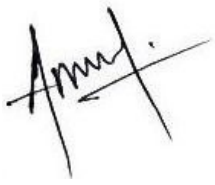
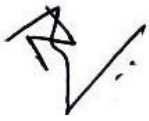
Ashoka Belgaum Dharwad Tollways Limited (ABDTL)

Environment Social and Safety Managment Plan

		
Prepared by	Reviwed and Recommended By	Approved by
HSE Officer	Anil Shimpi Head-HSE	Project Incharge

INDEX

Abbreviation

ABDTL	: Ashoka Belgaum Dharwad Tollway Ltd
ACL	: Ashoka Concessions Limited
ABL	: Ashoka Buildcon Ltd
BOT	: Build Operate and Transfer
BOCW	: Building and Other Construction Worker
CAPA	: Corrective Action and Preventive Action
CEO	: Chief Executive Officer
CRMB	: Crum Rubber Mix Bitumen
DBFOT	: Design Build Finance Operate and Transfer
ERP	: Emergency Response Plan
EPC	: Engineering Procurement and Construction
ESSMPM	: Environment, Social and Safety Management System Manual
ESSMP	: Environmental Safety and Social Management System
ESMP	: Environment & Social Management Plan
EC	: Environment Clearance
GRC	: Grievance Redressal Cell
GRM	: Grievance Redressal Mechanism
GHG	: Green House Gases
HSE&S	: Health Safety Environment and Social
HMP	: Hot Mix Plant
IFC	: International Finance Corporation
IRC	: Indian Road Congress
NHAI	: National Highway Authority of India
NCR	: Non Conformance Report
RMC	: Ready Mix Concrete
O&M	: Operation and Maintenance
PCDP	: Public Consultation and Disclosure Plan
PAC	: Project Affected Communities
PAF	: Project Affected Family
PAP	: Project Affected Person
PMC	: Project Management Consultant
P&M	: Plant and Machinery
QHSE	: Quality, Health, Safety and Environment
RAP	: Resettlement Action Plan
RFP	: Request For Proposal
SPV	: Special Purpose Vehicle
WMM	: Wet Mix Mecadam

Chapter 1
INTRODUCTION

This chapter describes the arrangements Ashoka Belgaum Dharwad Tollway Ltd (abdtl) proposes to make to manage the environment, social, occupational health and safety impacts and risks of project in conformance with applicable laws and regulations of the Central and State Government and International standards[1]. These arrangements will be set out in an Environmental, Safety and Social Management Plan (ESSMP) for the National Highways and State Highways. The ESSMP is designed to comply with the requirement of IFC Performance standards 2007 & IFC EHS Guidelines.

Environment, safety and social management system plan (ESSMP) has been developed to assist project incharge(s), project engineer(s), and supervisor(s) to better fulfill their responsibilities in managing environment, social, occupational health and safety. In particular, it has been prepared to provide implementing agency and /or contractor for systematically managing environment, health and safety.

For effective implementation of ESSM plan. EPC and Sub-contractors must provide appropriate training to their project manager(s), engineer(S), supervisor(s) and worker(s) on basic environmental good practices, environmental aspects and impact, hazard identification and risk control mechanism, Social aspects and Social issue related to Highway construction, IFC HSE Guideline construction and for tollway road, occupational health and safety risk management system.

This manual will assist EPCs, sub-contractors and project employes and workers to better manage environment, social, occupational, health and safety during the execution of project.

[1] IFC´s Policy on Social & Environmental Sustainability, April 2006 and related Performance Standards and Environmental, Health and Safety Guidelines.

Chapter 2

Assessment and Management of Environmental and Social Risks and Impacts

The importance of managing environmental and social performance throughout the lifecycle of the project. An effective environmental safety and social management system (ESSMP) is a dynamic and continuous process initiated and supported by the management, and involves engagement between the EPC, and subcontractor, its workers, local communities directly affected by the project (the project affected communities (PAC)) and, where appropriate, other stakeholders. Drawing on the elements of the established business management process of "Plan, Do, Check, and Act," the ESSMP entails a methodological approach to managing environmental and social risks and impacts in a structured way on an ongoing basis, a good ESSMP appropriate to the nature and scale of the project promotes sound and sustainable environmental and social performance, and can lead to improved financial, social, and environmental outcome at times, the assessment and management of certain environmental and social risks and impacts may be the responsibility of the customer[2] over which the company[3] does not have control or influence.

Examples of where this may happen includes:

- When early planning decisions are made by the customer and/or third parties[4] which impinge on the project site selection and/or design; (At the time conceptualization of NH-04, Belgaum-Dharwad Road Project most of environmental problem has been identified and it is readily available in feasibility report and detailed project report.)

- When specific actions directly related to the project are carried out by the customer such as providing land for a project which may have previously involved the resettlement of communities or individuals and/or leading to loss of biodiversity.

- Company cannot have ultimate control on customer actions, an effective ESSMP is identify the different entities involved and the roles they play, the corresponding risks present to the company, and there is opportunities to collaborate with these third parties in order to help achieve environmental and social outcomes that are consistent with the performance standards.

[2] National Highway Authority of India, Central Government, State Government, PWD and Other.
[3] Ashoka Concessions Ltd, Nashik
[4] Competent agency carry out the specific task

2.1 Objectives of ESSMP

1. To identify and evaluate environmental and social risks and impacts of the project.
2. To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, affected Communities, and the environment.
3. To promote improved environmental and social performance of company through the effective use of management systems.
4. To ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately.
5. To establish, maintain, and improve the worker-management relationship.
6. To promote compliance with national employment and labor laws.
7. To promote safe and healthy working conditions, and the health of workers
8. To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
9. To promote more sustainable use of resources, including energy and water.
10. To improve, or restore, the livelihoods and standards of living of displaced persons.
11. To protect and conserve biodiversity
12. To respect and preserve the culture, knowledge, and practices of Indigenous Peoples.
13. To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts.
14. To protect cultural heritage from the adverse impacts of project activities and support its preservation.

2.2 Scope of application :-

This ESSMP applies to business activities with environmental and/or social risks and/or impacts. For the purposes of this ESSMP , the term "project[5]" refers to a defined set of business activities, including those where specific physical elements, aspects, and facilities likely to generate risks and impacts, have yet to be identified. Where applicable, this could include aspects from the early developmental stages through the entire life cycle (design, construction, operation and maintenance, and handing over) of the assets. The requirements of this ESSMP apply to all business activities unless otherwise noted.

[5] Highway, Infrastructure Road etc

Chapter 3

Environmental and Social Assessment and Management System

The Customer has conducted a process of Environmental and Social Assessment for the Six lanning of Belgaum-Dharwad Section of NH-04 from km 433.00 to km 515.00 in state of karnataka to be executed as BOT (Toll) on DBFOT Basis under NHDF Phase-V. It is documented in the feasibility and/or detailed project report. Company will study the feasibility report and/or detailed project report (in case it is made available by the customer) during the RFP stage.

Major points such as Road Alignment, Socio Economic-Cultural Environment, Cultural heritage, Land less-ness & reduction of land holdings, Resettlement of Project affected persons, Involuntary Displacement , Natural Hazard, Land acquisition of land and structure etc, will have ultimate control of customer which get addressed in the feasibility report and /or detailed project report at the time conceptualization of project. However in case of any major shortcomings in this report will be addressed to concerned customer for changes, wherever feasible and practicable for project under implementation.

Company will establish a ESSMP appropriate to the nature and scale of the respective projects and commensurate with the level of its environmental and social risks and impacts. The ESSMP shall incorporate the following elements:

3.1 Policy and Objective;

3.2 Standards, guidelines, implementation, monitoring and review;

3.3 Organizational structure, roles and responsibility;

3.4 Management programs and plans; and

3.5 Emergency preparedness and response.

3.1 Policy and objectives

Health Safety and Environmental Policy

We, at ASHOKA Buildcon Ltd. are committed to become an icon in infrastructure development, through innovation, professionalism, active leadership in product quality and sustained growth by delivering value to our customers.

We shall conduct our operations in a manner so that we protect people, property and the environment by identifying, controlling and reducing all associated risks to a level As Low As Reasonably Practicable.

This will be achieved by :-

1. Our commitment to continual improvement of quality, environmental and occupational health and safety management system performance
2. Commitment to prevention of pollution, injuries and ill health.
3. Complying with all applicable legal and contractual requirements.
4. Adopting state of art technology available.
5. Communicating and consulting all associated stakeholders for establishing organizational objectives.

Quality, Health, Safety and Environmental Objectives

- To improve planning
- To reduce customer complaints
- To enhance motivation of employees
- To improve skills through training
- Complying with all the statutory rules and regulations.
- Minimising Air, Land and Water Pollution and preventing injuries and ill health.

This Policy will be agreed and formally adopted by the Company prior to commencement of construction of the Project. A copy will be provided to every employee of the company and will form part of the contract with all EPC, and sub-contractors engaged in activities associated with design, preconstruction, construction and operation and maintenance.

3.2 Standards, Guidelines, Implementation, Monitoring and Review

The ESSMPM provides a delivery mechanism to address potential adverse impacts, to instruct the project executing team and contractors to implement standards of good practices to be adopted for all the road project work, operation and maintenanc.

