Provide protective shoring / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (&gt;1m);</li> <li>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.</li> <li>3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work;</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>a) Traffic Management Plan; and</li> <li>b) Complaints from sensitive receptors</li> </ol>	Cost for implementation of mitigation measures responsibility of contractor.	<ol style="list-style-type: none"> <li>1) Recommended contractor to implement the mitigation measure when such deep trench were executed.</li> <li>2) Complied</li> <li>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</li> <li>4) Complied</li> </ol>

		<p>4) Plan material and waste routes to avoid times of peak-pedestrian activities;</p> <p>5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps;</p> <p>6) Maintain regularly the 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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES</a>).</p>				<p>5) Complied</p> <p>6) Not complied- Register of Equipment and Vehicles maintenance certificates not 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 pipe execution work was in progress during inspection. Instructed contracting agency to keep necessary sign boards when pipe execution work starts.</p> <p>8) Not Complied.</p>
Work Camps and worksites	Temporary air and noise pollution from machine operation, water	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within	Construction Contractor	<p>a) Complaints from sensitive receptors;</p> <p>b) Drinking water and sanitation facilities</p>	Cost for implementation of mitigation measures	1) Complied.



	<p>pollution from storage and use of fuels, oils, solvents, and lubricants</p> <p>Unsanitary and poor living conditions for workers</p>	<p>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 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>		for employees	responsibility of contractor.	<p>2) Removal of vegetation minimized by selecting best alignment.</p> <p>3) Labor camps facilities provided by the Contractor 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 area has not been provided</p> <p>8) Gas Cylinder has been Provided by Contractor</p> <p>9) Complied</p>
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		<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 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>10) Not complied</p> <p>11) Complied</p> <p>12) NotComplied. 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) Monthly report submitted by Contractor.
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>

## Improvements for 24 x 7 Water Supply System for Town Municipal Council in Kundapura

### 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 should be improved by Contractor. January, February and March 2020 site specific EMP Monthly report with PIU letter has to be submitted from the contracting agency.

### Recommendation:-

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

S.No	Monitoring of Mitigation /Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Certificate of Completion (Safeguards Compliance Orientation)	<ul style="list-style-type: none"> <li><b>Register of Clearances required /status</b></li> </ul>	1) CRZ Clearance attached as <b>Annexures 2,3 &amp; 4 in June 2019 report</b> 2) Tree cutting permission from tree officer not provided yet.
2.	Posting of Certification of Completion at worksites	<ul style="list-style-type: none"> <li>If any Respective Project Site work completed - Certification of Completion will be provided at worksites on Information board.</li> </ul>	Within 3 day of work Completion
3.	Posting of EMP at worksites.	<ul style="list-style-type: none"> <li><b>Project Information board should also be in Kannada Language along with contact numbers for grievance Redressal</b></li> </ul>	Comply with in 15 days
4.	Location of stockpiles;	<ul style="list-style-type: none"> <li>To prepare the Google map of the Locations of identified stockpiles</li> </ul>	Comply with in 5 days
5.	Complaints from sensitive receptors;	<ul style="list-style-type: none"> <li><b>Complaints/Grievance Redressal Registers should be maintained at each work site.</b></li> </ul>	<b>Compiled and maintaining grievance registers at site</b>
6.	Heavy equipment and machinery with air pollution control devices;	<ul style="list-style-type: none"> <li><b>PUC certification for all vehicles/equipment used for/during construction and certification of users at site.</b></li> </ul>	Comply with in 7days
7.	Certification that vehicles are compliant with Air Act	<ul style="list-style-type: none"> <li><b>Register of Equipment and Vehicles maintenance certificates at site</b></li> </ul>	Comply with in 5 days
8.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	<ul style="list-style-type: none"> <li>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.</li> </ul>	Comply with in 7 days
9.	Number of silt traps installed along trenches leading to water bodies;	<ul style="list-style-type: none"> <li>Prepare list of silt traps installed along trenches</li> </ul>	If applicable in 8 days
10	Records of surface water quality inspection;	<ul style="list-style-type: none"> <li>If any surface water body is Present nearby project area during</li> </ul>	For every 3 months,



		the construction phase, the contractor will carry out environmental monitoring and testing for Surface water engaging NABL approved laboratory.	<b>Complied (Jan to March Monitoring).Annexure 2 in May 2019 report.</b>  <b>The Water quality monitoring is done in January 2020 and attached as Annexure-5c in Jan 2020 report</b>
11	Use of silencers in noise-producing equipment and sound barriers; and	<ul style="list-style-type: none"> <li>• <b>Only acoustic enclosures fitted DG set will be allowed at the construction site and camp sites.</b></li> <li>• 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.</li> <li>• <b>Barricading- Hard Barricade should be provided to protect from unauthorized access of common people</b></li> </ul>	Daily monitoring required at site during the work  Comply during the work.
12	Equivalent day and night time noise levels (Appendix 3)	<ul style="list-style-type: none"> <li>• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.</li> </ul>	For every 3 months, <b>Complied (Jan to March Monitoring). Annexure 2in May 2019 report. And informed contractors toconduct the noise test every 3 months.</b> The Noise level monitoring is done in January 2020 and attached as <b>Annexure-5b in Jan 2020 report</b>
13	Records of Air quality inspection	<ul style="list-style-type: none"> <li>• 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</li> </ul>	For every 3 months, <b>Complied (Jan to March Monitoring).</b> <b>Annexure-2</b> during the work. <b>Informed the contractors to conduct the air quality test every 3 months.</b> The Air quality monitoring is done in January 2020 and attached as <b>Annexure-5a in Jan 2020 report</b>
14	Worksite clear of hazardous wastes such as oil/fuel;	<ul style="list-style-type: none"> <li>• Used oil generated from vehicles/DG set at plant/camp site will be collected in closed containers and sold to MoEF&amp;CC/SPCB approved used oil recyclers.</li> </ul>	Daily monitoring required at site during the work

