Environmental Monitoring Report

Project Number: 43253-027
Semestral Report (February–July 2019)
July 2019

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

Main Report

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

Semi Annual Environmental Monitoring Report (SEMR)

ADB Loan Number - 3726-IND
Period Covered: Feb to July 2019

India: Karnataka Integrated Urban Water Management Investment Program **(KIUWMIP)**

Tranche 2- 1st SEM Report

July 2019

Prepared by
Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) Government of Karnataka for Asian Development Bank

ABBREVIATIONS

ADB	Asian Development Bank
ADB SPS	Asian Development Bank Safeguard Policy Statement
APMC	Agricultural Produce Market Committee
BOD	Bio-Chemical Oxygen Demand
BPL	Below Poverty Line
CAP	Corrective Action Plan
CBO	Community Based Organizations
CC	Complaint Cell
CC Drain	Cement Concrete Drain
CFE	Consent for Establishment
CFO	Consent for Operation
CGWB	Central Ground Water Board
CMC	City Municipal Council
CPCB	Central Pollution Control Board
CSS	Construction Supervision Consultant
dbA	Decibels
DI	Ductile Iron
DPR	Detailed Project Report
DS	Double Suction
EA	Executing Agency
EAC	Expert Appraisal Committee
EC	Environmental Clearance
EIA	Environmental Impact Assessment
ELSR	Elevated Storage Reservoir
EMP	Environmental Management Plan
GDP	Gross Domestic Product
GIL	Grasim Industries Limited
GoI	Government of India
GoK	Government of Karnataka
GLSR	Ground Level Service Reservoir
GRC	Grievance Redress Committee
HDPE	High Density Polyethylene
H&S	Health and Safety
IA	Implementing Agency
IEE	Initial Environmental Examination
IWRM	Integrated Water Resource Management
KIUWMIP	Karnataka Integrated Urban Water Management Investment Program
KMRP	Karnataka Municipal Reforms Project
KSPCB	Karnataka State Pollution Control Board
KSRTC	Karnataka State Road Transport Corporation
KTCP	Karnataka Town and Country Planning
KUIDFC	Karnataka Urban Infrastructure Development & Finance Corporation
KUWSDB	Karnataka Urban Water Supply & Drainage Board
M&M	Major and Medium
MFF	Multitranche Financing Facility
MoEFCC	Ministry of Environment, Forest & Climate Change
MSL	Mean Sea Level
NGO	Non-Government Organization

NKUSIP	North Karnataka Urban Sector Investment Program
NO_2	Nitrogen Oxide
NRW	Non Revenue Water
OCRP	Office of Compliance Review Panel
OHT	Over Head Tank
OSPF	Office of the Special Project Facilitator
O&M	Operation & Maintenance
PC	Program Consultants
PCU	Project Co-ordination Unit
PMU	Program Management Unit
PMDCSC	Project Management Design and Construction Supervision Consultant
PIU	Program Implementation Unit
PWD	Public Works Department
RCC	Reinforced Cement Concrete
REA	Rapid Environmental Assessment
RF	Resettlement Framework
RP	Resettlement Plan
RPMU	Regional Program Management Unit
RSPM	Residual Suspended Particulate Matter
SC	Scheduled Caste
SEIAA	State Environmental Impact Assessment Authority
SPM	Suspended Particulate Matter
SPS	Sewage Pumping Station
ST	Scheduled Tribe
STP	Sewage Treatment plant
SW	Stone Ware
TMC	Town Municipal Council
ToR	Terms of References
UGD	under Ground Drainage
ULB	Urban Local Body
UDWSP	Urban Drinking Water & Sanitation Policy
USD	US Dollars
(U)WSS	(Urban) Water Supply & Sanitation

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1 INTRODUCTION

A. Overall Project Description and Objectives

1. 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 & 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 & sanitation within an IWRM context.

2. The Program will be implemented over a four-year period and will be funded by a loan via the Multitranche Financing Facility (MFF) of Asian Development Bank (ADB). 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). Initially Mangalore, and Kundapura are the 2 towns chosen to benefit from the 2 tranche of the investment. As the Detailed Project Report costs have exceeded substantially compared to the costs indicated on the basis of feasibility studies, ADB would finance 24X7 water supply in 4 towns namely (1) Kundapura, (2) Puttur (3) Udupi (4) Mangalore under Tranche-2 and UGD in one town namely Mangalore.

3. The programme proposes the MFF spread across two tranches over a period of ten years (2014-2024) with the total size of $225 M. The shares of ADB propose to be $150 million and counterpart funding from the state Government is estimated at $75 million. In addition to the Loan funds of $150M, the ADB has agreed to support the programme with an additional amount of $1.8 M as a grant fund out of its urban financing partnership facility.

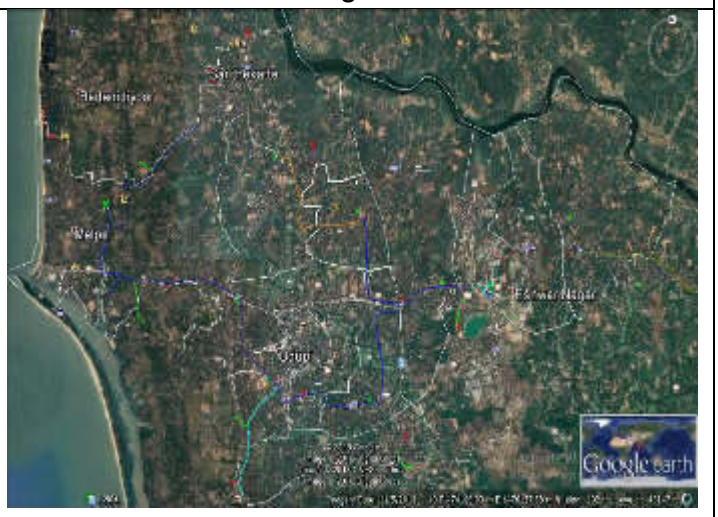
4. In **Tranche 2** main outcome will be providing 24X7 Water supply to Mangalore, Kundapura, Puttur and Udupi, Replacement of Old Sewerage Pumping Mains at Mangalore. Location of project towns is shown in **Figure 1.**

5. The Program Management Unit (PMU) is located in Bangalore, Regional Program Management Unit (RPMU) in Mangalore and Program Implementation Unit in the four Tranche 2 towns has been established. Project Management Design & Construction Supervision Consultant (PMDCSC, Egis) is also in place.

Kundapura

Mangalore

Puttur



Udupi

Figure 1: Location of project towns - Tranche -2

B. Environmental category as per ADB Safeguard Policy Statement, 2009

6. **Environmental Categorization**. KIUWMIP **Tranche 2** town has been categorized as ADB **Category B** for environment as per ADB Safeguard Policy (SPS 2009). Initial environmental examination reports (IEEs) were prepared for each subproject.

7. Environmental Management Plan. An EMP which addresses the potential impacts and risks identified by the environmental assessment shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the Project's impact and risks.

8. Public Disclosure. The IEE will be put in an accessible place (e.g., local government offices, libraries, community centers, etc.), and a summary translated into local language for the project affected people and other stakeholders. The following safeguard documents will be put up in ADB's

website so that the affected people, other stakeholders, and the general public can provide meaningful inputs into the project design and implementation:

9. During the design, construction, and operation of the project the pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World bank Environmental, Health, and Safety (EHS) Guidelines -General EHS Guidelines: Occupational, Health and safety (www.ifc.org/ifcext/enviro.nsf/Content/ Environmental guidelines) and EHS Guidelines for water & sanitation will be followed (http://www.ifc.org/wps/wcm/connect/e22c050048855ae0875cd76a6515bb18/Final%2B%2BWater%2Band%2BSanitation.pdf?MOD=AJPERE).

10. Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers. Preventive and protective measures should be introduced according to the following order of priority: (i) Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc; (ii) Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, acoustic insulating, etc; (iii) Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc. (iv) Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE; and (v) Comply with: Child Labour (Prohibition and Regulation) Amendment Act, 2016; Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 as amended from time to time from appropriate authorities; Trade Unions Act, 1926; The Building and Other Construction Workers (Regulation of Employment and conditions of Service Act) 1996 and the Cess Act of 1996; The Factories Act, 1948; and Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act 2013.

11. Following requirements of ADB SPS, PMU and RPMU shall apply pollution prevention and control technologies and practices consistent with international good practice. When the Government of India regulations differ from these levels and measures, PMU shall achieve whichever is more stringent. IEEs provide applicable standards. If less stringent levels or measures are appropriate in view of specific subproject circumstances, PMU will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

12. This report is the semi-annual environment monitoring report (SEMR) covering period Jan to June 2019 i.e 24X7 water supply and underground drainage sub projects. This SEMR describes the implementation of the environmental management plan (EMP) in each subproject IEE.

2 PROJECT SAFEGUARDS TEAM

13. Overall Implementation Arrangement. Karnataka Urban Infrastructure Development & Finance Corporation (KUIDFC) is the Executing Agency (EA) responsible for implementing the Investment Program. Investment Program implementation activities is monitored by KUIDFC through a separate Investment Program Management Unit (PMU) for the IWRM Project, which setup within KUIDFC.

14. At the Executing Agency (i.e. KUIDFC), environmental issues will be coordinated centrally by an Environmental Specialist (Designated as Assistant Executive Engineer–Environment), reporting to the Task Manager, Assistant Executive Engineer– Environment will ensure that all subprojects comply with environmental safeguards. The IEE/ EIA reports prepared by the Consultant, and will be reviewed by the Assistant Executive Engineer–Environment as per the ADB's Environmental Guidelines and forwarded to ADB for review and approval.

15. The consultant team includes an Environmental Specialist to supervise the implementation of environmental safeguards at the divisional level. The consultant team also includes a Construction Supervisor at each ULB/CMC/TMC responsible for the supervision of project implementation including environmental safeguards at the ULB/CMC/TMC level.

16. The contractor shall appoint one supervisor (environment & safety officer) who will be responsible on a day-to day basis for i) ensuring implementation of EMP ii) Coordinating the CS Engineer and environment specialists(all levels) iii) community liaison, consultation with interested/affected parties and grievance redressal and iv) reporting.

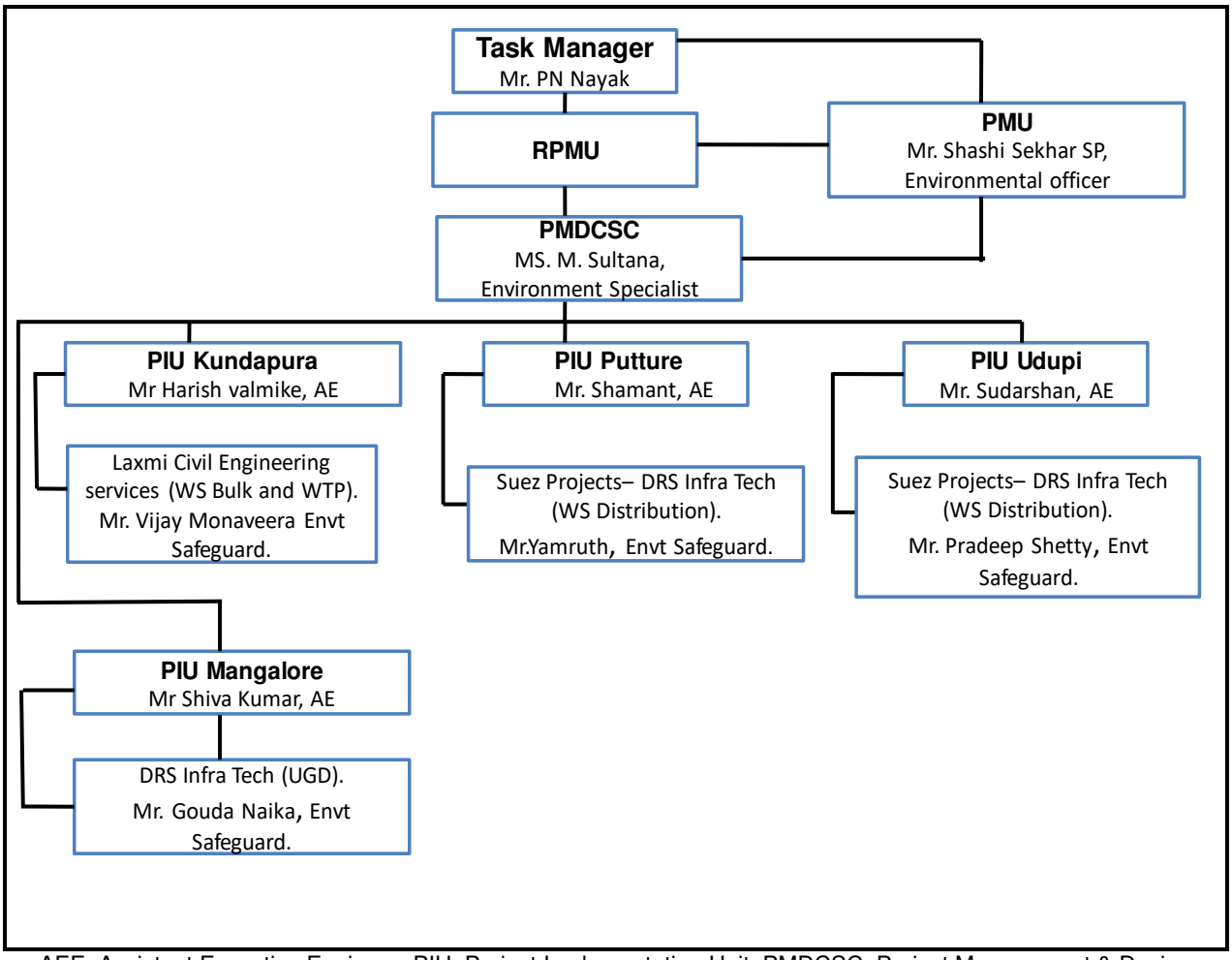
17. Reporting arrangement. Construction contractor monitoring safeguard implementation on daily basis, while construction Supervisor (Resident Engineer) reviews safeguard implementation weekly. After review they advised construction contractor for corrective measures. Monthly report summarizing observation, compliance & corrective measures is prepared by Environment Specialist of consultant on monthly basis following field visits to the towns. Then reports are forwarded from PIU/PMDCSC/RPMU to PMU for their observation and record. Based on monthly reports and site observations, Assistant Executive Engineer (Environment) of PMU, will review the semi-annual environment monitoring report for onward submission to ADB. **Table 1** shows activity Roles and Responsibility on safeguard implementation.

Table1: Activity, Roles and Responsibility – Safeguard Implementation

Investment Program Phase	Activity	Details	Responsible Agency
Pre construction phase	Investment Program Categorization	Conduct Rapid Environmental Assessment (REA) for each subcomponents using REA checklists	ULB
		Reviewing the REA and assigning Investment Program category (A/B/C) based on KIUWMIP Environmental Assessment Guidelines and ADB Guidelines	PMU
	Conducting EA	Conducting IEE / EIA based on the Investment Program categorization Conducting Public Consultation and	PMDCS consultant

Investment Program Phase	Activity	Details	Responsible Agency
		information disclosure Preparation of IEE / EIA	
	Investment program clearances	Fulfilling GoK/GoI requirement such as clearances from other Government Agencies	ULB
	Review of EIA/IEE	Reviewing the EIA/IEE Reports to ensure compliance thereof as per ADB Guidelines and approval of the same	PMU
	Disclosure of EIA/IEE	Information disclosure – IEE/EIA reports should be made available to the public, and on request IEE/EIA also made available.	ULB
	Incorporation of mitigation measures into Investment Program design	Incorporation of necessary mitigation measures identified in IEE/EIA in Investment Program design and in contract documents.	PMDCS consultant
	Review of design documents	Review of design and contractual documents for compliance of mitigation measures	PMDCS consultant
Construction Phase	Implementation of mitigation measures	Implementation of necessary mitigation measures	Contractor
	Environmental Monitoring	Environmental monitoring as specified in monitoring plan during construction stage; Monitoring of implementation of mitigation measures	PMDCS consultant
	Preparation of progress reports	Preparation of monthly progress reports to be submitted to PMU including a section on implementation of the mitigation measures	PMDCS consultant
	Review of progress reports	PMU to review the progress reports, consolidate and send to ADB review	PMU
Operation Stage	Environmental Monitoring	Conducting environmental monitoring, as specified in the environmental monitoring plan.	ULB/ Contractor
	Compliance Monitoring	Compliance monitoring to review the environmental performance of sub-project component, if required and as specified in Monitoring Plan.	ULB/KSPCB

18. **Figure 2** shows the implementation arrangement for environment safeguard. PMU includes a full-time Assistant Executive Engineer (Environment). As on Jun 2019 position of Assistant Executive Engineer (Environment) is filled up and also Environment Specialist of PMDCSC (Program Consultant) has been placed.



