

Environmental and Social Due Diligence Report

Project Number: 47083-004
December 2019

INDIA: Accelerating Infrastructure Investment Facility in India – Tranche 3 MEP Sanjose Kante Waked Road Private Limited (Part 1 of 3)

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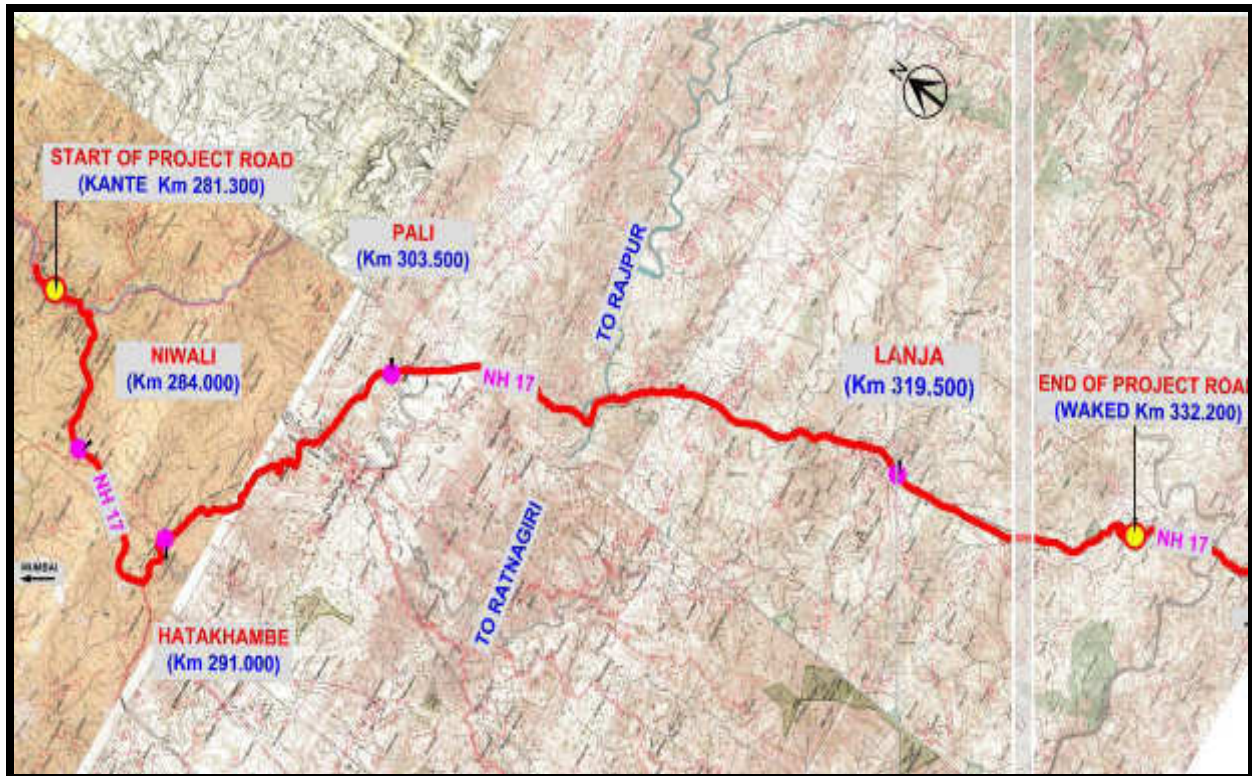
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Due Diligence Report on Environment and Social Safeguards

By

India Infrastructure Finance Company Limited (IIFCL)
(A Govt. of India Enterprise)

Rehabilitation & Up-gradation of NH-66 (Erstwhile NH-17) from km 281+300 to km 332+200 (Kante-Waked Section) to four lane with paved shoulder (Total Length – 49.147 km) in the state of Maharashtra under NHDP-IV on Hybrid Annuity mode



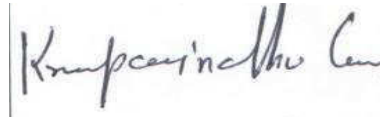



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MEP Sanjose Kante Waked Road Pvt Ltd (MSKWRPL)

Environment and Social Safeguards Due Diligence Report (ESDDR)

Prepared by	<p>Mr. Amit Jain Environment Consultant</p> <p>Dr. Rashmi Kadian Assistant General Manager (Environmental Specialist) ESMU, IIFCL</p> <p>Mr. Krupasindhu Guru Assistant General Manager (Social Specialist) ESMU, IIFCL</p>	  
Reviewed and Approved by	<p>Dr. S. S. Garg General Manager & Head, ESMU IIFCL</p>	

CONTENTS

PROJECT BACKGROUND	5
1. PURPOSE OF THE REPORT	6
2. SUB-PROJECT TITLE	6
3. SUB-PROJECT BACKGROUND	6
4. SUB-PROJECT LOCATION & DESCRIPTION.....	7
5. CONCESSIONAIRE	8
6. EPC CONTRACTORS	8
7. INDEPENDENT ENGINEER	9
8. IIFCL FUNDING	9
9. STATUS OF PROJECT IMPLEMENTATION	9
DUE DILIGENCE ON ENVIRONMENTAL SAFEGUARDS	10
10. ENVIRONMENT SAFEGUARDS COMPLIANCE REVIEW	11
11. APPLICABILITY OF ENVIRONMENTAL IMPACT ASSESSMENT NOTIFICATION..	11
12. APPROACH TO THE ENVIRONMENT SAFEGUARDS DUE DILIGENCE REPORT: ..	11
13. COMPLIANCE OF MSKWRPL TO THE ESSF OF IIFCL:	12
14. POLICY, LEGAL AND REGULATORY REQUIREMENT:.....	13
15. IMPACT ASSESSMENT OF SUB-PROJECT	14
16. IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLANS	15
17. HEALTH AND SAFETY	19
18. GRIEVANCE REDRESSAL MECHANISM	19
19. ENVIRONMENTAL SENSITIVITY.....	19
20. PROJECT AGAINST THE PROHIBITED INVESTMENT ACTIVITIES LIST	20
21. CATEGORIZATION OF SUB-PROJECT	20
22. SITE VISIT OBSERVATIONS.....	20
23. CONCLUSIONS AND RECOMMENDATIONS	22
DUE DILIGENCE ON SOCIAL SAFEGUARDS.....	24
24. PURPOSE OF THE SOCIAL SAFEGUARDS DUE DILIGENCE	25
25. PROJECT AGAINST THE PROHIBITED INVESTMENT ACTIVITIES LIST	25
26. OBJECTIVE OF SOCIAL SAFEGUARDS DUE DILIGENCE.....	25
27. APPROACH AND METHODOLOGY	25
28. SOCIAL IMPACT OF THE PROJECT	26
28.1 LAND ACQUISITION IN THE PROJECT	26
28.2 IMPACT ON STRUCTURE	27
28.3 REHABILITATION AND RESETTLEMENT IMPACT IN THE SUB-PROJECT.....	27
28.4 IMPACT ON INDIGENOUS PEOPLE	27
29. GREIVANCE REDRESSAL MECHANISM FOR THE SUB-PROJECT	27
30. EMPLOYMENT GENERATION	28
31. THE COMMUNITY ENGAGEMENT ACTIVITIES	28
32. LABOUR LICENSE OBTAINED BY THE SUBPROJECT DEVELOPER	28
33. DISCLOSURE	28
34. SITE VISIT OBSERVATION.....	29

LIST OF FIGURES

FIGURE 1: PROJECT LOCATION ON MAP	7
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LIST OF TABLES

TABLE 1: SALIENT FEATURES OF MEP SANJOSE KANTE WAKED ROAD PVT LTD	8
TABLE 2: STATUS OF REGULATORY PERMITS/ CLEARANCES OBTAINED RELATED TO ENVIRONMENTAL SAFEGUARDS.....	13
TABLE 3: STATUS OF EMP IMPLEMENTATION AT MSKWRPL.....	16
TABLE 4: EMP FOR OPERATION OF MSKWRPL	18

ANNEXURES

Annexure 1	Environmental Management Plan
Annexure 2	Tree Cutting Permissions
Annexure 3	Labour License
Annexure 4	Labour Insurance
Annexure 5	HSD Clearance
Annexure 6	Traffic Management Plan
Annexure 7	Project Safety Plan
Annexure 8	Organizational Chart

PROJECT BACKGROUND

1. PURPOSE OF THE REPORT

1. This Environmental and Social Due Diligence Report (ESDDR) has been carried out by India Infrastructure Finance Company Limited (IIFCL) in consultation with the Concessionaire, MEP Sanjose Kante Waked Road Pvt. Ltd. (MSKWRPL) to assess the adequacy of the project with the applicable national, IIFCL's ESSF and ADB's safeguard compliance. The report has been prepared as per the documents/information received from the Concessionaire and on the basis of site visit which was conducted on 5th and 6th November, 2019.

2. SUB-PROJECT TITLE

2. The sub-project includes - Rehabilitation & Up-gradation of NH-66 (Erstwhile NH-17) from km 281+300 to km 332+200 (Kante-Waked Section) to four lane with paved shoulder (Total Length –49.147 km) in the state of Maharashtra under NHDP-IV on Hybrid Annuity mode.

3. SUB-PROJECT BACKGROUND

3. Ministry of Road Transport & Highway (MoRT&H) has awarded road stretch project comprising development of the existing two lane road into four lane with paved shoulder of Kante-Waked section of NH-17 (New NH-66) from Km 281+300 to Km 332+200 (49.147 Km) in the state of Maharashtra on Hybrid Annuity basis for a Concession Period of 15 Years which excludes construction period of 730 days (i.e. 2 Years of construction period and Operation Period of 15 Years) to M/s MEP Sanjose Kante Waked Road Pvt Ltd (MSKWRPL) as concessionaire. The project is awarded to M/s MEPIDL-Sanjose India Infrastructure and Construction Pvt. Ltd.(JV) on the basis of lowest amount of Bid Project Cost i.e. Rs.826.28 Crores & O&M Cost of Rs. 11.60 Crores per year quoted by them among all the shortlisted bidders for the aforesaid project.
4. M/s MEP Sanjose Kante Waked Road Pvt Ltd is a newly incorporated SPV for undertaking the task of four laning (with paved shoulders) of Kante Waked Section of NH-17 (New NH-66) from Km 281+300 to Km 332+200 (49.147 Km) in the state of Maharashtra on hybrid annuity basis and to do all necessary and incidental activities in this regard.
5. M/S MEP Sanjose Kante Waked Road Private Limited (MSKWRPL) is a Special Purpose Vehicle (SPV) promoted by MEP Infrastructure Developers Ltd (MEPIDL) in joint venture with Sanjose India Infrastructure & Construction Pvt. Ltd. (SIICPL) (with 74:26 shareholding ratio) for implementing a road project involving up gradation from two-lane to four-lane of Kante Waked road in the state of Maharashtra from Km 281+300 to Km 332+200 (total length 49.147 Km).

4. SUB-PROJECT LOCATION & DESCRIPTION

6. The site of the four-lane project highway comprises the section of National Highway-17 (New NH-66) commencing km 281+300 to km 332+200 in the State of Maharashtra, India. The total design length of the project road is about 49.147 kms. The alignment of the project is shown in Figure 1 below.

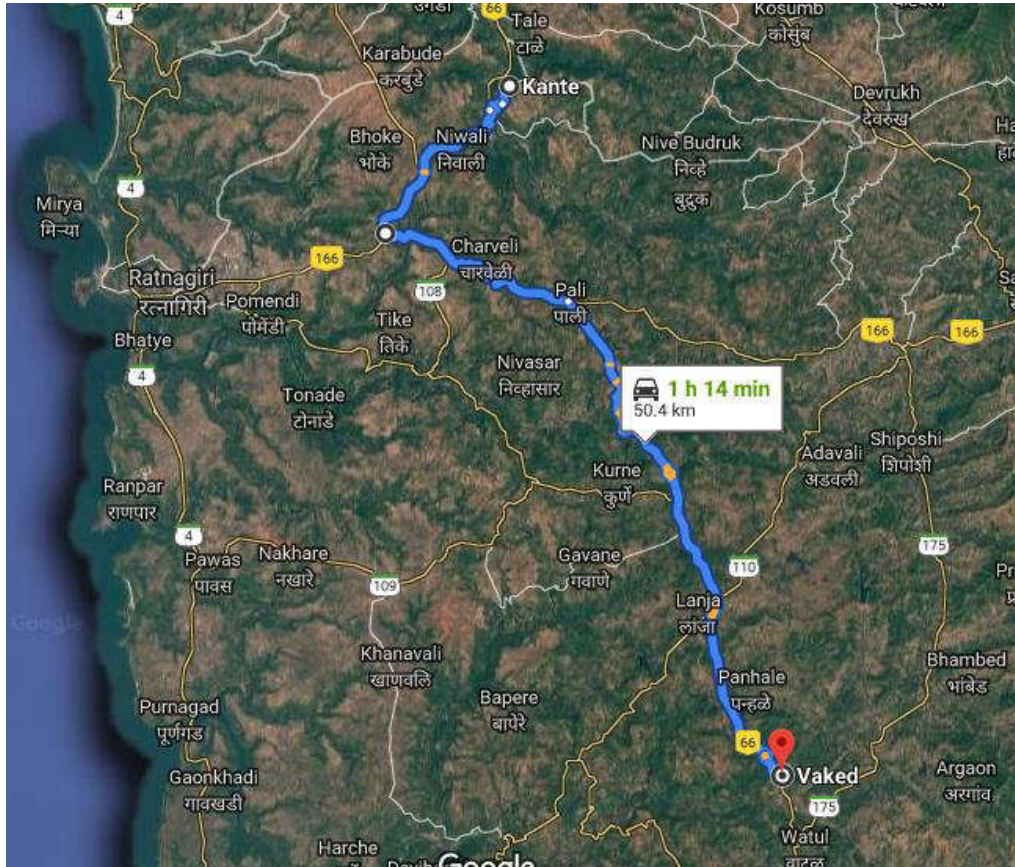


Figure 1: Project Location on Map

7. MSKWRPL had entered into a Concession Agreement (CA) with the Authority on 28th June, 2016 for construction, operation and maintenance of the Project. The CA sets out the scope, rights and obligations of all the parties, overall framework for the development, operation and maintenance of the Project.

8. The sub-project involves widening and strengthening of existing 2 lanes section of NH-17 (new NH-66) and its Operation and Maintenance (O & M). The Salient features of the sub-project are given in **Table 1**.

Table 1: Salient Features of MEP Sanjose Kante Waked Road Pvt Ltd

Particulars	Features
Project Road	NH-17 (New-66) Section from Kante to Waked (km 281+300 to km 332+200)
State	Maharashtra
Concessioning Authority	Ministry of Road Transport & Highway (MoRT&H)
Concessionaire	M/S MEP Sanjose Kante Waked Road Pvt Ltd
Total Project Length	49.147 km
Service Road/Slip Road	9.050 km
Major Junction	08 Nos.
Minor Junction	37 Nos.
Toll Plaza	01 Nos.
Truck Lay bays	02 Nos.
Bus Bays/Passenger shelter	18 Nos.
Rest area	01 Nos.
Elevated Structure	02 Nos.
Vehicular Underpass	01 Nos.
Light Vehicular Underpass	02 Nos.
Flyover	02 Nos.
Foot over Bridge	01 Nos.
Major Bridge	01 Nos.
Minor Bridge	09 Nos.
Pipe Culvert	182 Nos.
Slab and Box Culvert	27 Nos.

5. CONCESSIONAIRE

9. MoRT&H has appointed M/s. MEP Sanjose Kante Waked Road Pvt Ltd (MSKWRPL) as the concessionaire for this sub-project. MSKWRPL is a Special Purpose Vehicle (SPV) company promoted by M/S MEP Infrastructure Developers Limited.

6. EPC CONTRACTORS

10. MEP Infrastructure Developers Ltd (MEPIDL) is the turnkey EPC and O&M contractor for the sub-project.

7. INDEPENDENT ENGINEER

11. The contract agreement between MoRT&H and M/s Aarvee Associates has been signed to monitor the sub-project as Independent Engineer (IE).

8. IIFCL FUNDING

12. The total project cost of MSKWRPL is Rs. 826.28 crores. The project is financed by IIFCL under Direct Lending Scheme. IIFCL has sanctioned an amount of Rs 165.26 Crore and disbursed an amount of Rs 33 Crore so far.

9. STATUS OF PROJECT IMPLEMENTATION

13. The sub-project is under construction and the Scheduled Commercial Operations Date (SCOD) was 12th November 2018 which is now expected to be in March 2020. At the time of site visit, MSKWRPL staff has informed that the physical progress achieved till October 2019 is about 11.52 %.

DUE DILIGENCE ON ENVIRONMENTAL SAFEGUARDS

10. ENVIRONMENT SAFEGUARDS COMPLIANCE REVIEW

14. The environmental due diligence (EDD) report focuses on the status and review of the applicable environmental regulatory requirements, compliance to the regulatory requirements, review of the environment related sub-project documents, implementation to the Environmental Management Plans (EMPs), institutional arrangements for implementation and monitoring of environmental mitigation measures, EMP planned for operation phase, environment, health & safety (EHS) related clauses in agreements, health and work safety measures, status of plantations and project safety plan.