Company will ensure following action items to be complied with throughout the life cycle of the Project: -

- 3.2.1 Standards and guidelines;
- 3.2.2 Inspections, monitoring and auditing;
- 3.2.3 Periodical ESSMP review and amendments;
- 3.2.4 Reporting and communication of project related information including internal and external reporting and communication;
- 3.2.5 Documentation and record keeping;
- 3.2.6 Organisation, roles and responsibilities for the ESSMP implementation and for functioning of ESSMP Procedures.

3. 2.1 Standards and Guidelines

Besides the compliance with the stipulated conditions under various permits[6] obtained for road construction and operation of the proposed project, Company and its EPC and Sub-contractors shall be required to comply with regulatory provisions and applicable international standards.

Legal and Regulatory Requirements and Applicable International Standards

Company and its EPC, Sub-contractors are governed by the various legislative rules and regulation set by Ministry of Environment and Forest (MoEF) and concerned pollution control boards.

[6] Government approvals, clearances and licences etc.

Applicable rules and regulation for road project:-

A. MOEF Requirement Road construction -- EIA Report & Environment clearness from MOEF

B. Environment Protection Act :1986

C. The Water (Prevention & control of pollution) Act, 1974

D. The Water (Prevention & Control of pollution) Cess Act, 1977, including rules, 1978

E. The Air (Prevention & control of pollution) Act, 1984

F. The Hazardous Waste (Management & Handling) Rules, 2000

G. Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989

H. Forest clearance for tree cutting (Local, State and Center if required)

I. Local authority or Grampanchyat permission for establishment of plant

J. District Industry Center permission for industry

K. Factory Act: 1948 (Crusher, HMP, RMC & CRMB) Plant Establishment.

L. State Factory Rule (Director of Industrial Safety and Health requirement)

M. Building and Other Construction worker Act, 1996.

N. The Mines & Minerals Act, 1957 and

O. Mineral Concession Rules, 1960

P. Land acquisition Rule-1998

Q. Petroleum Rules, 1976 (Petroleum & Explosive Department)

R. The Indian Electricity Rules, 1956

S. Batteries Act, 1989

T. Minimum Wages Act, 1948

Legal Matrix

Sr. No.	Location of camp / Detail Address as per agreement	Name of Incharge	Plant & Machinery Details with Capacity	
	ABDRP, Tegur Camp CH: 450	Mr. Rahul Korhale	DG Set	380 KVA,
			RMC	120 TPH
			WMM	90 TPH
			HMP	45 TPH

Name of the Licensing/ Registration Authority	Purpose	Number and Date of Registration/License	Validity Period	
			From	To
Tegur Grampanchayat permission for borehole for Base camp 450	Borehole	TGPB No./grap/10-11 dt.21.09.2010		One time
License for Use of explosives Ch.490	Blasting	No.E/WC/NH/30.4573 (E56336) dt. 08.09.10	08.09.10	08.09.15
Dept of Mines & geology/ govt of Karnataka Ch.450	Quarrying license	No.806/10-11 dt. 16.12.10	16.12.10	16.12.13
Karnataka state pollution control Board (KSPCB) Consent for establishment of HMP, WMM, RMC at Hire-bagewadi camp 490	Establishment of plant	No. 58/27315/KSPCB/RO-BGM/ AEO-2/WPC-APC/MR/2012-13/103 dt.07th jun 2012		One time
Dept of Mines & geology/ govt of Karnataka Ch.490	NOC Mining Dept.	No.2012-13/821 dt. 18.05.2012	30.4.2011	One time
Govt Of Karnataka Factories, Boilers, Industrial Safety & Health 450	Obtaining of Factory Licence at tegur camp	No. SADFHD-1/FPN/MISC/PR 32/2010-11/76 dt. 22.11.2010	1.1.2013	31.12.2013
Ministry of Labour and Employment office of Assistant Labour Commissioner (central)	Registration of BOCW license	No.57/2010-AH dt. 24.12.2010	1.10.2010	Up to Project completion
Ministry of Labour and Employment office of Assistant Labour Commissioner (central)	Contract labour license	No. 89/2010-A/H dt. 24.12.2010	24.12.2010	23.12.2013
Plant and Machinery- consent to operate, Crusher , RMC, WMM, HMP For Ch.490	Clearance from PCB consent to operate	52068/PCB/Ro(BGM-1)/WPC-APC/SR/2013 Dated01/07/2013	01.07.2013	30.06.2014
Plant and Machinery- consent to operate, Crusher , RMC, WMM, HMP For Ch. 450	Clearance from PCB consent to operate	10 WPC & APC/KSPCB/ SEO(DWD)/ SR /2013-14/229	09.06.2014	30.06.2014

The contents of the environment, safety and social reporting system have been designed to meet the documentation requirements of above applicable Indian & International standards as applicable as per prevalent law in India i.e performance standards on social and environmental sustainability and general environmental, health and safety guidelines of IFC performance standards as described below :-

- PS1 – Social and Environmental Assessment and Management System
- PS2 – Labour and Working Conditions;
- PS3 – Pollution Prevention and Abatement;
- PS4 – Community Health, Safety and Security;
- PS5 – Land Acquisition and Involuntary Resettlement;
- PS6 – Biodiversity Conservation and Sustainable Natural Resource Management;
- PS7 – Indigenous Peoples; and
- PS8 – Cultural Heritage;
- Environment, Health and Safety -General Guidelines of IFC;
- IFC EHS Guideline for Toll Roads.

Applicability of Performance Standard for Ashoka Belgaum-Dharwar Road Project

Performance Standard	Applicability	
PS1 – Social and Environmental Assessment and Management System	Yes	
PS2 – Labour and Working Conditions;	Yes	
PS3 – Pollution Prevention and Abatement	Yes	
PS4 – Community Health, Safety and Security	Yes	
PS5 – Land Acquisition and Involuntary Resettlement	Not Applicable	LA & Resettlement is responsibility of NHAI, However SPV/EPC will appoint one facilitator for fasten process of compensation.
PS6 – Biodiversity Conservation and Sustainable Natural Resource Management	Partially Applicable	In this project corridor, there is no any endanger species or Wildlife sanctuaries. Athough we have made policy on Biodiversity & Natural Resource Management.
PS7 – Indigenous Peoples; and PS8 – Cultural Heritage	Not Applicable	In this project corridor, there is no any Tribal community nor heritage place in the immediate vicinity of the RoW (up to 0.5 Km).

3.2.2 Inspection, Monitoring and Auditing :-

Inspection and monitoring of the project activities in comparison with the stipulated conditions and norms by Indian environmental laws and/or IFC standard and suggested mitigation measures will minimize the adverse impacts and increase effectiveness of environmental, safety and social performance. Through the process of inspection, monitoring and auditing, Company will ensure that EPC and sub-contractors HSE & S system implementation and compliance with the requirements of stipulated conditions under the various permits as well suggested mitigation for the project life cycle related activities.

Internal monitoring of the ESSMP implementation will be the responsibility of HSE, HR & Admin Department, EQA department, P&M Department, Toll Operation, & Road Maintenance Team at the project execution. The internal and external monitoring and evaluation will be an ongoing process and will continue efficiently during the operation and maintenance of highway.

The EPC and Sub contractor will also ensure inspection of tools & tackles and monitoring of environmental parameters as per the following Table:-

Insepction :-

As per the Factory Act-1948 & BOCW-Act 1996 , all required inspection of vehicles, lifting tools and tackles, electrical fittings , pressure vessel & Cranes shall be carried out the by competent authority under the factory Act-1948 and BOCW-1996.

Monitoring of Environmental Parameters :-

Sr. No	Description of Parameters	Schedule and duration of monitoring
	1. Ambient Air Quality (SPM, RPM, CO, SO_2, Nox)	
1A	During construction phase , In the project camp boundary Four Samples from South, North, East and west sides One sample near admin and proejct office.	Over 24 hours continuous duration, Frequency :- quarterly basis Total five samples
1B	During construction phase & operation phase, Village, Urban area, Signal etc	Over 24 hours continuous duration, Frequency :- quarterly basis One Sample
1C	During operation phase At Toll plaza surrounding area	Frequency :- quarterly basis One sample
1D	During operation phase At Suitable Intersection	Frequency :- quarterly basis One sample
	2. Ambient Noise	
2A	During construction phase , In the project camp boundary Four Samples from South, North, East and west sides One sample near Admin and project office.	Over 24 hours continuous duration, Frequency :- quarterly basis Total five samples
2B	During construction phase & operation phase, Village, Urban area, Intersection (Signal) etc	over 24 hours continuous duration, Frequency :- quarterly basis One sample
2C	During operation phase At Toll plaza surrounding area	on a quarterly basis One sample
2D	DG Set (Above 50 KVA)	Quarterly basis One Sample
2^E	During construction phase , Crusher	Quarterly basis One Sample
2F	During construction phase , HMP Plant	Quarterly basis One Sample
2G	During construction phase , WMM Plant	Quarterly basis One Sample
2H	During construction phase , RMC Plant	Quarterly basis One Sample
2I	CRMP Plant	Quarterly basis One Sample

Sr. No	Description of Parameters	Schedule and duration of monitoring
	Stack Monitoring (PM, CO, SO_2, Nox) During construction phase ,	
3A	DG Set (Above 50 KVA)	Quarterly basis One Sample
3B	Hot Mix Plant – Stack	Quarterly basis One Sample
	4. Water quality (pH, Odour, TDS, TSS, O&G, Sulphide, Sulphate, COD, BOD and O&G, Heavy Metals etc) During construction phase ,	
4A	RMC Waste water and Treated water	Quarterly basis One Sample
4B	Down stream of Camp-Leachet	Quarterly basis One Sample
	5.Drinking Water quality as per WHO Standard, During construction phase, During construction phase	
5A	Labour camp	Monthly basis One Sample
5B	Project camp and Office	Monthly basis One Sample
	6.Soil Quality (Ph, Alkalinity, Acidity, Sulphite,C,N,P,K etc) During construction phase ,	
6A	Labour camp	Half yearly One Sample
	Project camp and Office	Half yearly One Sample

3.2.3 Review and Amendment

Company will annually review the ESMP and identified management action plans to address any changes in the organisation, process or regulatory requirements. Upon any amendment, the amended ESMP will be communicated to the EPC and Sub-contractor by the site HSE & S Department.