AEE: Assistant Executive Engineer, PIU: Project Implementation Unit, PMDCSC: Project Management & Design Supervision Consultant, PMU: Project Management Unit, RPMU: Regional Project Management Unit

Figure 2: KIUWMIP Safeguards Implementation Arrangement

19. **Table 2** shows detail of environment safeguard team for KIUWMIP. Environment Specialist of PMDCSC visit to project site almost every month to review EMP implementation and Asst. Executive Engineer (Environment) KIUWMIP-KUIDFC will visit whenever necessary.

Table 2: Details of KIUWMIP Environmental Safeguard Team

Name	Designation/Office	Email Address	Contact Number
1. PMU			
Mr.Shashisekhar SP	Environment Expert, KIUWMIP-KUIDFC	shashisekharsp@kuidfc.com	9343434900
2. PIUs			
Mr. Shiva Kumar	Assistant Executive, PIU, Mangalore	Jalasiritranche2eemng@gmail.com	07019199457
Mr.Harish Valmike	Assistant Engineer, AE, PIU, Kundapura,	jalasiritranche2aeekdp@gmail.com	09030145862
Mr.Shamant	Assistant Engineer, AE, PIU, Puttur	jalasiritranche2eeptr@gmail.com	08904616043

Sudarshan Sr	Assistant Executive Engineer, AEE, PIU, Udupi	jalasiritranche2eeudp@gmail.com	09886216863
3. Consultants			
MS. M.Sultana	PMDCSC, Environment Specialist	asmsultana786@gmail.com	09701194977

3 OVERALL PROJECT AND SUBPROJECT/PACKAGE PROGRESS AND STATUS

20. There are **5 sub projects** in Tranche 2 (Project 2) Physical construction has been started for one sub project at Mangalore (UGD) and One sub project at Kundapura (24x7 water supply), while, two sub projects at Puttur and Udupi (24x7 water supply) awarded under design validation phase. One sub project at Mangalore(24x7 water supply) is in tender evaluation stage. Out of 5 sub projects, 4 projects are presently under implementation. Status of sub-projects is given in **Table 3.** Site photographs are attached as **Appendix 1,** Monitoring Budget as **Appendix 2.**

Table 3: Status of Sub Project under Tranche 2 (Upto 30th Jun 2019)

Package Number	Components/List of Works	Type of Contract (specify if DBO, DB or civil works)	Status of Implementation (specify if Preliminary Design, Detailed Design, On-going Construction, Completed Works, or O&M phase)1	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
					%Physical Progress	Expected Completion Date
02MNG02	• Replacement of existing 750 mm dia CI pumping main with 1100 mm dia DI-K9 pipe(7.60km) from wet well-3 Kudroli to Kavoor STP. • Replacement of existing 600 mm dia CI pumping main with 900 mm dia DI-K9 pipe (0.95 km) from wet well-4 at Kandathpalli to wet well-3 at Kudroli. • Replacement of existing 225mm dia CI pumping main with 450 mm dia DI-K9 pipe (1.7 km) from wet well-6 Mulihitlu to ridge manhole near Casia Church. • Replacement of existing 450 mm dia CI pumping main with 450 mm dia DI-K9 pipe (1.1 km) from wet well-7 Jeppubappal to ridge manhole near wet well-8	Civil Works	On-going Construction	Contract Awarded: 06.06.2018	51.45%	05.03.2021
02KDP01	• Laying of clear water feeder muns of 200Mn dia for 4.8 Kms to OHT at Kodi.	Civil Works and services	On-going Construction	Contract awarded: 19.12.2017	**44.30%**	22.01.2028

	• Construction of 2 OHTs total capacity 0.9ML. (5LL at Halekote and 4LL at Kodi) • Laying of Distribution network for 31.64 kms of HDPE&DI pipes. • Replacement of non-functioning water for existing connection and providing new water supply connection of 2250 to un- covered households with class B Multijet water meters. • Providing 15 Nos of 24X7 Water flow meters • O & M for 8 years.					
02PTR01	• up gradation of electromechanical equipment's in Jack well • 400 mm dia DI Pipe Raw Water Pumping Main – 1.68 Kms from Jack well to proposed WTP • Construction of 8.7 MLD WTP at Nekkilady • 400 mm dia DI pipe clear water transmission main from WTP to MBR at Thenkila for 12.42 Kms • Clear Water Feeder Mains for 5.06 Kms for OHTs • Construction of 6 OHTs & 2 GLSRs of total capacity 4.55 ML • Laying of Distribution network for 142.66 kms of HDPE & DI pipes • Replacement of non-functioning 9226 water meters for existing	Civil Works and services	Design and Validation	Contract awarded: 16.11.2018	-	19.07.2030 (Phase -4)

	connections and providing new water supply connections of 4500 to un-covered households with Class B MultiJet water meters • Providing 29 Nos of 24X7 Water Flow meters • O & M for 8 Years					
02UDP01	• 8.07 kms clear water feeder mains • 7 OHTs • 358.17 kms distribution net work • 15000 HSC with Class B MultiJet Water Meters • SCADA • O&M for 8 years	Civil Works and services	Design and Validation	Contract awarded: 16.11.2018	**-**	15.08.2030 (Phase -4)
02MNG01	• Construction of 24X7 & Distribution Network - Operator assisted in Mangalore	Civil Works and services	In Tendering Evaluation Stage	Contract award: September 2019 (tentative)	**-**	-

21. Package-wise Contractor/s' Nodal Persons for Environmental Safeguards shown in **Table 4**

Table 4 Package-wise Contractor/s' Nodal Persons for Environmental Safeguards

Package Name	IEE Cleared by ADB (provide date)	Contractor	HSE Nodal Person	Email Address	Contact Number
24 x 7 Water Supply System for Kundapura Town(Construction of 24X7 & Distribution Network - Operator assisted in Kundapura)	Draft IEE Cleared by ADB in May 2018, Final IEE Cleared by ADB in April 2019	Laxmi Civil Engineering services Pvt,Ltd	Mr. Vijay Monaveera		
UGD Mangalore, Replacement of pumping mains Mangalore City	Draft IEE Cleared by ADB dated May 2018 Final IEE Cleared by ADB in April 2019	DRS Engineering services Pvt,Ltd.,	Mr.Gouda Naika	sakribai143@gmail.com	08050041746
24 x 7 Water Supply System for Puttur Town	Draft IEE Cleared by ADB in May 2018 Final IEE Cleared by ADB in April 2019	Suez Projects–DRS Infra Tech	Mr. Y Amruth	amruthsairam@gmail.com	07676075582
24 x 7 Water Supply System for Udupi Town	IEE Cleared by ADB in May 2018 Final IEE Cleared by ADB in April 2019	Suez Projects–DRS Infra Tech	Mr. Pradeep Shetty	Pradeepyellur@gmail.com	09652627322
24 x 7 Water Supply System for Mangalore City	Draft IEE Cleared by ADB in May 2019	In Tendering Evaluation Stage	-	-	-

4 STATUS OF IEE PER SUBPROJECT/PACKAGE

22. Status of IEE Per Subproject/Package shown in **Table 5**

Table 5 Status of IEE Per Subproject/Package

Package Number	**Final IEE based on Detailed Design**				**Site-specific EMP** (or Construction EMP) approved by Project Director?2 (Yes/No)	**Remarks**
	Not yet due (detailed design not yet completed)	**Submitted to ADB** (provide date of submission)	**Disclosed on project website** (provide link)	**Final IEE provided to Contractor/s** (Yes/No)		
02MNG02	Detailed design completed	Submitted on Jan 2019	Disclosed on PMU (www.kuidfc.com/ENG/project_jalasiri.htm), and will be disclosed on ULB website (www.Mangalorecity.mrc.gov.in).	Yes	No	Already in construction phase
02KDP01	Detailed design completed	Submitted on Jan 2019	Disclosed on PMU website www.kuidfc.com/ENG/project_jalasiri.htm, and ULB web site www.kundapurtown.mrc.gov.in	Yes	No	Already in construction phase
02PTR01	Detailed design completed	Submitted on Jan 2019	Disclosed on PMU website (www.kuidfc.com/ENG/project_jalasiri.htm), and ULB website (www. Putturcity.mrc.gov.in)	Yes	Yes	In design validation phase
02UDP01	Detailed design completed	Submitted on Jan 2019	Disclosed on PMU website (www.kuidfc.com/ENG/project_jalasiri.htm), and ULB website www.udupicity.mrc.gov.in	Yes	Yes	In design validation phase
02MNG01		In Tendering evaluation Stage	-	-	-	Expected to be awarded in Sep 2019

5 COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

23. **Table 6** provides the status of compliance of subprojects to national and state laws, rules, policies and regulations applicable to KIUWMIP Project 2

Table 6: Status of Compliance with National and State Legal Requirements (30st Jun 2018)

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
02MNG02	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	During implementation of project compliance with Air Act, Noise Rules and Water Act will be required For acoustic type of Generator – not required. Without acoustic measures Generator used by Contractor by hiring on rental basis.	-	Acoustic type of Generator must be used.	-
	Statutory permission from National Highways Authority for road cutting	Awaiting approval - 1100 WW-3, Kudroli To STP at Kavoor NH-66, at Kuntikan Junction NH Crossing. NH4 crossing -NOC from National highway authority applied on 17-07-2017. Charges paid to National Highways Authority Application enclosed as **Appendix 3**	-	Follow-up required to get NOC from National highway authority.	

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Statutory permission from Railway authority	Awaiting approval - 450 WW-7, JeppuBappal to RMH at Ekkur Near Sooterpete railway level Crossing Railway crossing- NOC from Railway authority applied on 17-07-2017. NOC yet to be obtained. Charges paid to Railway authority Authority Application enclosed as **Appendix 4**		Follow-up required to get NOC from Railway authority	
	Statutory permission from PWD	Till now PWD - NA			
	Utility shifting	• electrical pole Ashok nagar -Mangalore UGD enclosed as **Appendix 39** • Utility Sifting - MESCOM -Electrical pole. enclosed as **Appendix 40** • Compound wall restoration of Bharath beedi workers private Limited enclosed as **Appendix 41&41a**		List of utility shifting has to be maintained by Contractor.	

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Obtained - Approved on 06-06-2018 and is valid for one year 06.06.2019. Further renewal has been done on 06.06.2019. Labour licence enclosed as **Appendix 5** renewed copy as **and 5a**	valid up to 06.06.2020	Further renewal has been done on 06.06.2020.	Worker attendance register and Minimum wages register have to maintained by contractor
	Labour compensation insurance	Obtained / Received *on 25.02.2018*. Insurance Validity upto 04.02.2019. Further renewal has been done on *04.02.2019.* Labour compensation insurance policy enclosed as **Appendix 6 and** renewed copy as **Appendix 6a**	valid up to 04.02.2020	Further renewal has been done valid upto 04.02.2020.	Worker attendance register and Minimum wages register have to maintained by contractor
	Tree felling permission from forest department under Karnataka Preservation of Trees Act,1976 and Karnataka Preservation of Trees Rules,1977 and Forest (Conservation) Act 1980 and Indian Forest (Amendment) bill 2017.	No trees were affected			-

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
02KDP01	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	During implementation of project compliance with Air Act, Noise Rules and Water Act will be required For acoustic type of Generator – not required			
	Statutory permission from National Highways Authority for road cutting	NOC Obtained - on 25 /04/2019 - No National Highway crossing but a stretch of 0.11 km for laying clear water main is proposed along the service lane of NH-66 which needs permission from National Highway Authority of India. NH4 crossing -NOC from National highway authority was applied on 25-01-2019.	NOC Obtained on 25 /04/2019 enclosed as **Appendix 7**	Contractor has to meet the NOC conditions, if any	
	Statutory permission from PWD	NOC Obtained - on 25 /04/2019 - Laying rider main of length 1.8 km for Zone-1 along SH-52 permission will be required from State PWD. State PWD permission obtained for laying rider main of length 1.8 km for Zone-1 along SH-52	NOC Obtained on 25 /04/2019. enclosed as **Appendix 8 & 8a**	Contractor has to meet the NOC conditions, if any	

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Utility shifting	BSNL - Copper cable damaged – BSNL Copper cable damage charge latter enclosed as **Appendix 43**		List of utility shifting has to be maintained by Contractor.	
	Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Obtained /Received on 19-12-2017 and validity upto 19.12.2018 *A*pplied for renewal on 29-01-2019 Labour licence enclosed as **Appendix 9**	Valid upto 29.01.2020.	Further renewal has been done on 29.01.2020.	Worker attendance register enclosed as **Appendix 42** and Minimum wages register have to maintained by contractor
	Labour compensation insurance	Obtained /Received on 07-02-2019 and Labour compensation insurance policy enclosed as **Appendix 10**	Validity upto 02.02.2020	Further renewal has been done on 02.02.2020.	Worker attendance register and Minimum wages register have to maintained by contractor
	Tree felling permission from forest department under Karnataka Preservation of Trees Act,1976 and Karnataka Preservation of Trees Rules,1977 and Forest (Conservation) Act 1980 and Indian Forest (Amendment) bill 2017.	Not Required - 6 nos. Tree felling (at Kodi Beach OHT site) Compensation paid to the affected person for Cutting of coconut trees enclosed as **Appendix 11 and 11a.** **Note:** Coconut Trees are in exemption list.	Permission need not be obtained from forest dept	PIU does not have to apply for the tree cutting permission	-
	CRZ Clearance under Coastal Regulation Zone Notification Ministry of Environment and Forests 2011 The proposed OHT site and some pipelines in Kodi	Obtained – The proposed OHT site and some pipelines in Kodi area falls under Coastal Regulation Zone (CRZ)II. CRZ clearance for Kodi beach OHT from KSCZMA NOC	Obtained on 11/07/2017	Contractor and PIU has to meet /maintain the NOC condition.	• Project promoters Government order no: FEB1062 CRZ 2014 dated 16/01/2015 in accordance with application processing payment of the fees.