11. APPLICABILITY OF ENVIRONMENTAL IMPACT ASSESSMENT NOTIFICATION

15. It is required that the project meets the applicable national guidelines / regulations relating to the environment, occupational health and safety and social issues. The project should have necessary clearances as well as permits and approvals for project implementation and suitable environmental management plans.
16. National Highway projects up to 100 Kms involving additional right of way or land acquisition upto 40 meters on existing alignments and 60 meters on re-alignments or by-passes are exempted from the preview of the Environmental Impact Assessment Notification, 2006 of Government of India. The total length of the sub-projects is approximately 49.147 Kms, therefore, MSKWRPL does not require environmental clearance and is not required to conduct an Environmental and Social Impact Assessment (ESIA) as a statutory requirement. A detailed Environmental Management Plan (EMP) is prepared for the sub-project, based on the impacts envisaged by the sub-project and the EMP is being implemented at the sub-project.

12. APPROACH TO THE ENVIRONMENT SAFEGUARDS DUE DILIGENCE REPORT:

17. The Environmental Due Diligence Report (EDDR) reviews the available documents and assesses the compliance of the sub-project with respect to environmental safeguards; regulatory clearances; environmental impacts and management measures; EMP implementation; Health, Safety and Environment (HSE) measures; and categorization of sub-project on the basis of above review.
18. The following documents were referred in order to prepare Environmental Safeguards Due-Diligence Report:

- Project Information Memorandum (PIM)
- Concession Agreement
- Environment Management Plan (EMP) and its implementation
- Feasibility Study of MSKWRPL
- Independent Engineer's Report
- Lender's Independent Engineer Report
- Project Statutory Approvals/Permits
- Project HSE Documents
- Labour License & insurance
- Contract Documents

19. On review of the documents / information related to the sub-project and on the basis of site visit, the impacts of the MSKWRPL on environment are envisaged, which are given in section 15 of the ESDDR. The sub-project is mitigating the environmental impacts at the site with various measures. An EMP is available for MSKWRPL and status of its implementation is given in Section 16.

13. COMPLIANCE OF MSKWRPL TO THE ESSF OF IIFCL:

20. The Environmental and Social Safeguard Framework (ESSF) provides the enabling mechanism to IIFCL to deliver its policy objectives and applies to projects funded by IIFCL throughout the project cycle. The ESSF defines procedures, roles, and responsibilities, at various project milestones for managing the adverse environmental impacts. The environmental due diligence for MSKWRPL has been done as per requirements of direct lending scheme. The environmental safeguard risks during construction phase have been assessed and risks during operational phase have been evaluated. MSKWRPL is under construction and following the national regulations and guidelines. There does not seem to be any significant risk for either IIFCL or DFI involved.
21. The environmental safeguard due-diligence study has been carried out for the sub-project on the basis of site visit observations and based on information and documents provided by Concessionaire. A detailed discussion on the environmental and social safeguards related issues was also carried out with the team of the sub-project. It can be concluded that MSKWRPL is compliant to the requirements of IIFCL's ESSF under direct lending scheme and has adequate management measures implementation on site.

14. POLICY, LEGAL AND REGULATORY REQUIREMENT:

22. MSKWRPL does not fall under the schedule of EIA Notification, 2006 that lists projects or activities requiring prior environmental clearance; the project does not require environmental clearance from MOEF&CC, Government of India. However, MSKWRPL is required to comply with the applicable guidelines relating to the environment, occupational health and safety in addition to complying with local pollution control board regulations. The statutory permits/clearances related to environmental aspects obtained/to be obtained from regulatory authorities as part of MSKWRPL development were assessed and current status of availability of such permits/clearances are given in Table 2 below:

Table 2: Status of Regulatory Permits/ Clearances Obtained related to Environmental Safeguards

S.No.	Permits/Clearances	Statutory Authority	Current Status
1.	Environmental Clearance	Ministry of Environment, Forests & Climate Change (MoEF&CC), New Delhi	Not Applicable. As the sub-project length is below 100 kms (~49.147 Kms), this is exempted from obtaining environmental clearance (EC) and conducting EIA. An EMP has been prepared for the sub project and is being implemented at the sub-project (Annexure 1). The status of EMP is reported in the subsequent sections of the ESDDR.
2.	Forest Clearance	MoEF&CC and State Forest Department	Not Applicable. The project does not involve any forest land.
3.	Wildlife Clearance	MoEF&CC	Not Applicable. The Project area does not lie within an ecologically sensitive area and is not located close to any National Park/Wildlife Sanctuary. The location of Project does not contravene any international biodiversity or ecosystem conservation conventions. Therefore, it does not require wildlife clearance or permission.
4.	Tree cutting permissions	State Forest Department, Maharashtra	Sub-project involves cutting of about 23355 trees during highway expansion. Tree cutting permissions have been taken. The list of trees cutting (Scheduled and Non-scheduled) evaluation along with the permissions is attached in Annexure 2 .
5.	Consent to Establish/Operate	Maharashtra Pollution Control Board (MPCB), Maharashtra State	Developer has informed and it was verified during site visit that only cleaning and grubbing of road stretch has started. Consent to Establish and Consent to Operate under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act

S.No.	Permits/Clearances	Statutory Authority	Current Status
			1981 and amendments thereof and Authorization under Rule 6 of the Hazardous and other Wastes (Management and Trans-boundary Movement) Rules, 2016 will be taken prior to the start of the construction works requiring RMC, WMM plants etc.
6.	Borrow Area Permissions	District Administration Ratnagiri, Government of Maharashtra	Not Applicable. Since the cutting quantity is more than the filling quantity. Developer has confirmed that no borrow areas are required for the sub project.
7	Quarry and Stone Crusher Permissions	District Administration Ratnagiri, Government of Maharashtra, Village Panchayat and Maharashtra Pollution Control Board (MPCB)	Developer has confirmed that permissions will be taken as and when required.
8.	Labour License & Insurance	Office of Licensing Officer & Regional labour Commissioner (Central), Ministry of Labour & Employment, Vasco da gama, Goa.	MSKWRPL has taken Labour License under the Contract Labour (Regulation and Abolition) Act, 1970 (Annexure 3). The establishment has labour insurance which is being renewed and enclosed as Annexure 4 .

15. IMPACT ASSESSMENT OF SUB-PROJECT

23. EMP has been prepared for the sub-project. The main impacts envisaged due to various activities at the sub-project are summarized in the paragraphs below:

24. **Impact on Land Environment:** The sub-project involves strengthening and widening of the existing two lanes to four lane highway. During construction phase, the topography at sub-project location will change due to excavation of cuts and fills for project road and construction of project related structures. The impacts are temporary and are manageable with mitigation measures which are given in Section 16.

25. **Impact on Water Resources:** There are two perennial water courses crossing the proposed road stretch. The river in the stretch are Bar River at ch. 117.110 and Anjanari River at ch. 143.100. As per the EMP, all the works across these types of water courses are planned to execute other than the water flow period and is to be completed before the high water flow starts. If incomplete, the works will be kept pending during the flow period and no disturbance to the water flow will be done. Adverse impact on surface and ground water resources is envisaged

during construction phase due to increased sedimentation load because of construction activities, waste water discharge from labour camps, fuel/oil from construction vehicles etc. During the operation stage the leakage or spillage from vehicles damaged, overturned or just badly maintained may also lead to contamination of water bodies. EMP has been proposed to manage these impacts.

26. **Impact on Air Quality:** The setting up of camp including crusher & ready mix concrete plant, and up-gradation works at sub-project stretch shall involve generation of dust and release of other pollutants leading to the localized degradation of air quality. All the belt conveyors are to be covered with canopy to control the dust pollution; ready mix concrete plant to be well equipped with the cartage filters. All aggregate stock yards are provided with water sprinkling system. Mitigation measures are in place to manage these not very significant and temporary impacts.
27. **Impact on Noise Environment:** Impact on noise environment is envisaged during both construction and operation phases. In construction phase, all DG sets to have acoustic attachments to control noise at source. MSKWRPL has proactive plant and machinery maintenance schedule to control noise and air pollution.
28. **Impact on Biological Environment:** No National Park or Wildlife Sanctuary is located within close proximity of the project road and there is no notified animal corridor/migration route is present in the project area. No Reserve Forest are located along the project road. About 23355 trees are likely to be affected in up gradation of NH-17 (Kante Waked Section) for which permissions have been obtained. No significant impacts on fauna are anticipated at the sub-project. The repair and up gradation of minor bridges will cause some contamination of the canal water due to spillage of construction material, sediment loading & increased turbidity downstream of the bridge location. This may impact aquatic flora and fauna temporarily. Necessary mitigation measures have been recommended at locations of structure where construction/maintenance is proposed.

16. IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLANS

29. The status of EMP implementation is elaborated in the subsequent paragraphs on the basis of information received from the developer and on confirmation of the same during site visit. EMP is being implemented at MSKWRPL and the record of status of implementation is being maintained at site. The EMP implementation status on the basis of documents/information shared by developer and confirmations at the time of site visit is given in **Table 3**. EMP to be implemented during operational phase of the project is given in **Table 4**.

Table 3: Status of EMP Implementation at MSKWRPL

Issues	EMP	Responsibility	Status of EMP Implementation
Avenue & Median Plantation	Avenue Plantation will be taken up with the development of four laning of the highway. Plantation of trees to be done in different densities depending on the characteristics of the area. Median plantation to be done as per IRC.	MSKWRPL	Tree felling permissions have been obtained and cutting of trees is in progress. Around 8585 trees were cut till October 2019. Sub-project developer has informed that Avenue plantation has just begun and median plantation will be started after development of the highway.
Borrow pits	There are no borrow areas at MSKWRPL.	MSKWRPL	Since the development of the said highway is in the hill section, the soil required for construction is obtained from cutting sections of the hilly areas in the PROW of the project. The widening of the project requires more cutting than filling. If required, a detailed borrow area management and rehabilitation plan will be prepared.
Site for storage and construction camp	<ul style="list-style-type: none"> Storage of HSD, as per the stipulated guidelines. Besides these, emergency response plan will be in place towards meeting unforeseen emergencies. Trained personnel will be handling such materials and care will be taken so that spills are abated and in case of spills, immediately they are contained. 	MSKWRPL	<ul style="list-style-type: none"> Storage is done at designated areas, with markings and signboards as per clearance obtained (Annexure 5). Trainings are imparted to labour and staff.
Sewerage and solid waste disposal.	<ul style="list-style-type: none"> For sewerage disposal, septic tanks with soak pits will be provided at campsites. Proper sanitation facilities at the construction workers camp to be provided. Salvage material/ demolition wastes will be reused to the possible extent in embankments, shoulders, slopes, approach roads and temporary campsites. 	MSKWRPL	<ul style="list-style-type: none"> Septic tanks with soak pits are provided at site. Proper toilets and bathrooms are provided at site. Camp haul roads will be maintained with salvage material / demolition wastes once camp is established. Proper solid waste management with different colour dust bins is being done at the sub project Office site.
Traffic management	<ul style="list-style-type: none"> Secure assistance from local police for traffic control during construction Safety measures to be undertaken by installing road signs and markings for safe and smooth movement of traffic. 	MSKWRPL	<ul style="list-style-type: none"> Secure assistance was provided from local Police Department for traffic control at construction zones. Road signs, solar blinkers and barricades for construction zone are provided as per IRC standards.

Issues	EMP	Responsibility	Status of EMP Implementation
Noise level	<ul style="list-style-type: none"> Stationary equipment shall be placed as far as possible from residential areas to minimize noise impacts on the near inhabitants. Construction activities will be strictly prohibited during night hours near habitation. Provision of ear plugs to workers exposed to high noise levels in the project who work in batch mix plants, quarries etc. 	MSKWRPL	<ul style="list-style-type: none"> This is ensured at site. Site work timings are 8 AM to 8 PM. Workers are provided with personal protective equipment (PPE).
Air Quality	<ul style="list-style-type: none"> Trucks will carry construction material due to which emission of air pollutants will increase. All the vehicles deployed for construction of the project will have to keep "Pollution under Control" (PUC) certificates. DG sets will also emit air pollutants in the area during construction period. The emission generated during construction will be temporary and localized in nature. Vehicles carrying construction material shall be covered to avoid spilling. Mixing equipment shall be sealed and equipped with dust removal device. Water will be sprinkled in morning and evening hours at the construction yards and the unpaved sections of the road. 	MSKWRPL	<ul style="list-style-type: none"> PUC certificate is checked for all construction vehicles. Vehicles are covered to avoid spilling of construction material. Water sprinkling is done at site to control dust. Maintenance schedule is in place to control further environmental damage in case of break-down All belt conveyors are to be covered with canopy to control the dust pollution.
Water Quality	<ul style="list-style-type: none"> During construction it will be ensured that contractor does not dispose off debris in water bodies. The majority of the project stretch is plane & horizontal land which will act as water logging areas during the rainy seasons and may cause the breeding of the vectors in the area. 	MSKWRPL	<ul style="list-style-type: none"> All debris and other unsuitable material are being reused in haul road making purpose. The entire project stretch was almost covered by adequate drainage network which allows free water flow without obstructions.
Occupational Health and Safety	<ul style="list-style-type: none"> Labourers shall be equipped with proper safety gears like helmets, gloves and gum boots. Periodic health check-up of construction workers. Training of workers to be ensured 	MSKWRPL	<ul style="list-style-type: none"> All workers and labourers are equipped with PPE's like helmets, gloves and gum boots. Periodical health check-up is being conducted. HSE induction trainings are organized for labour and staff at a number of levels.
Prevention of erosion and scouring	<ul style="list-style-type: none"> Stabilizing the embankment with appropriate technique immediately after placing. 	MSKWRPL	<ul style="list-style-type: none"> Embankment work is in progress

Issues	EMP	Responsibility	Status of EMP Implementation
Drainage system	<ul style="list-style-type: none"> Adequate care to be taken for the purpose of free flow of flood discharge in the design stage itself. There are 1 major and 9 minor bridges which are to be constructed/strengthened along the project corridor to allow free flow of the natural drainage water in the area. 	MSKWRPL	<ul style="list-style-type: none"> Highway Construction work is in progress Construction of toe drain along the road on both the sides is in progress.

Table 4: EMP for Operation of MSKWRPL

Impact/Issues	EMP	Responsibility	Monitoring indicators
Noise	<ul style="list-style-type: none"> Multi layered plantation to serve as mitigation option for operation phase Effective traffic management and good road condition shall be maintained to reduce the noise level Speed limitation and honking restrictions may be enforced near sensitive locations. Create awareness in locals and drivers through programmes 	MSKWRPL	<ul style="list-style-type: none"> On site observations Records of safety week
Embankment protection	<ul style="list-style-type: none"> Periodic maintenance of stabilizing measures at embankments like turfing etc. 	MSKWRPL	<ul style="list-style-type: none"> On site checks & observations
Water logging	<ul style="list-style-type: none"> Regular maintenance and cleaning of drains 	MSKWRPL	<ul style="list-style-type: none"> On site checks & observations
Maintenance of Safety	<ul style="list-style-type: none"> Traffic control measures to be enforced strictly Monitor and ensure that all safety provisions included in design and construction phase are properly maintained Highway patrol units for round the clock patrolling to be available at site One ambulance to be available at toll plaza One tow-away facility for the break down vehicles 	MSKWRPL	<ul style="list-style-type: none"> Safety signage to be displayed and maintained at site Accident incident reports to be maintained at site
Avenue / Median Plantation & Maintenance	<ul style="list-style-type: none"> Avenue plants are proposed along the project stretches as per IRC-SP-21:2011. The avenue trees area proposed to be planted on either side of the road. Planted trees and shrubs in Avenue and Median Plantation to be properly maintained Tree survival list to be maintained for plantation effectiveness 	MSKWRPL	<ul style="list-style-type: none"> Records of trees planted to be maintained at site Survival records to be maintained at site
Redressal of public grievances	<ul style="list-style-type: none"> MSKWRPL shall maintain a complaint register at toll plaza MSKWRPL shall define a mechanism to handle and manage grievances raised by road users, project affected persons and employees/workers including those of sub-contractors. MSKWRPL shall send copy of the register to Concessioning Authority and Independent Engineer 	MSKWRPL	<ul style="list-style-type: none"> Complaint Record register

17. HEALTH AND SAFETY

- 30. MSKWRPL has a Traffic Management Plan (**Annexure 6**) and Project Safety Management Plan (**Annexure 7**), which elaborates the organizational structure roles and responsibilities of HSE staff; traffic safety and management practices; work place safety etc. MSKWRPL follows the safety guidelines and conducts safety training programmes as defined in the procedures and records for the same are maintained at the sub-project site.
- 31. First aid boxes and firefighting systems are maintained at sub-project site.
- 32. MSKWRPL has adequate institutional arrangement to look after HSE related aspects. The organizational chart is given as **Annexure 8**.