		<ul style="list-style-type: none"> <li>No solid or hazardous wastes (such as oil contaminated waste) will be dumped in drains or in open areas</li> </ul>	Comply during the work
15	solid waste such as removed concrete, wood, packaging materials, empty containers	<ul style="list-style-type: none"> <li>Burning of wastes will not be allowed.</li> <li>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.</li> <li>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.</li> </ul>	<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"> <li><b>Maintain copy of Section-wise list of utilities to be shifted / disturbed.</b></li> </ul>	<p>Partially Complied.</p> <p>Communication letter maintained by PIU <b>attached as Annexures 3&amp;4 in the May 2019 report.</b> Contactor should also have copy with him <b>Section-wise list of utilities to be shifted</b> 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"> <li><b>Register of damaged infrastructure</b></li> <li><b>Register of reinstated infrastructure</b></li> </ul>	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"> <li><b>Maintain separate file with all relevant documents of tree cutting, felling permission and Compensation.</b></li> </ul>	<b>Complied attached as Annexures 10 in the May 2019 report</b>
19	Number of signage's placed at project location.	<ul style="list-style-type: none"> <li><b>Maintain the signages placed at project location</b></li> </ul>	Comply with in 5 days
20	Visual site observations	<ul style="list-style-type: none"> <li><b>Register of official visiting the site and directions given if any at each site.</b></li> </ul>	Comply with in 3 days
21	Employment records;	<ul style="list-style-type: none"> <li><b>Attendance registers of labour at each site.</b></li> </ul>	<b>Complied and attached as Annexure 7 in the May 2019 report and maintaining the attendance register.</b>
22	Records of sources of materials; and	<ul style="list-style-type: none"> <li><b>Maintain separate record of quantity of materials used and with all authorized certificates of suppliers</b></li> </ul>	Comply with in 5 days
23	Compliance to core labor laws (See Appendix 2 of this IEE)	<ul style="list-style-type: none"> <li><b>Register of payment to the workers</b></li> </ul>	Comply Immediately
24	Site-specific OHS Plan;	<ul style="list-style-type: none"> <li><b>Site-specific Occupational Health and Safety Plan</b></li> </ul>	Comply with in 4 days

25	Equipped first-aid stations;	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Trained first aid personal will be available at the construction site.</li> <li>• Emergency numbers will be displayed prominently at camp and construction site.</li> <li>• 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.</li> <li>• The contractor shall identify nearby hospital, which could be used in case of emergency.</li> <li>• 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.</li> </ul>	Comply with in 7 days
26	Medical insurance coverage for workers;	<ul style="list-style-type: none"> <li>• <b>File of insurance as per 13.1 PCC with contents showing the validity.</b></li> <li>• Health Camps and Check -up should be conducted for the workers</li> <li>• <b>Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.</b></li> </ul>	Comply with in 12 days
27	Number of accidents;	<ul style="list-style-type: none"> <li>• <b>Accident and Incident register will be maintained by Contractor at each work site.</b></li> </ul>	<b>Complied. Attached in Annexure 1 in Aug 2019</b>
28	Supplies of potable drinking water;	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<b>Complied</b>
29	Clean eating areas where workers are not exposed to hazardous or noxious substances;	<ul style="list-style-type: none"> <li>• Since a common mess is not provided/operated, separate space for cooking and eating shall be provided.</li> </ul>	Comply with in 4 days
30	Record of H&S orientation trainings personal protective equipment;	<ul style="list-style-type: none"> <li>• <b>Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register</b></li> <li>• <b>The list of PPEs to be provided.</b></li> </ul>	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"> <li>• Safety vests will be used by workers whenever on the construction site.</li> <li>• Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations</li> <li>• Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These</li> </ul>	Comply with in 5 days

		<p>shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Welder's protective eye-shields will be provided to workers who are engaged in welding works.</li> <li>• 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.</li> <li>• Proper moving guards will be provided at all moving machines, like motors and pulleys.</li> <li>• All workforces on the construction site shall be provided with identity cards.</li> <li>• High risk areas are to be provided with warning signage.</li> </ul>	
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"> <li>• <b>The contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. Guidelines.</b></li> </ul>	Comply with in 10 days
33	Records of chance finds	<ul style="list-style-type: none"> <li>• Concerned records should be maintained if any chance find transpires.</li> </ul>	Comply immediately as soon as chance find occurs.
34	Availability and competency of appointed supervisor	<ul style="list-style-type: none"> <li>• Certified and Experienced supervisor will be appointed by Contractor</li> </ul>	Contractor must appoint certified and Experienced supervisor.
35	Monthly report	<ul style="list-style-type: none"> <li>• <b>Contractor submitted Monthly report to PIU &amp; PMU</b></li> </ul>	January 2020 Monthly report has to be submitted
36	Camp has been vacated and restored to pre-project conditions	<ul style="list-style-type: none"> <li>• All construction related structures not relevant to operation and maintenance (O&amp;M) are removed; and</li> <li>• Worksite clean-up must be satisfactory.</li> </ul>	Will be Compiled Within 2 days of Work Completion



**MAHAMMAD RAPHIYODDIN SHAPHIYODDIN MALIK**  
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## **ANNEXURE -1**


### **STATUS OF SITE OBSERVATIONS VISITED ON FEB 27<sup>th</sup> 2020**

<b>S.No</b>	<b>Observation</b>		<b>Recommendation</b>	<b>Status</b>
<b>a</b>	Material storage at kodi OHT, Kundapura	 <p>Latitude: 13.630724 Longitude: 74.669453 Elevation: 2.59m Accuracy: 3.2m Time: 02-27-2020 15:27 Note: OHT Kodi site, kundapura</p>	<p>Material at kodi OHT site were properly stored and bunded</p> <p>Instructed contractor agency to dispose all loose earth stored to dumping yard</p>	Partially complied




<b>b</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	 <p>Latitude: 13.6305 Longitude: 74.67027 Elevation: -0.72m Accuracy: 4.3m Time: 02-27-2020 15:23 Note: OHT Kodi site, kundapura</p> <p>Latitude: 13.630577 Longitude: 74.669838 Elevation: -0.38m Accuracy: 4.3m Time: 02-27-2020 15:21 Note: OHT Kodi site, kundapura</p>	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	<p>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.</p>		<p>One side Opening is required with proper channel/Gate/tubular rods.</p>	<p>Partially complied</p>
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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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<b>f</b>	Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site,Halekote	 <p>Latitude: 13.635578 Longitude: 74.704483 Elevation: 6.66m Accuracy: 9.6m Time: 02-27-2020 15:59 Note: OHT halekote site, kundapura</p> <p>Powered by NoteCam</p>	Hard Barricading is to be done at river side near Water Tank in order to prevent fall of any person. Proper bathroom and washing platform need to be provided.	Not complied
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<b>g</b>	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 hallekote site, kundapuram</p> <p>Powered by NoteCam</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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## ANNEXURE-2

### SITE VISIT OBSERVATIONS VISITED ON 23<sup>rd</sup> JANURAY 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>	Complied



2	Material storage area not barricaded and bunding is done partially	 <p>Latitude: 13.630742 Longitude: 74.669433 Elevation: 81.52m Accuracy: 1.7m</p> <p>Latitude: 13.63073 Longitude: 74.669569 Elevation: -2.81m Accuracy: 3.2m Time: 02-27-2020 15:27 Note: OHT Kodi site, kundapura</p> <p>Powered by NoteCam</p>	Material storage area is to be barricaded and proper bunding is to be done around the stored material	Complied
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3	Registers maintained at site	 <p>The image shows three registers placed on a patterned cloth outdoors. The registers are labeled 'LABOUR REGISTER', 'GRIEVANCE REGISTER', and 'ACCIDENT AND INCIDENT REGISTER'. Each register has a 'Rajguru' logo. The registers are placed on a cloth with a green and yellow pattern. The background shows a dirt ground and a person's hand.</p>	Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Complied
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4	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>	Partially complied
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5	Housekeeping at work Halikote OHT		Materials after use must be shifted to their yards. Proper housekeeping should be done at work site to avoid injuries	Not complied
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6	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Not 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 SITE OBSERVATIONS VISITED ON DECEMBER 2019