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	area falls under Coastal Regulation Zone (CRZ)II. CRZ-II,includes the "developed area" within the existing municipal limits or in other existing legally designated urban areas which are substantially built-up and has been provided with drainage and approach roads and other infrastructural facilities, such as water supply and	obtained enclosed as **Appendix 12 & 13**			• Precaution should be taken at the time of construction of OHT without impairment to environment and storm water. • Without approval of authority couldn't any change and expansion of proposed project • For the proposed project implementation of all work and activity to be subjected under CRZ notification dated:06/01/2011

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	sewerage mains; buildings shall be permitted only on the landward side of the existing road. Construction involving more than 20,000 m2built-up area in CRZ-II shall be considered in accordance with EIA notification, 2006 and in case of projects less than 20,000 m2built-up area shall be approved by the concerned State Planning authorities in accordance with this notification after obtaining recommendations from the concerned CZMA and prior recommendations of the concern CZMA shall be essential.	Obtained - CRZ clearance for Pipe Line laying NOC obtained enclosed as **Appendix 14 and 14 a**	Obtained on 11/07/2017.	Contractor and PIU have to Meet /maintain the NOC condition.	• Project promoters Government order no: FEB1062 CRZ 2014 dated 16/01/2015 in accordance with application processing payment of the fees. • Precaution should be taken at the time of construction of OHT without impairment to environment and storm water. • Without approval of authority couldn't any change and expansion of proposed project • For the proposed project implementation of all work and activity to be subjected under CRZ notification dated:06/01/2011
02PTR01	Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to	During implementation of project compliance with Air Act, Noise Rules and Water Act will be required For acoustic type of Generator – not required Contractor using acoustic type of Generator	-	-	-

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Establish (CTE) and Consent to Operate (CTO)	Construction period not started will be used acoustic type of Generator			
	Statutory permission from National Highways Authority for road cutting	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Statutory permission from Railway authority	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Statutory permission from PWD	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Utility shifting	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Will be Obtained - Sub Project is in Design validation (pre construction phase) Labour licence Not Received	-	-	-
	Labour compensation insurance	Will be Obtained - Sub Project is in Design validation (pre construction phase) Labour licence Not Received	-	-	-
	Tree felling permission from forest department under Karnataka Preservation of	No tree cutting noted during the design validation and survey			

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Trees Act,1976 and Karnataka Preservation of Trees Rules,1977 and Forest (Conservation) Act 1980 and Indian Forest (Amendment) bill 2017.				
02UDP01	Water (Prevention and Control of Pollution) Act. 1974. The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	During implementation of project compliance with Air Act, Noise Rules and Water Act will be required For acoustic type of Generator – not required. Construction period not started will be used acoustic type of Generator	-	-	-
	Statutory permission from National Highways Authority for road cutting	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Statutory permission from Railway authority	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Statutory permission from PWD	Will be Obtained if road cutting required sub project is in Precontraction Phase			
	Utility shifting	Will be Obtained if road cutting required sub project is in Precontraction Phase			

Package No.	Statutory Environmental Requirements	Status of Compliance (Specify if obtained, submitted and awaiting approval, application not yet submitted)	Validity Date(s) (if already obtained)	Action Required	Specific Conditions that will require environmental monitoring
	Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Obtained – on 11/01/2019 enclosed as **Appendix 15**	Validity upto 11/01/2020	Further renewal has been done on 11/01/2020.	Worker attendance register and Minimum wages register have to maintained by contractor
	Labour compensation insurance	Will be Obtained - Sub Project is in Design validation (pre construction phase) Labour licence Not Received	-	-	-
	Tree felling permission from forest department under Karnataka Preservation of Trees Act,1976 and Karnataka Preservation of Trees Rules,1977 and Forest (Conservation) Act 1980 and Indian Forest (Amendment) bill 2017.	No tree cutting noted during the design validation and survey			
02MNG01	In Tendering Evaluation Stage	-	-	-	-

6 COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

24. The loan agreement for KIUWMIP Project 2 was signed on 27 November 2018 and available in ADB website (https://www.adb.org/sites/default/files/project-documents/43253/43253-027-lna-en.pdf). **Table 7** provides a summary of compliance to the loan covenants related to environmental safeguards.

Table 7: Compliance to Loan Agreements (Environmental Safeguards)

Schedule No. and Item	Covenant	Status	Action Required
Schedule 4 Item 9	**Procurement of Goods, Works and Consulting Services** **Conditions for Award of the Contract** The Borrower shall ensure or cause the EA **to not award any Works contract** for a Subproject which **involves environmental impacts** until the EA has: a)Obtained the final approval of the IEE from the relevant environment authority of the Borrower and the State, and ADB; and b) Incorporated the relevant provisions from the EMP into the Works contract.	a) Obtained concurrence from ADB for Updated IEE sewerage and water supply packages of Mangalore, Kundapura, Puttur, and Udupi. b) Incorporated EMP into the works contract of Mangalore, Kundapura, Puttur, and Udupi sewerage and water supply works.	
Schedule 5 Item 10	**Safeguards –Environment** The Borrower shall ensure or cause the EA to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all projects' facilities comply with (i) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (ii) the Environmental Safeguards; (iii) the EARF; and (iv) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	**Under compliance** Document is prepared by complying all relevant State and National Laws, Safeguard Policy Statement (SPS 2009) of ADB, Environment Assessment Review Framework (EARF) for Tranche-2 program. Same will be followed for subsequent Tranches. For **Tranche 2** project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB. IEE has been updated for Manglaore UGD and Kundapura, Puttur and Udupi WSS, IEE reports submitted to ADB on Jan 2019 was accepted by ADB on Feb 2019. Further review will be conducted at implementation phase. Final design for Mangalore UGD. Kundapura, Puttur and Udupi WSS have been reviewed. IEE and EMP have been updated as per final design and scope at implementation stage. Updated Mangalore UGD and Kundapura WSS IEE/EMP accepted by ADB on August 2018 and Puttur and Udupi WSS February 2019 respectively. All updated reports already disclosed in ADB website. All safeguard measures and requirements as prescribed in IEE/EIA	

Schedule No. and Item	Covenant	Status	Action Required
		and EMP being considered during implementation. Corrective or preventive action plans including personal protection will be reflected in Environment Monitoring Report and project implementation authority will be taken care.	
Schedule 5 Item 10	Human and Financial Resources to Implement Safeguards Requirements The Borrower shall make available, or cause the EA to make available, all necessary budgetary and human resources to fully implement the EMP required.	**Complied** Budgetary provisions have been included in EMP of Tranche 2 sub projects attached as **Appendix 2**. Environment Engineer (Asst. Executive Engineer) is placed in PMU Human resource (project consultant, i.e Environmental Specialist of PMDCSC) for implementation of EMPs is in place for regular compliance.	
Schedule 5 Item 11	The Borrower shall ensure, or cause the EA to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP, the RP and the IPP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report; (b) make available a budget for all such environmental measures;	**Under compliance** Approved IEE, EMP for Tranche 2 project is attached in Bidding documents. This process will be followed for all the sub projects within the present Tranche and subsequent Tranche. In case of any change of scope, revised IEEs, EMPs will be prepared and corrective measures will be disclosed to contractor and same will be reflected in the "Environment Monitoring Report" For **Tranche 2** project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB. IEE has been updated for Puttur and Udupi. Updated WSS IEE report submitted to ADB on Jan 2019 was accepted by ADB on February 2019. Further review will be conducted at implementation phase. Updated IEE for Mangalore UGD and Kundapura WSS accepted by ADB on February 2019. All updated reports already disclosed in ADB website. Corrective actions were taken on the contractor regarding 1) To ensure PPE at all ongoing sites, 2) arrangement of public safety, 3) disposal of waste and 4) camp site management	

Schedule No. and Item	Covenant	Status	Action Required
	(c) provide the EA with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or the IPP; (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and (e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	(b) IEE indicates budgetary provisions for implementation of EMP budgetary provision for safeguard implementation under different packages are provided in the **Appendix 2**. (c) With the development of sub project and implementation, in case of additional impacts/risks due to change in scope/area, that will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Agency will inform the Construction Agency for taking relevant corrective measures. Till date no unanticipated environmental risks or impacts reported (d) Haul roads will be marked properly (by avoiding residences and agricultural land) before commencement of transportation of materials. (e) Pathways, land which are likely to be affected for a short period during implementation of the sub project will be restored by concerned construction agency before acceptance of the work. Restoration status will be reflected in post construction monitoring report	
Schedule 5 Item 12	Safeguards Monitoring and Reporting The Borrower shall cause the EA to do the following: (a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and	**Under compliance** (a)This is 1st semi-annual Safeguards Monitoring Report is prepared for the period Jan to July 2019, (b) With the development of project and implementation, in case of additional impacts/risks due to change in scope/area, will be reflected in revised IEEs, EMPs and accordingly Executing Agency (EA) will inform the ADB along with corrective action plan which will be reflected in the Monitoring Report. (c) in case of any breach of compliance with the measures and requirements set forth in the EMP; EA will promptly inform ADB and suitable corrective action plan will be planned.	

Schedule No. and Item	Covenant	Status	Action Required
	(c) report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.		
Schedule 5 Item 13	**Prohibited List of Investments** The Borrower shall ensure or cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	**Complied** Under Tranche -2, there is no violation of prohibited investment activities as per ADB SPS (2009). Same will be followed in subsequent Tranches	
Schedule 5 Item 16	**Other Social Measures** The EA shall ensure that civil works contracts under the Project follow all applicable labor laws of the Borrower and the State, and that these further include provisions to the effect that contractors: (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; and (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts will also include clauses for termination in case of any breach of the stated provisions by the contractors.	**Complied in document and during implementation** Provision are included (as per EMP & BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labours (preferably from economically backward group) covering women labours. In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken. All activities including awareness program will be reflected in "Monitoring Report".	

25. Contractor team carried out regular environment monitoring. Budget for environment monitoring is disclosed in the **Appendix 2.**

7 COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

26. Puttur and Udupi 24x7 water supply sub project Contractors submitted site-specific EMP Included as **appendix 16 and 17**.

27. Over-all compliance of the contractors with SEMP given in **Table 8**. Contractors' monthly monitoring reports to PIU(s) and monthly environmental site inspection reports of consultants included as an **appendix 18-23**.

Table 8 : Overall Compliance with SEMP

Package No.	Status of SEMP/CEMP Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required
02MNG02	**Satisfactory**	• Arrangement of display board with all information and caution and hazard boards. • Advance information for locals including shopkeepers before starting of the work • Use of PPE should be at all times as per site condition and work type. • Improvement is required material storage • Improvement is required in Environmental monitoring – for air and Noise quality should be done. • Improvement is required for first aid box - Standard First aid materials should be provided. • Health check-up's and HIV AIDS training programs has to be provided. • Worker Wages register has to be maintained.
02KDP01	**Satisfactory**	• Arrangement of display board with all information and caution and hazard boards. • Advance information for locals including shopkeepers before starting of the work • Use of PPE should be at all times as per site condition and work type. • Immediate Improvement of housekeeping and labour staying arrangement at Kundapura, Hilkote worker camp site and store yard at Kodi Beach • Improvement of material storage required. • Scaffolding have to be improved for OHT Construction site. • CRZ, NOC conditions have to be meet by Contractor and PIU. • Worker Wages register has to be maintained
02PTR01	**Satisfactory**	• Project is under Design validation period • Improvement is required for Puttur WTP site • Puttur WTP site – Proper Chlorine storage, chemical storage, electrical safety and Asbestos inventory, Toilet facility and housekeeping • Environmental monitoring – for air and Noise quality should be done.
02UDP01	**Satisfactory**	• Project is under Design validation period • Environmental monitoring – for air and Noise quality should be done.
02MNG01	**-**	-

A. Provide description based on site observations and records:

28. During the reporting period minimum dust was noted and water sprinkling techniques followed at peak construction period at construction sites.
29. During the reporting period, muddy water was not escaping through site boundaries or muddy tracks were not seen on adjacent roads restoration was done after work completed.
30. Restoration was done after work completed. No work was in progress in rainy season.
31. At Kodi beach and Hilkote areas are designated for storage of construction materials for 24x7 water supply Kundapura but contractor has to improve proper storage method of materials. For concrete works, chemical storage and refuelling areas will be designated. photographs of each area attached as **Appendix 1.**
32. Spillage is not observed at time of inspection recommended contractor to provide Spill kits and site procedure for handling emergencies.
33. Chemicals not stored at work site except WTP chlorine, and chemical storage areas are provided at Puttur WTP proper maintenance is required. Photographs of area attached as **Appendix 1**.
34. Spoil management Plan Submitted by Puttur, Mangalore and Kundapura 24x 7 water supply Contractors enclosed as **appendix 24, 25, 26**, recommended for Improvement each sub project. Identified the disposal areas to dispose Spoils. Mangalore UGD approved letter for disposal area from PIU enclosed as **appendix 27**.
35. Solid waste management plan submitted by Udupi 24x7 water supply Contractor enclosed as **appendix 28** and Identified the location to dispose the solid waste. location of Spoil/solid waste disposal Puttur sub project on GIS and Google map enclosed as **appendix 29,30,** and Udupi 24x7 water supply sub project on GIS map enclosed as **appendix 30a** and Mangalore UGD approved letter for disposal area from PIU enclosed as **appendix 27** and Dismantling register maintained by Mangalore UGD attached as **appendix 31**. Proper details of waste like quantity generated, transport, storage and disposal details not maintained by Mangalore and Kundapura 24x7 water supply sub Project. Puttur and Udupi sub projects are in preconstruction phase.

Table 8a Spoil /Solid waste details

Project No	Quantity generated	Transport	Storage	Disposal details
02MNG02	Spoil and Solid waste Quantity generated from construction not maintained by contractor and not mention in the Spoil management plan. recommended to	Transport root and mod of transport not mention in the Spoil /Solid /Trafic Plan recommended to update	No storage of waste	Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is approved by permission of PIU enclosed as **appendix 27**

	update the plan maintain record.			
02KDP01	Spoil and Solid waste Quantity generated from construction not maintained by contractor and not mention in the Spoil management plan. recommended to update the plan maintain record.	Transport root and mod of transport not mention in the Spoil /Solid /Trafic Plan recommended to update	No storage of Waste	Contractor Coordinated with PIU / Kundapura TMC surplus soils and Solid waste Disposed of in Authorized landfill.
02PTR01	Sub project is in pre-construction Phase Spoil and Solid waste Quantity generated from construction not maintained by contractor and not mention in the Spoil management plan. recommended to update the plan maintain record.	Transport root and mod of transport not Spoil /Solid /Trafic Plan mention in the Plan	Location identified	Location identified Google and GIS map enclosed as **appendix 29,30**
02UDP01	Sub project is in pre-construction Phase Spoil and Solid waste Quantity generated from construction not maintained by contractor and not mention in the Spoil management plan. recommended to update the plan maintain record.	Transport root and mod of transport not Spoil /Solid /Trafic Plan recommended to update	Location identified	Location identified on GIS map enclosed as **appendix 30a**

36. Barricades, signages, and on-site boards provided by contractor but List of number of barricades, signages, and on-site boards provided by contractor is not maintained and not submitted to PIU in monthly report. Photographs enclosed as **appendix 1**.

37. Kundapura 24x7 water supply Project Workers labor camp provided at Hilkote. For Mangalore UGD Workers labor camp provided at Shakti Nagar, Nigiri. Location not marked on google map Photographs enclosed as **appendix 1.** Puttur and Udupi 24x7 water supply sub projects are in preconstruction phase Locations identified and marked on GIS and google maps Photographs enclosed as **appendix 29,30**.

38. Recommended contractor of Kundapura 24x7 water supply and Mangalore UGD to maintain work-related accidents and incidents record till now no accidents and incidents recorded. Puttur and Udupi 24x7 water supply sub projects are in preconstruction phase.

B List of trainings on environmental safeguards, core labor standards, and OSH conducted during the reporting period

39. To implement the Environmental safeguards and Occupational safety and health during the construction by Contractor ADB, KUIDFC and Consultants conducted training programmes which are listed below **Table 9**.