18. GRIEVANCE REDRESSAL MECHANISM

- 33. MSKWRPL has devised guideline for Grievance Redressal Mechanism (GRM).
- 34. Developer has confirmed that they are maintaining a register at site for grievances. Record of any grievance or demand received from locals is maintained at the site office.
- 35. The Grievance Redressal Committee (GRC) was formed at the project site to ensure that any affected person's grievances are adequately addressed and to facilitate timely project implementation. At project level the GRC is headed by the General Manager.
- 36. Redressal of Public Grievances will be done during operation phase as per Article 40 of the Concession Agreement. The Concessionaire has to maintain complaint register for recording public grievances.

19. ENVIRONMENTAL SENSITIVITY

- 37. The environmental sensitivity of MSKWRPL has been assessed by reviewing various documents, supplemented by field visit and consultation with the developer.
- 38. The environmental sensitivity assessment is given below:

- The sub-project is being developed on the existing right of way. At certain places additional land is required. Developer has informed that this additional land is private land and it was confirmed during site visit.
- The sub-project sites are not located in any protected area like wildlife sanctuary / national park or in close proximity of any eco-sensitive area.
- The sub project does not involve diversion of forest land.
- During site visit and as per discussions with the sub-project staff, it was informed that no wild animals are sighted in and around the sub-project area.
- Approximately 23355 trees are to be cut at the sub-project and out of which 8585 are cut till October 2019.
- As informed by the concessionaire, no important cultural or heritage sites are getting affected due to the sub-project.
- The sub-project has the necessary approvals and permits from regulatory authorities.
- The impacts of the sub-project are temporary in nature and are manageable with EMPs.

20. PROJECT AGAINST THE PROHIBITED INVESTMENT ACTIVITIES LIST

39. The sub - project does not involve any prohibited activity as per the Prohibited Investment Activities List (PIAL) of ADB.

21. CATEGORIZATION OF SUB-PROJECT

40. The sub-project can be classified as Category B based upon ADB's EA requirements as per their Safeguard Policy Statement (2009). This classification is based on the review of the available documents and site visit with respect to the environmental sensitivity due to project activities.

22. SITE VISIT OBSERVATIONS

41. A site visit was undertaken by IIFCL's Social Safeguard Specialists and Environmental Consultant on 5th – 6th November, 2019. The site visit was undertaken to review the implementation of the project's environmental and social safeguards. During the site visit and follow on, site staff were mainly consulted regarding environmental safeguards related measures being implemented at the project site.
42. The sub-project is under construction and about 11.52% works are complete at the site till October 2019. Based on the discussions with staff at site, the site observations are given below:

- Developer has informed that since only cleaning and grubbing of road stretch has started. The establishments like camp and labour camp will come up at later stage. Applicable permissions regarding the same will be taken as per requirement.
- The sub-project has obtained applicable clearances/permits from regulatory organizations.
- The sub-project is involves strengthening and widening of highway in the existing ROW.
- Avenue plantation has been initiated and median plantation will begin at a later stage. Developer has been informed to keep a record of plantations and survival rate.
- Utility shifting at site is in progress complete.
- The workers and staff at the site were seen wearing personal protective equipment such as helmets, jackets, boots, gloves etc.
- Regulatory signs, warning sign and direction signs were available at all relevant places at site.
- Developer informed during site visit that during road diversion, HSE Officers and local traffic police is doing consultation and conveying the update related to road construction and risk to locals in concerned area.
- One camp is to be established at site, which is in progress. Labour camp will also be located at camp site.
- All waste water being generated at the sub-project premises is disposed in septic tanks/soak pits.
- Adequate EHS staff was present at the site and understood their commitments.
- On discussions with the site staff, it was observed that tool box talk, safety induction trainings are done for labour as well as staff.
- Vehicle movement in the administrative premises was very limited and control by Security at premises entrance.

- No oil spillage was observed at the site.
- The permits and NOCs required for the project are in place.
- Fire extinguishers and first aid kits were available at project premises.
- Emergency contact numbers have been displayed at appropriate locations.
- The sub-project has a proper grievance handling mechanism and records are maintained at site.

23. CONCLUSIONS AND RECOMMENDATIONS

43. It is concluded on the basis of review of the available information, reconnaissance site visit and interaction with sub-project staff it can be concluded that the concessionaire MSKWRPL is complying with the statutory requirements as per the national and state guidelines and regulations. MSKWRPL is committed to protection of the environment while performing its activities. The 49.147 km road strengthening and widening project in the State of Maharashtra is unlikely to pose any adverse environmental risks given the nature of the activities.
44. There are no legally protected areas, cultural heritage sites and forest land located within and/or in close proximity to the sub-project. However, the sub-project activities have reversible environmental impacts which have been managed.
45. Based upon the available documents and site visit, it is concluded that the concessionaire has undertaken adequate environmental safeguard measures. The conclusions for the sub-project are given below:
- The sub-project has been planned as per the National and State Government requirement and not in anticipation to ADB operation.
 - The project site is not located in an ecologically sensitive area.
 - The sub-project is being developed in the existing ROW and some additional land is being acquired for interchange and lay byes.
 - The project does not involve diversion of forest land. However, approximately 23355 numbers of are to be cut for widening and the concessionaire has a plantation scheme to compensate for the tree cutting.

- The sub-project has the required national and local level permits and approvals for project implementation.
- Concessionaire has confirmed continuous compliance with the terms and conditions stipulated while according statutory clearances /approvals /consents. Concessionaire has been informed to implement the EMP and maintain a record of status of implementation.
- The institutional arrangement available for the implementation of environment, health & safety appears to be adequate.
- The EMPs are undertaken to minimize any significant negative impact on environment. The concessionaire is maintaining safety at the site as per the management plans.
- During site visit and discussion with the project developer, the implementation of EMP was found to be adequate.
- After approval from ADB, the ESDDR will be uploaded on website for public disclosure.

46. Based on the site visit and due diligence findings, it can be deduced that the sub-project has no significant environmental safeguard issues. The sub-project, therefore, does not appear to involve any kind of reputational risk to ADB funding on environmental safeguards.

DUE DILIGENCE ON SOCIAL SAFEGUARDS

24. PURPOSE OF THE SOCIAL SAFEGUARDS DUE DILIGENCE

47. The Social Safeguards Due Diligence Report (SSDDR) has been carried out by India Infrastructure Finance Company Limited (IIFCL) in consultation with the Concessionaire, MEP Sanjose Kante Waked Road Pvt. Ltd. (MSKWRPL) to assess the Social safeguards compliances of the project with the applicable National Policies. The report has been prepared as per the documents/information received from the concessionaire and subsequent to the site visit organized during 5th & 6th November, 2019. The information given in the SSDDR is agreed and confirmed by the Concessionaire.

25. PROJECT AGAINST THE PROHIBITED INVESTMENT ACTIVITIES LIST

48. The sub project MSKWRPL does not involve any prohibited activity as per the Prohibited Investment Activities List (PIAL) of ADB.

26. OBJECTIVE OF SOCIAL SAFEGUARDS DUE DILIGENCE

49. Social Safeguards due diligence study for the project is carried out to assess the social safeguards monitoring compliance status of the project as per the applicable National policies/procedures as observed during the site visit as well as the information received. The main objective of this Social Safeguard Due Diligence Report (SSDDR) is:

- To assess the likely social impacts and its minimization/mitigation majors adopted for the project with respect to land acquisition, compensation , Indigenous people affected, involuntary resettlement and common properties resources affected, if any, in terms of displacement, loss of incomes, and community links;
- To ascertain, in case of any adverse impact, if appropriate mitigation measures have been taken during the project planning, designing and frameworks established for carrying out safeguard measures during the construction stage to minimize and mitigate such if any adverse impacts;

27. APPROACH AND METHODOLOGY

50. The Social safeguard due diligence study for MSKWRPL has been carried out after reviewing the documents made available by the subproject developer. On site visit to the project location by the Environmental and Social Safeguards Specialist, discussion with the project developer

and various permits and approvals relating to the project to understand the salient features of the project and social concerns. The following documents/Reports/Licenses/permits and notifications were referred in order to prepare the Social Safeguard Due Diligence Report:

- Project Information Memorandum (PIM)
- Concession Agreement
- Feasibility Study of MSKWRPL
- Independent Engineer's Report
- Lender's Independent Engineer Report
- Project Statutory Approvals/Permits
- Labour License & insurance

28. SOCIAL IMPACT OF THE PROJECT

28.1 Land Acquisition in the Project

51. Land acquisition is not in the scope of the project developer and it is under the purview of the Concessioning Authority, Public Works Dept. (PWD), Maharashtra. Land acquisition for the project MSKWRPL for 4 of Kante-Waked Section of NH-66 (Erstwhile NH-17) 281+300 to km 332+200 (Kante-Waked Section) to four lane with paved shoulder (Total Length – 49.147 km) in the state of Maharashtra under NHDP-IV on Hybrid Annuity mode.
52. During the discussion it was informed that the land acquisition to the extent of 40m Right of Way (RoW) for 4-laning of this project was completed during 2 laning of project. As per the LIE report 94.96% of land was made available to the project developer. The rest 5.14 % of land is being acquired by the Concessioning Authority, for which 3D has been completed and in advance stage of land acquisition. It is to be ensured by the sub project developer that compensation is paid by the Concessioning Authority, to the land owners prior to commencement of the civil works.
53. The total Land required for the project is 237.16 Ha. out of which 225.20 Ha is in the procession of the Concessionaire for construction of project road.
54. Land acquisition process was initiated prior to IIFCL's involvement and not in anticipation of ADB financing and that IIFCL was not involved in the rehabilitation and resettlement activities.

28.2 Impact on Structure

55. As informed by the concessionaire and noted during the site visit, that no structure is getting affected due to the project.

28.3 Rehabilitation and Resettlement impact in the sub-project

56. During the site visit it was informed that there was no involuntary resettlement because of land acquisition. Further during the site visit it was observed that there was no rehabilitation and resettlement impact in the project.

28.4 Impact on Indigenous people

57. As information provided by the concessionaire the project does not disturb indigenous people in the project and does not have adverse impact or create any threat to the survival of any indigenous community along the alignment, hence no indigenous people affected in this sub-project.

29. GREIVANCE REDRESSAL MECHANISM FOR THE SUB-PROJECT

58. During the site visit it was observed that the project authority has formed their own institutional arrangements to deal with any issues/concerns in the site. Grievance Redressal Mechanism with the help of project site official has in place which comprises of the following members:

- General Manager
- Deputy General Manager
- Manager (Administration)
- Engineers
- Supervisors

59. The Grievance Redressal Committee (GRC) was formed at the project site to ensure that any affected person's grievances are adequately addressed and to facilitate timely project implementation. At project level the GRC is headed by the General Manager

60. During the discussion it was informed that no grievance was received at site.

30. EMPLOYMENT GENERATION

61. It has been confirmed by the concessionaire that employment opportunities are being provided to the local people for various unskilled and semi-skilled activities like security guards and office assistants, drivers.
62. As informed by the concessionaire they have given job opportunity to more than 30 local labours. Based on the available skill and qualification requirements, employment preference has been given.

31. THE COMMUNITY ENGAGEMENT ACTIVITIES

63. As information provided by the concessionaire, to reach the local people, MSKWRPL has undertaken few of community development activities to reach the local people during the construction stage of the project. The subproject developer celebrated its road safety week, blood donation camp, free medical check-up camp, health and hygiene awareness camps has also been undertaken under community development initiatives.

32. LABOUR LICENSE OBTAINED BY THE SUBPROJECT DEVELOPER

64. The subproject developer MSKWRPL has received the Labour license from the Licensing Officer and Regional Labour Commissioner, (Central), Goa, Govt. of India, Ministry of Labour & Employment for doing the work of two/four laning of Kante-Waked Section of NH-66 section of Erstwhile NH-17 under Section 12(1) of the Contract Labour (Regulation & Abolition) Act, 1970. The detail of labour license is attached as **Annexure 3**. The subproject developer has taken insurance for the project MSKWRPL Project including contractors & sub-contractors workers is covered under policy (**Annexure 4**).

33. DISCLOSURE

65. After approval from the ADB, the report will be uploaded for public disclosure in IIFCL's and ADB's website.

34. SITE VISIT OBSERVATION

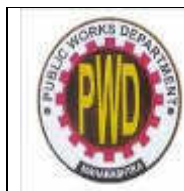
66. A site visit was undertaken by IIFCL's Social Safeguard Specialists and Environmental Consultant during 5th-6th November, 2019. The site visit was undertaken to review the implementation of the project's environmental and social safeguards parameters at the project site. The sub-project at the time of site visit was in the initial stage of construction.

67. During the site visit and discussions with subproject developer it was observed/noted that :

- The sub-project has been prepared by PWD, Mumbai as per its own funding requirement and not anticipation to ADB operation;
- Land acquisition process was initiated and prior to IIFCL's involvement and not in anticipation of ADB financing;
- Land acquisition has been done by PWD, Mumbai and the compensation for land acquisition was paid to the affected families before handing over the land to the concessionaire;
- There is no Rehabilitation and Resettlement in the project.
- The subproject do not have any indigenous people in the project;
- Employment opportunities have been provided to the local people;
- Local people's view have been given due consideration during the project planning and designing of the project;
- Construction workers will be provided with ready access to on- or off-site health care check-up facilities and are being provided with first aid facilities for minor injuries;
- As informed during the site visit it was confirmed that no fatal accident happened in the project till date.
- Emergency contact numbers have been displayed at the prominent places in project site.
- During the site visit it was observed that, staffs at the site were seen wearing personal protective equipment such as helmets, jackets, boots, gloves etc.

- As informed by the project developer, after discussions with the local people, the affected cultural properties are being relocated by the concessionaire;
- Local labours are being engaged in the construction activities for skilled as well as unskilled activities;
- It seems that the sub-project does not appear to involve reputational risk to Asian Development Bank funding on social safeguards and recommended for funding under the proposed project.

68. Based on the site visits observations and desk review, it appears that the sub-project have no negative significant social safeguard issue.



Project: Rehabilitation and Upgradation of NH-66 (old NH-17)
From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION)
to four lanes in the state of Maharashtra under NHDP-IV on
Hybrid Annuity Mode

Document: Environmental
Management Plan

Document No : MEP/ KWRPL/ EMP



Rev:00

Annexure - 1





9Sr. No.	CONTENTS	Page No.
1	ENVIRONMENTAL MANAGEMENT OF THE PROJECT	
1.1	Environmental Control Measures	4
1.2	Environmental Monitoring and Surveillance Program	6
1.3	Emergency Response Plan	8
1.4	Environmental Issues and Remedial Measures	8
1.5	Review of Environmental Management Plan	16
1.6	Environmental Management Organization and Responsibilities	16
1.7	Schedule of Environmental Monitoring Reports	18
2	ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION CAMPS	
2.1	Introduction	19
2.2	Labour Camp Management	19
2.3	Source of Water Supply	20
2.4	Sanitation and Waste Water Treatment	20
2.5	Medicare	21
2.6	Hazardous Waste Collection, Operation and Disposal	21
2.7	Operation and Maintenance of Oil interceptor	21
2.8	Layout Plan of Camp	22
2.9	Dust Suppression Inside the Camps	22
2.10	Closure Plan	22
2.11	Site Identification and Setting up of Workers Camp	23
3	BORROW AREA MANAGEMENT	
3.1	Borrow Land Identification and Methodology of Operation	25
3.2	Borrow Area Identification	26
4	CONSTRUCTION PLANTS AND DIESEL GENERATOR SETS	
4.1	Pollution Control in Stone Crusher	28
4.2	Pollution Control System in WMM plant	28
4.3	Pollution Control in Hot Mix Plant	28
4.4	Pollution Control in Batching plant	29

Client	Independent Engineer	EPC Contractor	Page 1 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



	4.5	Waste generation from Construction plants	29
	4.6	Pollution Control in DG sets	29
	4.7	Pollution Control Monitoring	29
	4.8	Site Identification for Stone Crusher Unit	30
	4.9	Site Identification for Hot Mix Plant	31
	4.10	Installation of Stone Crusher Unit	31
	4.11	Installation of Hot Mix Plant	33
5	QUARRY MANAGEMENT PLAN		
	5.1	Precautions Before and After Firing	34
	5.2	Transportation of Explosives	34
	5.3	Drilling and Blasting	35
	5.4	Storage of Explosives	36
	5.5	Details of Quarry Management Plan	36
	5.6	Closure Plan	38
	5.7	Quarry Source Identification	39
6	ENVIRONMENTAL MANAGEMENT AT WORK SITES		
	6.1	Diversions for Water Courses	39
	6.2	Disposal of Wastes Generated from Diversion	40
	6.3	Top Soil	40
	6.4	Environmental Enhancement	40
	6.5	Strategy for Avenue Tree Plantation	41
	6.6	Slope Protection Measures	41
	6.7	Sources of Water for Construction and Dust Suppression	42
	6.8	Longitudinal Drains	42
7	SOLID WASTE MANAGEMENT		
	7.1	Waste Management	42
	7.2	Scheduled Waste Management	43
	7.3	Disposal of Scarified Bitumen Material	43
	7.4	Solid Waste Disposal	43

Client	Independent Engineer	EPC Contractor	Page 2 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

	7.5	Used Oil, Grease and Lubricants	44
	7.6	Bituminous Filter Waste	44
	7.7	Damaged Pre Cast	44
8	ENVIRONMENTAL MONITORING		
	8.1	Introduction	45
	8.2	Soil Erosion and Sedimentation Monitoring	45
	8.3	River Water Quality Monitoring	45
	8.4	Air Quality Monitoring	45
	8.5	Monitoring of Construction Vehicles	46
9	PERMISSION AND CONSENTS		
10	TRAINING		
	10.1	Organizational Arrangements	46
	10.2	Environmental Training	47
	10.3	Environmental Monitoring	47

Client	Independent Engineer	EPC Contractor	Page 3 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

1 **ENVIRONMENTAL MANAGEMENT OF THE PROJECT**

1.1. **Environmental Control Measures**

1.1.1 **Introduction**

This section details the mitigation measures to be implemented to minimise environmental impacts during construction and to ensure compliance with environmental regulations.