S.No	Observation		Recommendation	Status of Observations
1	PPEs at work site	 <p>Latitude: 13.630407 Longitude: 74.669418 Elevation: 86.12m Accuracy: 7.6m Time: 17-12-2019 12:45 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	Workers wearing PPEs at kodi OHT site and instructed to wear PPEs regularly at working sites	Complied

2	Project information board at kodi OHT Site to be provided in English as well			Project information board in English must be provided.  Contact number must be provided for emergency and for public complaints in English and Kannada language as well	Complied
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3	Material storage area not barricaded and not provided sign board at Kodi OHT at material stocks		Material storage area is to be barricaded properly and sign boards must be provide at stock yard	Complied
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4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause vehicular accidents by passing traffic	 <p>Latitude: 13.630648 Longitude: 74.669873 Elevation: 86.02m Accuracy: 1.8m Time: 17-12-2019 12:59 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p> <p>Latitude: 13.630622 Longitude: 74.669887 Elevation: 3.02m Accuracy: 3.2m Time: 02-27-2020 15:25 Note: OHT Kodi site, kundapur</p> <p>Powered by NoteCam</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.	Partially Complied
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5	Pipes and other material stockpiled along the access roads	 <p>The left photograph shows a large coil of black pipes with a sign that reads 'PIPE STOCKING HARD'. The right photograph shows a larger area with black pipes stacked in neat rows and blue pipes lying on the ground in the foreground. Both areas are surrounded by trees and vegetation.</p>	Provide a designated area for material stockpile away from access ways to maintain flow of the traffic and proper barricading is to be done for the stored material along with sign board	Partially complied
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6	Housekeeping near store room not maintained	 <p>Latitude: 13.63047 Longitude: 74.670185 Elevation: 84.22m Accuracy: 1.9m Time: 17-12-2019 13:06 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	The housekeeping near store room should be done properly	Not Complied
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7	Worker cutting steel without safety	 <p>Latitude: 13.630457 Longitude: 74.669705 Elevation: 92.52m Accuracy: 2.1m Time: 17-12-2019 12:47 Note: Kodi Beach OHT</p> <p>Powered by NoteCam</p>	Worker must wear face shield or safety glasses or goggles and protective hand gloves	Partially complied
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8	OHT Hallekote work site is barricaded except a small portion which is for material transportation	 <p>Latitude: 13.635018 Longitude: 74.70436 Elevation: 235.27m Accuracy: 5.3m Time: 17-12-2019 14:27 Note: Hallekote OHT</p> <p>Powered by NoteCam</p>	<p>Provide Corrugated metal sheets only to a portion adjacent to the houses in order to prevent entry of any person/animal into the work site.</p> <p>Loose materials should be disposed off to their landfills area</p>	Complied
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9	Steel bars coming out of the storage area posing a risk of injury to the workers near labour room	 <p>Latitude: 13.636012 Longitude: 74.7039 Elevation: 236.26m Accuracy: 4.6m Time: 17-12-2019 14:24 Note: Hallekote OHT</p> <p>Powered by NoteCam</p>	<p>Immediately remove the steel bars from the area and store it at a proper place.</p> <p>And proper housekeeping should be maintained after work at work sites</p>	Complied
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10	The distribution board provided for the clari-flocculator is found open during raining condition				<p>The distribution board should be kept closed and only authorised electrician is allowed to operate it. Necessary warning with distribution board number should be displayed on it for awareness of others</p> <p>The distribution board should be protected from weather. ELCB should be fixed on the DB for the safety of employees from electric shock.</p>	Not Complied
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11	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.		It should be replaced with another cable of required specifications and with no damage	Not Complied
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12	A small portion is left out of barricading		The left out portion of barricading is to be done	Complied
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13	One side of the Clariflocculator Japti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator	 <p>Latitude: 13.61083 Longitude: 74.759057 Elevation: 142.73m Accuracy: 2.2m Time: 17-12-2019 14:51 Note: Japti WTP</p>	One side Opening is required with proper channel/Gate/tubular rods.	Not Complied
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14	Hard Barricading has been completed as per the instructions near GL Water Reservoir at Japti WTP Site Kundapura	 <p>Latitude: 13.61086 Longitude: 74.75881 Elevation: 130.63m Accuracy: 1.8m Time: 17-12-2019 14:54 Note: Japti WTP</p> <p>Powered by NoteCam</p>	The remaining Hard Barricading is done near GL Water Reservoir at Japti WTP Site , Kundapura	Complied
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15	Stones are lying in the premises	 <p>Latitude: 13.613219 Longitude: 74.757898 Accuracy: 135.6m Time: 17-12-2019 14:54 Note: Japti WTP</p> <p>Powered by Not</p>	It should be either used or disposed off appropriately.	Not complied
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# **ANNEXURE 4**

**ADB Visit on March 2<sup>nd</sup> to 5<sup>th</sup> 2020 to Kundapura, Udupi and Mangalore**  
**Locations for Site Inspection**

**Kundapura Site Visit on 4<sup>th</sup> March 2020**









## Udupi Site Visit on 4<sup>th</sup> March 2020









## Mangalore Site Visit on 5<sup>th</sup> March 2020







# Monthly Environmental Monitoring Report

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Project Number: 43253-027  
March 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 km<sup>2</sup> 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 km<sup>2</sup> area by another 245 km with 8,000 units of manholes.

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

Sewerage network extended to adjoining areas of old city and to other areas in Mangalore City Corporation (MCC) boundary covering 50.60 km<sup>2</sup>. Overall 60% of Mangalore, 75.60 km<sup>2</sup>, 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 km<sup>2</sup>. West district consists of 6 zones (city center of Mangalore) covers 30.82 km<sup>2</sup>. South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km<sup>2</sup>. East district consists of 1 zone (Pachanady, Bondel and Shakatinagara) covers 18.78 km<sup>2</sup>.

**Table 1: Salient Features of Existing Sewerage System in Mangalore**

Location	12°87'N Latitude 74°88'E Longitude
Area	132.45 km <sup>2</sup>
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
<b>Existing Underground Drainage (1961 Scheme) by Public Health Department</b>	
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 <sup>2</sup>
Designed Population	2,00,000 for the year 1991
<b>Extension of Underground drainage system (1974) by KUWSDB and MCC</b>	
Underground drainage Network	245 km
Total Number of Manholes	8000
<b>Underground drainage system (2005) under KUDCEMP by KUIDFC</b>	
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, km<sup>2</sup> = square kilometer, UASB = up-flow anaerobic sludge blanket.