40. During the report period safeguard orientation program on safety and environment has been arranged for contractor, supervisor's engineers of PMDCSC, engineers of PIU at Mangalore, Kundapura, Puttur and Udupi. Training details is attached as **Appendix 32,a,and b.**

Table 9 Trainings, Workshops and Seminars Conducted

Date	Topic	Conducted by	No. of Participants (Total)	No. of Participants (Female)	Remarks
6/02/2019	Environmental Health and Safety	Mr. Govind Environmental Specialist ADB and Mr. Shashishekar KUIDFC Environmental Specialist	41	0	
12/04/2019	Environmental and Social Safeguards and other Related safety issues on sites	ADB	58	5	
25/05/2019	Environmental and Social safeguard	Ms. M.Sulthana Environmental Specialist, Egis Consultant Mr. Venkata Ramana, Social Specialist, Egis Consultant	30	1	
13/06/2016 to 14/06/2016	Environmental safeguards and other safety issues on sites.	ADB	59	7	

C Provide the monitoring results as per the parameters outlined in the approved EMP

41. Daily, weekly and monthly monitoring is continued for all the running packages. The overall compliance status for all the 2 running packages during report period is satisfactory. Improvement is noted for all the running packages. Persons who monitored and mitigation measures against impact field is given in Table 10 to 13.
42. There are few partial compliance status noted for the running packages.
43. Advance information to the locals and shopkeepers at pipe laying area of Mangalore and Kundapura is not always provided. Time period for construction work for particular area and contact details of PIU, consultant in project display board for any grievances or suggestion should be included.
44. Partial use of project display board for Mangalore UGD package and Kundapura 24x7 water supply observed.
45. Need to improve use of PPE by contractor's workers. Use of PPE should be at all times as per site condition and work type. Particularly use of shoes, hand gloves and safety belt (when working at height)
46. Temporary placement of caution tape is noted for all the packages. Improvement/ complete use of caution tape at working areas required
47. Improvement of housekeeping and labour staying arrangement is required for Kundapura at Hilkote.
48. Improvement of material storage for Kundapura 24X7 water supply at Kodi store yard and Mangalore UGD packages
49. Improvement is required for Puttur WTP site – Chemical storage, Chlorine cylinder store, Electrical safety and Toilet facility and housekeeping.
50. Improvement is required for provision of first aid box. First aid materials are not sufficient. .

Table 10: Summary of Environmental Monitoring Activities (Jan to Jun - 2019)- UGD in Mangalore City, Package No.02MNG02

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
• Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and • Occupational hazards which can occur to workers and public during work.	Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following: 1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; 2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); 3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; 4. Details of materials at each site (type and quantity); 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.);	• Site inspection and record verification; - Done. • Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done • Site specific Occupational Health and Safety (OHS)plan; • Spoil and waste management plan; and • Complaints from sensitive receptors and public.	• Checking of records • visual inspection of sites	-	1. Daily by construction supervisor- Resident Engineer 2. Weekly / bi weekly by Construction Manager. 3. Verification by Environment Specialist of PMDCSC and Asst .Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis: **a) Dates of Verification by Environment Specialist of PMDCSC :** Jan – 22/01/2019 Feb – 16/02/2019	construction supervisor - Mr. Prakash and Resident Engineer - Mr. Shahir. Mr. Gopi Kumar M.Sulthana Environment Specialist of PMDCSC.

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	6. Construction waste/debris generated (details and quantity); 7. Detail the sequence of work process (step-by-step) including specific details of each work; 8. Contractor's supervision and management arrangements for the work; Emergency: Designate (i) responsible person on site, and (ii) first aider; and (iii)Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading, etc. 9. The pumping main lines are to be laid along the roads, Roads are provided with side drains to carry rain water. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains.				March - 30-03-2019 April – 11-04-2019 May- 21/05/2019 Jun- 12/06/2019 **b) Dates of Verification by Asst Executive Engineer (Environment) KIUWMIP-KUIDFC** Feb : 16/02/2019 April – 11/04/2019 Jun- 12/06/2019	Mr.Shashi SP **Asst Executive Engineer (Environment) KIUWMIP-KUIDFC**

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	The following should be included in the site layout plan: a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone; b) Location of temporary stockpiles and provision of bunds; c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil; d) Wetting of soil to arrest dust generation by sprinkling water; and e) Waste/surplus soil utilization and disposal plan – indicate expected duration of temporary stockpiling along the trench at each site and identify final surplus soil utilization/disposal site in consultation with program implementation unit (PIU).					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	10. At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 11. Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,) 13. Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken Record to confirm that contingency services are provided and all damaged utilities are restored after the work	• Checking of records • visual inspection of sites	All construction site,	Do	Do
Disruption to traffic flow and sensitive areas and receptors	15. Prioritize areas within or nearest possible vacant space in the subproject location; 16. Avoid locating construction work camps	List of selected sites for construction work camp,	• Checking of records • visual inspection of sites		Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	close (100 m away) to residential areas; 17. Do not consider residential areas; for stockpiling the waste/surplus soil; and 18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.	storage area and disposal area. Complaints from sensitive receptors				
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution	19. Contractor should obtain material from existing mines approved/licensed by Mines and Geology Department/ Revenue Department only; 20. Verify suitability of all material sources and obtain approval of implementing agency; 21. No new quarry sites shall be developed for the subproject purpose; and 22. Submit a monthly statement of construction material procured indicating material type, source and quantity.	Check Sources and approval	• Checking of records • visual inspection of sites	All construction site,	Do	Do
Dust and emissions from construction activity may de-grade the air quality	23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;	Site observations Informal Ambient air quality monitoring (4 locations,	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	24. Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; 25. Bring materials (aggregates, sand, etc. gravel) as and when required; 26. Use tarpaulins to cover sand and other loose material when transported by vehicles; 27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 28. Clean wheels and undercarriage of vehicles prior to leaving construction site; 29. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly; ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity; and 30. Carry out air quality monitoring.	frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)				

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
High noisy construction activities may have adverse impacts on sensitive receptors and structures	31. Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise (road cutting activity) are conducted during periods of the day which will result in least disturbance; 32. Construction work shall be limited to day light hours (6 AM to 6 PM) for all the works located within the town; Provide prior information to the local public about the work schedule; 33. Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually by chiselling; 34. Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 35. Maintain maximum sound levels not exceeding 80 decibels (dB) when	Complaints from sensitive receptors Site observations Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	measured at a distance of 10 m or more from the vehicles					
Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	36. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 37. Stockpiles shall be provided with temporary bunds; 38. Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas; 39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund; 41. Dispose any wastes generated by construction activities in designated sites; and, 42. Ensure that there is no spill over of excavated earth, construction materials like cement	Site observations	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	concrete into the drain near wet well no. 3; also ensure that the drain flow is not blocked / disturbed during the work					
Impacts on landscape and aesthetics due to construction activity	43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 44. Coordinate with PIU / MCC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 45. In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / MCC; waste shall not be disposed in the forest areas and in or near water bodies/ rivers; 46. Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported, reused and disposed properly;	Work site inspection Complaints from public	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	47. Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 48. Recover used oil and lubricants and reuse or remove from the sites; 49. Remove all wreckage, rubbish, or temporary structures which are no longer required; and 50. Request program implementation unit (PIU)/ project management, design and construction supervision consultant (PMDCSC) to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.					
Hindrance to traffic movement / accessibility	51. Plan pipeline work in consultation with the traffic police; Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8 of IEE. 52. Strictly follow the pipe laying method presented in Table 13 so that trench excavation, pipe laying,	Work Program Review	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	and refilling including compacting, at a stretch is completed in a minimum possible time 53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement; 54. Do not close the road completely, ensure that work is conducted onto edge of the road; allow traffic to move on one line; 55. In narrow roads with considerable traffic (Jama Masjid- Road, Ashok Nagara road, and old port / Kandathapalli Road), work shall be undertaken between two intersections and diverting traffic in that section to a parallel road, so that through traffic is not blocked fully. 56. In some sections on Jama Masjid- Road, Old Port Road and Kandathapalli Road there are no parallel roads to divert traffic; in those sections work shall be conducted in the nights or in low traffic hours in					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	day time; but in case of day-time work traffic shall not be blocked for more than 2-3 hours at a stretch; prior information shall be provided to public – a week before and a day before work, about the schedule of the work and temporary road closure; proper signage shall be provided 57. Maintain safe pedestrian access at all times to the houses along the work site 58. At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. 59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken.					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	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					
Schools, hospitals and religious places) due construction work in the proximity (within 250 m of such place)	61. No material should be stocked in this area; material shall be brought to the site as and when required 62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles 63. No work should be conducted near the religious places during religious congregations 64. Material transport to the site should be arranged considering school timings; material should be in place before school starts; 65. Notify concerned schools, hospitals, etc. 2 weeks prior to the work; conduct a 30 minutes awareness program at on nature of work, likely disturbances and risks and construction	Complaints from sensitive receptors Work program	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	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.					
Impediment of access to houses and business	66. Leave space for access between mounds of excavated soil, where required 67. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required. 68. Consult affected business people to inform them in advance when work will occur 69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues 70. Provide sign/caution/warning boards at work site indicating work schedule and traffic information; prevent public entry into work sites through	73. Number of walkways, wooden planks and foot bridges; 74. Complaints from public; 75. Spoil Management Plan; and Traffic Management plan.	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	barricading and security; and 71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints. 72. Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. The site-specific traffic management plan should be part of the Construction Management Plan.					
Impact on local employment generation	76. Employ local labour force to the maximum extent, if manpower is available	Employment Records Compliance to labour laws	• Checking of records • visual inspection of sites	All construction site,	Do	Do
Workers occupational health and safety	77. Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment (PPE); (c) H&S Training for all site personnel;	Site specific OHSEquipped first aid station. Potable watersupply andclean eating area. PPE and medical insurance	• Checking of records • visual inspection of sites	All construction site, and Camp site	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	(d) documented procedures to be followed for all site activities; and (e) documentation of work- related accidents; 78. 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; 79. 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; 80. Extreme care shall be taken while working on existing sewer lines/ manholes, where they are					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	required to be shifted, to safeguard the workers against the gaseous emissions and hazardous working conditions 81. 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; 82. Provide all necessary personnel protection equipment; including oxygen masks for emergency use; 83. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 84. Provide medical insurance coverage for workers; 85. Secure all installations from unauthorized intrusion and accident risks;					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	86. Provide supplies of potable drinking water; 87. Provide clean eating areas where workers are not exposed to hazardous or noxious substances; 88. Provide H & S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 89. 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; 90. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 91. Ensure moving equipment is outfitted with audible back-up alarms; 92. Mark and provide sign boards for hazardous					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. 93. 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; 94. 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 95. Overall, the contractor should comply with IFC EHS Guidelines on Occupational Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES).					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
Danger due to deep excavations, hindrance to traffic and chances of accident,	96. 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; 97. Plan material and waste routes to avoid times of peak-pedestrian activities; 98. 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; 99. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by	Traffic Management Plan Complaints from public	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	equipment malfunction or premature failure; 100. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and 101. Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/ 3%2BCommunity%2BHealth%2Band%2B Safety.pdf?MOD=AJPERES).					
Temporary worker camps	99 The contractor should operate the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers	List of selected sites. Written consent of land owner Waste Management plan	• Checking of records • visual inspection of sites	At workers camp	Do	Do

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	accommodation), including the following: 100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 101 Minimize removal of vegetation and disallow cutting of trees; 102 Labour camps shall include accommodation for workers/labourers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 103 The roof height of the worker's and labour camp shall not be less than 3 m from floor level to the lowest part of the roof. 104 The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	basis of one sq.mt per head or as per the relevant regulation, whichever is higher. 105 Fire and electrical safety pre-cautions shall be adhered to. 106 Cooking, sanitation and washing areas shall be provided separately. 107 The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 109 The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 110 Provide water and sanitation facilities; water,					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60-80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 111 Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons; 112 Train employees in the storage and handling of materials which can potentially cause soil contamination; 113 Recover used oil and lubricants and reuse or remove from the site; 114 Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 115 Remove all wreckage, rubbish, or temporary structures which are no longer required; and					

Impact	Mitigation Measures	Parameters Monitored	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Construction Period						
	116 Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.					

Table 11: Summary of Environmental Monitoring Activities of the Package- 24x7 Water Supply System in Kundapura Town, Package No. 02KDP01

Impact	Mitigation Measures	Parameters Monitored	Method of monitoring	Location of Monitoring	Date of Monitoring Conducted	
Impacts on the environment, workers, and community due to improper implementation of EMP	1) Project manager and all key workers will be required to undergo EMP implementation including spoils management, standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.; and 2) Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work.	a) Certificate of Completion (Safeguards Compliance Orientation) b) Posting of Certification of Completion at worksites c) Posting of EMP at worksites.	• Checking of records • visual inspection of sites	-	1. Daily by construction supervisor- Resident Engineer 2. Weekly / bi weekly by Construction Manager. 3. Verification by Environment Specialist of PMDCSC and Asst .Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis: **a) Dates of Verification by**	1. Construction supervisor - Mr. Sadanand kamate and Resident Engineer - Mr. Raghav 2. Mr. Gopi Kumar a) M.Sulthana Environment Specialist of PMDCSC.

					Environment Specialist of PMDCSC : Jan – 23/01/2019 Feb – 15/02/2019 March - 31-03-2019 April – 10-04-2019 May- 22/05/2019 Jun- 15/06/2019 **b) Dates of Verification by Asst Executive Engineer (Environment) KIUWMIP-KUIDFC** Feb: 15/02/2019 April: 10-04-2019 Jun: 14/06/2019	b) Mr.Shashi SP Asst Executive Engineer (Environment) KIUWMIP-KUIDFC

Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	1) Consult with PMU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 2) Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; 3) Use tarpaulins to cover sand and other loose material when transported by trucks; and 4) Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 5) Clean wheels and undercarriage of vehicles prior to leaving construction site; and 6) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.	a) Location of stockpiles; b) Complaints from sensitive receptors; c) Heavy equipment and machinery with air pollution control devices; d) Certification that vehicles are compliant with Air Act	• Checking of records • visual inspection of sites	Working locations	Do	Do

Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; 2) Laying of pipelines during dry season and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches or pumping; 3) Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, dispose in municipal landfill (Sample Spoils Management Plan in Appendix 10); 4) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 5) Provide temporary bunds for stockpiles and materials; 6) Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund; and 7) Dispose any wastes generated by construction activities in	a) Areas for stockpiles, storage of fuels and lubricants and waste materials; b) Number of silt traps installed along trenches leading to water bodies; c) Records of surface water quality inspection; d) Effectiveness of water management measures; e) No visible degradation to nearby drainages, nallahs or waterbodies due to civil work	• Checking of records • visual inspection of sites	All construction site, stockpile areas	Do	Do

	landfill or reuse in beneficial purposes					

Contamination of coastal water due to works in coastal zone	In addition to the above measures following measures given below for piling works: 1) 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 in landfill safely		• Checking of records • visual inspection of sites		Do	Do
Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	1) Plan activities in consultation with PMU/PMDCSC so that activities with the greatest potential to generate noise (road cutting and piling activity) are conducted during periods of the day which will result in least disturbance; 2) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; 3) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-	a) Complaints from sensitive receptors; b) Use of silencers in noise-producing equipment and sound barriers; and c) Equivalent day and night time noise levels (Appendix 3)	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 4) Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicle/s.					
Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	1) Manage surplus soil, debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 2) Coordinate with PIU / Kundapura TMC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 3) In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / Kundapura; waste shall not be disposed in the forest areas and in or near water bodies/ rivers / coast 4) Prepare and implement spoils management plan; 5) Surplus soil and debris from work site shall be	a) Complaints from sensitive receptors; b) Worksite clear of hazardous wastes such as oil/fuel; and Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 6) Recover used oil and lubricants and reuse or remove from the sites; 7) Remove all wreckage, rubbish, or temporary structures which are no longer required; and 8) Request PIU/PMDCSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work.					
Disruption of service and damage to existing infrastructure at specified project location	1) At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 2) Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 3) Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)	a) Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken b) Record to confirm that contingency services are provided and all damaged	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	4) Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 5) Reconstruct the damaged footpath and drains immediately after the completion of pipeline work in that particular section	utilities are restored after the work				
Loss of vegetation and tree cover	1) Except four (4) coconut trees at Kodi OHT site, and pruning of large tree to the minimum required extent at Halekoti OHT site, no trees shall be removed for the subproject. 2) Trees in the pipeline alignments shall be avoided during construction by locally altering the alignment. 3) Obtain tree cutting and pruning permission from Tree Officer; plant and maintain 10 trees for each tree that is removed	a) PMU/PMDCSC to report in writing the number of trees cut and planted.	• Checking of records • visual inspection of sites	All construction site,	Do	Do
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	a) Traffic route during construction works including number of permanent signages, barricades and flagmen on	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	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), provide alternative route, and ensure that public is informed about such traffic diversions; 6) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; 7) Maintain safe pedestrian access at all times to the houses along the work site;	worksite (Appendix 11); Complaints from sensitive receptors; and Number of signages placed at project location.				