1.1.2 **Soil Erosion Management**

Erosion control measures will be carried out as soon as possible after earthworks and it will include measures such as providing cut-off drains or immediate commencement of subsequent works such as road base and pavement construction.

Sedimentation control will be carried out to prevent deposition of silt into water courses and will include:



- Silt ponds
- Vegetative buffer strips

1.1.3 **Water Quality Management**

Water quality management will be closely related to soil erosion and sedimentation control. Control measures to protect water will include:

- Temporary drainage to direct surface runoff into silt ponds.
- Temporary sanitation facilities will be provided at the construction workers camp site.
- Waste oil and grease will be stored in proper containers and taken off site. There will be no discharge into water courses.
- Fuel skid tanks will be sited away from any water courses.
- Maintenance sites will be well managed and kept tidy to prevent possibility of contamination.

Client	Independent Engineer	EPC Contractor	Page 4 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

1.1.4 Air Quality Management

Air quality will be maintained to comply with environmental statutory requirements. Control measures will include:



- Site roads will be compacted and maintained.
- A site speed limit of 20 km/hr will be imposed on earth roads.
- Access roads that connect to public roads will be laid with crusher run at the intersection to minimise dust and mud being spilled onto public roads.
- Trucks moving outside the site carrying soil or aggregates will not be overloaded to prevent spillage on public roads.
- Vehicles and machinery will be properly maintained to reduce exhaust emissions.
- Dust collectors and suppressors will be fitted on crusher, wet-mix and asphalt mixing plants to prevent air pollution.

1.1.5 Noise Control Measures

Noise levels will be maintained to comply with the statutory environmental requirements. Control measures will include:

- The proper maintenance of construction vehicles and equipment to reduce excessive noise.
- Any 'High Noise Area' will be posted with warning signs and workers will not be allowed to freely enter the area.
- Tertiary crushers will be fitted with rock lining to act as a sound insulator during the crushing process.
- Natural vegetation will be maintained where possible to act as a natural buffer.
- Only locations that are not within the near vicinity of housing areas will be selected for quarrying and mixing operations.

Client	Independent Engineer	EPC Contractor	Page 5 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev: 00	

1.1.6 Ecology Management

- Existing flora and fauna will be managed in a sustainable manner. Control will include:
- No clearing, destroying or removal of trees, timber, scrub or other flora other than specified under the contract.
- No disposal of waste material amongst vegetation within the site.
- No hunting, capturing of stock or fauna protected by the relevant statutes.

1.2. Environmental Monitoring and Surveillance Programme

1.2.1 Environmental Surveillance

The Environmental Officer will carry out regular surveillance inspections of aspects of environment management, including:



- Soil erosion
- River Water Quality
- Air Quality
- Noise control and protection
- Waste and schedule waste management
- Pest control
- Ecology control
- Labour camp management

The Environmental Officer will issue Environmental Surveillance Reports to the Project Manager for action. Any significant environmental issue requiring more immediate corrective action will be addressed by Environmental Improvement Notices issued by the Environmental Officer.

1.2.2 Environmental Reporting

Environmental Reports will be prepared at specified intervals and submitted to the Management Committee covering development activities, site condition, monitoring results, compliance status and recommendations.

Client	Independent Engineer	EPC Contractor	Page 6 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

1.2.3 Acceptable limits of noise

- Day 65dB(A)
- Night 55dB(A)

Control of Noise in urban areas



- The use of sound barriers or other measures shall be considered where warranted.
The public will be educated about the regulations of noise from vehicles
- Developing trees barriers between road and sensitive areas like Schools and Hospitals.
- Sign boards like "No horn Please" will be provided.
- Declaring such area as silence zone.
- Good and properly maintained equipment will be used during construction.
- Improvement of roads in urban areas.

1.2.4. Acceptable limits of air

National ambient Air Quality Standards

Pollutants	Time Weighted Average	Sensitive Area	Industrial Area	Residential Rural & Other Area
Sulphur Dioxide (SO₂)	Annual 24 hours	15 µg/m ³ 30 µg/m ³	80 µg/m ³ 120 µg/m ³	60 µg/m ³ 90 µg/m ³
Oxides of Nitrogen (NOX)	Annual 24 hours	15 µg/m ³ 30 µg/m ³	80 µg/m ³ 120 µg/m ³	65 µg/m ³ 90 µg/m ³
Carbon Monoxide (CO)	8 hours 1 hour	1000 µg/m ³ 2000 µg/m ³	5000 µg/m ³ 10000 µg/m ³	2000 µg/m ³ 4000 µg/m ³
Lead (Pb)	Annual 24 hours	0.50 µg/m ³ 0.75 µg/m ³	1.0 µg/m ³ 1.5 µg/m ³	0.75 µg/m ³ 1.00 µg/m ³
RPM Size less than 10 µm	Annual 24 hours	50 µg/m ³ 75 µg/m ³	120 µg/m ³ 150 µg/m ³	60 µg/m ³ 100 µg/m ³
SPM	Annual 24 hours	70 µg/m ³ 100 µg/m ³	360 µg/m ³ 500 µg/m ³	140 µg/m ³ 200 µg/m ³

Client	Independent Engineer	EPC Contractor	Page 7 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

1.2.5. Employment of local Labour

1. Provisions will be made to deploy local Labour as per the Labour Act.

1.2.6. Prevention of water flooding into Fields

1. Suitable measures will be taken to prevent discharge of runoff water into nearby fields.
2. Runoff water will be properly drain off through surface, sub surface drains, and through chutedrains.
3. Open drains will be provided to drain off runoff water.
4. Closed pucca drains will be provided built up areas.
5. Collected water will be properly diverted to rain water harvesting structures, nearby culverts.

1.3. Emergency Response Plan

1.3.1 Accident and Fire

These contingencies are covered separately in the Safety Plan. The Project Manager will act as the Emergency co-coordinator in the event of an incident.

1.3.2 Spillage of hazardous chemicals

For this project, it is not anticipated that hazardous chemicals or materials will be used in any substantial quantities. Therefore, spillage risks will be very small. However, in the event of a spillage, response procedures like wearing of gloves, thermal jackets, goggles and gumboot depending on the nature of hazard.



1.3.3 Reporting

All emergency incidents will be reported to relevant local authority in writing within 24 hours.

1.4 Environmental Issues and Remedial Measures



S.No	Environmental Issues/Component	Impact Description	Remedial Measures
A	Pre-Construction /Design Phase		
1.	Borrow Areas	NA	NA

Client	Independent Engineer	EPC Contractor	Page 8 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



2.	Embankment Slopes	<ul style="list-style-type: none"> Some degree of soil erosion on newly constructed embankment The issue of water logging in adjoining area will improve due to the raising of the road 	<ul style="list-style-type: none"> Turfing of the slopes to check soil erosion with grasses etc., Suitable drainage measures will be taken to avoid water logging in adjoining area.
3.	Protected forest / Sensitive areas	<ul style="list-style-type: none"> No Losses of protected forests No Sensitive areas exist in the corridor 	<ul style="list-style-type: none"> Not Needed
4.	Road Side Plantation	<ul style="list-style-type: none"> Heavy loss of roadside trees leading to increase in air and noise pollution. 	<ul style="list-style-type: none"> Trees will be removed as per the design with prior approval of DFO Two trees will be planted in case of one removed.
5.	Air Quality	<ul style="list-style-type: none"> There will be slight increase in the pollution level of the air in few places. 	<ul style="list-style-type: none"> Widening and strengthening of road will allow optimum speed of fast moving vehicles. Tree Plantation scheme to be implemented.
6.	Noise Level	<ul style="list-style-type: none"> The noise level might slightly increase in market places 	<ul style="list-style-type: none"> Widening and strengthening of road will allow optimum speed of fast moving vehicles Tree Plantation scheme to be implemented.
7.	Relocation Utility lines/ Community Utility	<ul style="list-style-type: none"> Short term negative impact during transitory phase of shifting of utility lines. No impact on shifting wells, hand pump etc. 	<ul style="list-style-type: none"> All utilities to be relocated with prior approval of the concerned agencies All communities' utilities such as sources of water to be relocated to suitable places.

Client	Independent Engineer	EPC Contractor	Page 9 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



8.	Soil Erosion	<ul style="list-style-type: none"> • Removing and cleaning of tree line, herbaceous and shrubby covers from embankment will increase soil erosion • Excavations of borrow pits will increase soil erosion 	<ul style="list-style-type: none"> • Turfing of road embankment slopes with herbs, shrubs and grasses • In borrow pits, the depth of pit will be regulated so that the sides of the excavation will have a slope not steeper than 1 vertical to 4 horizontal from the edge of the final section of bank. • The devices for checking soil erosion include the formulation of sediment basins, slope drains, etc, such works and maintenance thereof will be deemed as accidental to the earthwork • Cutting of trees in phases
9.	Loss of top soil	<ul style="list-style-type: none"> • The loss of topsoil due to the acquisition of agricultural land and due to construction dumps 	<ul style="list-style-type: none"> • In agricultural areas or in any other productive soil areas as directed by the Engineer, the top soil from all areas of cutting and all areas to be permanently covered has to be stripped to a specified depth of 150 mm and stored in stockpiles of height not exceeding 2 m. The contractors at his own cost shall make any non-compliance good. • Such stock piled topsoil must be returned to cover the disturbed area and cut slopes. Residual topsoil must be distributed on adjoining/proximate barren / rocky areas as identified by the Engineer in a layer of thickness of 75 mm to 150 mm • Topsoil will not be unnecessarily trafficked either before stripping or when the stockpiles. Stockpiles will not be surcharged or otherwise loaded and multiple handling will be kept to a maximum.

Client	Independent Engineer	EPC Contractor	Page 10 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



10.	Compaction of soil	<ul style="list-style-type: none"> The excavations in borrow areas will may lead to marginal loosening of soil The compaction of soil may not be affected largely 	<ul style="list-style-type: none"> It will be ensured that the stability of excavation of fills is maintained. Construction vehicles, machinery and equipment shall move or be stationed in the designated area If operating from temporarily hired land, it will be ensured that the topsoil for agriculture remains preserved and not destroyed by storage, material handling or any other construction related activities. The topsoil from all areas of cutting and all areas to be permanently covered shall be stripped to a specified depth of 150 mm and stored in stockpiles of height not exceeding 2 m Cut and fill should be equalised as per design Earth if required should be dumped in selected and approved area by the engineers.
11.	Borrowing of Earth	NA	NA
12.	Contamination of soil from fuel and lubricants	<ul style="list-style-type: none"> The impact will be negligible since the chemical nature of the soil will not change much Negligible impact on the growth of vegetation 	<ul style="list-style-type: none"> Vehicles and machines are maintained and refilled in such a fashion that old diesel spillage does not contaminate the soil Fuel storage and refilling sites should be kept away from cross drainage structure and important water bodies. At spoils shall be disposed off as desired and the site shall be fully cleaned before handing over.
13.	Contamination of soil from construction wastes	<ul style="list-style-type: none"> The impact will be marginal of the soil quality The growth of vegetation will be partially disturbed 	<ul style="list-style-type: none"> The construction wastes should be dumped in selected pits, developed in infertile land Follow the norms of MPCB Borrow pits to be filled by such wastes

Client	Independent Engineer	EPC Contractor	Page 11 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



14.	Water Bodies and water sources	<ul style="list-style-type: none"> The part filling of a ponds will have only negative impact 	<ul style="list-style-type: none"> Any source of water for community such as ponds, wells, tube-wells etc. lost incidentally shall be replaced immediately. All desired measures will be taken to prevent temporary of permanent flooding
15.	Drainage and run-off water	<p>The flow of runoff water will not be affected largely,</p> <ul style="list-style-type: none"> excepting certain stretches where the drainage problem already exists 	<ul style="list-style-type: none"> At cross drainage channels, etc the earth stone or any other construction material should be properly disposed of so as not to block the flow of water All necessary precaution shall be taken to construct temporary or permanent device to prevent water Pollution
16.	Contamination of water from construction waste, fuel and lubricants.	<ul style="list-style-type: none"> The construction wastes may increase the suspended matter and clay in stagnant water bodies There will be very little increase in toxicity The community dependent on such water used for purpose other than drinking may be affected The fuel and lubricants may affect the both component of water bodies 	<ul style="list-style-type: none"> Construction work close to the streams or other water bodies shall be avoided especially during monsoon All waste arising from the project is to be disposed of as per the norms of MPCB Water products must be collected, stored and transferred to disposal location. The slopes of embankment leading to water bodies should be modified and re-canalised so that contaminant may not enter the water body. To avoid contamination from fuel and lubricants, the vehicles and equipment shall be properly maintained and refilled
17.	Use of water for construction	<ul style="list-style-type: none"> The use of water from sources, already in use by local community may cause scarcity of water for community The easy availability of underground water will not affect the water tube 	<ul style="list-style-type: none"> Arrangement of supply and storage of water will be made by the contractor in such a way so that the water availability and supply to nearby communities remain unaffected. If a new tube-well is to be bored, proper sanction and approval by underground water department is needed.

Client	Independent Engineer	EPC Contractor	Page 12 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



			<ul style="list-style-type: none"> The waste of water during the construction should be minimised.
18.	Emission from construction vehicles and machinery	<ul style="list-style-type: none"> Effect on human health Dust settled on leaves may reduce growth rate of the plants Crowded market places and construction sites will have higher degree of emission 	<ul style="list-style-type: none"> All vehicles, equipments and machinery used for construction shall be regularly maintained to ensure that the pollution emissions levels are as per norms of MPCB Monitoring of suspended particles test will be conducted as per the norms of MPCB The human settlements should be at least 500 m downward wind direction of asphalt mixing plant
19.	Dust and its Treatment	<ul style="list-style-type: none"> The impact of dust at construction sites is rather adverse, but localised in nature No serious health problem is likely to be caused 	<ul style="list-style-type: none"> At precautions to reduce the level of dust emissions from the hot mix plants shall be taken The Hot Mix Plants be sited at least 500 m from nearest habitation. The plant will be including the dust extraction unit. Water should be sprayed in the line and earth mixing sites, asphalt mixing site and service roads. In filling subgrade, water sprayed is needed to solidify the material. After the impacting, water should be sprayed regularly to prevent dust. Vehicles delivering material should be covered.
20.	Noise from the vehicles, asphalt plants and equipments	<ul style="list-style-type: none"> The activities of using heavy machinery and equipments are localised and intermittent No serious impact on human health like loss of hearing ability through some sleep disorders may result 	<ul style="list-style-type: none"> The parts and equipments used in construction shall strictly conform to CPCB noise standards. Vehicles and equipments used will be fitted with silencer Noise standards of industrial enterprises will be strictly enforced to construction workers from damage In construction sites with 150m where there are human

Client	Independent Engineer	EPC Contractor	Page 13 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



			settlements, noise construction will be stopped between 10.00 pm and 6.00am. <ul style="list-style-type: none"> Noise will be monitored at constructionsites.
21.	Noise from blasting operation	<ul style="list-style-type: none"> The sudden and loud noise of blasting is disturbing an d irritating The intense noise may cause partial deafness 	<ul style="list-style-type: none"> People living near such sites will be given prior information of operational hours. Blasting will not be undertaken in midnight or late- night hours.
22.	Accident risk from construction activities	<ul style="list-style-type: none"> The type of accidental risks may be due to ill-maintained machines and vehicles due to poor light conditions at the work place, or due to carelessness and poor management of the work involved 	<ul style="list-style-type: none"> To ensure safe construction in the temporary accesses during construction, lighting devices and safety signal devices shall be installed. Traffic rules and regulation to be strictly followed. At blasting sites- the blasting time, signal and guarding will be regulated. Prior to blasting the site should be thoroughly inspected. Blasting will not be carried out during peak hours. Safety of workers undertaking various operations during construction should be ensured by providing helmets, masks, safety goggles etc. The electrical equipments should be checked regularly to avoid risks to workers. At every work place, a ready available first aid unit including an adequate supply of dressing materials, a mode of transport.
23.	Health Issues	<ul style="list-style-type: none"> The presence of unhygienic conditions at work place of construction workers. The non-availability of good drinking water 	<ul style="list-style-type: none"> At every work place, the good and sufficient water supply shall be maintained to avoid waterborne diseases and securing the health of worker. Adequate drainage, sanitation and waste disposal to be provided at work place. Medical care to be provided to workers if falling ill. Portable Water shall be available at campsite.