Review matrix for SPV and EPC and Reporting to ACL HSE&S Department

Documents	Format No	Frequency of Reporting
1. Site Specific HSE & Traffic Management Plan	Plan	Quarterly
2. Legal Matrix	FR/ACL/02	Monthly
3. Legal Compliance	FR/ACL/04	Quarterly
4. HSE Work Instruction	WI	Monthly
5. EMSP	Plan	Quarterly
6. IFC Gap Analysis for applicable Performance standard and its improvement with action plan for next three months.	IFC Gap Analysis sheet and its record	Quarterly

HSE Committee is in place and every quarterly meeting has been conducted at project site and minutes has been recorded and circulated to each and every department heads for better implementation.

HSE COMMITTEE- BDR PROJECT

CHAIRMAN : **Mr. Rahul Korhale (Project Incharge)**

MEMBERS : **Mr. Manoj Upadhyay (Stores Dept), Mr. Surya Trivedi (HRD)**

: **Mr. Ganesh Musale (P&M Dept) : Mr.Nikhil Bhagwat (QA/QC Lab)**

SECRETARY : **Mr. Amol Deore (HSE Officer)**

3.2.4 Reporting and Review

Company will ensure external reporting of environmental, safety and social performance through HSE & S department & it will monitor and ensure the timely compliance under all applicable acts for infrastructure road projects. EPC and Sub-contractor - Project Incharge / Laisining head /project site HSE will ensure mechanism for timely reporting of responses against any complaints or notices issued by the regulatory agencies or other stakeholders.

To ensure effective implementation of the ESSMP, the inspections and audit findings will be communicated by the HSE &S department to management and project incharge for effective implementation of suggested mitigation measures of their project component.

Open communication on HSE & S issues will be ensured on regular basis during the work specific team briefing, onsite work group meetings and work specific instructions.

3. 2.5 Documentation and Record Keeping

The EPC and Sub-contracor will monitor and maintain following documents for effective implementation of the ESSMS:

Sr. No.	Description of report	Frequency of reporting	Format No
1	Environment & social management plan status report on ESMP	Frequency : Quarterly Basis on ESMP and Environment and Social Potential issue	ACL/FR/HSE/01
2	Land acquisition status	Frequency : Quarterly Basis and till the end of land acquisition process (Copy of 3D, 3G)	ACL/FR/HSE/02
3	Latest issue on land acquisition & hot spots (such as Cultural heritage, Historical Structures, Religious Structures, Intersections and underpass etc.	Frequency: Quarterly Correspondence copy & follow-up action note from EPC/SPV of issue for ready reference.	ACL/FR/HSE/03
4	Environment clearness and Moef Clearance Compliance report (Starting from Project) (Even though it is responsibility of Customer, But EPC has to implement the EC Conditions, monitor it and prepare compliance report and submit to NHAI)	Frequency -Six Monthly Acknowledgment copy from state Moef/CPCB and Report.	As per Annexure 1 Sample Copy

5	Legal matrix of all project related permissions with validity	Frequency: Monthly All legal permissions required for Road projects and Plant & machinery related license.	ACL/FR/HSE/04
6	Legal compliance report under Environment protection Act and consent to operate permissions /licenses.	Frequency: Quarterly Acknowledgment copy from SPCB and report.	ACL/FR/HSE/05
7	Environment Statement (Annual Environmental Report for Consent to operate permission) form –V as per (Pl. reference state wise format)	Frequency: once in year (before 30 Sep) Acknowledgment copy from SPCB and report.	As per prescribed format by concern authority
8	Legal compliance report under factory license and BOCW license	Frequency: Quarterly Report or as per prescribed norms Acknowledgment copy from Factory Inspectorate /BOCW and Report.	As per prescribed format by concern authority
9	Environmental Report from Third party approved by CPCB /SPCB. 1. Ambient Air Monitoring, 2. Noise Level Monitoring and 3. Waste water Monitoring report 4. Soil Testing	Frequency: Quarterly Final Report Copy From CPCB /SPCB Approved Third party	As per the Third party certificate
10	Testing Certificate from competent Authority under Factory Act & BOCW Act & Its requirement Compliance Summary All P&M fitness certificates, Lifting tools and tackles certificate, Pressure vessel and storage tank fitness certificate from from govt. certified competent authority and in the prescribed format.	Frequency: Quarterly Final Report Copy as per as prescribed format mentioned in Factory Act /BOCW act by the Competent authority and copy of acknowledgment submitted in concern department.	As per prescribed format by concern authority As per Annexure 2 Sample copy
11	1.HSE –Work instruction Reports- All Nine formats (FR/CO/DO/PR/HSE-01 TO 9) 2. SBIM Monthly HSE Report	Frequency :-Monthly Frequency :-Monthly	As per ABL WI & Formats As per Annexure 3

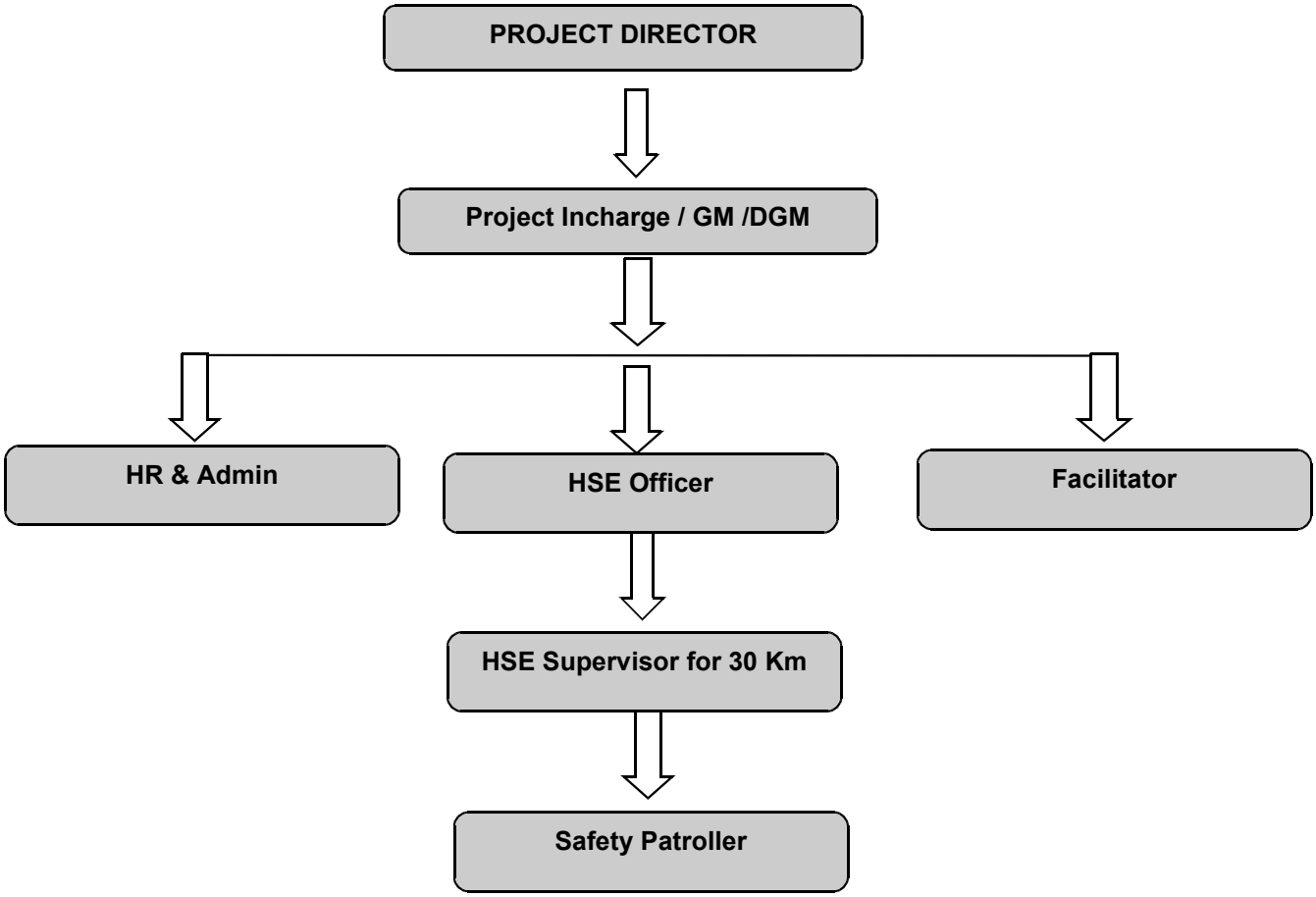
12	Project Water Consumption Report (All Streams – Project use, Camp use, Production plants (RMC, WMM, HMP & CRMB) Water consumption Report.	Frequency : Quarterly Format is as below	ACL/FR/HSE/06
13	Water Cess Return as per Form-1 Under section 17 of the Water (Prevention and Control of Pollution) Cess Act, 1977 (36 of 1977 and its receipt	Frequency : Quarterly Acknowledgment copy and form-1 Receipt from SPCB	As per prescribed format by concern authority
14	Hazardous waste disposal to the CPCB/ SPCB Authorized Third party.	Frequency : Quarterly Manifest copy from CPCB/SPCB Authorized third party. And Haz, Waste Disposal return as per HAZ Rule 2003- Form no-12 from Authorized third party.	As per prescribed format by concern authority
15	Road Accident Report Summary as per Road Accident format Form-1A & A4 AS PER IRC-53	Frequency : Monthly	ACL/FR/HSE/07
16	Project Accident report under factory act and/or BOCW Act (as per prescribed format of state regualtion and Accident reporting	Frequency: As and when happen immediate within in 24 hour's after the accident /incident / property damage	As per prescribed format of state regulation
17	ACL-HSE-Monthly Report	Frequency: Monthly	ACL/FR/HSE/08
18	Incident Report	Frequency: As and when happen immediate within in 24 hour's after the accident /incident / property damage.	ACL/FR/HSE/09
19	Tree plantation summary report. _ a. Road side plantation summary b. Camp Plantation summary	Frequency: Quarterly	ACL/FR/HSE/10
20	QHSE- NCR report from client, certification body and independent consultant. Summary report on the closer of NCR with evidence.	Frequency: Monthly	ACL/FR/HSE/11