	8) Hard barricades should be mandatorily provided for work sites in residential and commercial areas, along with caution board. 9) At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints; 10) Keep the site free from all unnecessary obstructions; 11) Drive vehicles in a considerate manner In narrow roads listed above, Inform the affected local population on week in advance, and again a day before the work					
Impede the access of residents and customers to nearby shops	1) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time;	a) Complaints from sensitive receptors; b) Spoils management plan; and c) Number of walkways,	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	2) Leave spaces for access between mounds of soil; 3) Provide walkways and metal sheets where required for people; 4) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; 5) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and 6) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	signs, and metal sheets placed at project location				
Disturbance to socio cultural resources (religious, educational, health care etc.,), access disruptions etc.,	1) No material should be stocked close to these areas; material shall be brought to the site as and when required; 2) Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles; 3) Strictly follow the pipe laying method presented in Table 7 so that trench excavation, pipe laying, and refilling including compacting, at a stretch	a) Visual site observations b) Public complaints	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	is completed in a minimum possible time; 4) No work should be conducted near the religious places during religious congregations; 5) Material transport to the site should be arranged considering school timings; material should be in place before school starts; 6) Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts; and 7) Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.					
Generation of contractual employment and increase in local revenue	1) Employ local labor force to the maximum extent, if manpower is available; and 2) Comply with labor laws	a) Employment records; b) Records of sources of materials; and c) Compliance to core labor laws (See Appendix 2 of this IEE)	• Checking of records • visual inspection of sites	All construction site and Proposed camp site	Do	Do

Occupational hazards which can arise during work	1) Comply with all national, state and local core labor laws (See Appendix 2 of this IEE); 2) Develop and implement site-specific health and safety (H&S) plan which will include measures such as: **(a)** excluding public from the site; **(b)** ensuring all workers are provided with and use Personal Protective Equipment; **(c)** H&S Training for all site personnel; **(d)** documented procedures to be followed for all site activities; and **(e)** documentation of work-related accidents; 3) All trenches in sandy and mixed sandy soils irrespective of depth shall be protected with safety shoring / strutting to avoid safety risks to workers, public and nearby buildings/structures 4) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;	a) Site-specific OHS Plan; b) Equipped first-aid stations; c) Medical insurance coverage for workers; d) Number of accidents; e) Supplies of potable drinking water; f) Clean eating areas where workers are not exposed to hazardous or noxious substances; g) record of H&S orientation trainings h) personal protective equipment; i) % of moving equipment outfitted with audible back-up alarms; j) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing	• Checking of records • visual inspection of sites	All construction site, stockpile areas and Proposed camp site	Do	Do

	5) Provide medical insurance coverage for workers; 6) Secure all installations from unauthorized intrusion and accident risks; 7) Provide supplies of potable drinking water; 8) Provide clean eating areas where workers are not exposed to hazardous or noxious substances 9) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 10) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; 11) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;	high voltage equipment, and areas for storage and disposal. k) Compliance to core labor laws (Appendix 2)				

	12) Ensure moving equipment is outfitted with audible back-up alarms; 13) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 14) Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 15) Overall, the contractor should comply with International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety. (this can be downloaded from http://www1.ifc.org/wps/					

	wcm/connect/9aef2880488559a983acd36a6515bb18/2%2Boccupational%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES)					
Traffic accidents and vehicle collision with pedestrians during material and waste transportation	1) Provide protective shorting / strutting hard barricading for all deep excavations in sandy and mixed sandy that may require especially for pipe lines soils (>1m); 2) One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and Kundapura TMC to identify risk areas and buildings at risk (due to excavation, vibration and noise) and take necessary precautions for safe conduct of work. 3) identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work; 4) Plan material and waste routes to avoid times of peak-pedestrian activities; 5) Liaise with Kundapura TMC in identifying risk areas on route cards/maps;	a) Traffic Management Plan; and b) Complaints from sensitive receptors	• Checking of records • visual inspection of sites	All construction site,	Do	Do

	6) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 7) Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads; and 8) Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/3%2Bcommunity%2Bhealth%2Band%2Bsafety.pdf?MOD=AJPERES).					
Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants	1) Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 2) Minimize removal of vegetation and disallow cutting of trees; 3) Labor camps shall include accommodation for workers/laborers along with other basic amenities such as	a) Complaints from sensitive receptors; b) Drinking water and sanitation facilities for employees	• Checking of records • visual inspection of sites	All construction site,	Do	Do

Unsanitary and poor living conditions for workers	kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 4) The roof height of the worker's and labor camp shall not be less than 3 m from floor level to the lowest part of the roof. 5) The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per head or as per the relevant regulation, whichever is higher. 6) Fire and electrical safety pre-cautions shall be adhered to. 7) Cooking, sanitation and washing areas shall be provided separately. 8) The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 9) The site must be graded and rendered free from depressions such that water does not get stagnant anywhere.					

	10) The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 11) Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 12) Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons; 13) Train employees in the storage and handling of materials which can potentially cause soil contamination; 14) Recover used oil and lubricants and reuse or remove from the site; 15) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 16) Remove all wreckage, rubbish, or temporary structures which are no longer required;					

	17) Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.					
Risk of archaeological chance finds	1) Create awareness among the workers and supervisors about the chance finds during excavation work; 2) Stop work immediately if any finds are suspected to allow further investigation; 3) Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in site; and 4) Adjacent to important religious sites, undertake excavation and construction work in such a way that no structural damage is caused to the building.	Records of chance finds	• Checking of records • visual inspection of sites	All construction site,	Do	Do
Unsatisfactory compliance to EMP	5) Timely submission of monitoring reports including pictures.	a) Availability and competency of appointed supervisor Monthly report	• Checking of records • visual inspection of sites		Do	Do
Damage due to debris, spoils, excess	6) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines)	b) PMU/PMDCSC report in writing that (i) worksite is restored to	• Checking of records • visual inspecti	All construction site,	Do	Do

construction materials	which are no longer required; 7) All excavated roads shall be reinstated to original condition. 8) All disrupted utilities restored. 9) All affected structures rehabilitated/compensated. 10) 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; 11) 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; 12) The contractor must arrange the cancellation of all temporary services; and 13) Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.	original conditions; c) (ii) camp has been vacated and restored to pre-project conditions; d) (iii) all construction related structures not relevant to operation and maintenance (O&M) are removed; and e) (iv) Worksite clean-up is satisfactory.	on of sites			

Table 12: Summary of Environmental Monitoring Activities of the 24x7 Water supply system in Puttur Town – Package No. 02PTR01

Impact	Mitigation Measures	Parameters monitored	Method of monitoring	Location of Monitoring	Date of Monitoring	Name of Person Who Conducted the Monitoring
Unsatisfactory compliance to EMP	1. Appoint Safeguards (Environmental, Health And Safety or EHS) Engineer to ensure EMP implementation; 2. Submission of updated EMP/SEMP; and 3. Timely submission monthly of monitoring reports including documentary evidence on EMP implementation such as photographs.	(i) Mobilization of Environment , Health And Safety(EHS) engineer (ii)Submission of EMP prior to start of works (iii)Submission of monthly reports.	• Checking of records • visual inspection of sites	Contractor and PIU office	1. Daily by construction supervisor- Resident Engineer 2. Weekly / bi weekly by Construction Manager. 3. Verification by Environment Specialist of PMDCSC and Asst .Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis: **a) Dates of Verification by Environment Specialist of PMDCSC :** Jan – 24/01/2019 Feb – 18/02/2019 March - 30-03-2019	1. Construction supervisor - Mr. Prakash berappa and Resident Engineer - Mr. Shandesh Alphe 2. Mr. Gopi Kumar a) M.Sulthana Environment Specialist of PMDCSC.

					April – 9-04-2019 May- 24/05/2019 Jun- 12/06/2019 **b) Dates of Verification by Asst Executive Engineer (Environment) KIUWMIP-KUIDFC** Feb: 15/02/2019 April: 10-04-2019 Jun: 14/06/2019	b) Mr.Shashi SP Asst Executive Engineer (Environment) KIUWMIP-KUIDFC
Telephone lines, electric Poles and wires, water Lines within proposed project area	4. Identify and include locations and operators of these utilities in the detailed design documents, during design validation phase and preconstruction phase, to prevent unnecessary disruption of services during construction phase; 5. Conduct detailed site Surveys with the construction drawings and discuss with the respective agencies before ground clearance; and	Telephone lines, electric Poles and wires, water Lines within proposed project area	• Checking of records • visual inspection of sites	Contractor and PIU office and some of site locations	-Do-	-Do-

	6. Require construction contractors To prepare a contingency plan to Include actions to be done in case of unintentional interruption of services.					
Tree cutting	7. Further minimize removal of trees, if possible, by adopting to site condition and with appropriate layout Design and pipeline alignments, wherever there are trees on the selected sites; 8. For any tree cutting that may be required at other sites, obtain prior permission from Forest Department; and 9. Plant and maintain 10 trees for each tree that is removed.	(i) Layout plan of overhead tanks (OHTs); (ii)tree cutting/pruning permission; and (iii)Compensatory tree plantation as part of the project.	• Checking of records • visual inspection of sites	Contractor and PIU office and site locations	-Do-	-Do-

Ground disturbance Can uncover and damage Archaeological and historical remains	10. Create awareness among The workers and supervisors about The chance finds during excavation work; 11. Stop work immediately if any finds are suspected to allow further investigation; and Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ.	Implementation of chance find measures	• Checking of records • visual inspection of sites	Contractor and PIU office and site locations	-Do-	-Do-

Disruption To traffic flow And sensitive receptors	1. Prioritize areas within or nearest possible vacant space in the project location; 2. If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; Do not consider residential areas; Take extreme care in selecting sites to avoid direct disposal to water body which will Inconvenience the community; and For excess spoil disposal, ensure **a.**) site shall be selected Preferably from barren, Infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; **b.)** debris disposal site shall be at least 200 m away from surface water bodies;	(i) List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas. (ii) Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• Checking of records	Contractor and PIU office and site locations	-Do-	-Do-

	c.)no residential areas shall be located within 50 m downwind side of the site; and **d.)** site is minimum 250 m away from sensitive locations like settlements,					

Impacts due to improper disposal of debris	12. PIU shall identify a Debris disposal site in consultation with Puttur CMC Adhering to the criteria; and Priority shall be to reuse the debris for any beneficial purpose, such as road construction, and material such as iron, wood, etc., shall be salvaged for reuse and important religious or tourist sites.	List of selected sites for disposal	• Checking of records	Contractor and PIU office and site locations	-Do-	-Do-
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.	13. Prioritize sites Already permitted by the Mining Department; If other sites are necessary, inform construction contractor that it is their responsibility to verify the suitability of all material sources and to obtain the approval of PMU; and If additional quarries will be required after construction is started, Inform construction	(i) List of approved quarry Sites and Sources of materials; and (ii) Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.	• Checking of records • visual inspection of sites	Contractor and PIU office and site locations	-Do-	-Do-

	contractor to obtain a written approval from PMU.					
The failure of the Storage structures can be catastrophic.	14. The design shall incorporate seismicity of the place and all other safety factors. All care shall be taken to ensure a safe and structurally sound construction.	Incorporated in final design and communicated to contractors.	• Checking of records • visual inspection of sites	Contractor and PIU office and site locations	-Do-	-Do-
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	15. Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works; Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc.; and Include in detailed design drawings and Documents all conditions And provisions if necessary.	Incorporated in final design and communicated to contractors.	• Checking of records		-Do-	-Do-
Use of approved construction practices to minimize construction impacts	16. Method Statement should be in a Table format with appended site layout map and cover the following: Work description; Number of workers (skilled and unskilled); Details of plant,	Review of method statement and implementation of work	• Checking of records	Contractor and PIU office and site locations	-Do-	-Do-

	equipment and machinery, vehicles; Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); (v) Personal Protection Equipment (helmet, gloves, boots, etc.) details for each type of work; (vi) Details of materials at each site (type and quantity); (vii) 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.); (viii) Construction waste/debris generated (details and quantity); (ix) Detail the sequence of work process (step-by-					

	step) including specific details of each work; (x) Contractor's supervision and management arrangements for the work; (xi) Emergency: Designate (a)responsible person on site, and (b) first aider; (xii) Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading, etc.; and The pipelines are to be laid along the roads. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains.					

Table 13 Summary of Environmental Monitoring Activities of the 24x7 Water supply system in Udupi Town – Package No. 02UDP01

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
Unsatisfactory compliance to EMP	1. Appoint Safeguards (Environmental, Health and Safety or EHS) Engineer to ensure EMP implementation 2. Submission of updated EMP/site-specific environmental management plan (SEMP) 3. Timely submission monthly of monitoring reports including documentary evidence on EMP implementation such as photographs	(i) mobilization of EHS engineer (ii) submission of SEMP prior to start of works (iii) submission of monthly reports	Contractor and PIU office	• Checking of records	Contractor and PIU office	1. Daily by construction supervisor- Resident Engineer 2. Weekly / bi weekly by Construction Manager. 3. Verification by Environment Specialist of PMDCSC and Asst .Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis: **a) Dates of Verification by Environment Specialist of PMDCSC :** Jan – 25/01/2019 Feb – 15/02/2019 March - 31-03-2019	1. Construction supervisor - Mr. Sadanandh and Resident Engineer - Mr. Aneesh Suvarna. 2. Mr. Gopi Kumar a) M.Sulthana Environment Specialist of PMDCSC.

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
						April – 10-04-2019 May- 23/05/2019 Jun- 15/06/2019 **b) Dates of Verification by Asst Executive Engineer (Environment) KIUWMIP-KUIDFC** Feb: 15/02/2019 April: 10-04-2019 Jun- 12/06/2019	b) Mr.Shashi SP Asst Executive Engineer (Environment) KIUWMIP-KUIDFC
Tree cutting	1. Further minimize removal of trees, if possible, by adopting to site condition and with appropriate layout design (Overhead tank or OHT sites) and alignments (pipelines) 2. For any tree cutting that may	(i) Layout plan of OHTs (ii) tree cutting / pruning permission (iii) Compensatory tree plantation as part of the project	Contractor and PIU office and site	• Checking of records	Contractor and PIU office and site		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	be required, obtain prior permission from Forest Department 3. Plant and maintain 10 trees for each tree that is removed						
Telephone lines, electric poles and wires, water lines within proposed project area	4. Identify and include locations and operators of these utilities in the detailed design documents, during design validation phase and preconstruction phase, to prevent unnecessary disruption of services during construction phase 5. Conduct detailed site surveys with	List of affected utilities and operators; (ii) Bid document to include requirement for a contingency plan for service interruptions (example provision of water if disruption is more than 24 hours), spoil management plan, and traffic	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	the construction drawings and discuss with the respective agencies before ground clearance; and 6. (ii) Require construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services.	management plan					
Ground disturbance can uncover and damage archaeological and historical remains	7. Create awareness among the workers and supervisors about the chance finds during excavation work 8. Stop work immediately if any finds are suspected to	Chance Finds Protocol	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	allow further investigation 9. Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ.						
Disruption to traffic flow and sensitive receptors	10. Prioritize areas within or nearest possible vacant space in the project location; 11. If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property,	(i) List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas. (ii) Written consent of landowner/s (not lessee/s) for reuse of excess spoils	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	vegetation, irrigation, and drinking water supply systems; Do not consider residential areas; Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. (v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m	to agricultural land					

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies.						
Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging,	12. (i)Use quarry sites and sources permitted by Mines and Geology Department only 13. No new quarry sites shall be developed for the subproject Verify suitability of all material sources and obtain approval of implementing agency	(i) List of approved quarry sites and sources of materials; (ii) Bid document to include requirement for verification of suitability of sources and permit for additional	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
and water pollution.	14. Submit on a monthly basis documentation of sources of materials to PMDCSC.	quarry sites if necessary.					
Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	15. Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. 16. Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. Include in detailed design drawings and documents all conditions and provisions if necessary	Incorporated in final design and communicated to contractors.	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
Use of approved construction practices to minimize construction impacts	4. Method Statement should be in a Table format with appended site layout map and cover the following: (i)Work description (ii) Number of workers (skilled and unskilled) (iii) Details of plant, equipment and machinery, vehicles (iv) Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing) (v) PPE (helmet, gloves, boots, etc.) details for each type of work (vi)Details of materials at each	Review of method statement and implementation of work	Contractor and PIU office	• Checking of records	Contractor and PIU office		

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	site (type and quantity) (vii)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.) (viii) Construction waste/debris generated (details and quantity) (ix) Detail the sequence of work process (step-by-step) including specific details of each work (x) Contractor's supervision and management						

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	arrangements for the work (xi) Emergency: Designate (i) responsible person on site, and (ii) first aider (xii) Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading etc. (xiii) The pipelines are to be laid along the roads. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating						

Impact	Mitigation Measures	Parameters monitored	Location	Method of monitoring	Location of Monitoring	Date of Monitoring	Compliance status
	dust, road safety issues, etc., and also into nearby open drains.						