Client	Independent Engineer	EPC Contractor	Page 14 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

24.	Damage or loss of cultural properties	<ul style="list-style-type: none"> No existence of archaeological epic is likely No monument exists in the corridor 	<ul style="list-style-type: none"> Relocation of cultural properties All necessary and adequate care should be taken to minimise the impact on cultural properties. If valuable or invaluable articles such as fabrics, coins, geographic or archaeological artefacts discovered, the excavation should be stopped and archaeology department at Maharashtra will be contacted. Archaeologist will supervise the excavation to avoid any damage to the relics. Religious structures which are falling in the alignment will be suitably relocated as per guidelines of NH
25.	Roadside landscape development	<ul style="list-style-type: none"> The positive impact will be on bio-aesthetics and beauty Landscaping and beautification of ponds and access roads will improve aesthetic considerations. 	<ul style="list-style-type: none"> Avenue plantation of foliage shade trees mixed with flowering trees should and scented plants as per detailed designs. The treatment at ponds as the sites for rests for tourists and specified chainage to be developed.
26.	Safety measures	<ul style="list-style-type: none"> The chances of accidents would be reduced in view of improved road conditions 	<ul style="list-style-type: none"> Traffic management plan will be developed, especially in congested locations. Traffic control measures including speed limits to be enforced strictly. Further growth of encroachment and squatting on ROW to be discouraged Widening of the existing carriage way will be reduce accidents. Strengthening of pavement Improvement upon the curves in road geometrics Proposing service lanes in markets and near schools. Providing proper median Improving upon road crossing

Client	Independent Engineer	EPC Contractor	Page 15 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	
				<ul style="list-style-type: none"> Putting warning signals and signboards.

1.5 Review of Environmental Management Plan

Periodic review meetings will consider the performance of the Environmental Management Plan. Feedback will be considered based on surveillance and monitoring reports as well as comments from the client's representatives and external agencies.



These review meetings will result in recommended changes and improvements to the Environmental Management Plan for its continued effectiveness.

1.6 Environmental Management Organisation and Responsibilities

1.6.1 Outline of Management System

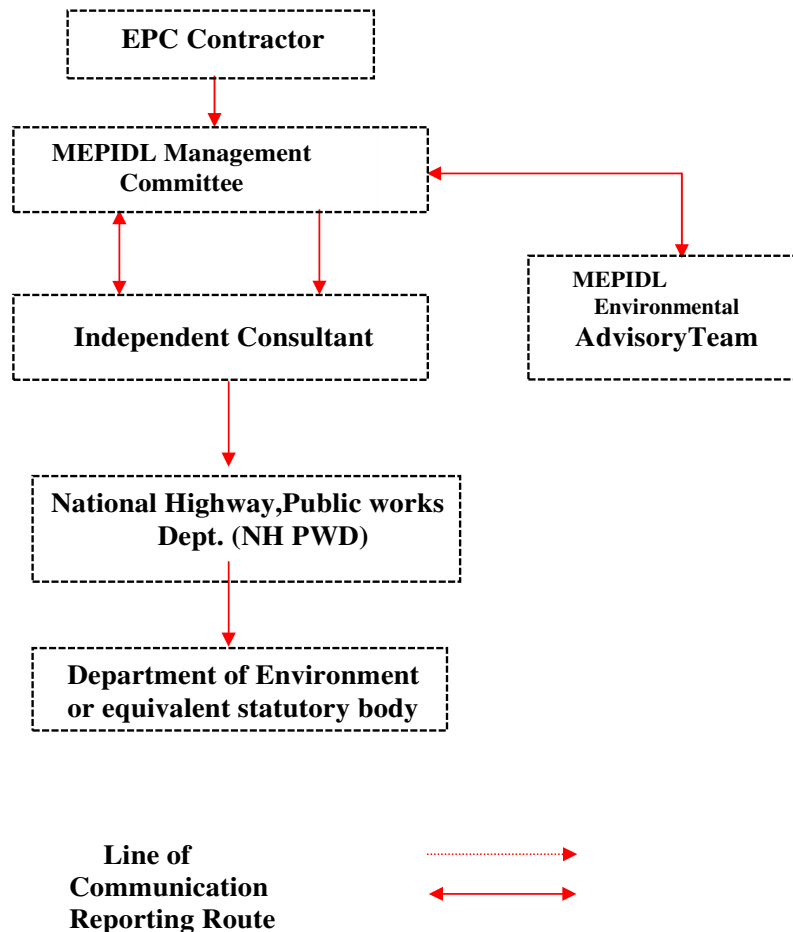
- Through out all stages of construction, our working methods will ensure that the environment of the site and surrounding area is protected; particularly all water courses after the areas have been inundated.
- During site clearance and earth works, materials shall be carted away to approved tips. All retained trees will be adequately protected. Cutslopes will be protected from scour if it is left for long periods of time and temporary site drains will discharge via silt ponds into water courses.
- During the construction of foundations and the bridge structure, care will be taken to avoid polluting water courses with cement grout, concrete construction debris and materials. Upon completion of the bridge structure, all permanent drainage, scour protection, turfing and landscaping will be completed if required.

Client	Independent Engineer	EPC Contractor	Page 16 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

1.6.2 Relationship of Organisations

For the purposes of environmental management, the lines of communication and reporting routes will be as follows:



1.6.3 Responsibility of Key Staff

MEPIDL



Management Committee

Responsible for ensuring that there is overall compliance with the EMP and setting up of environmental policies. Contact Person, Mr. Surendra Pattar Senior General Manager

Project Manager

Responsible for implementing the EMP during all phases of construction. He will ensure that all

Client	Independent Engineer	EPC Contractor	Page 17
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	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

subcontractors are aware of and comply with the EMP. , Mr. SurendraPattar Senior General Manager

Environmental Advisory Team (In-House)

The team will act as an advisory panel on environmental matters, carry out environmental surveillance audits at random intervals and provide technical input as and when required.



Environmental Officer



He will carry out regular environmental surveillance inspections and monitor corrective actions. This position will not be a dedicated position in the organization but the PM will appoint suitably trained personnel in his project team to take this responsibility. He will receive guidance and advice from senior personnel of the Environmental Advisory Team on technical matters

1.7 Schedule for Environmental Monitoring Reports

Components	Action to be Taken	Monitoring Agency
AIR	Parameters: <ul style="list-style-type: none"> SPM, RPM, SO₂, NO_x, CO, Monitoring Frequency Construction Phase: Ratnagiri once in a Quarter Monitoring Standard Existing National Ambient Air Quality Standard issued by the CPCB	SPCB
NOISE	Parameters: <ul style="list-style-type: none"> Noise measurement in dB(A) for day & night Monitoring Frequency Construction Phase: Adho only if complaint is lodged Operational Phase : One location Ratnagiri Monitoring Standard Existing Noise standard issued by the CPCB	SPCB
WATER QUALITY	Parameters: <ul style="list-style-type: none"> pH, BOD, COD, DO, Oil & Grease, Chloride Monitoring Frequency Construction Phase: One time per season in a year for 24 hour period during bridge construction activity At water crossings where bridges are to be constructed Monitoring Standard Water quality standard issued by the CPCB 	SPCB

Client	Independent Engineer	EPC Contractor	Page 18 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
		FLORA	Parameters: <ul style="list-style-type: none"> No of trees surviving after 1.5yr. And 2yrs. in relation to total number of trees planted Re-vegetation success, in terms of survival of plantings Monitoring Points: Throughout the stretch Monitoring Standards: 100% newly planted trees, shrubs and bushes	SPCB

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

2. ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION CAMPS

2.1 Introduction

Construction camp is the location in which the contractor will have all his camp office, residential complex, workshop, Laboratory and the Plants & Machineries for the proposed work.

The site for the construction will be almost center of the highway work stretch reducing the transport and easy accessibility to the work site. The site will be free from cultivation and in non agricultural land



The construction camp will have Offices & Residences Plants & Machineries Workshop Vehicle parking. The layout of the construction camp is designed in such a way that there will a reasonable distance between the office & residences and plant area. The land for the construction camp will be purchased by the company on its own by paying the mutually agreed amount to the land owners and will be properly documented. The layout plan prepared for the construction camp will be submitted for approval to the local approving authority. On receiving the approval for the local body the construction activity in the camp site will be started. The site clearance will be first step and the trees if any existing the site will be taken care and will be left as such and in case any removal is to be done will be compensated by planting the additional trees at the boundary or at any selected location in the camp site. The top soil if any will be removed only in the construction area and will be utilized in the lawn development in the camp site. No disturbance will be done in the other areas. Fencing all around the camp site will be done with check post provision in the entrance thereby restricting the camp area as restricted area for the general public. The barbed wire fencing also prevents the entry of domestic or stray animals into the camp site.

2.2 Labour Camp Management

All workers accommodation will be located within site. The construction camp will be managed in an environmentally sustainable and hygienic manner. Controls will include:

- Adequate toilets will be provided.
- Arrangements will be made for the safe disposal of domestic sewage.
- Domestic refuse will be collected and removed from site on a regular basis.
- The construction camp will be maintained in a clean and sanitary condition.
- At the completion of the works all temporary offices and site facilities will be removed.

Client	Independent Engineer	EPC Contractor	Page 20 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

2.3 Source of WaterSupply

The water requirement in the construction camp site will be for the following

- Domestic use in Office and Residential complexes.
- For process in plant area i.e. in crusher, wet mixing plant & batching plant.

Domestic use:

For the domestic usage of water in the office and residential complexes, the bore well will be driven and the water will be tested for its quality. Upon receiving the good quality of bore water, the same will be utilized for the above purpose by providing the OHT for water storage and necessary pipe lines for delivery. If required, the Reverse Osmosis treatment system will be provided for the bore water if the raw water is not potable upon receiving the water test report.



Plant Area:

The water is required for the dust suppression system in the crusher.
 The water is required for process in the wet mixing plant and batching plant.
 The water in the existing open well, if any, will be utilized for this, that too upon conducting water quality test.

2.4 Sanitation and Waste Water Treatment

The office and residential complexes will be constructed with sufficient ventilation and required number of toilets and bathrooms and wash basins. The non-hazardous waste collection bins will be provided at various locations depending on the requirements and taken for proper disposal. The residential and office blocks will be situated at a reasonable distance from the plant and machinery. The septic tanks of adequate capacity will be provided separately for the office and residential complex. The raw sewage will be treated in these tanks. The treated sewage from these septic tanks will flow into soak pits, thereby the underground strata disposal is practiced. The soak pits and septic tanks will be located carefully so that there will not be any contamination to the water sources.

Client	Independent Engineer	EPC Contractor	Page 21 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

The waste water from the canteen will separately collect and treated in the digester proposed. The outlet from the digester and the bathroom wastewater will be collected in a sump and taken for green belt development and gardening. Since the laboratory proposed in the campsite for material testing, the wastewater will be only container washings which will have only little bit of non hazardous solids. This will be settled in the grit chamber provided and the clear water will be taken to the waste water sump. There will be no chemical effluent generation from the lab.

2.5 Medicare



A medical care center will be established within the base camp site with necessary first aid kits and facilities to treat minor injuries and to provide first aid. A consulting physician will be appointed. The doctor will be visiting once in fifteen days or whenever required whichever is the earliest for health checkups and treatment. Urgent cases will be taken to the nearest hospital for treatment. Responsible persons will be trained in the first aid. The first aid boxes with medicines will be kept in the work area. A separate vehicle will be made available at any time for emergency cases. The contact phone number of the nearest ambulance station will be displayed within the campsite for easy accessibility.

2.6 Hazardous Waste Collection, Storage and Disposal

The list of hazardous waste generated within the campsite will be prepared. Generally construction camp offices will generate the following hazardous wastes

- a. Waste oil
- b. Fused tube lights
- c. Used Batteries

Client	Independent Engineer	EPC Contractor	Page 22 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

Waste Oil:

The waste oil will be generated from the machineries, vehicles, generators while oil replacements and oil spillages while filling with fresh oil etc., while handling the oil enough care shall be taken to avoid any spillage and necessary tray or suitable spillage collection provision will be provided to collect the spilled oil while handling or storage.

The collected

spillages will be taken for reuse if possible or otherwise taken to waste oil storage tank. While replacing the oil in the machineries enough care will be taken to avoid spillage and leakages and the provision to collect the spillage and leakage will be made before draining the waste oil from the machineries. The camp site will have separate isolated hazardous waste storage area with proper labeling. Necessary PPE and Instructions regarding the collection and storage, nature of the waste oil in language understood by workers and English will be displayed in storage and usage area. The oil storage and waste oil storage area will have the spillage and leakage collection arrangement. The waste oil will be disposed to the authorized recycler.

Fused Tube lights:

The fused tube lights are injurious and hazardous in nature. Hence the fused tube lights within the construction camp site will be collected with proper care using PPE and will be stored in the designated area.

Used Batteries:

The used batteries will be collected and stored in a designated area and will be given to the suppliers on buy back basis.

2.7 Operation and Maintenance of Oil Interceptor



The oil interceptor will be used at the wash area. The oil will be separated in the first tank where the oil floats on the top.

2.8 Layout Plan of Camp

The layout plan is attached as annexure A at the end of the document.

2.9 Dust Suppression inside the Camps

Client	Independent Engineer	EPC Contractor	Page 23 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

Watersprinkling arrangement will be provided to suppress the dust generated due to vehicle movement within the camp. Periodical sprinkling will be done. Generally once in morning and once in evening and also whenever required.



2.10 Closure Plan

The activities carried out in this regard will be as per the direction of the land owner. If it is desired by the owner that the high land be flattened for construction purpose then the land will be leveled once the extraction of material is complete. The closure procedure agreed upon will be documented and included in the agreement before borrow area is exploited.

2.11 Site Identification and Setting up of Workers Camp



Sl.No	Item / Requirement	Details as per Actual
1	Details of camp site	
a	Size and area of Camp (maximum & Sq. mtrs)	
b	Date of camp proposed to be operational	
c	Present land use (barren or fallow land having no prominent vegetation should be preferred)	
d	Should be away from settlement to avoid interference. Given no of settlement within 500m.	
e	Should be away from water body to avoid direct contamination. Give details of water bodies present within 500m.	
f	Details of nearest forest or any other ecologically sensitive area (should be away from these areas)	
g	No. of trees of girth > 0.3m present and will be affected (no tree should be affected)	
2	Details of topsoil stacking	
a	Quantity of topsoil to be removed (Sq.m & depth in cm)	
b	Detail of preservation & management of topsoil	
3	Details of workforce (at camp site)	
a	Total No of Laborers	
b	Total no of Male Workers	
	No of male Workers below 14 years of age	

Client	Independent Engineer	EPC Contractor	Page 24 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

c	Total no of Female workers	
d		
e	No of Female workers below 14 years of age	
f	No of children (below 14 years of age)	
4	Details of dwelling units	
a	No of dwellings	
b	Minimum size of dwelling (mxm)	
c	No of openings per dwelling and size of openings	
d	Specification of walls Specification of roofing	
e	Specification of flooring	
f	Specification of flooring	
5	Details of service facilities	
a	Specification of drinking water tank	
b	Size and capacity of Drinking water tank (mxmxm & Cum.)	
c	Capacity of Water Tank for water closets (WCs)/ Bathrooms and general purpose (Cum.)	
d	Total no of WC	
e	No of WC for female workers (should be separate for male & female workers)	
f	Specification of WC	
g	Total No of bathrooms for female workers (should be separate for male & female workers)	
h	Size of septic tank for WCs/ Baths (mxmxm)	
i	Details of household solid waste collection system (two bin system is recommended)	
j	Details of fuel for cooking i.e. kerosene with stove, LPG etc.	
k	Electricity arrangement	

Client	Independent Engineer	EPC Contractor	Page 25 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

3. **BORROW AREA MANAGEMENT**

3.1 **Borrow Land Identification and Methodology of Operation**

Since The development of said highway is in the hill sections of the konkan region the soil used for the construction is obtained from the cutting sections of the hills within the PROW. the soil location where the soil forembankment and constituent for GSB can be obtained is called barrow land. The widening of the existing road involves more cutting of earth than filling. Hence the amount of material generated as a result of excavation is enough for use in filling areas provided the cut material is found suitable. But as a back up measure the usage of barrow material is not completely ruled out.

3.1.1 **Haul Road management:**

The approach road to the borrow area will be maintained through out the period of its use. Periodic sprinkling of water will be carried to keep the dust generation under control. Speed limits will be strictly adhered to while hauling of material is carried out. Necessary sign boards will be erected wherever required and the traffic assistants will be posted to regulate the traffic flow. A friendly atmosphere will be created with the local community and all assistance will be provided.

3.1.2 **Top Soil Management:**

Before the commencement of the excavation the top soil will be stripped and stockpiled for the future use. This soil will be spread after the completion period in case of high level borrow areas. The top soil from the other borrow areas will be utilized in the turfing of side slopes.



3.1.3 **Photographic records:**

Photographs of the area depicting the state of land before and after extraction of material shall be maintained.