21	Emergency preparedness and response procedures and its effectiveness report (Mock drill Report and comments). Mock drill frequency – Quarterly	Frequency: Quarterly	ACL/FR/HSE/12
22	Project site training record	Frequency: Monthly	Attendance Sheet
23	Project GHG Report	Frequency: Monthly	ACL/FR/HSE/13
24	Complaint register (Construction and Operation phase) or As per the site specific Grievance Redressal Mechanism procedure and format.	Frequency: Monthly	ACL/FR/HSE/14

The ESSMS related report and ESMP will be placed for review by stakeholders and kept at the EPC Project implementation unit and copy of same is send at company office to access the effectiveness of the ESSMS. wherever required the feedback is given at concern EPC for further improvement.

3.3 Organization Structure & Responsibilities

3.3.1 Project Site HSE Organization Chart



FRAMEWORK FOR ESSMP MANAGEMENT

The framework for Environmental social & Safety management Plan is to provide a guidance for the EPC contractor and the concessionaire to manage the activities in such a way so as to minimize the environmental impacts during the construction and operation of the project road. The framework takes into consideration the roles and responsibilities of various actors involved in the construction and operation of the road within the ambit of the governing regulatory framework.

ROLES & RESPONSIBILITIES

The responsibility of implementation of the environmental management plan rests with the following personnel involved in the implementation of the project.

PROJECT DIRECTOR; The Project Director is responsible for the overall implementation of the project. In the present case, the EPC contractors are also members of the SPV, VHPL, and hence the Project Director is responsible for undertaking the engineering, procurement and construction of the project.

- Guiding the formation of Policy & its Approval
- Giving the guideline for the Budget & its Approval
- Review of the safety & Environment Procedure & its Approval
- To provide guideline for All legal aspect of project & comply all environment legal rules & regulation.
- To provide guidance for the implementation of OHSAS & EMS System

PROJECT INCHARGE / DEPUTY GENERAL MANGER (DGM) / (AGM)

The Project Incharge / Deputy General Manager is responsible for the overall implementation of the project. The Project Incharge /GM /DGM is responsible for undertaking the engineering, procurement and construction of the project. The GM/ DGM shall oversee the implementation of the EMP by assigning the necessary resources and periodically review the effective use of the EMP on site.

Project site HSE & S Officer:-

- Implementing the HSE&S Manual, Safety Plan, Environment Management Plan, Emergency preparedness plan and EPC HSE-Work Instructions;
- Train the workers and employee as per the training programs ;
- Prepare the HSE Training program as per the site specific requirement;
- Provide the Safety & Environmental awareness /Induction training to employee (EPC and subcontract employees) after getting the formal information from the HR & Adm Department;
- Carry out HIRA (Hazard identification and risk assessment) & EAI (Environmental Aspects and its Impacts) and prepare mitigation measures and approve it from Head- HSE&S ;
- Identify the IDLH /Risk and guide to process owner of risk for control measures.

- Daily Safety Observation Tour, Work place Monitoring, Safety Findings to be recorded & Informed to site Project Incharge and Process Owners;
- Conducting Safety Committee Meeting including preparation of agenda, near miss & accidents reports & forward to Corporate Office before 3rd of every month;
- Monthly HSE Report sending to be sent HSE- Corporate Manager before 3rd day of every month;
- Emergency preparedness plan and its effectiveness report (i.e. Mock drill Report) on quarterly basis;
- Visit the labour camp, Workers canteen to do the audit on welfare provided and required.
- Accident reporting within 24 hour's to concern Govt. authority and Head- HSE & S.

RESIDENT ENGINEER- ROAD AND BRIDGE WORKS

The Project Engineer - Road Works shall be responsible for implementation of the EMP during the construction of the road works. He being responsible for day to day operations with regards to road works shall supervise and oversee construction activities such as site clearances, stripping of top soil, excavations. Filling and laying material etc. which necessitates the operation of construction equipment and machinery at the site. These activities would have environmental effects in terms of impairment to noise and air quality, tree cutting and severances and hence shall be responsible for implementing the EMP in the day to day activities of road construction. The Project Engineer - Bridge Works shall be responsible for implementation of the EMP during the construction of bridge works. These activities would necessitate diversion of roads, cutting of trees and diversion to natural drainage paths which would have a bearing on the environmental quality of the area. The PE (bridge works) shall be responsible for implementation of EMP with respect to environmental aspects during bridge construction.

SITE ENGINEERS/SUPERVISORS.

The site engineers/supervisors report to the PE and are responsible for day to day operations of construction works in their respective areas. They supervise and oversee the construction activities and hence shall be made responsible for ground the EMP and minimize the impacts during construction. Some of the key aspects that shall be taken up by the site engineers/ supervisors shall include periodic sprinkling of water in inhabited areas during transportation of material and operation of construction machinery.

SUBCONTRACTORS

Sub contractors shall be sensitized on environmental aspects as they form part of the road construction in terms of transportation, earthwork, concrete and form work. The environmental effects due to and transportation of material, debris removal and residues shall be properly conducted to minimize damage to the environment. The site engineers/supervisors shall be responsible for monitoring the implementation of EMP at this level.

Overall Responsibility

Overall responsibility for the environment, social, occupational health and safety management system lies with the Project Head of the SPV who will establish and maintain an organizational structure that defines roles, responsibilities, and authority to implement the ESSMP. This will include the designation of in-house personnel during the different phases of the Project as described below.

The HSE &S activities will be carried out by SPV, EPC and/or O&M contractor and third-parties. All these activities will be undertaken under contract with company and will be supervised by company which will ensure that all contracts include terms and conditions requiring contractors to adopt management systems which comply with the ISO 14001, OHSAS 18001 and with the ESSMP requirements.

In addition, the ESSMP will provide for the following:

- Commitment by the management of the necessary human and financial resources, on an ongoing basis throughout the BOT /DBFOT / Contract period, to achieve effective and continuous conformance with the Policy;

- Communication of commitments, roles and related responsibilities to the project team and external stakeholders;

- Ensure employees and contractors have the required skills and knowledge to perform the work either through existing skills and experience or by imparting necessary training;

- Ensuring the project officials are kept up to date with information on relevant Indian legislation, regulations, standards and guidelines pertaining to the project.

3.1 Management Programs and Plans

In addition to the suggested mitigation measures maintained in Site Specific EMP. SPV, EPC and/or Sub- contractor will develop and implement following management Programs and plans under the ESMP:

Management Plans:-

- 3.4.1) Construction Labour Management Plan;
- 3.4.2) Pollution Prevention Management Plan;
- 3.4.3) Traffic Management Plan;
- 3.4.4) Health Management Plan;
- 3.4.5) Training Programs and plan;
- 3.4.6) Resettlement Action Plan (RAP);
- 3.4.7) Indigenous People Development Plan (IPDP);
- 3.4.8) Public Consultation and Disclosure Plan;
- 3.4.9) Grievance Redressal Mechanism;
- 3.4.10) Biodiversity & Wildlife Management Plan.