8 MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS

51 Monitoring of Environmental Impacts On Project Surroundings shown in **Table 14**

Table 14 Monitoring of Environmental Impacts on Project Surroundings

Package No.	Status of Pre-Work Conditions(Recorded / Not Recorded)	Baseline Environmental Conditions (air, water, noise) Documented(Yes / No)	Action Proposed and Additional Measures Required
02MNG02	**Recorded**	**No**	Environmental monitoring of air and Noise is required for every 3months except monsoon season and water quality if any surface water bodies near project area.
02KDP01	**Recorded**	**No**	Environmental monitoring of air and Noise is required for every 3months except monsoon season and water quality if any surface water bodies near project area.
02PTR01	**Recorded**	**No**	Project is in preconstruction Phase Environmental monitoring of air and Noise is required which can be compared with construction Phase Monitoring results. For every 3months except monsoon season Monitoring has to be done. water quality monitoring is required if any surface water bodies near project area.
02UDP01	**Recorded**	**No**	Project is in preconstruction Phase Environmental monitoring of air and Noise is required which can be compared with construction Phase Monitoring results. For every 3months except monsoon season Monitoring has to be done. water quality monitoring is required if any surface water bodies near project area.
02MNG01	-	-	Tendering Evaluation stage

52. In addition to desk reviews and site inspections, monitoring of selected environmental parameters have been conducted during the reporting period. The frequencies of the environmental monitoring activities are commensurate to the type and significance of the impacts. For Project 2 subprojects, the parameters to be monitored are ambient air quality and noise levels.

53. The ambient air quality monitoring results are presented in **Table 15**. Results indicate that concentrations of parameters as measured "during construction" at Kundapura WSS package is almost within the CPCB limit. Base line study data of ambient air quality not provided in IEE. Concentration level at Kundapura 24X7 Water supply package in working locations "during construction" stage tested for RSPM and SPM. SO2, NO2, RSPM , parameters are within the standard. For SPM Application of mitigation measures i.e suppression of dust is required. Complete test result certificates are available as back up papers with PMDCSC and PIU**. Appendix 33** shows monitoring locations. Mitigation measures, like dust suppression will be applied as per EMP. Instruction has been given to the contractor for improvement of application of mitigation measures.

Table 15 Air Quality Monitoring Results

Site No.	Date of Testing	Site Location (Provide GPS Coordinates)3	Parameters (as required by statutory clearances or as mentioned in the IEE)				Remarks
			RSPM (PM10 and PM 2.5 µg/m3	SO2 µg/m3	NO2 µg/m3	SPM	
AAQ1	14.02.2019	Shastri circle	89.3	27.5	29.6	172.6	below limit
AAQ2	14.02.2019	OHT Helkote	72.6	25.6	28.2	159.4	below limit
AAQ3	14.02.2019	Old bustand Kundapura	59.7	27.5	30.3	126..4	below limit
AAQ4	14.02.2019	Parijatha Circle	51.7	24.6	26.2	103.8	below limit
AAQ5	14.02.2019	Office, Near Head Post office	48.2	22.7	2.0	89.9	below limit
AAQ6	15.02.2019	Basroor main road	42.5	25.9	28.4	76.1	below limit
AAQ7	16.02.2019	Church Road	43.6	23.5	25.2	82.1	below limit
AAQ8	16.02.2019	M.Kodi	39.4	21.7	24.1	72.0	below limit
AAQ9	16.02.2019	OHT Kodi	39.2	21.3	23.9	71.3	below limit
AAQ10	16.02.2019	Public Park near Jumma Masjid	23.4	16.3	18.7	47.3	below limit

Note: CPCB – Central Pollution Control Board, BDL – below detection limit
*** Monitoring conducted during report period Jan to Jun 2019**
Package no. 02KDP01= 9 samples on 14.02.2019
Standard as per CPCB: SO2 µg/m3 : 80, NO2 µg/m3:80, RSPM µg/m3: 100.0.
SPM µg/m3 : 100

52. The water quality monitoring has also been carried out for construction sites of Kundapura. **Table 16** shows water quality data. Complete test result certificates for Kundapura package are available as back up papers with PMDCSC and PIU. **Appendix**

[3] If GPS coordinate is not available, provide landmark(s) and/or chainage.

33 shows monitoring locations. It is noted from the results that water quality at Kundapura 24x7 Water supply project location is within the standard. Base line study data of water quality not provided in IEE.

53. The next environmental monitoring activities has be conducted within Jun to Aug 2019 to measure concentrations of parameters as done earlier and covering all running construction sites. Due monsoon season the study will be carried out Sep to October 2019 The cost of the environmental monitoring is arranged from contractor budget.

Table 16 Water Quality Monitoring Results

Site No.	Date of Sampling	Site Location	Parameters *(as required by statutory clearances or as mentioned in the IEE)*						Remarks
			pH	Conductivity µS/cm	BOD mg/L	TSS mg/L	TN mg/L	TP mg/L	
RW1	14.02.2019		7.74	41	2.2	-	-	-	TSS, TN, and TP is not tested. Water sample tested as per prescribed parameter by CPCB.
SW1	14.02.2019		7.45	-	-	-	-	-	TSS, TN, and TP is not tested. Water sample tested as per prescribed parameter by CPCB. Conductivity not tested for this sample
SW2	14.02.2019		7.36	-	-	-	-	-	TSS, TN, and TP is not tested. Water sample tested as per prescribed parameter by CPCB. Conductivity not tested for this sample
DW1	14.02.2019		7.47	-	-	-	-	-	TSS, TN, and TP is not tested. Water sample tested as per prescribed parameter by CPCB. Conductivity not tested for this sample

54. The noise level monitoring has also been carried out for construction sites of Kundapura. **Table 17** shows noise level data. Complete test result certificates for Kundapura package are available as back up papers with PMDCSC and PIU. **Appendix 33** shows monitoring locations. It is noted from the results that noise levels at Kundapura 24X7 Water supply project location is within the standard for commercial and residential areas. Base line study data of ambient air quality not provided in IEE. At Kundapura 24X7 water supply package locations noise level above the residential area standard but below the commercial or industrial area standard. Noise level monitoring to be continued as per environment monitoring program throughout the construction period for understanding increase or decrease trend of noise level at project locations. To mitigate high noise levels contractor to apply mitigation measures like control use of noise producing equipment, maintenance of equipment's and finally use of PPE by worker or mitigation measures as prescribed in EMP.

55. The next environmental monitoring activities has to be conducted within Jun to Aug 2019 to measure concentrations of parameters as done earlier and covering all running construction sites. Due to monsoon season, the study will be carried out Sep to October 2019. The cost of the environmental monitoring is arranged from contractor budget.

Table 17: Noise Quality Monitoring Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) *(as required by statutory clearances or as mentioned in the IEE)*		Remarks
			Day Time	Night Time	
NM1	14.02.2019	Shastri circle	58.28	49.03	within the standard of Commercial area
NM2	14.02.2019	OHT Helkote	47.73	38.87	within the standard residential area
NM3	14.02.2019	Old bustand Kundapura	64.47	51.23	within the standard Commercial area
NM4	14.02.2019	Parijatha Circle	54.11	41.79	within the standard Commercial area
NM5	14.02.2019	14.02.2019	47.84	37.00	within the standard Commercial area
NM6	14.02.2019	Basroor main road	49.74	39.10	within the standard Commercial area
NM7	14.02.2019	Church Road	53.67	45.74	within the standard Commercial area
NM8	14.02.2019	M.Kodi	52.43	43.41	within the standard residential area
NM9	14.02.2019	OHT Kodi	49.91	39.14	within the standard residential area
NM10	14.02.2019	Public Park near Jumma Masjid	52.58	38.60	within the standard residential area

*** Monitoring conducted during report period Jan to Jun 2019**

Package no. 02KDP01= 9 samples on 14.02.2019

CPCB Limits for Industrial area (I): Day Time= 75 dB(A), Night Time (9 PM to 6 AM)= 70 dB(A)
Commercial (C)area: Day Time= 65 dB(A), Night Time (9 PM to 6 AM)= 55 dB(A)
Residential ® area :Day Time= 55 dB(A), Night Time (9 PM to 6 AM)= 45 dB(A)
Silence Zone (S): Day Time= 50 dB(A), Night Time (9 PM to 6 AM)= 40 dB(A)

56. For Kundapura 24X7 water supply package monitoring has been conducted for drinking water and bore well water. All concentrations are within the limit. Result certificates are available with PIU and PMDCSC.

9 INFORMATION DISCLOSURE AND CONSULTATIONS

57. As per approved IEE, consultations and disclosure will be a continuous process throughout Project 2 implementation involving public consultations and focus group discussions. Field level consultation has been done at Kundapura, Mangalore, Puttur and Udupi during the report period.

58. During implementation of project general discussion has been done with the local public at Mangalore, and Kundapura along pipe laying locations of impact zone. Such

consultation is basically one to one discussion with public and generally to be continued throughout the construction period. The issues like requirement of restoration of utility services, removal of overburden soil, road restoration done or not, dust and noise pollution during implementation of the project, community safety arrangement, availability of public access have been discussed and views has been tabulated. consultation with the farmer using back wash water for agriculture purpose near the WTP premises in Japthi, Kundapaura enclosed as **Appendix 34**.

59. Outcome of consultation as follows,

- ✓ There is no issue on impact of utility services like PHE line etc.
- ✓ Excess earth removed in most of the cases. Public have no complaint on that
- ✓ Road restoration done without affecting the public
- ✓ There is minimum impact due to generation of dust and noise from project activity
- ✓ Arrangement of caution tape is done in most of the cases. No public complaint
- ✓ Local movement of public is not affected. Alternate access provided

60. The indicative schedule for consultations and disclosure is presented in **Table 18.**

Table 18: Information Disclosure and Consultations

Date of Consultation	Location	Number of Participants (specify total, male and female)	Issues/Concerns Raised	Response to issues/concerns
01.01.2019	Urdu School Kudroli(3 PM)	16	Citizens requested for detail of old UGD connection, Identification of all encroachments safety sign boards near the Urdu school and rectification of road damaged in early project	
08-02-2019	5.00pm at Mogaveera Sabha Bhavana, Ferry Road, Rangamandira	57	Citizens requested remedying the intermittent water supply (on alternative days); that road restoration be included; concessions on water supply connections for poor (this is a low income fishing community); mechanism for grievances for water tariffs; mechanism forgrievances	
	MahavishnuSheshashayanaBhajanaMandira Sabha Bhavan, Mangaluru	23		
07-02-2019	4th Cross Parking place of Bharati Heights Apartment at 10.30pm	30	Citizens asked why theearlier 24/7 water supply project was not completed; details of existing and proposed project details; why the project status is not disclosed on official websites, despite repeated reminders;if the questionsin earlier public consultations have	

			been incorporated into the plan; road restoration to be included; what types of pipes are being laid for the proposed water supply project; is the contractor under supervision of Mangalore City Corporation; will pressure will be maintained in higher elevated areas and have steps been initiated to supply 24/7 water for 150 to 200 ft high elevated areas; will Mangalore City Corporation pay for the purchase and installation of water meters	
14-02-2019	at Bejai church mini hall at 4.30PM	28	Citizens requested UGD provision for residents near Bejai Church; old UGD connection be repaired to stop leakages; provide UGD connections for 80 households currently without access; identify encroachments on the storm water drains; undertake UGD works near Kunthkanaonly in April /May 2019 to ensure safety of school children; safety sign boards in Kannada; road damage from earlier UGD works be repaired	
15-02-2019	KrishnaGnanaMandir Temple at 6.30 PM	47	Citizens revealeddissatisfaction with the quality of civil works under KUDCEMP; they were unhappy with the lack of ameeting agenda for the Public Consultation and with thelogistics for the meeting.Most of the participants demanded a brief note on project components and details Other feedback include the need for to connect the UGD line from Kottara Chowk to the high way; addressing the problem of illegal connections; addressing the intermittent supply of water;some areas receiving only raw water;ensuring quality material during the construction; avoiding damage to the existing pipelines; grievance redressal mechanism; display board with project details and name of the contractor	
15.02.2019	KrishnaGnanaMandir Temple at 6.30 PM	11	People discussed the early completion of project, missing links, manholes, land acquisition at Kodikal for construction of OHT quality of work, project display board and grievance redressal mechanism	
16-02-2019	Government Higher Primary	30	Citizens requested information on continuous water supply during laying of the WS pipelines; whether interrupted power supply.	