3.2 **Borrow Area Identification**



Sl. No.	Item / Description	Details as per Actual
1	Date of Borrow Area planned to be operational	

Client	Independent Engineer	EPC Contractor	Page 26 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

2	Current Landuse (preference to barren land, riversideland, otherwise, un-irrigated agriculture land or land without tree cover)	
3	Size (Sq.m) and area (m x m) of Borrow Area	
4	Proposed maximum depth of pit in m (IRC 10 & Clause 305.2.2 of MoRTH Spec.)	
5	Detailsofriversideborrowarea(inneredgeshould not be less than 15m from the toe of the bank and bottom of pit should not cut the imaginary line of 1:4 from embankment top)	
6	Borrowareainculturableland(shouldbeavoided or restricted to total depth of 45cm including preservation of 15cm top soil)	
7	Quantity Available (Cum.)	
8	Quantity of top soil to be removed (Sq.m & depth in cm)	
9	Details of preservation (storage) and management (re-use / re-laid) of top soil	
10	Width of Haul road (m)	
11	Total Length of Haul Road (km.)	
12	Length of Non-metal Haul Road (should be as minimum as possible)	
13	No of settlements within 200m of Non-metal Haul Road (should be as minimum as possible)	
14	Distance from settlement (should be minimum 800m)	
15	Should be away from water bodies. Give detail of water bodies within 250m.	
16	Details of water sources for dust suppression	
17	Quantity of water required for dust suppression i.e. sprinkling at borrow area and on haul road (Cum.)	
18	Availability of water required for dust suppression (Cum.)	
19	Detailsofecologicallysensitiveareai.e.RF,PF, Sanctuaryetc.within500m(shouldbenil)	
20	Detailsofschool,hospitalandanyarchaeological sites within 500m (should benil)	
21	Distance from nearby road embankment, fence line / boundary (should be minimum 10m & outside ROW)	
22	No of Trees with girth more than 0.3m (Not tree should be affected)	

Client	Independent Engineer	EPC Contractor	Page 27 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

4. **CONSTRUCTION PLANTS AND DIESEL GENERATORSETS**

The plants to be located in the plant area are:

1. Stonecrusher
2. WMMplant
3. Hot mixplant
4. Batchingplant

4.1 **Pollution Control in Stonecrusher**

There is no process wastewater from the stone crushing unit. Hence no water pollution. The dust will be generated while crushing operation, while conveying and at dropping point. This is controlled by providing the dust suppression system. In the dust suppression system the water sprinkling will be done at point starting from the jaw crusher to the dropping point. Due to sprinkling of water the weight of the dust particles gets increased and it will not fly in air. The water required for the sprinkling purpose will be drawn from the nearby open well/ bore well and the system will have standby motors for continuous operation. Green belt will be developed around the plant area which will act as the dust filter for the surrounding area.



4.2 **Pollution Control System in WMMplant**

The total operation in the WMM plant is wet operation there will not be any air pollution. This operation will not generate any process waste water also.

4.3 **Pollution Control in Hot Mix Plant**

This operation has no process wastewater. Due to application of high flame at high speed the dust particles in the aggregates may come out in the Air vent. This is controlled by providing the dust collector and the bag filter. The dust collector reduces the velocity and makes the heavier particles to get settled down and the outlet air is passed through bag filter. For Periodical replacement of the bag filters maintenance schedule will be drafted in consultation with the engineer in-charge and schedule will be adhered.

Client	Independent Engineer	EPC Contractor	Page 28 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

4.4 Pollution Control in Batching Plant

In batching plant the cement will be stored in silos and will be conveyed in pipes using screw pumps. Hence there is no possibility of spreading in air. The water sprinkling arrangement will be provided at the conveyance and the drop point there by suppressing the dust spreading. The wastewater generated while mixing drum cleaning and the concrete transit containers will be allowed to pass in the settling tank and filtered in the sand bed and filtrate will be used for dust suppression in the vehicle movement area.

4.5 Waste Generation from Construction Plants

The process waste generated in the construction plant is Stone dust. This dust is utilized in the WMM plant and if in excess it may be utilized for land fill. This will be mechanically handled for collection and conveyance.

4.6 Pollution Control in DG Sets

The following DG sets are provided in the camp site



Sl. No	Location	Capacity of DG set	Pollution control Equipment
1.	Hot Mix Plant	250KVA	Acoustic Insulation, Anti vibration pads, Silencers with sufficient height
2.	Crusher	500KVA	
3.	Crusher	500KVA	
4.	WMM	125KVA	
5.	Concrete Batching Plant	250 KVA	
6.	Camp/Work shop	75KVA	
7.	Camp lighting	45KVA	

The stacks of sufficient height also satisfying with the legal norms will be provided for each genset for the exhaust dispersion. The noise level will be reduced by providing separate enclosure for the gensets and with sound absorbing material.

4.7 Pollution Control Monitoring

The ambient air quality will be monitored once in six months and the level of pollutants in the air will be checked. The emission from the genset and the hot mixing plant will also be monitored once in six months and level will be checked and improvements if any

Client	Independent Engineer	EPC Contractor	Page 29 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	



	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

required

will be done. All the vehicles used in the project will be tested for emission and the certificate of fitness will be maintained by the Maintenance department. All the emission tests will be done with the third party and the copies of the results will be maintained in the Maintenance Department. The schedule of maintenance of the plants, equipments and machinery will be drafted in consultation with the technical person in charge and the schedule will be adhered. Periodical review of the maintenance works completed will be done by the Maintenance department once in three months. If any deviations the root cause will be identified and the required remedial actions will be taken.

4.8 Site Identification for Stone Crusher Unit

S. No	Item / Requirement	Details as per Actual
1.	Predominant wind direction	
2.	Size and area of the proposed plant site (maximum & Sq.mtrs)	
3.	Present land use (barren or fallow land having no prominent vegetation should be preferred)	
4.	No dwelling units within 250m from the stone crusher plant boundary in downwind direction	
5.	Distance of nearest boundary of State Highways and National Highways should be at least 250m from the plant boundary	
6.	No sensitive area such as religious places, schools/educational institutions, reserved / protected forest, sanctuary etc. within 500m	
7.	No water body should be present within 500m	
8.	No trees of girth > 0.3m present and will be affected (no tree should be affected)	
9.	Width of Haul road (m)	
10.	Total Length of Haul Road (km)	
11.	Length of non-metal Haul Road (km) (should as minimum as possible)	



	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

4.9 Site Identification for Hot Mix Plant



S. No	Item / Requirement	Details as per Actual
1.	Predominant wind direction	
2.	Size and area of the proposed plant site (maximum & Sq. m)	
3.	No dwelling units within 500m from the hot mix plant boundary in downwind direction	
4.	Distance of nearest boundary of State Highways and National Highways should be at least 250m from the plant boundary	
5.	No sensitive area such as religious places, schools/educational institutions, reserved /protected forest, sanctuary etc. within 500m	
6.	No water body should be present within 500m	
7.	No other trees of girth > 0.3m present and will be affected (no tree should be affected)	
8.	Width of Haul road (m)	
9.	Total Length of Haul Road (km)	
10.	Length of non-metal Haul Road (km) (should be as minimum as possible)	

4.10 Installation of Stone Crusher Unit

S. No	Item / Requirement	Details as per Actual
1.	Details of dust and emission control measures in stone crusher plant i.e. water spraying at primary crusher and conveyor & return belts, covered conveyor system, chute at outfall of aggregates, cyclone separator, wind brake wall etc.	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



2.	Sedimentation tank for treating effluent from watersprinkler	
3.	Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc.	
4.	Quantity of water required for dust and emission control in the crusher plant and plant compound (Cum.)	
5.	Details of sources of water for pollution control (Type /Capacity/ Present Use/ Ownership)	
6.	Availability of water required for dust and emission control in the plants (Cum.)	
7.	Greenbelt along the periphery of plant site (Sq. m)	

	<p>Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode</p>			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

4.11 Installation of Hot Mix Plant

S. No	Item / Requirement	Details as per Actual
1.	Pollution control devices for hot mix plant i.e. stack height, water scrubbers, acoustic enclosure etc.	
2.	Details of treating effluent from water sprinkler i.e. sedimentation tank, oil separator etc.	
3.	Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc.	
4.	Quantity of water required for dust and emission control in the hot mix plant and plant compound (Cum.)	
5.	Details of sources of water for pollution control (Type / Capacity/ Present Use/ Ownership)	
6.	Availability of water required for dust and emission control in the plants (Cum.)	
7.	Greenbelt along the periphery of plant site (Sq. m)	

Client	Independent Engineer	EPC Contractor	Page 33 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

5 QUARRY MANAGEMENT PLAN

5.1 Precautions Before and After firing

The following safety precautions shall be followed before and after firing.



- Warning shall be given before blasting.
- For large blasts, particularly in pits employing numerous men and machines, blasting shall be done at times that are notified in advance. It shall be preceded by definite and well understood signals, such as horns, sirens, whistles or yelling that is loud enough to caution everyone.
- Blasting crew shall make sure that all personnel are out of the way, machines are protected, and no visitors or trespassers are around when the blasting takes place.
- If public roads are within the danger area, traffic shall be stopped at a safe distance of 400 meters.
- The return to the blast area shall be slow and gradual.
- In case of shot firing with a safety fuse, utmost care shall be taken to count the number of loud reports to make sure that all shots have been fired.
- In the event of misfire, no person should be allowed to approach the blasting site, and careful inspection for the undetonated explosives shall be made.
- If the misfire is due to cable fault or faulty electrical connection, it shall be rectified and shot fired.

5.2 Transportation of Explosives

The following rules and regulations shall be followed at the time of transportation of explosives



- Explosives shall always be transported in specially designed vehicles called an Explosive van bearing special signs or inscription 'DANGER-EXPLOSIVES'.
- Vehicles to be used for transporting explosives shall have a light wooden or non-sparking metal (copper, brass and the like) floors.
- Electrical wiring in vehicles shall be fully insulated so as to prevent danger of short circuiting and at least two fire extinguishers of carbon tetrachloride type shall be carried.

Client	Independent Engineer	EPC Contractor	Page 34 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

- No metals except approved metal truck bodies shall be allowed to come in contact with cases of explosives.

Client	Independent Engineer	EPC Contractor	Page 35 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



- Smoking shall be prohibited in vehicles carrying explosives and no unauthorized person shall travel in the vehicle carrying explosives.
- Loading and unloading of explosives shall be done carefully by trained staff and supervised by qualified personnel.

5.3 Drilling and Blasting

The following rules and regulations shall be strictly followed at the time of drilling and blasting operation.

- All the blasting activities shall be carried out under the supervision of a shot firer.
- The shot firer must possess a valid license. Only approved ohm Meter & Exploders shall be used in the site.
- Smoking or other sources of fire are prohibited within a radius of 100 feet from the place where explosives are being handled or used.
- Unauthorized persons are totally prohibited in the blasting area. Drilling of holes shall not be resumed after a blast has been fired unless a thorough examination has been made to ensure that no exploded charge is left.
- Rods made of wood or some non-ferrous non-sparking material shall be used for charging and stemming. No hole should be loaded except those that are to be fired in the next round of blasting. Holes loaded during one shift shall be fired on the same shift.
- Detailed records of hole positions, charge type and quantity, hole depth, charge column and stemming shall be maintained so as to facilitate the act of locating the depth in case of a misfired charge.
- After filling the holes the charge shall be covered with sandbags to prevent splinters from flying in all directions.
- Blasting operations will be carried out only during fixed hours of the day, which shall be notified in writing and widely publicized.
- Caution boards indicating the timings also shall be displayed prominently in local language, Hindi & English.
- A standard warning signal/siren and all clear signal shall be used before and after firing and inspection. All personal working in the area and nearby shall be made aware of this established warning procedure.
- Before firing, the holes shall be rechecked so as to ensure that all the holes have been connected and delays have been laid out in the proper firing sequence.

Client	Independent Engineer	EPC Contractor	Page 36 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

- Before firing the shot holes, the blaster shall give a final warning and ensure that all persons within the danger zone have taken proper shelter.

5.4 Storage of Explosives



Storage of explosives is regulated by Indian Explosives Act, 1884 and provisions thereunder should be strictly observed. The following rules and regulations shall be followed during the storage of explosives.

- Explosives shall be placed in dried and intermediate layers, well ventilated and protected from water, not nearer than 100 mtrs from shafts and at least 20 mtrs from any mechanical or electrical devices.
- The area surrounding stores of explosives shall be kept clear of inflammable debris. Separate compartments shall be provided for detonators.
- Boxes with explosives shall never be opened inside a store but at least 15 mtrs away from all activities in the store shall be carried out by the authorized workers only.
- Entry to the store shall be restricted to the storekeeper and supervisors. Lighting arrestor shall be provided for Magazine.

5.5 Details of Quarry Management Plan



LOCATION	Location map to be supplied
NEAREST PROJECT CHAINAGE	Ch. 143.100 RHS and Ch. 162.600 LHS
AREA INVOLVED	10 Acres
EXISTING LAND USE	Nil
LAND USE OF THE AREA - SURROUNDING	
ACCESS ROAD	The site is located adjacent to the NH and accessed by the road hence no separate access road is required. Regarding haul roads side drain will be provided on both sides. Protection work will be carried out on side slopes and at the bottom of it to prevent landslides during rainy season. Water will be sprinkled on the access roads using water tankers periodically to control dust operation.

Client	Independent Engineer	EPC Contractor	Page 37 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

	The operational and mining area does not have any trees.
PRE ESTABLISHMENT ACTIVITIES	Since the site is located adjacent to highway direct approach from NH is available. There is no disturbance due to vehicle movements to the adjacent landowners.
MACHINERIES AND EQUIPMENTS USED	Crusher unit consisting of a primary jaw crusher, secondary cone crusher and a vertical shaft impact or, Pneumatic drill, compressors, jack hammers. Dozer, Excavator (PC 300), Wheel loaders, Tippers.
HEALTH FACILITIES	A room shall be built in the vicinity and necessary first aid facilities will be made available. A person with knowledge of first aid will be in charge of this room. For Serious injuries a vehicle will be made available to take the injured to the nearest hospital
SAFETY	All necessary safety measures will be taken on site. Fire fighting equipments and protection system will be provided on the site. All personals working in the area will have to use protective gears while entering the crusher area and mining area. Safety boots, hand gloves helmets and other essential gears will be made available. The Site safety representative will be responsible for all the safety requirements. A record of all accident occurring will be maintained on site. All safety measure required to be observed will be printed and displayed at relevant places.
MONITORING OF AIR QUALITY	We will liaise with the pollution control board authority and seek their assistance in monitoring air pollution. Also private parties will be called to conduct independent monitoring periodically and a record of the results will be maintained on site
CONCERNS OF LOCAL	It will always be one in mind to take care of the welfare of the local people. Working hours will be such that least amount of

Client	Independent Engineer	EPC Contractor	Page 38 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	



	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

COMMUNITY	inconvenience is caused to people living nearby. Blasting time will be fixed & local people will be intimated of these by word
MINING	Mining/blasting operation will be carried out in a safe and secure manner. It will be ensured that least disturbance is caused while carrying out such operations. All the statutory laws regulation, rules etc pertaining to acquisition, transport, storage & use of explosive will be strictly adhered to. The explosives will be supplied by the authorized agencies on day to day basis and no storage of explosives within the site is proposed.
CRUSHING	The crusher will be placed in an area which has no adjacent building within radius of 300m and will be located in such manner that the materials after blasting do not fly into the crushing area. All the persons working in these areas will be provided with suitable wears & equipments. No person will be allowed into crushing premises. The crusher area will be designated as a hard hat area and people entering this area will be required to wear helmets and safety boots. The dust suppression is proposed to control dust in the crusher.
WORKSHOP & FUEL STORE	A workshop will be built where all breakdown vehicles/machineries will be repaired. It will have a concrete flooring so as to avoid contamination of soil by used oil/grease. A separate room will be provided for storage of fuel. Used oil will be stored separately in drums and disposed off in a safe manner. A record of the same will be maintained at site.

5.6 Closure Plan:

The activities carried out in this regard will be as per the direction of the landowner. If it is desired by the owner that the high land be flattened for construction purpose then the land will be leveled once the extraction of material is complete. The closure procedure agreed upon will be documented and included in the agreement before borrow area is exploited.

Client	Independent Engineer	EPC Contractor	Page 39 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	



5.7 Quarry Source Identification

Sl. No	Item / Requirement	Details as per Actual
1.	Present land use (bare land with no prominent vegetation is preferred)	
2.	Predominant wind direction	
3.	Size and area of Quarry (maximum & Sq. m)	
4.	Quantity Available (Cum)	
5.	Quantity proposed to be collected (Cum)	
6.	No of Trees with girth more than 0.3m	
7.	No Settlement within 500m of Quarry	
8.	No water body within 500m of Quarry	
9.	Width of Haul road (m)	
10.	Total Length of Haul Road (km)	
11.	Length of Non-metal Haul Road (km) (should be as minimum as possible)	
12.	No of Settlements within 200m of Non-metal Haul Road (should be as minimum as possible)	
13.	Quantity of water required for dust suppression i.e. sprinkling at borrow area and on non-metal haul road (Cum.)	
14.	Details of Water sources for dust suppression	
15.	Availability of water required for dust suppression (Cum.)	