Company will work upon the above mentioned management action plans for necessary changes, where required while being practiced. A brief description of the above mentioned plans is given as following:

3.4.1) Construction Labour Management Plan :-

The Company, SPV and EPC will base the employment relationship on the principle of equal opportunity and fair treatment, and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, and promotion, termination of employment or retirement, and disciplinary practices.

The Company will take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women.

The Company will ensure that all workers receive notice of dismissal and severance payments mandated by Indian labour law and collective agreements in a timely manner. All outstanding back pay and social security benefits and pension contributions and benefits will be paid

(i) on or before termination of the working relationship to the workers,
(ii) where appropriate, for the benefit of the workers, or
(iii) Payment will be made in accordance with a timeline agreed through a collective agreement. Where payments are made for the benefit of workers, workers will be provided with evidence of such payments.

The Company will provide a grievance mechanism for worker to raise workplace concerns. The company will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. In Project office and Camp area grievance box for easy and immediate communication.

The Company will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the project work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The client will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards.

Child Labour

The Company & its EPC, Sub-contractor will not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

Forced Labour

The Company & its EPC, Sub-contractor will not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty.

Worker

During the construction peak work labour strength of approximately 250-300 persons is expected. A brief of the measures that have been suggested for the construction labour under the construction labour management action plan include the following:-

- Provisions of labour camps provided with individual/share dwelling units supported with piped water supply,
- Provision of proper accommodation, food and sanitation etc.
- Monthly inspection of labour camps and mess-hall to focus on the following
  - General observations on cleanliness;
  - Drinking water availability with respect to source, cleanliness of storage tanks and quality fit to be consumed;
  - Provision of first aid facility, sanitation facilities to water availability in the toilets their cleanliness and drainage;
  - Provision of garbage collection, segregation and disposal facilities.

- The Detailed Labour Camp management plan is attached herewith as **annexure no-4.**

- **Workers' participation in safety & environment management.**

Company/EPC Contractor shall, in every factory and/or project site where a hazardous process takes place, or where hazardous substances are used or handled, set up of a Safety Committee to promote co-operation between the workers and the management in maintaining proper safety, health and environment at work and to review periodically the measures taken for the improvement of Safety and Environment management system and shall be documented.

- **Creches**

(1) In every factory / Construction site wherein more than [thirty women workers] are ordinarily employed there shall be provided and maintained a suitable room or rooms for the use of children under the age of six years of such women.

(2) Such rooms

- shall provide adequate accommodation,
- shall be adequately lighted and ventilated,

- shall be maintained in a clean and sanitary condition and
- shall be under the charge of women trained in the care of children and infants.

❖ **Canteen :**

Company /EPC Contractor shall provide and maintain in every place wherein not less than two hundred and fifty building workers are ordinarily employed, a canteen for the use of the workers.

❖ **Workers Management Relationship :-**

Company has a formal and documented human resource policy which are communicated in local language, And has a policy of making workers organization wherein workers Representative and management representatives discuss any issue and resolved suitably and same is documented.

❖ **Worker engaged by Third party & Supply Chain**

Enough care is taken by the company while selecting and appointing third party & supply chain that they have the competency and infrastructure for effective implementation ESSMS.

❖ **Security Management Strategy :-**

Company has a well define security management system and it is monitored and reviewed time to time for its effectiveness. The Security Management Plan for is attached herewith **as annexure No.5.**

3.4.2) Pollution Prevention Management Plan

During the project life-cycle, Company will consider ambient conditions and apply technically and financially feasible resource efficiency and pollution prevention principles and techniques that are best suited to avoid, or where avoidance is not possible, minimize adverse impacts on human health and the environment. The principles and techniques applied during the project life-cycle will be tailored to the hazards and risks associated with the nature of the project.

Resource and efficiency :-
Company has a policy to use latest technology and machines for construction work to avoid environmental pollution problem and to encourages innovative ways of conservations of natural resources like water and energy.

Pollution Prevention :-
Company will avoid the release of pollutants or, where avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local and regional.

Environmental issues specific to construction and operation of roads include the following:

- Eco-system and Habitat alteration;
- Storm water;
- Waste;
- Noise;
- Air emissions;
- Waste-water,
- Chemical Spill Management Plan

Environmental issue	Management practices to prevent and control impacts
1. Eco-system and Habitat alteration ;- Disruption of eco-system, terrestrial and aquatic habitats can occur both during construction of a road and during maintenance of the Right-of-way.	1. Sitting roads and support facilities to avoid critical terrestrial and aquatic habitat (e.g. old-growth forests, wetlands, and fish spawning habitat) utilizing existing transport corridors whenever possible; 2. Design and construction of wildlife access to avoid or minimize habitat fragmentation, taking into

	account motorist safety and the behaviour and prevalence of existing species. Possible techniques for terrestrial species may include wildlife underpasses, overpasses, and bridge extensions, via ducts, enlarged culverts, and fencing. Possible techniques for aquatic species include bridges, fords, open bottom or arch culverts, box and pipe culverts. 3. Minimizing removal of native plant species, and replanting of native plant species in disturbed areas; 4. Exploring opportunities for habitat enhancement through such practices as the placement of nesting boxes in right of-way, bat boxes underneath bridges, and reduced mowing to conserve or restore native species
2.Storm water;	
Construction or widening of sealed roads increases the amount of impermeable surface area, which increases the rate of surface water runoff. High storm water flow rates can lead to stream erosion and flooding. Storm water may be contaminated with oil and grease, metals (e.g. lead, zinc, copper, cadmium, chromium, and nickel), particulate matter and other pollutants released by vehicles on the roadway,	1. Use of storm water management practices that slow peak runoff flow, reduce sediment load, and increase infiltration, including vegetated swales (planted with salt-resistant vegetation); filter strips; terracing; check dams; detention ponds or basins; infiltration trenches; infiltration basins; and constructed wetlands; 2. Where significant oil and grease is expected, using oil /water separators in the treatment activities; 3. Regular inspection and maintenance of permanent erosion and runoff control features;
3.) Waste;	
Solid waste may be generated during construction and maintenance of roads and associated structures. Significant quantities of rock and soil materials may be generated from earth moving during construction activities. Solid waste generation during operation and maintenance activities may include road	1.Maximizing the rate of recycling of road resurfacing waste either in the aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base; 2. Incorporating recyclable materials (e.g. glass, scrap tires, certain types of slag and ashes) to reduce the volume and cost of new asphalt and concrete mixes.

resurfacing waste (e.g. removal of the old road surface material);	3.Reuse of fly ash for road construction 4.Composting of vegetation waste for reuse as a landscaping fertilizer;
4.) Air Emissions Air emissions are typically related to dust during construction and exhaust from vehicles.	1. Regulatory requirements and its mitigation measure compliance; 2. Construction wind breaking wall ; 3. Tree plantation around the Crusher, HMP, WMM etc ; 4. Provision of Bag House , Dust collector etc ; 5. Provision of water sprinkling on internal and approach road. 6. Stack Height: Maintain the stack height as per prescribed norms of CPCB /SPCB. 7. Monitor and measure the GHG as per Guideline of ISO:14064:01 & Its ABL Working instructions attached herewith as **Annexure No.9**
5.Noise ; Traffic noise is generated by vehicle engines, emission of exhaust, High Noise due to Construction Machinery such as Crusher, WMM and HMP Traffic noise can be a significant nuisance and may be loud enough to interfere with normal conversation and can cause stress in children and raise blood pressure, heart rates, and levels of stress hormones. Traffic noise levels are reduced by distance, terrain, vegetation, and natural and manmade 32obstruction.	1. All equipment to be timely serviced and properly maintained. 2. Bottlenecks to be removed, major intersections to be provided with interchange/flyovers 3. Construction equipment and machinery to be fitted with noise silencers and maintained properly. 4. Timing of noisy construction activities shall be done during night time and weekends when there are no activities by the sensitive receptor, concurrent noisy operations may be separated to reduce the total noise generated, and if possible re-route traffic during construction to avoid the accumulation of noise beyond standards. Else provision of temporary noise barrier at sensitive locations; 5. All camps should maintain minimum distance from following: ➢ 1000 m from habitation ➢ 1000m from forest areas ➢ 500 m from water bodies ➢ 500 m from through traffic route
6.Waste water :-	