	School, Katipalla, at 2.00 PM		Will affect the 24x7 project; who will pay for the new water meters; how will customer's issues be addressed after water supply house service connections are connected; Project Display Boards; Grievance redressal mechanism	
17-02-2019	near Sutrpete Railway gate, Mangalore at 4.30pm	23	Citizen requested for maintenance of pressure in elevated areas, Diesel generator for water supply during power cut, information dissemination about the project	
17.05.2019	4th cross in the parking place of Bharathi heights apartment 10.30 am	30	People requested for early completion of work, frequent project information, provision of DGs during power cut, types of pipes used for the project, pressure to high elevated areas and water meters	
29.05.2019	Bookapatna 4.00 pm	33	People requested that the contractor should hire skilled workers like Plumbers and Electricians for the project and for restoration of damaged utilities and delay in closing the pits opened for laying the pipes in spite of repeating reminders. The PIU/RPMU Engineers should periodically inspect the road restoration work so that the quality of construction is maintained. The pot holes should be properly closed and in case construction/road restoration work is still in progress, proper sign boards should be displayed on priority basis to avoid accidents and inconveniences causing to public. Surprise spot inspection should be carried out by KUIDFC Officials from Mangaluru.	
31.05.2019	Padil 6.30 PM	57	The people requested that the Officers should regularly supervise the civil works until the construction is completed. They should also include the UGD work as the UGD works done under KUDCEMP around 17 years ago was not functioning properly and secondly that all areas under Padil was not covered under the network. Surprise spot inspection should be carried out by KUIDFC Officials from Mangaluru.	
31.05.2019	Deyvednya Kalyana Mantapa, Ashok Nagar 7.00 PM	51	. The people requested for safety arrangement for pedestrians, drainage water with proper closing. Drinking water without pollution, action against foul smell and drainage, the height of desk slab culvert shall be raised to	

			150 mm above the existing road .The existing sewerage pipe at bed level shall be removed. Action shall be taken when water is coming to houses due to chocking of drainage.	
03.06.2019	Kavoor 4.30PM	67	The Public asked for installation of water meters. A mechanism to address Customer Grievances. Address the issue of Non Revenue water. Mechanism for addressing the Residences which are constructed in low lying areas and the UGD was constructed elevated level. Both of the participants insisted for prior information to the public regarding public consultation meetings. The Public have insisted strongly that a letter should be addressed to the Deputy Commissioner to depute the concerned Officials from Mangaluru City Corporation for the PC without fail and provide solutions to their problems.	
04.06.2019	Sarvamangala Hall Garodi 5.30PM	15	The residents of this area have informed that under KUDSEM some UGD network was started but was not completed in all aspects, and hence the ground level water table is becoming contaminated due to seepage of sewer water, they have advised the Engineers to take corrective action. Illegal tap connections from Tumbe water supply pipe lines should be identified and disconnected immediately to avoid misuse of water. Repair the defunct UGD net work to avoid of seepage of drainage water to the open wells, When there is no water what is the mechanism to ensure 24/7 water supply. All the residents/Public in the meeting strongly insisted for prior notice/communication to be given to them. The Official of Mangalore City Corporation shall participate in the subsequent meetings.	
06.06.2019	Dakishna Kannada Upper Primary Kannada Model School Jappinamagaru 5.30PM	51	The people informed that during the 1st stage of ADB project the UGD pipes have been laid with a lesser Dia ,the manholes have been damaged and are overflowing and with this the open well are becoming contaminated due to seepage of the drainage water. The Engineers shall improve the sewer pressure by using lesser Dia pipes. The Officials shall	

			visit near Nagapanna manhole to sort out the overflowing drainage issues immediately to avoid seepage of water and control the foul smell emitting from that. The UGD survey has not been done by the Corporation Officials so far as they are very close to the city and living in the low lying area. The UGD pipeline has broken near Kattapuni and has to be repaired immediately. In Jappinamagaru main road the sewer water and rain water is chocking , will it be addressed under the proposed project	
07.06.2019	Kanchadi Yuvaka Mandal 11.30AM	36	The residents participated in the meeting and complained against the Officials of the MCC for not participating in the meeting and not taking steps to address their Infrastructure issues since a long time in spite of repeated reminders to them. They asked the reason for not laying of the UGD pipelines through Kottarachowki. The people asked about precautionary steps to taken for laying of the UGD pipeline of 50 metres stretch of Konchadi as it is a difficult task at all times. They urged the Officials on the necessity of initiating rainwater harvesting methods for all the Households.	

10. GRIEVANCE REDRESS MECHANISM

61. As per approved IEE, a project-specific grievance redress mechanism (GRM) has been established to receive, evaluate and facilitate the resolution of affected people's concerns, complaints and grievances about the social and environmental performance at the level of the Project. The GRM aims to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. The project-specific GRM is not intended to bypass the government's own redress process; rather it is intended to address affected people's concerns and complaints promptly, making it readily accessible to all segments of the affected people and is scaled to the risks and impacts of the project.

62. The GRC/SC for the project will be headed by Dy. Commissioner (DC) of the district with members as followed: (1) ULB Commissioners of project towns, (2) Revenue Department (Registrar) official, (3) RPMU Social safeguard/ R&R Officer of KIUWMIP, (4) ULB officer who will convene the periodic meeting of GRC and will shoulder responsibility of keeping records of grievances/ complaints in details with help from resettlement NGO. Other members, such as, NGO/CBO representatives, wards council representatives, DPs' representatives will be selected by the ULB Commissioner to represent in the GRC/SC

meeting. NGO should also deploy one person in the team who will be responsible for coordinating with all GRC members and the DPs for grievance redress.

63. In the event when the established GRM is not in a position to resolve the issue, Affected Person also can use the ADB Accountability Mechanism (AM) through directly contact (in writing) to the Complaint Receiving Officer (CRO) at ADB headquarters or to ADB Indian Resident Mission (INRM). The complaint can be submitted in any of the official languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM. A Grievance Redress Mechanism is shown in the **Figure 3.**

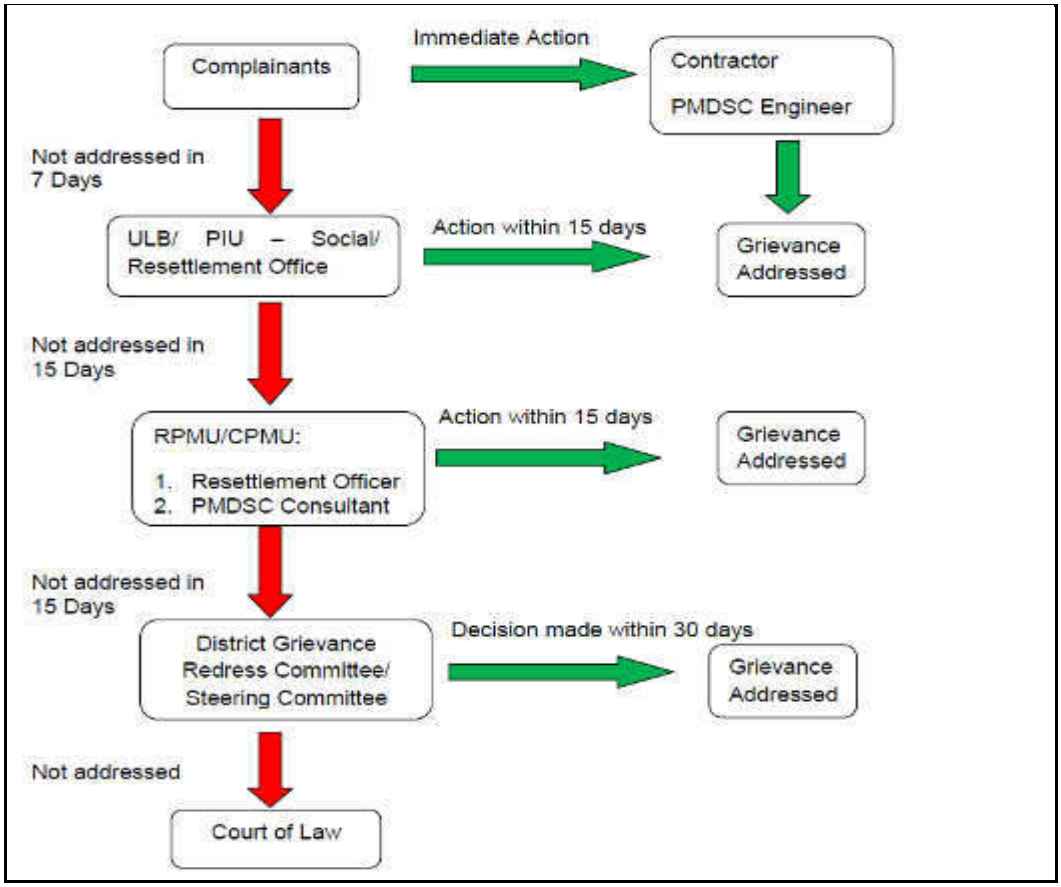


Figure 3: Grievance Redress Process

64. The PIUs will make the public aware of the GRM through public awareness campaigns. Grievances can be filed in writing using the Complaint Register and Complaint Form or by phone with any member of the PIU. The contact phone number of the respective PIUs and the RPMU will serve as a hotline for complaints and will be publicized through the media and placed on notice boards outside their offices and at construction sites.

65. Project level GRC has been set up on 23rd August 2018. Office memorandum is attached as **Appendix 35&35a.**

66. Already complaint register and accident register open at contractor level. grievances registers maintained by contractors of 2 sub projects 24X7 Kundapura and Mangalore UGD are attached as **Appendix 36 and 37.** Till date all grievances are resolved at contractor level. Accident record is available with the contractor. There is no as such accident record from working locations during the report period.

11 SUMMARY OF KEY ISSUES/CONCERNS IDENTIFIED DURING THE REPORTING PERIOD AND REMEDIAL ACTIONS

67. Based on environmental monitoring conducted during Jan to December 2019, KIUWMIP Project 2 is in mixed (partial to fully complied) compliance level of environmental safeguards. The main partial non-compliances include:

68. Advance information to the locals and shopkeepers at pipe laying area of Mangalore and Kundapura is not always provided. Time period for construction work for particular area not displayed. Contact details of PIU, consultant displayed on project display board for any grievances or suggestion for Mangalore UGD sites and in Kundapura yet to be provided.

69. No or partial use of project display board for Mangalore UGD package and Kundapura 24X7 water supply.

70. Need to improve use of PPE by contractor's workers. Use of PPE should be at all times as per site condition and work type. Particularly use of shoes, hand gloves and safety belt (when working at height). year plugs and nose masks should be provided for heavy vehicle drivers and in emergency for Mangalore UGD project.

71. Temporary placement of caution tape is noted for all the packages. Improvement/ complete use of caution tape at working areas required

72. Improvement of housekeeping and labour staying arrangement is required for Kundapura camp and store yard.

73. Kundapura 24X7 water supply Project, at Hilkote OHT site Scaffolding should be used and Proper safety measures should be taken.

74. Improvement of material storage for Kundapura 24X7 water supply and Mangalore UGD packages required.

75. Improvement is required for Puttur WTP site – Proper Chlorin storage, chemical storage, electrical safety and Asbestos inventory, Toilet facility and housekeeping.

76. Improvement of housekeeping and labour camp is required for Byadgi STP site under Byadgi UGD- STP package

77. Improvement is required for first aid box. First aid materials are not sufficient

78. Environmental monitoring for air and Noise quality should be done for Mangalore UGD.

79. Hard Barricading should be provided at Kodi beach OHT. And CRZ compliance Condition should be followed by Contractor.

80. For Kundapura, Kodi beach OHT site, Compensation paid, Tree cutting permission not required (to be checked once again).

81. Health check-up's and HIV AIDS training programs not carried out at Kundapura 24X7 water supply and Mangalore UGD.

82. Table 16 provides the recommended corrective action plan to address the non-compliances and partially compliances.

12 STATUS OF CORRECTIVE ACTIONS FROM PREVIOUS SEMR(S)

83 corrective actions to be implemented as reported in the visits and status of implementation of comments as provided by ADB, shown in **Table 19** and Compliance status Attached as **Appendix 38**

Table 19 Corrective Action Plan Status

Issues/Concerns	Corrective Action	Status	Remarks
Puttur- Existing Vented Dam at Nekkilady on Kumaradhra River			
a) No support available for the ladder going up the vented dam	a) Install handrail and horizontally installed ladder supported by monkey cage. Regulation mandates that all sloping ladder with heights of more than 1.5 m should be provided the abovementioned support.	Project is in design validation phase. asset survey is in progress. Will be complied in construction phase.	Will be complied
b) The crane installed at vented dam was not marked with the date of testing for safe working load and due date of testing	b) Obtain safe load certificates for all weight lifting equipment like cranes, whines, ropes, and other related equipment. Display the testing date and safe working load on the equipment.		
c) No lock or warning signs provided at access point to vented dam	c) Enforce access control measures to all high hazard areas Provide proper signages, such as "authorized personnel only" to limit access of people relevant to the site		
Puttur- WTP built during the KUDCEMP			
a) Asbestoses sheet found lying on site during the walkthrough	a) Conduct an inventory of all hazardous waste on site. Prepare and enforce the safe	Project is in design validation phase. asset	Will be complied

Issues/Concerns	Corrective Action	Status	Remarks
b) Access control in transformers not provided. No proper identification of authorized persons responsible in accessing high hazard zones. No proper signages installed to limit access for authorized personnel only to the site c) The Insulating mats near electric panels were missing. There was no signage of accesses control was found d) Improper storage and handling of chlorine cylinders No SDS or instruction to handle provided near chlorine cylinders. No emergency response system for chlorine handling displayed near chlorine cylinders.	disposal plan for hazardous waste b) Provide access control measures to all high hazard areas such as control panel /metering area, DG area, etc. Provide and display proper identification for authorized personnel permitted to access high hazard zones. Provide proper signages. c) Contractor to ensure all electric panels to be provided with standard insulating rubber mats. All electric appliances should be provided with proper signages and access to these panels to be controlled by lock and key d) Procure Safety data Sheet (SDS) to prove that chlorine is properly stored and handled Store chlorine cylinder per details provided in MSDS. Provide proper PPEs and Emergency response training to workers handling chlorine Provide hazardous signages and proper access control to chlorine storage area. Get cylinder tested periodically and mention the due date for next testing on cylinder	survey is in progress. Will be complied in construction phase.	
Puttur- Site for GLSR) at Tenkila a) The slope of site was very steep and no protection for slope stabilization was made available for observation	a) Slope stabilization to be included in detailed design Consultations with the temple authorities to be conducted at the earliest. The temple opens only for one day in a year, the construction during the temple opening day to be avoided.	Project is in design validation phase. asset survey is in progress. Will be complied in construction phase.	Will be complied
Kundapura - Jack well near Jambukeshwara Temple in Jambu village a) The fire extinguisher on site was found expired	a) All fire extinguishers to be tested periodically and all workers to be provided with	Not complied	Will be complied

Issues/Concerns	Corrective Action	Status	Remarks
b) The open 'space' and 'trench did not have proper covering, caution warning, nor signages c) The fire extinguisher on site was found expired	basic fire safety trainings including usages of fire extinguisher. b) Limit or block access to sites that pose slip and trip hazards. Provide proper caution signages on the site c) All fire extinguishers to be tested periodically and all workers to be provided with basic fire safety trainings including usages of fire extinguisher.		
Kundapura - OHT Site Halekote a) The site is situated right next to residential staff quarters with children No proper delineation between area of construction site and residential site. b) Material storage unorganized and stored haphazardly. No barricading nor markings were found onsite c) One worker was found painting without using hand gloves or nose mask. Paint SDS was not displayed near the working area. d) Labor camp not properly marked nor ventilated. 5 people stayed in one room e) No toilets provided for the workers. Tap for water not available in toilets. f) Health and Safety Manual and records of daily tool fox not	a) Isolate and barricade the construction area after providing proper access to residents to the nearby roads b) Designated space for material stockpile should be properly barricaded and marked with caution signages c) Procure the MSDS of paint from the manufacturer and use precautions and PPEs according to MSDS provided. Identify areas that will be painted on given schedules to identify and use rubber mat to avoid contamination of soil or floor d) Improve labor camp conditions in accordance with IFC guidance e) Provide toiles for workers in accordance with best practices f) 1. Revise Safety Plan /EHS manual per site specific conditions 2. Toolbox meeting to be conducted on daily basis to	a) Hard barricading Provided but supported with steel rod which is unsafe recommended contractor to use wood. b) Designated space for material is provided soft barricading done recommended contractor to Provide with caution signages and follow proper storage system. c) Not complied d) Not complied e)Not complied 1. Not revised Safety Plan /EHS manual as per site specific conditions.	Will be complied

Issues/Concerns	Corrective Action	Status	Remarks
available on site for review during the visit Attendance register, and accident/ incident record and GRM register, was not maintained on site Unstable scaffolding being used onsite	convey the importance of safety to Labours 3. Keep onsite an accident/ incident record register 4. Provide proper scaffolding and lifeline for safety harness hooks	2. Safety measures and usage of PPE'S is displayed on the site (recommended to past on wooden plank) Tool box meeting conducted recommended contractor to do proper documentation of tool box meeting. 3. Not complied given time line to comply in 3 days 4. Not Complied.	
Mangalore UGD a) Big open trenches blocked the access of houses from the roads.	a) Work in phases. Excavate trenches in smaller pockets. Close off pockets of excavated trenches before leaving the work site in the evening. Provide proper danger signages to warn off pedestrians, assign traffic warden to control traffic flow near the trenches. As part of good practice, provide sturdy access ways for pedestrians (i.e., cemented pathways, not just planks) with a handrail to prevent people from falling into the trenches.	Work completed and restoration done	

SAUW Semi-Environmental Monitoring Report Review – Information Log

Instructions: Provide information based on SEMR submitted by Project Management Unit (PMU). This log sheet will serve as record of the review findings, comments, and/or further actions. A copy of the SEMR log sheet should be (i) provided to PMU for their record; (ii) attached to the SEMR to be disclosed on ADB website; (iii) used as reference for review of next SEMRs; and (iv) inputted in the SARD Safeguards Compliance Tracking System.