### 3. The proposed subproject:

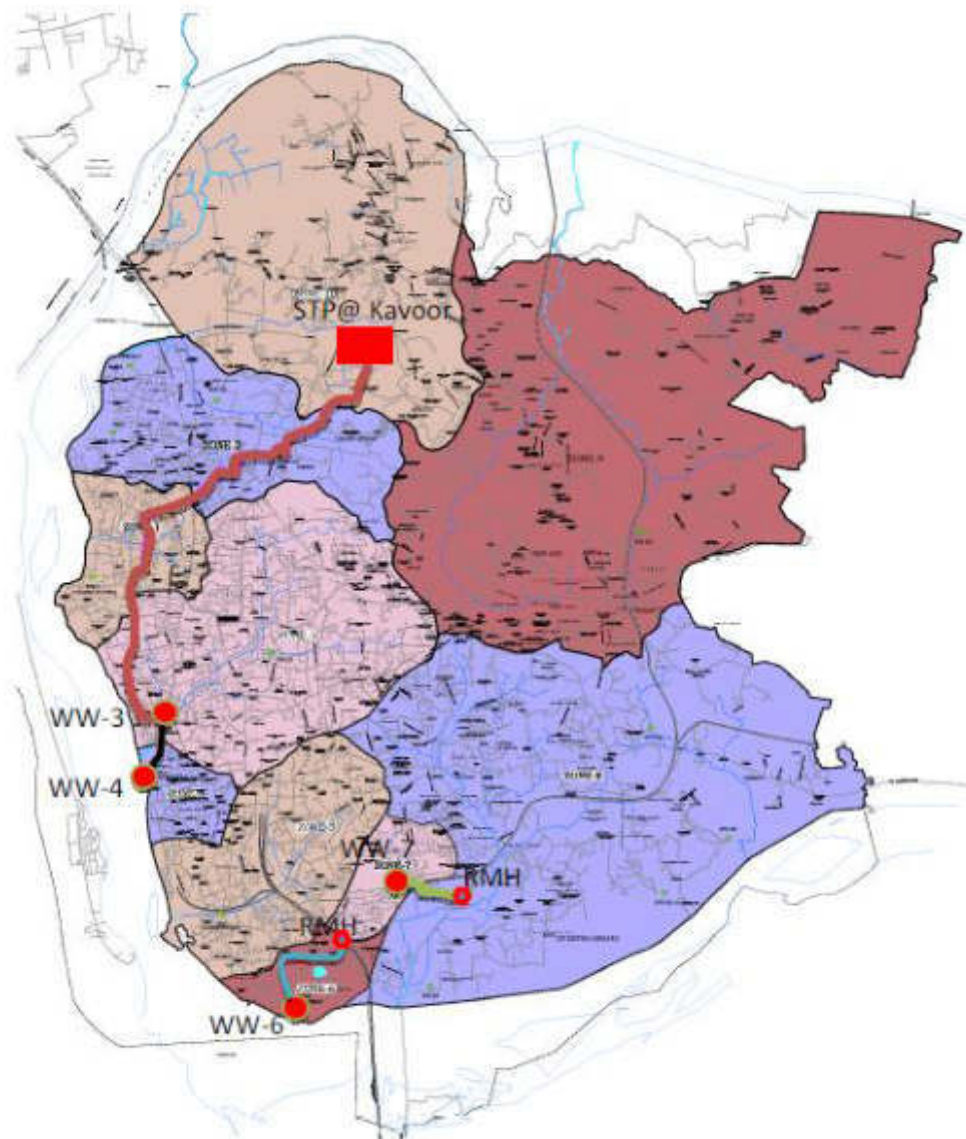
Under this subproject, it is proposed to replace existing sewage pumping mains, which are damaged, undersized and/or choked up in sewerage zones 3, 4, 6 and 7.

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"> <li>(i) From Kudroli wet well 3 to Kavoor STP: 7.65 km length and 1,100 mm diameter</li> <li>(ii) From Kandathpalli wet well 4 to Kudroli wet well 3: 0.95 km length and 900 mm diameter</li> <li>(iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate: 1.7 km length and 450 mm diameter</li> <li>(iv) From Jeppu Bappal wet well 7 to Ridge manhole near Yekkur, inside old STP: 1.1 km length and 450 mm diameter</li> </ul>	<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.

<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infra Tech Pvt, Ltd.,
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 05/03/2020	<b>Name of Environment, Health And Safety (EHS) Engineer :-</b> 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"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>4. Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ul style="list-style-type: none"> <li>Site inspection and record verification; - Done.</li> <li>Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done</li> <li>Site specific Occupational Health and Safety (OHS) plan;</li> <li>Spoil and waste management plan; and</li> <li>Complaints from sensitive receptors and public.</li> </ul>	Good construction practice to be followed by contractor – no additional costs	<ol style="list-style-type: none"> <li>1. Maintaining daily work records <b>Attached in Jan 2020 annexure 5 a &amp; b</b></li> <li>2. Complied. <b>Attached in Sep 2019 annexure 3</b></li> <li>3. Complied and PPEs are provided to workers on site. <b>Attached in annexure Sep 2019 1.v</b></li> <li>4. Contractor maintained registers for</li> </ol>



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. And instructed contracting agency to put hard barricades.</p> <p>6. Contractor maintained register for damaged infrastructure. Attached as <b>Annexure-11</b> in <b>May - 2019 report</b>. 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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>				<p>provided.</p> <p>9. Typical site layout plan not prepared</p> <p>a) Barricading and security personals are provided on working 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><b>11</b> 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. <b>Attached as Annexures-2, 3, 4 &amp; 5 in May - 2019 report</b></p> <p>12 Work is in progress and Recommended contractors to provide diversion of drains and provision of water tanker</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>whenever and wherever required on site.</p> <p>13 Work in progress and no such damage and restoration found in this month during site visit.</p> <p>14 Work in progress and no such damage and restoration happened in this month.</p> <p>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 yard location on</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>google map which is complied. <b>Attached in Sep 2019 annexure 4</b></p> <p>17 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is marked on Google map. <b>Attached in Sep 2019 annexure 4</b></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. <b>Attached in Jan 2020 in</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						<b>annexure 4</b>
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> <p>30. Carry out air quality monitoring.</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 Complied</p> <p>27 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 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
						Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	<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 jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and</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 minimized by using construction equipment by</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles				<p>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>
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>	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 in progress and no such stockpiles found</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<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> <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</p>				<p>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 provide storage yard if fuel stored in bulk.</p> <p>41 Complied Followed by contracting</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		is not blocked / disturbed during the work				agency  42 Complied  Followed by contracting agency
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	<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> <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</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 Complied-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 Management Plan prepared by contractor needs to be updated.</p> <p>47 Complied</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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>Followed by contracting agency</p> <p>48 Complied</p> <p>49 Complied</p> <p>50 Construction 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 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</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> <p>53 Complied.</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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 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,</p>				<p>54 Complied.</p> <p>55 Complied. <b>(Attached in june 2019)</b></p> <p>56 Complied.</p> <p>Work is carried out in low traffic hours in day time and; prior information given about the schedule of the work.</p> <p>57 Complied <b>(Attached in June 2019) and</b> no such work are executing near residential areas during site visit</p> <p>58 Caution board provided at work site. Entry restriction information; competent</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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>official's name and contact for public complaints provided. Recommended all sign board must be Retro reflective <b>(Attached in Sep 2019 annexure 4 g, h, i, j, k and l)</b></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 <b>(Attached in Sep 2019 annexure 4 g, h, i, j, k and l)</b></p>
Nuisance/ disturbance to sensitive areas	Schools, hospitals and religious places) due construction work in the proximity (within 250 m	<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</p>	Construction Contractor	Complaints from sensitive receptors  Work program	Good construction practice to be followed by contractor – no	61 Complied  Followed by contracting