6 ENVIRONMENTAL MANAGEMENT AT WORKSITES

6.1 Diversions for Water Courses

Since the entire stretch of Four Laning of Kante-Waked section comes under coastal region two perennial rivers are crossing the stretch. Bav river at ch. 117.110 and Anjanari river at ch. 143.100. In case if any diversion work is to be done, the structure will be of RR masonry backed sand fill which is available in the water course itself. After completion the RR masonry will be demolished and the stones are disposed or reused in construction works. The mortar will be disposed for land fill or basement filling in building construction sites. The sand used for retaining will be again spread in the river stretch. In case of small water courses, the Hume pipes will be laid first with sand cushion so that the water passed

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

through the pipes thereby enabling no disturbance to the culvert construction. These Hume pipes if not necessary will be removed after completion of the work.

6.2 Disposal of Wastes Generated from Diversion

The stones arising from the demolishing of RR masonry constructed for diversion will be sold out. The sand used for retaining will be spread all along the river from it is collected. The Hume pipes used for the small water courses will be taken back and sold out.

6.3 Top Soil

The top soil generated from the clearing and grubbing operations will be stocked and will be reused in the slope protection measures such as turfing etc. If in excess these soil will be conveyed and spread over the dry unfertile lands available at adjacent with the permission from the landowners or with the concern authority in case of government lands.

6.4 Environmental Enhancement

6.4.1 Introduction

Some additional measures needed to improve the environment are proposed to be undertaken during the project implementation. Such measures are known as environmental enhancements. These relate to improvement of natural, physical and aesthetic environment of roadside.

The objectives of these measures include: -

- To enhance the appeal of the project road
- To improve the environmental quality, and
- To generate goodwill amongst local community



To achieve these objectives, some suggested measures include:

1. Enhancement of roadside facilities (bus stops, rest areas, etc.)
2. Improvement of aesthetic qualities along the project road
3. Improvement of the local natural resources for local population
4. Enhancement of cultural properties and access to them
5. Management of some existing problems

6.4.2 Enhancement of natural environment

The natural environment can be improved by plantation of ornamental and shade

Client	Independent Engineer	EPC Contractor	Page 41 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

providing avenue trees, the shrubs and some important herbs besides developing ponds and providing bore wells along the roadside.

6.4.3 Plantation of trees, shrubs and herbs along the road

The plantation of trees can be done in different densities depending on the

- Habitat and soil type
- Water table depth
- Availability of indigenous species
- Survival rate of plantlets and
- People's choice

The physical growth characteristics like the form and shape, canopy types, branching patterns, growth rate, colour of flowers, foliage and root characteristics will also be the major criteria in the selection of plantation type and densities.

6.5 Avenue Tree Plantation

Avenue tree plantation shall be taken up after the development of four lane.

6.6 Slope Protection Measures

To protect the slope from sliding and erosion the protection works such as stone pitching with suitable stone will be done. Also the slopes will be turfed with the top soil available in the stock. Fast growing vegetation will be developed all along the slope to avoid erosion.



The rain water collected in the road will be drained by constructing the drainage channel all along the slope. Wherever necessary the pipes for drainage will also be laid. Turfing of the slopes of embankment will be done if the height of the embankment is less than 3.0 meter to avoid soil erosion. Stone pitching of sideslopes of embankment will be done if the height of the embankment is more than 3.0m to avoid erosion of soil.

6.7 Sources of Water for Construction and Dust Suppression

Following sources of water for dust suppression have been identified

1. Km 143+100 LHS near anjanri bridge

Client	Independent Engineer	EPC Contractor	Page 42 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

2. Km160+500 RHS near Kuvve village
3. Km 117.100 BHS :- Bav river

6.8 Longitudinal Drains

Longitudinal drains will be constructed on either side of the carriageway, between carriageway and service road as per provisions of concession agreement. In urban areas RCC covered drains will be constructed. Longitudinal drains along the carriageway will be maintained regularly as per the schedules stipulated in the concession agreement.

7. SOLID WASTE MANAGEMENT

7.1 Waste Management

Waste generated due to land clearance, construction and the site offices and facilities will be managed to prevent air and water pollution. Control measures will include:

- Sufficient waste containers to be provided and used at site offices and facilities.
- Domestic waste will be collected regularly and removed to an approved sanitary landfill site.
- Construction waste will be removed and disposed of at a dumping site approved by the local authority.
- Vegetation waste will be removed to designated dumping site.
- No solid waste will be dumped in or near water courses.
- Sanitary facilities with septic tanks will be provided at the worker's camp.
- Designated cooking places will be provided to prevent food waste being generated everywhere.



7.2 Scheduled Waste Management

Scheduled waste generated during construction such as used oil, batteries, solvents and pesticides will be stored and disposed of in compliance with the environmental statutory requirements.

Control measures include:

- All scheduled wastes will be stored in containers.
- Spillage and leakage will be prevented.

Client	Independent Engineer	EPC Contractor	Page 43 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

- Scheduled waste containers will belabelled.
- Scheduled waste will be stored at designated areas away from human activity.
Warning signs will beposted.
- Scheduledwastewillbecollectedbyasubcontractoranddisposedatapprovedreceiving areas.

7.3 Disposal of Scarified BitumenMaterial

- Scarified Bitumen material will be reused in the embankment/sub grade, if the same conforms to therequirements.
- ScarifiedBitumenmaterialwillbedisposedawayfromthehabitationplaces.
- Scarified Bituminous material will be disposed in the trenches and the trenches will be covered withsoil.

7.4 Solid WasteDisposal

The list of all the solid waste generated within the camp site will be prepared and will be collected and stored properly. Since these waste are non hazardous will be sold out.

Generally the construction camp site will have the following solid waste:



- Steelscraps
- woodenwastes
- Polythenewaste
- Paperwaste
- Plasticwaste
- Wastecontainers

The quantity generation and the disposal records will be maintained and the possible means of reduction will be applied.

7.5 Used Oil, Grease and Lubricants

All the Hazardous waste such as Waste oil etc., will be collected by using necessary PPE and stored in the designated area and will be disposed to the authorized agencies after verifying his license and proper manifest copies will be maintained. All collection, storage and disposal records related to the Hazardous waste will be maintained and will be kept open for the inspection by the authorities and third party inspection.

Client	Independent Engineer	EPC Contractor	Page 44 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

7.6 Bituminous Filter Waste

The hot mix plant has inbuilt air bag filter system to prevent dust generation during heating of the aggregates, mixing of aggregates with bitumen. The bag filters have auto arrangement for cleaning dust stocked in the bags. The dust will be recycled as fines in the process. Wastes generated from the hot mix plant will be used in developing the roads inside the construction camp or the approach roads to the construction camp. The waste will also be used for filling holes in adjacent rural roads.

7.7 Damaged PreCast

The damaged pre-cast material will be collected in the designated area. These will be disposed in the disposal areas. The excess concrete will be utilized for the activities such as safety pillar construction etc. during the site clearing the soil of approximated depth 150 mm or as per the instruction of the technical person-in-charge will be removed. The stripped top soil will be transported using tipper to designated areas and stocked. This material will be used for turfing of sideslopes or used to cover the waste dumping area.



The material below the top soil will be evacuated for the construction activity. This evacuated material will be stocked and reused in the construction if finds suitable. This material will be used for basement filling in case of building construction and can be applied as fill material in road in case of road work. The used material will be disposed for land fill in adjacent low lying areas. The steel waste generated will be collected and stored in the designated area and sold out.

8. ENVIRONMENTAL MONITORING

8.1 Introduction

Environmental monitoring and surveillance will be carried out to assess the effectiveness of the environmental management system and to confirm compliance with the relevant

Client	Independent Engineer	EPC Contractor	Page 45 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

regulations. The monitoring will be carried out by the Environmental Officer in the course of his daily duties. However, all MEPIDL staff will also be briefed on the requirements of this EMP and they are also responsible for notifying either the Environmental Officer or Project Manager if any non-compliance is noticed. The In-House Environmental Advisory Team will also make surveillance visits at least twice a year and will make the necessary recommendations for improvement.

8.2 Soil Erosion and Sedimentation Monitoring

Sedimentation due to soil erosion and surface runoff will be monitored at the outlet of silt ponds and work areas adjacent to major rivers:

- Monitoring will be carried out in conditions of flowing water.
- Monitoring will be carried out regularly from the time earth works commence.
- Basic monitoring method will be through visual surveillance.
- In the event of non-compliance, action plan for non-compliance will be implemented, e.g., providing temporary drainage and silt ponds, providing adequate siltation time in the silt ponds, de-silting of silt ponds, etc.

8.3 River Water Quality Monitoring

Water quality will be monitored upstream and downstream of the construction for major rivers.



- Monitoring will be carried out through regular visual inspections as the only probable contamination during the course of works would be either through silt or oil discharge. There are no chemicals involved in this project and as such, the requirement for full water quality test would not be justified.
- In the event of non-compliance, the action plan for non-compliance will be implemented, such as providing silt ponds, re-location of fuel skid tanks or vehicle wash areas, etc.

8.4 Air Quality Monitoring

Air quality will be monitored at locations at the site boundary or close to pollution sources. Toxic gases will not be involved or generated in the course of construction works and as such, monitoring will be limited to visual surveillance to detect generating of excessive dust or smoke from burning.

- Air quality monitoring will be carried out regularly through visual observations.

Client	Independent Engineer	EPC Contractor	Page 46 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

- Dust control measures will be implemented during earthworks.
- Water browsers will be provided if excessive dust is generated.
- In the event of non-compliance, the action plan for non-compliance will be implemented such as spraying of water on earth roads, compacting the access roads, providing a layer of crushed run on roads, regulating speed and movement of heavy vehicles, etc.

8.5 Monitoring of Construction Vehicles

Vehicles and machinery are to be regularly maintained so that emissions conform to National and State Standards. The pollution levels of the construction vehicles will be checked by authorized agencies once in six months.

Agencies/Institutions:

The Government of India has laid down various policy guide lines, regulations, acts and legislations pertaining to sustenance of environment. The following are various Environmental Implementing Agencies.

- **Air Quality Control** : Maharashtra Pollution Control Board
- **Checking of Air and Noise Pollution of vehicles**: Motor vehicles department, Govt. of Maharashtra.
- **Water Pollution**: Maharashtra Pollution Control Board

9 PERMISSION AND CONSENTS

All statutory permissions and consents will be taken as and when required.

10 TRAINING



10.1 Organizational Arrangements

An environmental Unit will be established in each construction package with a Officer to

address the environmental issues. The Environmental Unit will have proper staff to ensure the implementation of EMP and related measures. The officer (Environment) will be familiar

with the Indian environmental legislation, will have proper training of the environment of the region, and will be able to coordinate with NGOs, community groups, and Government department.

Client	Independent Engineer	EPC Contractor	Page 47 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

	Project: Rehabilitation and Upgradation of NH-66 (old NH-17) From Km 281/300 to km 332/200 (KANTE TO WAKED SECTION) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode			
	Document: Environmental Management Plan	Document No : MEP/ KWRPL/ EMP	Rev:00	

10.2 Environmental Training

Training of staff will be done at a number of levels. Some short-term training is required for the Environment Officer, other staff members of the Environment Unit and the contractor staff to raise their levels of environmental awareness. The Environment and Natural Resources Division and the State Pollution Control Boards conduct the training programs, and their help will be sought in this regard. In the long-term training, the specialized training or special environmental issues will be examined and provided to the Environment Unit.

10.3 Environmental Monitoring

In order to ensure that the prescribed environmental norms are maintained during the constructional and the operational phases, the regular monitoring is one of the most important components of the institutional arrangement. The regular monitoring of Air pollution, Water quality, Noise pollution, and maintenance of trees, etc. will be done at regular intervals. The field reports of various environmental components will be received at a quarterly basis, and any lapse has to be taken care of.

Some awareness training will be provided to the contractors and their personnel to ensure that the EMP is implemented effectively. The project co-coordinator will assess the contractor practices and, if high pollution levels are suspected, government or private sector laboratories will check them.⁹

Client	Independent Engineer	EPC Contractor	Page 48 of 48
MORT&H	Aarvee Associates	MEP Infrastructures Developers Ltd	

PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352 - 222394	nhratnagiri.ee@mahapwd.com
No. NHD/RTN/PB/PO-2/ 2042	Date:- 24/10/2017

To,

M/s. MEP SANJOSE KANTE WAKED ROAD PRIVATE LIMITED,
B1-406, Boomrang Chandivali form Road,
Near Chandivali Studio, Andheri (East),
Mumbai-400072.

Sub: - Rehabilitation and upgradation of NH-66 (Old NH-17) from KM 281/300 to KM 332/200 (KANTE TO WAKED SECTION) to four lanes in the State of Maharashtra under NHDP-IV on Hybrid Annuity Mode ("Project") - **felling of trees falls under ROW (Right Of Way). -Reg**

Ref: 1. The Concession Agreement signed between MEP Sanjose Arawali Kante Road Pvt. Ltd and MoRT&H on 28th June 2016.
2. The Chief Engineer letter no CENH/ P-1/NH-66/Arawali to Kante/trees/2530/2017 dated 13.10.2017.

Sir,

Please find the enclosed herewith letter received from Chief Engineer dated 13.10.2017 regarding approval for proposal of cutting and disposal of roadside trees encountered in four-lane project. In this regard, it is to inform you that the trees cutting permission request have been submitted to Forest Department & permission will be obtained shortly from Forest Department. Further, it is to inform you that the CE, Mumbai has approved the valuation amount of Rs. 98,44,706/- for 23355 nos of trees vide letter dated 13.10.2017 (copy enclosed).

For the subjected work, the removal of the trees as per the article 11.4 of Concession Agreement stated that, "The Authority shall assist the Concessionaire in obtaining the applicable permits for felling of trees to be identified by the Authority for this purpose if and only if such trees cause a material adverse effect on the project highway. The cost of such felling shall be borne by the authority, and in the event of any delay in felling thereof for reasons beyond the control of the Concessionaire, it shall be excuse for failure to perform any of its obligations hereunder if such failure is a direct consequence of the delay in the felling of trees. For the avoidance of doubt, the parties there to agree that the felled trees shall be deemed to be owned by the authority and shall be disposed in

Inward
Date: 25/10/2017
No: 275

by X

In view of above, it is requested to start the tree cutting activity in presence of Independent Engineer, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway at the earliest. The tree cutting permission for will be obtained & communicated to you shortly.

Encl. As above

O.C. approved by E.E.


For Executive Engineer,
National Highway Division,
Ratnagiri.

Copy submitted to :Chief Engineer, NH (P.W.) Navi Mumbai for kind information please

Copy submitted to: The Regional Officer, Kokan Bhavan, Navi Mumbai for kind information.

Copy to: The D.F.O., Chiplun: for kind information please.

Copy to: The R.F.O., Ratnagiri: for kind information please.

Copy to: TL, M/s Aarvee Associate Architect Engineer & Consultant Pvt. Ltd.: it is requested to submit the tree cutting progress report (desired format) day to day in co-ordination with Concessionaire.

GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
Office of the Chief Engineer (N.H.)
Konkan Bhavan, CBD, Belapur, Navi Mumbai-400614
Tel.: 022-27574303 Fax :022-27574272

CENH/P-1/NH-66/Arawali to Kante/Trees/2530/2017

Date:13/10/2017

To,
Superintending Engineer,
National Highway Circle,
Navi Mumbai-400614

Sub: - Rehabilitation and up gradation of NH-66 (Old NH-17) from Km 281/300 to Km 332/200 (Kante to Waked Section) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode - Proposal of Cutting and disposal of roadside trees encountered in four-lane project - reg.

Ref:- Your office letter No. SE/NHC/PB-1/397 dated 01.03.2017


Please refer to your letter dated 01.03.2017 on the above mentioned subject.

2. Proposal for valuation of Non Scheduled Trees amounting of Rs. 60,96,129/- (Excluding cutting, transportation & disposal charges) and of Scheduled Trees amounting of Rs. 37,48,577/- (Excluding cutting, transportation & disposal charges) is approved as recommended by you subject to following conditions

- i) Necessary approvals from Forest / Environment / other concern departments shall be obtained in advance.
- ii) Consent of concessioner for cutting of trees at the above mentioned amount for removing of trees upto depth of 1.20 m below ground level, transportation and disposal of cut down trees shall be obtained.
- iii) Cutting and transportation charges shall be approved by Executive Engineer in consultation with concern authority before start of work.
- iv) Only those trees, which are encounters in the present development width of four lanning work, shall be cut. The Executive Engineer shall personally monitor this.
- v) Re-plantation of maximum possible number of trees shall be considered in the space between toe line for four laning and ROW edge and available on Government land adjoining to the site.

3. The village wise details of number of trees and amount is as per Annexure I.

Encl: Annexure I


Chief Engineer
National Highway (P.W.)
Konkan Bhavan, Navi Mumbai.