Wastewater discharges from maintenance facilities and from rest areas Waste water from RMC Plant	1. Waste-water discharge from facilities and rest areas will be treated in soak pit. And as per guideline of state pollution control board 2. RMC Waste water is recycled for dust suppression in project camp area and internal roads.
7.Chemical Spill Management	Spill management comprises of prevention and control of spills. Always remember that prevention of spills is inexpensive and easier than management of spills. Treatment and disposal of contaminated soil or water be quite expensive. The spilled chemical waste should be disposed of in the same way as hazardous waste. 1.**Prevention of Spills –General Measures** ➢ Hazardous materials and wastes should be covered in containers and protected from damage. ➢ Secondary containment such as a drain pan or drop cloth should always be used to absorb spills or leaks when removing or changing chemicals/ oils. ➢ Drip pans or absorbent materials should be placed under paving equipment when not in use. ➢ Used oils or chemicals should be promptly transferred to suitable waste or recycling drums. Full drip pans or other open containers should not be left lying around ➢ Never buried spilled materials, Report it to Site HSE Officer or Store inchrage, 2.**Hazardous Material/Waste Storage area** ➢ Waste storage areas should be kept clean, well organized, and equipped with sufficient spill cleanup materials, ➢ Used oil filters should be crushed or punctured (nail hole in the top of the filter) and then placed over a funnel mounted in the waste oil-recycling drum for 12 to 24 hours to drain excess oil and then send the filter to the authorized recycler or CPCB approved third Party, ➢ Cracked batteries should be stored in a non-leaking secondary container till all the acid has

drained out

3. Vehicle, Equipment, Plant and Machineries

- Onsite maintenance of plant, machinery and vehicles should be carried out in the designated area having proper spillage control measures.
- All onsite and incoming vehicles and equipment should be checked for leakages. If leakage is discovered, it should be attended immediately. Vehicles should be parked in the designated parking area
- Fueling up of vehicles onsite should be carried out in designated areas located away from .drainage courses, to prevent runoff contamination
- Secondary containment, such as a drain pan should always be used when fueling to catch spills and leaks.
- Fuelling and refueling should be avoided near water bodies

4. SPILLAGE MANAGEMENT MATERIALS REQUIRED TO CONTAIN THE SPILL

Personal Protective Equipment

- Chemical splash goggles
- Gloves
- Shoe covers

Absorption Materials

- Spill pillows (or equivalent)
- Spill booms, Spill sock
- Polyethylene liners filled with loose absorbent, or high porous sand and with loose absorbent in the bottom

Clean-up Tools

- Polypropylene scoop or dust pan
- Broom or brush with polypropylene bristles
- Polypropylene bags .
- Floor sign - DANGER Chemical Spill Keep Away

To guide the site engineer and Sub-Contractors , Company has prepared a site specific EMP and the details are as below

Plan	Annexure No
HSE Work Instructions	Annexure N0-03
EMP & Potential environmental Issue	Annexure N0-06
Guieline for Disposal of Construction Waste with its mitigation plan	Annexure N0-07
Guideline for Tree Plantation	Annexure No-08
GHG Monitoring and Measuring	Annexure No-09

3.4.3) Traffic Management Plan :-

It is expected that there will be increase of traffic for construction related activities of the Project. This may disturb local people in the area and also increase chances of road accidents requiring a traffic management plan to minimize adverse impacts. The traffic management action plan includes the following elements.

1.Transport management planning;
2.Driver training;
3.Access road maintenance;
4.Vehicle management and maintenance;
5.Community liaison and safety, and
6.Traffic diversion during the road construction.

The traffic management action plan covers the following aspects:

1. Sourcing or recruitment of drivers and number of qualified drivers needed;
2. Drivers' training and drivers commitment;
3. Driver communication with control point and vehicle equipment;
4. Source of suitable vehicles, Vehicle quality and specification;
5. Vehicle management and preventative maintenance programme;
6. Vehicle routes, route planning and alternative routes;
7. Overall vehicle movements - access route selection and management;
8. Strategic vehicle parking locations - to minimise impact of vehicles on local community, villages, roads, and
9. Inspection and audit of the project traffic.

The traffic management is to be monitored on daily basis to evenly spread traffic flow during a day so as to avoid congestion and minimise chances of road accidents. The plan also describes roles and responsibilities of SPV, EPC –O&M, and Sub-contractors. The Traffic management & diversion is available at road project site. The project site HSE Officer is responsible for preparation of diversion plan and its effective implementation.

In order to make an accident free zone at road construction chainage, SPV, EPC / subcontractor will ensure an elaborate traffic management plan and procedures which will be inline with IRC:SP-55 standard and tie up with local administration. The required and mandatory road signage shall be posted at working zone.

Detailed Guideline for Traffic Management is attached herewith herewith as Annexure No-10

3.4.4) Health Management Plan :-

Company shall follow the requirement of pre-medical and periodical medical check up for each and every employees, workers who are suppose to work at project /constuction. The person should be physically fit for working, and be healthy by mentally and physically.

Company will provide the healthy, accident free and environment friendly work place. And also monitor work place time to time.

During construction / operation phase, the stagnant water and vegetation provide favorable breeding conditions for mosquitoes and snails. During operation phase, SPV /EPC will make regular field surveys and take necessary actions to curb the disease if thriving in the area with additional budget.

Company will monitor the water borne diseases such as malaria, Cholera etc, As and when required resources will be provided to curb the same

3.4.5) Training Programs:-

HSE induction training and Regular job specific training needs will identified by EPC /SPV and training will be imparted to EPC project personnel, SPVS and sub-contractor engaged for the project activities. Specific training will be imparted to undertake the required ESMP management actions and monitoring activities. The project will ensure that all concerned team members assigned for implementation of ESSMSM and project specific ESMP understand the following aspects through the training programme :-

- Purpose and Importance of ESSMSM & ESMP for Various project activities ;
- Requirements of the mitigation measures under the management plan and specific action plans ;
- Understanding of the sensitive environmental and social features within and surrounding the project area ;
- Aware of the potential risks from the project activities.

Suggested training module matrix for EPC, SPV and Sub-contractor for better implementing the ESMP and ESSMS.

Sr. No	Training Topic	Designation					
		Project Management (GM, DGM, Sr. Manager and Manager)	Engineers / Departmental Heads	Supervisor	Operators	Driver	Labour / Workers
1	E S & S Induction		√	√	√	√	√
2	Emergency Preparedness and Response Plan	√	√	√	√	√	
3	Environment & Social Management Plan	√	√	√	√		
4	General Safety Rule		√	√	√	√	√
5	Hazard Identification and Risk Assessment and Risk Control	√	√	√	√		
6	Environment Aspect and Impact Assessment and control measures	√	√	√	√		
8	Fire Fighting			√	√		√
9	Hazardous Material (MSDS)		√	√	√		√
10	Road Safety & Road Barricading			√	√	√	√
11	First Aid Box & its use	√	√	√	√	√	√
12	Accident prevention at road project site and HMP, WMM, RMC Plant	√	√	√	√		√
13	Working at Height		√	√	√		√
14	Material Handling		√	√	√		√
15	Electrical Safety	√	√	√	√		√
16	Defensive Driving	√	√	√	√	√	√

3.4.6) Resettlement Action Plan (RAP):-

The land acquisition for the Belgaum-Dharwad NH-04 road projects has been undertaken the provision of National Highways Act, 1956 by the NHAI.

The legal responsibility of securing the land, determining the compensation /resettlement benefits and implementing the process is under the purview of the NHAI. Company, SPV and EPC will appoint one facilitator at project site level, He will track, monitor and information to the concern agency and record of Project affected family. Facilitator will be involved with customer for the land acquisition process to the extent of liasoning with competent authorities for expediting the process of land acquisition.

a. NHAI and Independent consultant will make an effort to minimize the land requirement and modification road design to avoid impacts wherever possible.

b. NHAI / State Revenue Department will do a survey of structures and assets including encroachments along the right-of-way that will be impacted by the proposed Infrastructure Road Project**.** State revnue department will make list of land owner under different land categories.

c. Public consultation on the project information will be done in public hearing by concern Customer and govt authority.

d. NHAI will obtain the list of landowners as per the revised 3A/3D notifications and assessment of project affected families This will also help in order to assess the extent of loss and vulnerability of the PAPs and help in determining the required assistance and opportunities to those families that have been rendered to more vulnerable subsequent to the land acquisition process. Projects in planning phase should initiate this exercise.

e. NHAI will handover the acquired land to the Company for road development.

f. Company/EPC facilitator will assist to customer and revenue department to fasten the process of land acquisition.

g. Company/EPC facilitator will assist to project affected family if they need any help such as shifting of household, Labour and Truck etc.

3.4.7) Indigenous people development plan (IPDP):-

During the construction phase & operation phase, Project affected family /person (PAF /PAP) may get employment in EPC / SPV as per project requirement.
At Road Development Projects there is always requirement of manpower and labours during the construction ans operation phase. where PAP can get employment. When ever there is manpower requirement, The company will give the priority to Local community /PAP /PAF.

Company /EPC / SPVs will make a provision of employment for local community and PAP as per capabilities, education and experience, some trades are as follows.

1. Security	2. Flagman	3. Gardner
4. Driver /Cleaner	5. Office boy /Peons	6. Cook
7. Machine helper	6. Skilled labour	9. Unskilled labour

3.4.8) Public Consultation and Disclosure Plan (PCDP) :-

National highways and state highways infrastructure projects are based on public private partnership. PCDP responsibility lies with Customer. Company will monitor EPC /SPVs activities and ensure the following :-

1. EPC Project Incharge will attend the meeting if there is announcement, information, invitation from local authority, NHAI and Moef etc ;
2. As and when there is grievance from local public will be recorded and project incharge will forward it to the concern department to resolve. If grievance is under the scope of Project incharge will be resolve on priority;
3. Project information board will be displayed at appropriate location;
4. During Construction phase, Proper signage such as informative, warning and guiding signage's will be display;
5. During Operation phase, Information required by the Customer and Government Authority will be displayed at appropriate location;
6. During Operation phase, Informative,warning, hazard marking and mandatory signages will be posted at appropriate location;

7. At toll plazas, Company will keep public complaint register and /or grievance box. Toll Manager and/or Maintenance Incharge will be responsible for the follow-up and close-out of complaint and/or grievance. Toll Manager /Maintenance Incharge will report the grievance status report to the company HSE &S department on monthly basis.