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
	of such place)	<p>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>			additional costs	<p>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 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"> <li>• Number of walkways, wooden planks and foot bridges;</li> <li>• Complaints from public;</li> <li>• Spoil Management Plan; and</li> <li>• Traffic Management plan.</li> </ul>	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. <b>(Attached in june 2019 )</b>
		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 <b>(Attached in June 2019)</b>
		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(<b>Attached in June 2019</b>) work schedule not provided.</p> <p>71 Complied. Recommended all project information board and sign board must be Retro reflective (<b>Attached in annexure 4 g, h, i, j, k and l</b>)</p> <p>72 Site-Specific Traffic Management Plan Prepared by contractor is not adequate and to get it updated again. <b>Recommended to comply (Attached in June 2019)</b></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&amp;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. (<b>Attached Sep 2019 in annexure 1.v</b>)</p> <p>77 PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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>82. Secure all installations from unauthorized intrusion and</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 taken for 40 Unskilled and for 10 semiskilled workers</p>

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 &amp; 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> <p>90 Signage are</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 <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2BAnd%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2BAnd%2BSafety.pdf?MOD=AJPERES</a>).</p>				<p>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. <b>(Attached in Sep 2019 annexure 1.v)</b></p> <p>92. Not Complied</p>
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</p> <p>94. Plan material and waste routes to avoid times of peak-</p>	Construction Contractor	<ul style="list-style-type: none"> <li>• Traffic Management Plan</li> <li>• Complaints from public</li> </ul>	Good construction practice to be followed by contractor – no additional costs	<p><b>93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.</b></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</p>

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		<p>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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>				<p>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 <b>but not maintained record of joint inspection.</b></p> <p>96 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
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), 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 head or as per the relevant</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.</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>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 persons;</p>				<p>105. Not Complied.</p> <p>106. 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>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 has to conduct HIV AIDS Awareness Training programme. Contracting agency has not submitted March 2020 Site specific EMP report with PIU letter.

### Recommendation:-

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

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Site inspection and record verification	<ul style="list-style-type: none"> <li>Site inspection Register must be maintained</li> </ul>	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"> <li>Institutional setup</li> <li>List of PPE provided and standards followed, Site specific OHS Equipped first aid station, Medical insurance. Hospitals recognized in emergency.</li> <li>Health Camps and Check -up should conducted for the workers</li> <li>Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor.</li> <li>Electrical measures safety</li> <li>Fire safety measures should be reflect in OHS plan.</li> <li>Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register</li> </ul>	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"> <li>Type of waste generated (Solid and Hazardous)</li> <li>Quantity of different waste generated at site</li> <li>List and type of garbage bins provided</li> <li>Time of waste collection</li> <li>Location of Waste disposal site identified consultation with PIU</li> <li>If private land NOC from owner.</li> <li>Location of Waste disposal site mark on google map.</li> <li>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</li> </ul>	Comply with in 15 days

		<u>Solid Waste (Handling and Management) Rules, 2016.</u>	
5.	Complaints from sensitive receptors and public.	<ul style="list-style-type: none"> <li>Complaints register must be maintained at each site.</li> </ul>	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"> <li>Section-wise list of utilities to be shifted/ disturbed</li> <li>Submission Letters of Section-wise list of utilities to be shifted/ disturbed to PIU</li> <li>Plan to shift and contingency steps to be taken</li> </ul>	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"> <li>Identify the location consultation with PIU</li> <li>Letters of communications and finalization location</li> <li>Mark the location on google map.</li> </ul>	Complied - letter for finalization of the disposal site. The <b>letters</b> 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"> <li>Maintain Copy of Certification of authorized material sources</li> </ul>	Comply with in 5 days
10.	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	<ul style="list-style-type: none"> <li>During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory</li> </ul>	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
11.	Site observations	<ul style="list-style-type: none"> <li>Maintain Register for site observation at site</li> </ul>	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"> <li>During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory</li> </ul>	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
13.	Work Program Review	<ul style="list-style-type: none"> <li>Work plan must be prepared and review</li> </ul>	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	<ul style="list-style-type: none"> <li>List of walkways, wooden planks and foot bridges provided with location must be maintained</li> </ul>	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"> <li>Type and quantity of waste generated will be waste generated.</li> <li>Reuse of quantity of waste generated in any other projects or any other place</li> <li>Amount of waste disposed in identified disposal areas consultation with PIU</li> <li>If private land NOC from owner.</li> <li>Location of Waste disposal site mark on google map</li> </ul>	<p>Spoil Management Plan submitted – not adequate 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"> <li>Attendance registers of labour at each site.</li> <li>Register of payment to the workers at each site.</li> </ul>	<p><b>Attendance register is maintained. but Register of payment to the workers Not maintained</b> Comply with in 5 days</p>
18.	Site specific OHS Equipped first aid station	<ul style="list-style-type: none"> <li>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.</li> <li>Trained first aid personal will be available at the construction site.</li> <li>Emergency numbers will be displayed prominently at camp and construction site.</li> <li>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.</li> <li>The contractor shall identify nearby hospital, which could be used in case of emergency.</li> </ul> <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>Comply with in 10 days (when work is in progress all this facilities must be provided)</p>
19.	Potable water supply and clean eating area.	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Complied</p>

20.	PPE and medical insurance	<ul style="list-style-type: none"> <li>• The Contractor shall provide and ensure enforcement with zero tolerance the following:</li> <li>• Safety vests will be used by workers when on the construction site.</li> <li>• Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/unloading operations</li> <li>• 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.</li> <li>• 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.</li> <li>• Welder's protective eye-shields will be provided to workers who are engaged in welding works.</li> <li>• 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.</li> <li>• Proper moving guards will be provided at all moving machines, like motors and pulleys.</li> <li>• All workforces on the construction site shall be provided with identity cards.</li> <li>• High risk areas are to be provided with warning signage.</li> </ul>	Complied
21.	List of selected sites. Written consent of land owner	<ul style="list-style-type: none"> <li>• If any Activity related to project carrying out in private land written consent of land owner (NOC) must be taken.</li> </ul>	If any, Comply with in 20 days