<table>
<tr><td>Project title:</td><td colspan="4">India: Karnataka Integrated Urban Water Management Investment Program (KIUWMIP) – Tranche -2</td></tr>
<tr><td>Loan Number:</td><td>3726-IND</td><td>Project Number:</td><td colspan="2">43253-027</td></tr>
<tr><td>Overall Project and Objectives</td><td colspan="4">1. The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP) 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 & 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 & sanitation within an IWRM context.

2. The Program will be implemented over a four-year period and will be funded by a loan via the Multitranche Financing Facility (MFF) of Asian Development Bank (ADB). 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). Initially Mangalore, and Kundapura are the 2 towns chosen to benefit from the 2 tranche of the investment. As the Detailed Project Report costs have exceeded substantially compared to the costs indicated on the basis of feasibility studies, ADB would finance water supply in 4 towns namely (1) Kundapura, (2) Puttur (3) Udupi (4) Mangalore under Tranche-2 and UGD in one town namely Mangalore.

3. The programme proposes the MFF spread across two tranches over a period of ten years (2014-2024) with the total size of $225 M. The shares of ADB propose to be $150 million and counterpart funding from the state Government is estimated at $75 million. In addition to the Loan funds of $150M, the ADB has agreed to support the programme with an additional amount of $1.8 M as a grant fund out of its urban financing partnership facility.

4. In Tranche 2 main outcome will be providing Water supply to Kundapura, Puttur, Mangaluru and Udupi; and Replacement of Old Sewerage Mains at Mangalore.</td></tr>
<tr><td rowspan="2">Approved Categorization</td><td></td><td>Category A</td><td></td><td>Category C</td></tr>
<tr><td>√</td><td>Category B</td><td></td><td>FI</td></tr>
<tr><td>Loan Effectivity Date:</td><td colspan="2"></td><td>Frequency of Reporting</td><td>Semi- Annually</td></tr>
<tr><td>Project Officer</td><td colspan="2">Akira Matsunaga</td><td>Project Analyst</td><td>Edgardo G. Moises,</td></tr>
<tr><td rowspan="2">Reporting Year</td><td rowspan="2">2019</td><td rowspan="2">Coverage Period</td><td>February to July 2019</td><td>1st SEMR of the year</td></tr>
<tr><td></td><td>2nd SEMR of the year</td></tr>
<tr><td colspan="2">Date of PMU submission to ADB</td><td>First submission - 25 July 2019
Revised submission – 22 August 2019</td><td>Date of ADB's feedback/comment to PMU</td><td>02 August 2019</td></tr>
</table>

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
A. Project Safeguards Team *(check loan agreement and PAM requirements)*				

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
PMU[1]	Mr Shashi Sekhar SP, Environment Expert			
PIU[2]	1. Mr. Shiva Kumar, Assistant Executive, PIU, Mangalore, Package 02MNG02 2. Mr.Harish Valmike, Assistant Engineer, AE, PIU, Kundapura, Package 02KDP01, In-charge Environment safeguard compliance 3. Mr.Shamant, Assistant Engineer, AE, PIU, Puttur, Package 02PTR01 In-charge Environment safeguard compliance 4. Sudarshan SR, Assistant Executive Engineer, AEE, PIU, Udupi, Package 02UDP01	Details of KIUWMIP Environmental Safeguard Team is provided in table 2		
Consultants	MS. M. Sultana, PMDCSC, Environment Specialist			
Others *(e.g. auditor, external monitoring team, etc)*	Table 4 provide information on Environment Safety Officer of contractors 1. Mr. Gouda Naika , DRS Infra		Provide regular trainings to EHS officers of contractor for ADB's requirements	

[1] PMU – project management unit
[2] PIU – project implementation unit (For DWSNIP – project coordination units are PIUs

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	Tech Pvt, Ltd., Package 02MNG02 2. Mr. Vijay Monaveera, Laxmi Civil Engineering services , Package 02KDP01 3. Mr. YAmruth, Suez Projects– DRS Infra Tech, Package 02PTR01 4. Mr. Pradeep Shetty, Suez Projects– DRS Infra Tech , Package 02UDP01			
B. Overall Project and Subproject Description *(summarize number and type of packages)*[3]				
Number of Packages with civil works *(check if consistent with latest procurement plan)*	Following five (5) packages are considered in tranche -2 **A. Water Supply** 1) 02KND01 - Construction of Bulk & Distribution Network - Operator assisted in Kundapura - 44.30% Physical progress against total quantity as of June 2019 2) 02PTR01 - Construction of Bulk & Distribution Network - Operator assisted in Puttur - Design validation under Progress 3) 02UDP01 - Construction of			

[3] DB/DBO – design-build or design, build, and operate or where contractor will finalize the detailed engineering design; civil works contract – enough details of the package is known and used as basis for bid/contract's Technical Specification

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	distribution Network - Operator assisted in Udupi - Physical progress against total quantity as of June 2019 - Design validation under Progress 4) 02MNG01 - Construction of Bulk & Distribution Network - Operator assisted in Mangalore - In tendering stage **B. Sewerage** 5) 02MNG02 - Replacement of pumping mains - 51.45% Physical progress against total quantity as of June 2019			
Number of DB/DBO packages and status (see footnote 3)	As per table 3 no package is if DB/DBO type			
Number of civil works packages and status (see footnote 3)	As per table 3 One sewerage package is civil works rest four water supply packages are of Civil Works and services type, details are provided in table 3.			
IEEs cleared for awarded packages?	As per table 4 and 5 all IEEs for awarded packages are cleared			
Safeguard documents disclosed on project website?	As per table 5 all IEEs are disclosed on ADB and KUIDFC's, it also provides weblink of disclosed IEEs on PMU website		Provide searchable weblink of disclosed IEEs	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
SEMR information on package-wise implementation phase (bidding, on-going, construction, completed, under operation, others)	Table -1 provides package wise components and physical progress			
C. Status of compliance with statutory clearances *(check IEE for the complete list, summarize the findings for each package – obtained/under application and if obtained, specify validity period)*				
Environmental Clearance (EC)	Not required			
Forest Clearance	Not required			
No Objection Certificate/Letter	Table 6 provides Status of Compliance with National and State Legal Requirements for following requirements Water (Prevention and Control of Pollution) Act. 1974 The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up diesel generator Consent to Establish (CTE) and Consent to Operate (CTO) Statutory permission from National Highways Authority for road cutting Statutory permission from Railway authority Statutory permission from PWD Utility shifting Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)			
Site location clearance				
Permit/Consent to Construct (or equivalent)				
Permit/Consent to Operate (or equivalent)				
Road-cutting permit				
Utilities shifting permit				

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	Labour compensation insurance			
Tree-cutting permit	Table 6 provides status of NOCs for tree cutting and Appendix 11 and 11a details of compensation paid for 6 coconut trees.			
Others (specify)				
D. Status of Compliance with loan covenants *(verify items in SEMR with the project's loan agreement)*				
Procurement of goods, works and consulting services (Schedule 4, Item 7)	Complied	Details are provided in table -7		
Safeguards environment (Schedule 5, Item 5)	Complied and ongoing	Details are provided in table -7		
Human and financial resources to implement safeguards requirements (Schedule 5, Item 9)	Complied	Details are provided in table -7		
Safeguards-related provisions in bidding documents and works contracts (Schedule 5, Item 10)	Complied and ongoing	Details are provided in table -7		
Safeguards monitoring and reporting (Schedule 5, Item 11)	Complied and ongoing first SEMR was submitted on 25 July 2019	Details are provided in table -7		
Prohibited list of investments (Schedule 5, Item 12)	Complied	Details are provided in table -7		
Labor standards, health and safety (Schedule 5, Item 13)	Complied in document and during implementation	Details are provided in table -7		
E. Contractors Compliance with Environmental Safeguards Requirements				
Appointment of Environment, Health and Safety (HSE) and/or nodal person	Table 4 provides details of package-wise Contractor/s' Nodal Persons for Environmental Safeguards	None		
Submission of site-specific EMPs	No details for submission of site-	Site-specific EMPs for 2 packages (Kundapura and	Provide details with dates for submission of SEMP.	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	specific EMPs are provided in SEMR	Mangalore UGD) is already approved, for 2 packages (Puttur & Udupi) site-specific EMPs will be submitted after ongoing design validation survey.	Add details of change in scope from approved IEE (if any)	
Submission of SEMP implementation report *(specify in comments frequency – daily, weekly, monthly or quarterly basis)*	SEMP implementation report are provided in in following tables Table 10: Compliance to SEMP of the Package- UGD in Mangalore City, Package No. 02MNG02 Table 11: Compliance to EMP of the Package- Water Supply System in Kundapura City, Package No. 02KDP01 Table 12: Compliance to EMP of the Package- water supply system in Puttur city – Package No. 02PTR01 Table 13: Compliance to EMP of the Package- water supply system in Udupi city – Package No. 02UDP01	SEMP implementation report for pre-construction phase is for Udupi and Puttur is provided in Appendix	Provide SEMP implementation report for pre-construction phase for Mangalore and Kundapura.	
Site verification by PMU, PIU, or consultants *(verification report should be attached to the SEMR)*	Package wise details of site verification done by PIU or PMU staff is detailed in SEMR compliance tables			
SEMR compliance matrix on mitigation measures implementation	SEMR compliance matrix, is based on	Compliance matrix for pre-construction SEMP is missing in	Add compliance matrix on mitigation measures	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
(matrixes are based on approved SEMPs)	approved SEMP for Kundapur water supply and Mangalore UGD	report for Kundapura and Mangalore UGD packages	implementation for pre-construction Phase for Kundapura water supply and Mangalore UGD based on approved SEMPs	
Other information			-	-
F. Environmental Monitoring based on EMP				
Rationale		Rational for selected sampling location, is not provided in report	Provide rational for sampling site selection	
Parameters to be monitored are commensurate to the impacts, mitigation measures, and project/ subproject/ package	Results of air quality, Noise and water quality monitoring and ambient noise quality for Kundapura sampling are provided in table 15 to 17	As per IEE once sampling per quarter is required, for semiannual report at least 2 sampling to be conducted. Results for pre-construction phase and sampling results for Mangalore UGD package is missing	Provide details of environmental monitoring reports of Mangalore UGD package. Justify the sampling location and categorize each sample into Industrial Residential, Rural and Other areas Provide results for pre-construction phase sampling for all ongoing packages Provide details of last and next planned sample Provide Sampling collection and analysis methodology	
Sampling locations identified and appropriate		4 sampling location is identified as per IEE, but justification for other sampling location is not provided.		
Sampling frequency identified and appropriate	Sampling results of Air and noise quality for month of February 2019 for Kundapura is provide in table 11 and 12	Details of frequency of sampling only for Kundapura is given in report, results for other packages are not provided		
Sampling collection and analysis are in accordance with internationally accepted practices	None	Methodology for collection and analysis of sample is not provided in report.		
Standards and performance indicators are compliant with ADB SPS requirements[4] (provide justification if less stringent standards are used)	None	Only CPCB's standard are provided for comparison	Compare the results with Applicable ADB SPS standards and categorize each sample location in Industrial Residential, Rural and Other areas	
G. Environmental monitoring results (narrative based on presented results)				

[4] ADB SPS (Appendix 1 para 33) requires projects to apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines (https://www.ifc.org/ehsguidelines). These standards contain performance levels and measures that are normally acceptable and applicable to projects. When host country regulations differ from these levels and measures, the borrower/client will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the borrower/client will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented ADB SPS.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
Visual inspection *(refer to EMP tables in the IEE where visual inspections are required to determine if there are environmental impacts)*				
Air quality results	Only for Kundapura package is provided in table 15 results of P.M2.5 and PM 10 are exceeding, acceptable standards as per ADB SPS	Exceeding results from acceptable limit are indicator poor implementation of mitigation measures	Add comparative tables for pre-construction, construction phase and acceptable standards as per ADB's SPS Conduct Air quality monitoring for all required locations as per IEE Implementation of EMP to be followed strictly	
Water quality results	Only for Kundapura package is provided in table 16	Ensure conducting all environmental samplings for all packages as scheduled in IEE	Add summary of water quality test report in main text of report	
Noise level results	Results for ambient noise only for Kundapura are provided		Conduct noise level monitoring for all required locations as per IEE Add comparative tables for pre-construction, construction phase and acceptable standards as per ADB's SPS Implementation of EMP to be followed strictly Explain the category of sampling location (Industrial area, Commercial area, Residential Area, and Silent Zone)	
Others		Pre-construction phase environment monitoring for all packages and construction phase	Provide pre-construction phase environment monitoring for all 4 packages and construction	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
		monitoring results for Mangalore UGD are missing in report	phase monitoring results for Mangalore UGD Ensure conducting all environmental samplings as scheduled in IEE	
H. Consultations and/or FGDs during the reporting period				
Number	17 meetings		Provide	
Reason/s for consultations/FGDs	General project information and grievances of public			
Number of participants	605 (Table 18 breakup provides breakup of number of participants)			
Number of **female** participants	No details			
I. Trainings, Workshops, Seminars during the reporting period				
Number	Summary of 4 trainings conducted during SEMR reporting period is provided in table 9			
Topics	1. Environmental Health and Safety 2. Environmental and Social Safeguards and other Related safety issues on sites 3. Environmental and Social safeguard 4. Environmental safeguards and other safety issues on sites.			
Number of participants	188 (41 +58+30+59)			
Number of **female** participants	13 (0+5+1+7)			
J. Grievance Redress Mechanism				
GRM per PAM or IEE/EARF established	Established, details provided in section 10			
GRM notified via publication or notice boards	GRM notification is annexed in Appendix 35 and 35A			
GRM members identified	GRM Members are identified and details			

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	are provided in Appendix 35 and 35A			
GRM members have capacity to address project-related complaints *(detailed information on capacity development of GRM members such as trainings, workshops, briefings, etc should be attached in the SEMR)*	No details provided			
Number of meetings conducted *(attach minutes of the meeting)*	No details provided			
K. Complaints Received *(detailed information on nature of complaints, summary and status of resolution)*				
Number of complaints	No summary /details provided			
Nature *(provide summary of issues/concerns)*	None			
Status of resolution	None			
L. Summary of Issues and Corrective Actions				
Major issues/concerns (specify)	Details are provided in table 19		Provide compliance report in next SEMP	
Corrective Action to be implemented, timeline, responsible person/s, and budget are clearly specified	Details are provided in table 19	Budgetary requirements for implementing corrective action plan is missing	Provide details of time spent and budget used in implementing corrective action plan in next SEMR	
M. Status of Corrective Action Plan from Previous Reporting Period (list all and provide status)				
	NA			
N. Appendixes				
Photos included?	Included in appendix - 1	Issues shown in photographs are not highlighted in corrective action plan.		
Summary of consultations included?				
Site EMPs (attach sample?)	For Puttur and Udupi package its attached in appendix		Include all required NOC/ permission in report	
Checklists?	Not provided			
Others	SPOIL MANAGEMENT PLAN	Appendix number are missing	Provide appendix numbers.	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU
	(SMP) for Kundapura is attached 2 times in appendix and in both are not readable, no space between the words	The labour license of laxmi civil engineering is already expired in December 2018 Summary and reference of some appendices is missing in main report	Include summary and reference of appendix in main report	

O. Review and clearance for disclosure		
Reference	1st SEMR report	
	Name	**Date**
Reviewed by	**Govind Singh Rathore**	**02 September 2019**
Noted by		
Response to ADB comments by:		
Status/Remarks	1. Recorded as submitted	
	2. Send comments to PMU for response to comments	