3.4.9) GRIEVANCE REDRESSAL MECHANISM:-

A Grievance Redressal Cell (GRC) to be established at the project office. The cell has representation from company, Sub-contractor and local administration. The company facilitator will look into complaints and concerns about ownership disputes, historic structures, religious structures, public utilities, distribution of compensation among heirs, missing affected assets and persons in the census etc. The procedure will not replace existing legal processes. Company will forward the grievance to the concerned customer and authorities for necessary action.

Grievance Redressal Mechanism Procedure is in place for own employee, Project affected persons and road user. Project Incharge & Toll Manager is responsible for the implementation.

Grievance Redressal Mechanism procedure is attached herewith as Annexure No-11

3.4.10) Eco System, Biodiversity & Wildlife Management Plan:-

Company will implement the directives and guidelines stipulated in environment clearness issued by ministry of forest and environment and state pollution control board.

During the construction phase, various adverse impacts on the eco-sytem and wildlife are anticipated in the surrounding areas of the proposed project in terms of increased noise levels, land vibrations during tunneling and blasting, release of air and water pollutants, etc. Mammals are the most vulnerable group affected by these negative impacts, which affect their movement, behavior and breeding habit. To avoid and minimize the negative impacts of these activities, project authorities are advised to prepare strict guidelines as suggested below:

1. Strict instructions (warnings) shall be imposed on the workers at project sites to ensure that they do not harvest any species and/ or produce from the forests and cause any danger or harm to the animals and birds at project territory and forest section.

2. Minimum levels of noise during construction activities will be maintained.

3. The fuel wood to the laborers shall not be provided from tree cutting meant for the purpose and/or the provision made for the supply of the free/subsidized kerosene/LPG from the depots being set up for this purpose to avoid forest degradation and destruction of animal habitats.

4. To avoid the deterioration of water quality and release of pollutants into the river, project authorities would provide proper sanitation facilities and garbage disposal bins to the workers camp areas.

5. The interference of human population would be kept to a minimum in the adjacent forested areas and it would be ensured that the EPC /SPV /Sub-contractors do not set up labour camps in the vicinity of forests and wilderness areas.

6. The project authorities will be bound by the rules and regulations of the Wildlife (Protection) Act (1972), Biological Diversity Act (2002), Forest (Conservation) Act (1980), Environment (Protection) Act (1986) and guidelines of State Biodiversity Conservation Strategy Action Plans for the preservation of habitats and protection of wild animals

7.In case any wildlife found having taken up a refuge in any such tunnels or any space in project territory, all construction labour to leave that place immediately, trained personnel from Department of Forests and Wildlife Warden's office and approved experts should be intimated for rescue of such wildlife. Any construction activities to be taken up only after any trapped wildlife finds its safe escape;

8.It would be ensured that the noise levels would be kept as minimum as possible in the project area, particularly where human and wildlife habitats are located. For the strict blasting regime, i.e. controlled blasting under constant and strict surveillance should be followed. Some of the suggested methodologies for reduction and mitigation of noise so as to cause as little disturbance to the animals as possible are given below:

- Only well maintained/new equipment that produces lesser noise would be installed at the work sites.
- The best way to control the noise is at source. Certain equipment that needs to be placed permanently at one place like generators, etc. would be housed in enclosed structures to cut off the noise.
- The heavy equipment like rotating or impacting machines will be mounted on anti-vibration mountings
- Wherever combustion engines are required, they will be fitted with silencers.
- There should be provision of wind barrier around three sides of storage piles. All storage piles should be wetted and covered

with plastic sheets. The grading operation should be suspended when speed of wind is very high.

3.5 Emergency Response Plan (ERP)

The project requires detailed Emergency Response Plan both for probable hazards likely to take place during construction and operation phases. The ERP is to address hazards associated with handling of heavy machinery and explosives required for construction and excavation activities. Following natural / accidental hazards may occur during construction phase of the project:-

Accidental & Natural Hazards

- Accident due to heavy equipment/machinery;
- Accidents due to fly rock during excavations/drilling.
- Fire & explosion to fueling station;
- Slope failure at the project component locations including en-route proposed roads;
- Accident due to explosives handling;
- Road Accidents;
- Natural hazard like earthquake, landslides, and flood, etc.

In order to take care of above hazards /disasters, Company, EPC and subcontractor will ensure an elaborate ERP procedure on do's and don'ts have to be worked out with reporting mechanism, emergency preparedness team shall tie up with local administration (with defined roles and responsibilities) and should be communicated to each & every worker/employee of project site. ABDTL Emergency Response plan is attached herewith **as annexure no. 12**

Chapter – 4: Natural Resources

Minerals, Aggregates and Soil resource management

Land use Change and Loss of productive/top soil

- To the extent non-agricultural areas to be used as borrow areas

Top soil to be preserved and laid over either on the embankment slope for growing vegetation to protect soil erosion.
The Stockpile shall be designed such the slope does not exceed 1:2 (Vertical to horizontal) and the height of the pile will be restricted to 2m
To prevent any compaction of soil in the adjoining productive lands, the movement of construction vehicles, machinery and equipment will restricted to corridor

The stored topsoil will be utilized for:

Top dressing of the road embankments and fill slopes.
Filling up of tree pits, proposed part of compensatory plantation.
The contractor shall be responsible for working out haul roads with the minimal loss of productive soils, in consultation with the Supervision Consultants

Slope protection and Soil erosion due to construction activities, earthwork, and cut and fill etc.

Prepare Construction schedule for bridges during non-monsoon season.
Bio-turning of embankments to protect slopes.
Slope protection by providing frames, dry stone pitching, masonry retaining walls, planting of grass and trees.
The side slopes of all cut and fill areas will be graded and covered with stone pitching, grass and shrub as per design specifications.

Soil erosion at earth stockpiles

The earth stockpiles to be provided with gentle slopes to prevent soil erosion.
Retention wall/bund to be provided around the storage areas for excavated soil and other construction material to check the flow of solid with storm water in case of rain;

Borrow areas

Non-productive, barren lands, upland shall be used for borrowing earth with the necessary permissions/consents from land owner and necessary local authorities.
Depths of borrow pits to be regulated (should not more than 2 Meter).
Topsoil to be stockpiled and protected for use at the rehabilitation stage.
Silted/Sediment Lakes, Ponds should be selected as borrow area;
Use of fly Ash should be done at embankments and other earth work to reduce the use of Borrow area
Transportation of earth materials through covered vehicles.
No Borrow area to be located within ROW
IRC recommended practice for borrow pits (IRC 10: 1961).
Borrow areas not to be dug continuously.
To the extent borrow areas shall be sited away from habituated areas. Borrow areas shall be leveled with salvaged material or other filling materials which do not pose contamination of soil. Else, it shall be converted into fishpond in consultation with land owner/community. Rehabilitation of the borrow areas as per Guidelines for redevelopment of Borrow Areas.

Quarry Operations

Aggregates will be sourced from existing licensed quarries only.
Copies of consent/ approval / rehabilitation plan for a new quarry or use of existing source will be verified and their regular compliance to be checked.
The quarry operations will be undertaken within the rules and regulations in force in the state.

Borrow Areas and Quarries Management Plan:

The sources for borrow materials, metal quarry and sand quarry shall identified and samples should be tested to determine their suitability.
Location of source of supply of materials for embankment of sub-grade and the procedure for excavation or transport of material shall be in compliance with the environmental requirements of the MoRTH and as specified in IRC:10-1961.
The following precautions have to be taken
To restrict unauthorized borrowing by the contractor No borrow area shall be opened without permission of the supervision Consultant.
The borrowing shall not be carried out from cultivable lands, unless and until, it shall be agreed upon by the supervision consultant that there is no suitable uncultivable land in the vicinity for borrowing or private landowners are willing to allow borrowing on their fields.
To avoid any embankment slippage, the borrow areas Will not be dug continuously, and the size and shape of borrow pits will be decided by the Supervision Consultant.
Redevelopment of the borrow areas to mitigate the impacts will be the responsibility of EPC and Sub Contractor.
Precautionary measures as the covering of vehicles will be taken to avoid spillage
During transport of borrow materials. The unpaved surfaces used for the haulage of borrow material will be maintained properly.
The haul roads and borrows areas will be managed and maintained. Since dust rising is the only impact along the haul roads sprinkling of water will be carried out twice a day along such roads during their period of use.