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


## Annexure -1

### Status of Site Observations for the month of 29<sup>th</sup> February 2020

S.N o	Observation		Recommendation	Status
a	Proper barricading and Cautionary Sign.		<p>Barricading is done at kunttikana site</p> <p>Instructed contracting agency to put hard barricading continuous without gap.</p>	Partially complied




<b>b</b>	Flag man at kunttikanna Work location		<p>Flagman provided t both side of the road to maintain traffic and avoid any accident and incident</p> <p>Again instructed to follow it properly</p>	Partially complied
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c	PPEs at work locations		<p>All workers are wear PPEs during site visit at kuttikana and kandatpalli locations</p> <p>Instructed to follow it properly 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>	Complied
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<b>d</b>	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Partially complied
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e	<p>Gas stove is being used for cooking food</p>	 <p>The top photograph shows a cluttered kitchen area with a gas stove, various containers, and laundry hanging on the wall. The bottom photograph shows a close-up of a white electrical switchboard mounted on a brick wall, with loose wires and a red cloth hanging nearby.</p>	<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>	<p>Not complied</p>
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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>	Partially complied
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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 -2

### Status of Site Observations for the month of 20<sup>th</sup> January 2020


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

<b>b</b>	PPEs at work locations and hard barricading at konchady loaction		<p>All workers are wearing PPEs during site visit at konchady location</p> <p>Hard barricading should be maintained at work site</p>	Partially complied
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<b>c</b>	Safety helmets jackets, shoes and safety ear plug for drivers	 A photograph showing a yellow and black CASE roller paving a road. The roller is moving from left to right, leaving a fresh layer of dark gravel behind it. A person in a blue shirt and brown pants stands near the roller. In the background, there are buildings and palm trees under a clear sky.	Safety helmets jackets, shoes and safety ear plug must be weared by drivers during working at site	
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<b>d</b>	Sign boards and hard barrication at work site		Work in progress sign board should be kept and hard barricading must be done during road restoration work to avoid public entrance to carry safe work	Partially complied
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<b>d</b>	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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<b>g</b>	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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<b>h</b>	Sign Boards are not properly visible from the distance		Retro reflective sign boards with legible matter are to placed so that it may be visible from the considerable distance for the fast moving vehicles	Partially complied
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## Annexure -3

### Site Observations for the month of 19<sup>th</sup> December 2019

S.No	Observation		Recommendation	Status of observation
a.	PPEs at work locations		<p>All workers are wearing PPEs during site visit at kuttikana and kandatpalli locations</p> <p>Instructed to follow it properly 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>	<p>Complied</p> <p>Drinking water and 1nos Mobil toilets to be provided for 10nos workers at work site</p>

b	Project information board at work matadkani site	 <p>Latitude: 12.882412 Longitude: 74.82842 Elevation: 99.05m Accuracy: 2.2m Time: 19-12-2019 16:02 Note: Matatkani pipe laying</p>	Provided information board at matadkani work site	Project at Complied
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<b>c</b>	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours  Rest room for workers should be separate	Not complied
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d	First Aid Box is not adequate	 <p>Latitude: 12.914864 Longitude: 74.877576 Accuracy: 1700.0m Time: 19-12-2019 16:50 Note: Shakti Nagar Labour Camp</p> <p>Powered by NoteCam</p>	First Aid Box with adequate materials as specified by ADB is to be provided at labour camp.	Not complied
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e	Loose electrical wires found		Electrical wires should be properly fitted with pipes and plugs are to be used instead loose connections.	Not complied
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f	Sign boards found and proper hard barricading	 <p>Latitude: 12.882322 Longitude: 74.828388 Elevation: 95.45m Accuracy: 2.1m Time: 19-12-2019 16:02 Note: Matatkani pipe laying</p> <p>Powered by NoteCam</p>	Proper sign boards are to be placed at open trench with Retro reflective sign boards and with hard barricading at matatkani site	Not complied
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h	Project Information Board is not proper	 <p>Latitude: 12.882412 Longitude: 74.82842 Elevation: 99.05m Accuracy: 2.2m Time: 19-12-2019 16:02 Note: Matatkali pipe laying</p>	<p>Project information board, Go slow boards, work in progress board is provided by contracting agency</p> <p>But project information board, Go slow boards, work in progress board is to be provided Retro reflective as per instructions</p>	Partially complied
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i	Fire Extinguisher at shakinagara labour camp site	 <p>Latitude: 12.908873 Longitude: 74.876535 Elevation: 133.07m Accuracy: 1.9m Time: 19-12-2019 16:52 Note: Shakti Nagar Labour Camp</p> <p>Powered by NoteCam</p>	Provided Fire Extinguisher at shakinagara labour camp and instructed safety person to keep one Fire Extinguisher at all work site for any emergency	Partially complied
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# **ANNEXURE 4**



**ADB Visit on March 2<sup>nd</sup> to 5<sup>th</sup> 2020 to Kundapura, Udupi and Mangalore**  
**Locations for Site Inspection**

**Kundapura Site Visit on 4<sup>th</sup> March 2020**









## Udupi Site Visit on 4<sup>th</sup> March 2020







## Mangalore Site Visit on 5<sup>th</sup> March 2020








## Monthly Environmental Monitoring Report

Project Number: 43253-027 March 2020

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

Package No. 02MNG02

Prepared by



DRS INFRATECH PVT LTD



<b>Karnataka Integrated Urban Water Management Investment Program</b>	
<b>Name of the Work:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	<b>Name of the Contractor:</b> DRS Infratech Pvt Ltd.
<b>Package No:</b> Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
<b>Name of the city :</b> Mangalore	<b>Name of SE/EE/AE Of concerned division PIU :-</b> AE - Mr. Shiv Kumar
<b>Date of monitoring:</b> 24/03/2020	<b>Name of Environment, Health and Safety (EHS);</b> Mr. Madhukar Shetty S

REV	Date	Prepared By	Checked By	For Approval
004		MADHUKAR SHETTY	RAKESH SUVARNA	Submission Purpose