Copy to Executive Engineer, NH Division, Ratnagiri for information and necessary action

Enclosure to letter No. CENH/P-1/2017/00/Arawali to Kante/Trees/2530/2017 Date:
11/10/2017

Annexure - I

Sr. No.	Village	Non Scheduled Trees	Total amount (Present Fuel Value)	Scheduled Trees	Total amount (Present Fuel Value)
1	Nivali	1130	₹ 5,82,908.00	882	₹ 3,32,171.05
2	Ravanangwadi	386	₹ 2,18,504.00	559	₹ 1,85,090.45
3	Tarave wadi	90	₹ 58,087.00	95	₹ 1,39,977.95
4	Hatichamba	1357	₹ 7,25,270.00	516	₹ 4,31,238.40
5	Zarewadi	136	₹ 93,928.00	98	₹ 54,645.09
6	Charveli	319	₹ 1,78,490.00	255	₹ 1,50,387.05
7	Kotharewadi	339	₹ 1,92,256.00	675	₹ 2,07,512.55
8	Nagalewadi	251	₹ 35,174.00	298	₹ 13,474.55
9	Bazarpeth	414	₹ 2,51,334.00	745	₹ 5,35,290.15
10	Marathewadi	98	₹ 44,094.00	19	₹ 6,45,970.15
11	Pali	311	₹ 1,70,683.00	439	₹ 4,79,368.45
12	Khanu	748	₹ 3,78,079.00	450	₹ 2,25,757.26
13	Math	339	₹ 1,43,811.00	187	₹ 25,851.35
14	Kadugaon	1141	₹ 2,78,651.00	209	₹ 61,538.92
15	Kurne	340	₹ 1,23,210.00	164	₹ 68,078.75
16	Anjinare	0	₹ 0.00	0	₹ 0.00
17	Muslim Gaon	0	₹ 0.00	0	₹ 0.00
18	Pateregaon	297	₹ 69,443.00	254	₹ 26,562.85
19	Devadhe	936	₹ 3,88,569.00	157	₹ 24,625.85
20	Boudhawadi	652	₹ 3,90,401.00	152	₹ 3,582.15
21	Tarfe Devadhe	951	₹ 2,84,689.00	833	₹ 66,764.20
22	Lanja	1947	₹ 5,04,952.00	602	₹ 13,132.95
23	Kuve	547	₹ 3,18,540.00	309	₹ 23,819.00
24	Puragaon	2412	₹ 6,65,056.00	316	₹ 33,737.95
24	Waked	15141	₹ 60,96,129.00	8214	₹ 37,48,577.07

Chief Engineer
National Highway (P.W.)
Konkan Bhavan, Navi Mumbai.

PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352 - 222394	nhratnagiri.ee@mahapwd.com
No. NHD/RTN/PB/PO-1/ 2944	Date :- 25 NOV 2016

To,
✓ The Range Forest Officer,
Ratnagiri,.

Sub: - Permission for felling of scheduled trees under existing as well as proposed ROW (Right Of Way) along the Stretch of NH-66 (Old NH-17) from Km 241/300 to Km 281/300 & Km 281/300 to 332/200-Reg

Ref: Your office letter no.अ/मूल्यांकन/चौपदरीकरण/४३५/२०१६-१७, दि. १८/११/२०१६

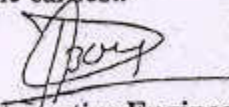
Sir,

With reference to your letter no.435 dated 18.11.2016 regarding permission for felling of scheduled trees under existing as well as proposed ROW (Right Of Way) along the Stretch of NH-66 (Old NH-17) from Km 241/300 to Km 281/300 & Km 281/300 to 332/200. The compliance of observation are as given below.

1. The new plantation will be done as per the National Highway act 1956, the typical cross section of plantation for 4 lane project Highway (copy enclosed).
2. The National Highway width is 30m (15m from centre line on both side) along the project stretch and this land is treated as Government Land, this land under possession Government of Maharashtra. The balance land is acquired for widening of project Highway as per NH-Act 1956. The all Survey no., area of acquired land, name of owner, type of trees, Structural details are mentioned in Joint Measurement Survey (JMS) copy is already submitted to your office).
3. The deposition of valuation charges of trees for approval of amounting to Rs.5,59,610/- (Ratnagiri, Chiplun & Dapoli rang for Ratnagiri District) is already submitted to Regional Office, Ministry of Road Transport & Highway. The valuation charges will be deposit immediately in your account, after approval form Ministry.

In view of the above, it is requested to issue the permission for felling of schedule tree/ trees specified in endorsed list, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway at the earliest.

Encl. As per text.


Executive Engineer,
National Highway Division, Ratnagiri.

Copy submitted to: The Collector, Ratnagiri: for kind information please.

Copy submitted to : The Regional Officer, M.O.R.T&H., Chembur, Mumbai for information.

Copy submitted to: The D.F.O., Chiplun: for kind information & necessary action please.

Copy to : Sub Divisional Engineer, P.W. NH Ratnagiri: for information & necessary action please.



परिक्षेत्र वन अधिकारी , रत्नागिरी यांचे कार्यालय
 मारुती मंदिर, शिवाजी स्टेडीयमचे मागे एसटी रोड, ओ वरत बंगला रत्नागिरी
 दुरध्वनी नंबर 02352/223271 ईमेल आयडी क्र. Rangertn555@Gmail.com



क्रमांक अ/मुल्यांकन/चौपदरीकरण/ ४३५ /२०१६.१७
 रत्नागिरी दिनांक १८ / ११ /२०१६

प्रति

मा. कार्यकारी अभियंता,
 राष्ट्रीय महामार्ग विभाग
 रत्नागिरी

विषय:- मुंबई गोवा राष्ट्रीय महामार्ग क्रमांक ६६ मधील बाधित झाडांचे तोडी बाबत..

या कार्यालयाकडून राष्ट्रीय महामार्ग क्रमांक ६६ मधील येणा-या जंगली झाडांचे मुल्यांकन यापूर्वीच योग्यत्या मार्गांनी सादर करणेत आले आहे. आपलेकडील पत्र क्र. २८२० दि. ११/११/२०१६ व पत्र क्र. २८५० दि. १५/११/२०१६ अन्वये संगमेश्वर तालुक्यातील २२ गावांमधील व रत्नागिरी तालुक्यातील १२ गावातील बाधित झाडांचे तोडीस परवानगी मिळणेबाबत प्रस्ताव पाठविला आहे. सदर गावातील झाडांचे तोडीस परवानगी देणेपूर्वी खालील बाबींची माहिती देणेस विनंती आहे.

१. महाराष्ट्र वृक्षतोड अधिनियम १९६४ सुधारणा १९८९ मधील कलम ३ प्रमाणे वृक्षतोडीस परवानगी दिलेनंतर त्याप्रमाणे नवीन झाडांची लागवड करणेची तरतूद आहे. तरी आपण पर्यायी वृक्षलागवडी बाबत कोणते नियोजन केले आहे. याची माहिती मिळावी.
२. उपरोक्त पत्रान्वये झाडतोडीस परवानगी मागणी केलेल्या क्षेत्राचे मालकी हक्काबाबत आपण कागदपत्र सादर केलेले नाहीत. तथापी पत्रामध्ये सदरचे क्षेत्र संपादित केलेलेचे नमूद केले आहे. ते ग्राह्य धरणेत येत आहे. परंतु सदर क्षेत्राचे संपादन, मालकीहक्काबाबत व मुल्यांकना प्रमाणे नुकसान भरपाई बाबत भविष्यात कोणताही वाद निर्माण झालेस किंवा न्यायालयीन प्रक्रिया निर्माण झालेस त्यास वृक्षाधिकारी किंवा वनविभाग जबाबदार राहणार नाही. त्याची सर्व जबाबदारी आपले विभागाची राहिल.
३. संपादीत क्षेत्रातील झाडांचे मुल्यांकाचे काम तातडीचे असलेने मा.जिल्हाधिकारी रत्नागिरी यांचे आदेशानुसार त्वरीत करून दिले आहे. परंतु वन विभागाकडे मुल्यांकन फी रु. २९७१२७/- जमा केलेली नाही. याबाबत मा.उप विभागीय अधिकारी (प्रान्त) रत्नागिरी, राजापूर यांचेकडे प्रस्ताव सादर करणेत आला आहे. सदरच्या मुल्यांकन फीचा भरणा अद्याप पर्यंत झालेला नाही. उपरोक्त पत्रान्वये पाठविलेले दोन्ही प्रस्ताव या परिक्षेत्रातील संबंधीत वनपाल यांचेकडे जरूरत्या कार्रवाहीसाठी पाठवित आहोत. तत्पुर्वी वरील बाबींची पूर्तता होणे आवश्यक आहे.

[Signature]
 २२/११/२०१६

जावक लिपिक,
 कार्यकारी अभियंता
 महामार्ग विभाग, रत्नागिरी

(बा. रा. पाटील)

परिक्षेत्र वन अधिकारी
 रत्नागिरी

प्रतिलिपी- मा. विभागीय वन अधिकारी रत्नागिरी यांना माहितीसाठी सविनय सादर

PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352 - 222394	Email ID- nhratnagiri.ce@mahapwd.com
No. NHD/RTN/PB/ 2850	Date :- 15 NOV 2016

To,
The Range Forest Officer,
Ratnagiri.

Sub: -Permission for Ratnagiri Taluka (12 nos. of villages) Felling of scheduled trees under existing as well as proposed ROW(Right Of Way) along the Stretch of NH-66 (Old NH-17) from KM 281/300 to KM 332/200 (Kante to Waked Section)

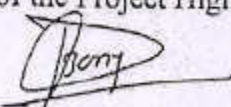
Ref: The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra, dated 28th June 2016

Sir,

With reference to above mentioned subject regarding Felling of scheduled trees permission for Ratnagiri Taluka, it is to inform you that, the land is acquired through Competent Authority of Land Acquisition (CALA), appointed by Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra ("MoRT&H" or "Authority"). The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra and MEP Sanjose Kate to Waked Road Pvt Ltd. signed on 28th June 2016 for Rehabilitation and up gradation of NH-66 (Old NH-17) KM 281/300 to KM 332/200 (Kante to Waked Section) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode.

The valuation schedule tree of Ratnagiri Taluka (12 nos. of villages) already carried out by your office at the time of Joint Measurement Survey (JMS) with TILR/Dy. SLR, the copy of JMS enclosed for perusal.

In view of the above, it is requested to issue the permit for felling of schedule tree/ trees specified in the list, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway is enclosed for ready reference.


Executive Engineer,
National Highway Division,
Ratnagiri.

Copy submitted to Collector, Ratnagiri for information please.

Copy submitted to The D.F.O.,Chiplun: for kind information & necessary action please.

Copy submitted to Subdivisional Engineer, NH Sub-Division, Ratnagiri for information please.

Copy to MEP Sanjose Arawali Kante Road Pvt.Ltd. for information please.

PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352- 222394	Email Id :- nhtratnagiri.eg@mahapwd.com
No. NHD/RTN/PB/ 2907	Date: 22 NOV 2016

To,
The Sub Divisional Officer and,
Competent Authority of Land Acquisition (CALA),
Ratnagiri

Sub: - Permission for Ratnagiri Taluka (12 nos. of villages) Felling of Non-scheduled trees under existing as well as proposed ROW (Right Of Way) along the Stretch of NH-66 (Old NH-17) from KM 281/300 to KM 332/200 (Kante to Waked Section)

Ref: The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra, dated 28th June 2016

Sir,

With reference to above mentioned subject regarding Felling of Non-scheduled trees permission for Ratnagiri Taluka, it is to inform you that, the land is acquired through Competent Authority of Land Acquisition (CALA), appointed by Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra ("MoRT&H" or "Authority"). The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra and MEP Sanjose Kate to Waked Road Pvt Ltd. signed on 28th June 2016 for Rehabilitation and up gradation of NH-66 (Old NH-17) KM 281/300 to KM 332/200 (Kante to Waked Section) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode.

The valuation schedule & Non- Schedule tree of Ratnagiri Taluka (12 nos. of villages) already carried out by Forest & Agriculture department at the time of Joint Measurement Survey (JMS) with TILR/Dy. SLR, the copy of JMS are already submitted to your office by TILR/Dy. SLR.

In view of the above, it is requested to issue the permission for felling of Non-schedule tree/ trees specified in the list, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway is enclosed for ready reference.

Encl. As per text


Executive Engineer (EE),
National Highway Division
Ratnagiri

Copy to submitted: - The Collector, Ratnagiri: for kind information please.

Copy to submitted: - The Dy. C.F./ D.F.O., Chiplun: for kind information & necessary action please.

Copy to submitted: - The Sub Divisional Engineer, NH Sub Divi., Ratnagiri: for information & necessary action please.

Copy to: - MEP Sanjose Kate to Waked Road Pvt Ltd : for information please.

PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352 - 222394	Email ID- nhratnagiri.cc@mahapwd.com
No. NHD/RTN/PB/ 2469	Date :- 12 9 NOV 2016

To,

The Sub Divisional Officer and
Competent Authority of Land Acquisition
Rajapur.

Sub: - Permission for felling of Non-scheduled trees under existing as well as proposed ROW(Right Of Way) along the Stretch of NH-66 (Old NH-17) from KM 281/300 to KM 332/200 (Kante to Waked Section) in Lanja Taluka (10 villages).

Ref: The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra, dated 28th June 2016

Sir,

With reference to above mentioned subject regarding permission for felling of Non-schedule trees in Lanja Taluka (10 villages), it is to inform you that, the land is acquired through Competent Authority of Land Acquisition (CALA), appointed by Ministry of Road Transport and Highways ("MoRT&H" or "Authority"). The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra and MEP Sanjose Kate to Waked Road Pvt Ltd, signed on 28th June 2016 for Rehabilitation and up gradation of NH-66 (Old NH-17) KM 281/300 to KM 332/200 (Kante to Waked Section) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode.

The valuation of schedule trees & Non Schedule trees of Lanja Taluka (10 villages- Math, Kadugaon, Kurne, Anjinare, Pateregaon, Devadhe, Boudhawadi tarfe Devadhe, Lanja, Kuve, Puragaon & Waked) has been already carried out by Forest & Agriculture Department at the time of Joint Measurement Survey (JMS) with TILR/Dy. SLR and officials. The details of valuation of Non-schedule trees record already available at your office.

In view of the above, it is requested to issue permission for felling of Non-schedule trees, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway.

Sd/-
Executive Engineer,
National Highway Division,
Ratnagiri.

Copy submitted to Collector, Ratnagiri for information please.

Copy submitted to The D.F.O., Chiplun: for kind information & necessary action please.

Copy submitted to Subdivisional Engineer, NH Sub-Division, Kharepatan for information please.

✓ Copy to MEP Sanjose Kante to Waked Road Pvt.Ltd. for information please.

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PUBLIC WORKS DEPARTMENT

Executive Engineer,
National Highway Division, Ratnagiri

Tel :- 02352 - 222394	Email ID- nhratnagiri.ee@mahapwd.com
No. NHD/RTN/PB/ 2970	Date :- 29 NOV 2015

To,
✓ The Range Forest Officer,
Ratnagiri.

Sub: - Permission forfelling of scheduled trees under existing as well as proposed ROW(Right Of Way) along the Stretch ofNH-66 (Old NH-17) from KM 281/300 to KM 332/200 (Kante to Waked Section) in Lanja Taluka (10 villages).

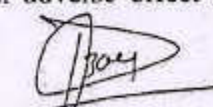
Ref: The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra, dated 28th June 2016

Sir,

With reference to above mentioned subject regarding permission for felling of schedule trees in Lanja Taluka (10 villages), it is to inform you that, the land is acquired through Competent Authority of Land Acquisition (CALA), appointed by Ministry of Road Transport and Highways ("MoRT&H" or "Authority"). The Concession Agreement with Ministry of Road Transport and Highways through CE (NH), P.W.D, Government of Maharashtra and MEP Sanjose Kate to Waked Road Pvt Ltd. signed on 28th June 2016 for Rehabilitation and up gradation of NH-66 (Old NH-17) KM 281/300 to KM 332/200 (Kante to Waked Section) to four lanes in the state of Maharashtra under NHDP-IV on Hybrid Annuity Mode.

The valuation of schedule trees & Non Schedule trees of Lanja Taluka (10 villages- Math, Kadugaon, Kurne, Anjinare, Pateregaon, Devadhe, Boudhawadi tarfe Devadhe, Lanja, Kuve, Puragaon & Waked) has been already carried out by Forest & Agriculture Department at the time of Joint Measurement Survey (JMS) with TILR/Dy. SLR and officials. The details of valuation of schedule trees record already available at your office.

In view of the above, it is requested to issue permission for felling of schedule trees, which are such tree cause a material adverse effect on the construction, operation or maintenance of the Project Highway.


Executive Engineer,
National Highway Division,
Ratnagiri.

- Copy submitted to Collector, Ratnagiri for information please.
- Copy submitted to The D.F.O., Chiplun: for kind information & necessary action please.
- Copy submitted to Subdivisional Engineer, NH Sub-Division, Kharepatan for information please.
- Copy to MEP Sanjose Kante to Waked Road Pvt.Ltd. for information please.