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

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Construction Impacts	<ul style="list-style-type: none"> <li>Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and</li> <li>Occupational hazards which can occur to workers and public during work.</li> </ul>	<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"> <li>Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles;</li> <li>Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing);</li> <li>Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work;</li> <li>Details of materials at each site (type and quantity);</li> </ol>	Construction Contractor	<ol style="list-style-type: none"> <li>Daily maintaining the Labor work report and machinery report. <b>Attached Annexure 01</b></li> <li>Adopted.</li> <li>Adopted. PPEs are provided workers on site. <b>Attached Annexure 02</b></li> <li>Materials details registers maintained at site.</li> </ol>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>5. Near excavated area building and infrastructure not found and also excavated area fully hard barricaded done.</p> <p>6. Debris disposed specified place and also maintained register for damaged infrastructure.</p> <p>7. Daily work plan prepared and adopted accordingly at site.</p> <p>8. Necessary staffs are deployed and always available at site.</p> <p>9. Typical site layout plan prepared and also properly maintained.</p>

Daily





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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><b>The following should be included in the site layout plan:</b></p> <ul style="list-style-type: none"> <li>a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone;</li> <li>b) Location of temporary stockpiles and provision of bunds;</li> <li>c) Separation of stockpiles areas with worker's/vehicle movement paths to avoid disturbing the stockpiled soil;</li> <li>d) Wetting of soil to arrest dust generation by sprinkling water; and</li> <li>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).</li> </ul>		<p>a) Adopting. barricades provided and security personal available at working place.</p> <p>b) Excavated soil is disposed panchady solid waste management with direction of PIU.</p> <p>c) The excavated soil is directly disposed to specified place.</p> <p>d) Adopted. Daily two times water sprinkling going on at working site for dust control</p> <p><b>Attached Annexure 03</b></p> <p>e) The excavated soil is utilized for digestion of waste at panchady. As directed by environment engineer MCC Mangalore.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 electricity and telephone services are restored quickly</p>	Construction Contractor and PIU	<p>10. Primary utility identifies properly conducted one weeks before start the work.</p> <p>11. Each department and public communication ongoing before starting work and also rectified all utility issues at same day.</p> <p>12. Adopted. Water tank supply provided while required. <b>Attached Annexure 04</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
construction work camps, stockpile areas, storage areas, and disposal areas	Disruption to traffic flow and sensitive areas and receptors	<p>14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section</p> <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>13. The PIU are coordination with electricity and telephone department is shifting and restoring of services.</p> <p>14. Adopting. Damaged Compound walls and Drains are reconstruction going on while work completed. <b>Attached Annexure 05</b></p>
				<p>15. Adopted.</p> <p>16. Adopted</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>17. Adopted.</p> <p>18. Not applicable. Pipes are main comport of this project.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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	<p>19. Obtained material from authorized agency but supporting documents maintained.</p> <p>20. Suitable material approved by client and consultant are utilized.</p> <p>21. No</p> <p>22. Adopted.</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>	Construction Contractor	<p>23. Adopting</p> <p>24. Adopting.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status Of Complaints
		<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> <p>30. Carry out air quality monitoring.</p>		<p>25. Adopting.</p> <p>26. Adopted, the tarpaulins used to cover for loose materials vehicles.</p> <p>27. Adopting. barricades provided for stockpile, sand and other loose materials.</p> <p>28. Adopted. Properly maintained wheel wash system for vehicles before leaving construction site.</p> <p>29. Adopted. PUC test done and certificate also available for all machinery.</p> <p>30. Air quality monitoring conducted on December month and also report to be submitted to PIU.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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 chiseling;</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>	Construction Contractor	<p>31. Adopted.</p> <p>32. Adopted.</p> <p>33. Adopted.</p> <p>34. Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles		35. Test conducted and also report to be submitted to PIU.
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>	Construction Contractor	<p>36. Adopting</p> <p>37. Adopted.</p> <p>38. Adopted. Dumping surplus soil in panchady solid waste.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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> <p>41. Dispose any wastes generated by construction activities in designated sites; and,</p> <p>42. Ensure that there is no spillover 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>39. Not applicable.</p> <p>40. Not applicable.</p> <p>41. Daily basis waste is disposed.</p> <p>42. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
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> <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</p>	Construction Contractor	<p>43. Adopting.</p> <p>44. Adopted.</p> <p>45. Adopted.</p> <p>46. Adopting. Waste management plan prepared.</p> <p>47. Adopted.</p> <p>48. Adopted.</p> <p>49. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		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.		50. Adopted.
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 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 minimize 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 (Jamie Masjid- Road, Ashok Nagara road, and old port /</p>	Construction Contractor	<p>51. Traffic management plan prepared.</p> <p>52. Adopted. Properly maintained.</p> <p>53. Adopted.</p> <p>54. Adopted.</p> <p>55. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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 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>56. Adopting.</p> <p>57. Adopted.</p> <p>58. Retro reflective sign board and projects details boards are provided. <b>Attached Annexure 06</b></p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>59. Adopted. Engineers are all time available at site for monitoring.</p> <p>60. Retro reflective barricading and caution boards are provided at site. (<b>Attached Annexure 06</b>)</p>
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</p>	Construction Contractor	<p>61.Adopted.</p> <p>62. Adopting.</p> <p>63.Adopting.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>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>		<p>64. Adopted. Properly maintained timings.</p> <p>65. Adopted.</p>
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</p>	Construction Contractor	<p>66. Adopted.</p> <p>67. Adopted. Access provided.</p> <p>68. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>work will occur</p> <p>69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues</p> <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>69. Adopted.</p> <p>70. Adopted. Sign boards and hard barricades provided.</p> <p>71. Adopted. Retro reflective sign boards provided. <b>(Attached Annexure 06)</b></p> <p>72. Adopted.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
Socio-Economic Employment	Impact on local employment generation	73. Employ local labor force to the maximum extent, if manpower is available	Construction Contractor	73. Adopted.
Occupational Health and Safety	Workers occupational health and safety	<p>74. Develop and implement site-specific Health and Safety (H&amp;S) Plan which will include measures such as:</p> <ul style="list-style-type: none"> <li>(a) excluding public from the site;</li> <li>(b) ensuring all workers are provided with and use Personal Protective Equipment (PPE);</li> <li>(c) H&amp;S Training for all site personnel;</li> <li>(d) documented procedures to be followed for all site activities; and</li> <li>(e) documentation of work- related accidents;</li> </ul> <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</p>	Construction Contractor	<p>74. Adopted. All workers used PPEs at working area. <b>Attached Annexure 07</b></p> <p>75. Adopted. Dewatering continuously ongoing and also sheet plate was provided for collapse area.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 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>76. Adopted.</p> <p>77. Adopted. Manholes are shifted where required to working location.</p> <p>78. Adopted. Weekly training conducted for all staff and labors. <b>Attached Annexure 08</b></p> <p>79. Adopted. PPEs are provided include oxygen masks.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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>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 &amp; 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>80. Adopted. first aider deployed and available at site.</p> <p>81. Adopted.</p> <p>82. Adopted.</p> <p>83. Adopted. Drinking Water to be provided at working site. <b>Attached Annexure 09</b></p> <p>84. Adopted. Clean eating area provided for workers</p> <p>85. Adopting. Induction training for new labors and daily tool box talk conducted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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</p>		<p>86. Adopted. Safety training conducted for visitors.</p> <p>87. Adopted. Reflective jacket provided. <b>Attached Annexure 10</b></p> <p>88. Adopted.</p> <p>89. Adopted.</p> <p>90. Signage are provided with international standards.</p> <p>91. Adopting.</p> <p>92. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		from <a href="http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES</a> ).		
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	<p>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;</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>	Construction Contractor	<p>93. Adopted. Traffic management plan submitted.</p> <p>94. Adopted. Waste management plan prepared.</p> <p>95. Adopted. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions.</p>





Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 <a href="http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES">http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2BCommunity%2Bhealth%2Band%2BSafety.pdf?MOD=AJPERES</a>).</p>		<p>96. Adopted. Vehicles regularly inspection conducted.</p> <p>97. Adopted. <b>Attached Annexure 11</b></p> <p>98. Adopted.</p>
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 <a href="http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation">http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers_accommodation</a>), including the following:</p> <p>100 Consult with PIU before locating worker's 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>	Construction Contractor	<p>99. Adopted.</p> <p>100. Adopted.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<p>102 Labor camps shall include accommodation for workers/laborer's 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 labor 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>101. Adopted.</p> <p>102. Adopted. Proper kitchen, toilets, bathrooms and washing place provided.</p> <p>103. Adopted. Proper thickness concrete floor provided for worker's camp.</p> <p>104. Adopted. Provided concrete floor and well maintaining.</p> <p>105. Adopted.</p> <p>106. Separate cooking room provide and also provide proper washing area.</p> <p>107. Adopted.</p> <p>108. Not applicable.</p>



Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Status of Complaints
		<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 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>109. Adopted.</p> <p>110. Adopted.</p> <p>111. Adopted. Separate toilet, rooms are provided for men and women.</p> <p>112. Adopted. Trained store helper engaged for store work only.</p> <p>113. Adopted.</p> <p>114. Adopted.</p> <p>115. Adopting.</p> <p>116. Adopted.</p>

## Labor's Attendance and Machinery Register

[illegible]



## Annexure 02

### PPEs Register

MARCH - 2020.					
S3	03/03/20	Pancham	Safety Shoes Pair 01	Mark	Pancham
	Sl. No - 2496 / 20.		(Tiger)		
S4	03/03/20	Balaji (Cont.)	Safety Jacket - No's 05	Mark	Balaji
	Sl. No - 2500 / 20.		Orange		
S5	05/03/20	Mitham (Cont.)	Hand gloves Pair 06	Mark	Mitham
	Sl. No - 2512 / 20		Orange Jacket - No's 06		
			Nose Mask No's 06		

PPEs ISSUED REGISTER					
Date / / 20					
Sl. No	DATE	NAME	MATERIALS DESCRIPTION	UNIT	APPROVED SIGNATURE
S6	06/03/20	Balaji (Cont.)	Orange Jacket	No's 01	Mark
		(Mangaladivi	ICB op/r		
	Sl. No - 2521 / 20.				
APRIL - 2020.					
S7	24/04/20	Balaji (Cont.)	Nose Mask	No's 06	Mark
	Sl. No - 2654 / 20.				



## Annexure 03

### Water Sprinkling at Site



## Annexure - 04

### Water Provided for affected house





## Annexure 05

Damaged Drainage and Compound Wall Are Rectification work



## Annexure 06

### Retro Reflective Sign Boards





## Annexure 07 and 08

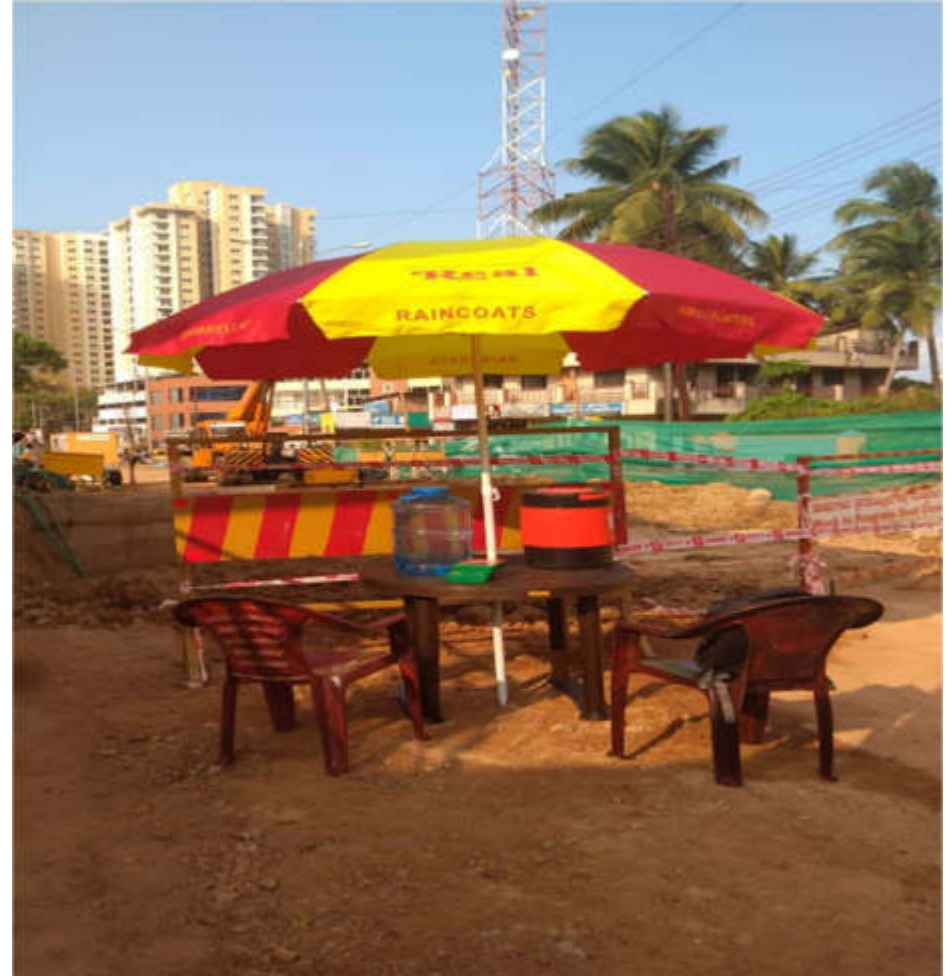
Workers are with PPEs and Tool Box Talk for Workers





## Annexure 09

### Drinking Water Facilities at Working Location



## Annexure 10

### Reflective Jacket





## Annexure 11

### Flagman for Traffic Diversion



# Monthly Environmental Monitoring Report

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Project Number: 43253-027  
March 2020

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

Package No. 02PTR01

Prepared by



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