Borrowing of earth shall be carried out at location recommended as follows:

Non-Cultivable Lands: Borrowing of earth will be carried out up to a depth of 2.0 m from the existing ground level. Borrowing of earth shall not be done continuously. Ridges of not less than 8m width shall be left at intervals not exceeding 300 m. Small drains shall be cut though the ridges, if necessary, to facilitate drainage. Borrow pits shall have slopes not steep than 1 vertical in 4 horizontal.
Productive Lands: Borrowing of earth shall be avoided on productive lands. However, in the event of borrowing from productive lands, under circumstances as described above, topsoil shall be pressed in stockpiles. The conservation of topsoil shall be carried out. At such locations, the depth of borrow pits shall not exceed 45 cm and it may be dug out to a depth of not more than 30 cm after stripping the 15 cm top soil Aside. Elevated lands: at locations where private owners desire their fields to be leveled, the borrowing shall be done to depth of not more than 2 m or up to the level of surrounding fields.
Borrow Pits Along Roadside: Borrow pits shall be located 5m away from the toe of the embankment. Depth of the pit should be such that the bottom of the pit shall not fall within an imaginary line of slope 1 vertical to 4 horizontal projected for the edge of the final section of the bank. Borrow pits should not be dug continuously. Ridges of not less than 8 m width should be left at intervals not exceeding 300 m. Small drains should be cut through the ridges to facilitate drainage.
Community/Private Ponds: Borrowing can be carried out at locations, where the private owners (or in some cases, the community) desire to develop lands (mostly low-lying areas) for pisciculture purposes and for use as fishponds.

Borrow Areas Near Settlements: Borrow pit location shall be located at least 1 km from villages and settlements. If unavoidable, they should not be dug for more than 30 cm and should be drained.

Compaction of soil due to movement of vehicles and equipments.

Construction vehicles, machinery, and equipment to be stationed in the designated ROW to avoid compaction.
Approach roads/haulage roads shall be designed along the barren and hard soil area to reduce the compaction.
Transportation of quarry material to the dumping sites through heavy vehicles shall be done through existing major roads to the extent possible to restrict wear and tear to the village/minor roads.
Damaged village roads/haul road should be restored immediately;
Land taken for construction camp and other temporary facility shall be restored to its original conditions;
Provision of dedicated path within the site for exclusive entry and exit of the construction vehicles;

Contamination of soil due to leakage/spillage of oil, bituminous and non bituminous debris generated from demolition and road construction.

Construction vehicles and equipment will be maintained and refueled in such a fashion that oil/diesel spillage does not contaminate the soil.
Fuel storage and refueling sites to be kept away from drainage channels/ water bodies (river, pond lakes, community water resources).
Unusable construction demolition debris shall be dumped in ditches and low lying areas.
Waste oil and oil soaked cotton/ cloth shall be stored in containers labeled 'Waste Oil' and 'Hazardous' sold off to MoEF/SPCB authorized vendors;
Oil, grease, fuel and chemicals should be stored on concrete plat form with HDPE sheet,
Non-bituminous wastes to be dumped in borrow pits with the concurrence of landowner and covered with a layer of topsoil conserved from opening the pit.
Scarified bituminous should be milled and reused on embankment and other rural roads;
Bituminous wastes will be disposed off in an identified dumping site approved by the State Pollution Control Board
Soil quality monitoring to be under taken as per monitoring plan, SPCB, MoEF requirements

Contamination due to use of fly ash

Use and disposal of fly ash as per fly ash notification.
Fly ash to be used sandwiched between good earth layers after the proper approval from NHAI Consultant / Independent Engineer / NHAI PIU.

Water resource strategy

Construction water

Source the requirement of water preferentially from ground water but with prior permission from the concerned authority.
Take all precaution to minimize the wastage of water in the construction process/ operation.
Water intensive activities should not to be undertaken during summer period (April, May June)
Monitor and Measure the Water

Alteration in surface water hydrology due to embankment

Existing drainage system to be maintained and further enhanced.
Provision of adequate size and number of cross drainage structures.

Sections of the corridor to be raised suitably along flood prone areas with the cross drainage structures and adequate side drains to be built.

Siltation in water bodies due to construction activities/earthwork

Bridge construction in non-perennial streams to be limited to the dry season.
Silt/Sediment trap to be provided.
Embankment slopes to be modified suitably to restrict the soil debris entering water bodies.
Provision of Silt fencing shall be made at water bodies.
Silt/sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be re-vegetated;
Construction material and demolition waste of existing bridges etc shall be periodically removed and no material shall be stored at the river bed during monsoon or water flow in the rivers;
Natural flow of the river should not be disturbed;
Earthworks and stone works to be prevented from impeding natural flow of rivers, streams and water canals or existing drainage system.

Deterioration in Surface water quality due to leakage from vehicles and equipments

No vehicles or equipment should be parked or refueled near water-bodies, so as to avoid contamination from fuel and lubricants;
Oil and grease traps and fueling platforms to be provided at re-fueling locations.
All chemicals and oil shall be stored away from water and concreted platform with catchment pit for spills collection;
Construction material and other waste from river bed/ channel, other water bodies should be removed,
Storage of material shall be away from the water bodies,
All equipment operators, drivers, and warehouse personnel will be trained in immediate response for spill containment and eventual cleanup.
Construction camp to be sited away from water bodies
Wastes must be collected, stored and taken to approve disposal site only.
Water quality shall be monitored periodically as per the requirement of SPCB/ MoEF/EIA.

Air Quality improvement

Climate and Air Quality

Site Project In-charge will
Do Compensatory Plantation (1:3) and as per the guideline of Divisional forest department. Tree Plantation Guideline is attached
Do the additional plantation on river banks, borrow areas and sensitive locations will also prevent deterioration of the local climatic conditions
Avoid of use of wood as fuel in labor camps and Project site office etc.
Make Provision of kerosene and/or LPG gas for cooking at labor camp;
Do Plantation of pollutant absorbing trees at congestion locations and /or whenever applicable.
Make Provision of junctions at major intersections and flyovers, ROB for congestion free movement of traffic as per Schedule-B of concession Agreement.

Dust generations due to construction activities and transport, storage and handling of construction materials.

Site development during construction of Project office, Labor Camps, HMP, WMM, Crusher Plants, Stockyard etc.
Transportation, loading and unloading of loose and fine materials through covered vehicles.
Storage areas to be located downwind of the habitation area.
All stockpiles to be covered while uncovered stockpiles and transfer points will be periodically water sprinkled to minimize fugitive dust generation.

Dust generating activities to be avoided in conditions of high wind (particularly during summer season) and loose construction material to be covered at construction site
Vehicle speed to be restricted to 15 km/hr at site, haul roads to minimize potential for dust generation in the surroundings
Trucks/ dumpers to be covered by tarpaulin sheets during off site transportation of friable construction materials and spoil
Water sprinkling on unpaved roads within the Proposed Project site and Haul road to avoid dust generation;
Housekeeping of the area (Project site, Camp site, Labor camps, Stockyard, etc) to be maintained by deputing sweepers to remove dirt/debris from the floors/sites on daily basis
Water sprinkling on earthworks, unpaved haulage roads and other dust prone areas at regular interval.
Development of green belt around Crushers, and other Plants and Machineries
Provision of PPEs to workers.

Emissions from vehicles, equipment and Machineries

Regular maintenance of machinery and equipment
Preventive Maintenance Schedule and All Machinery Should have it own History Sheet
Ensure that all the vehicles entering the site will have valid PUC (Pollution under control) certificate; Idling should not be allowed. Machinery to be turned off when not in use
Crusher, RMC Plant, asphalt mixing plants, CRMB Plant at downwind (1km) direction from the nearest settlement.
All Plant and Machinery Such as Crusher, WMM, HMP, RMC, DG Set & CRMB Plant licensed by the Local Authority, SPCB and Factory Inspectorate shall be used.
Diesel generators meant for emergency power supply to be regularly maintained so as to ensure that emissions from fuel combustion remain at design levels. Also to ensure stack height of 1.5 m above the roof level of the shed meant for diesel generators to meet the stack height requirement as specified by CPCB;
Low sulphur fuel to be used for operation of DG set and other plants and machineries.
Regular Ambient air quality and stack monitoring should be carried out as per the ACL –Environmental Monitoring Plan for Road Project, Camp sites, & Toll Plaza. ACL –Environment monitoring Plan for Air, Water, Soil and Noise is prepared

Noise from construction vehicle, equipment and machinery.

All equipment to be timely serviced and properly maintained & carry out the preventive maintenance of machineries and vehicles.
Bottlenecks to be removed, major intersections to be provided with interchange / flyovers as per schedule-B Concessions Agreement.
Construction equipment and machinery to be fitted with noise silencers and maintained properly.
Timing of noisy construction activities shall be done during night time and weekends when there are no activities by the sensitive receptor, concurrent noisy operations may be separated to reduce the total noise generated, and if possible re-route traffic during construction to avoid the accumulation of noise beyond standards. Else provision of temporary noise barrier at sensitive locations;
Initiation of multi-layered plantation, to serve as mitigation option for operation phase
Provision of rubber puddings/ noise isolators at equipment /machinery used for construction;
Noise prone activities need to be restricted to the extent possible during night to reduce the noise impact. There is also requirement of providing make shift noise barriers surrounding the high noise generating construction equipment;
Site workers working near high noise equipment to use personal protective devices to minimize their exposure to high noise levels;

Honking restrictions near sensitive receptors;
Noise monitoring should be carried our as per ACL Environmental Monitoring Plan
In high noise area, use of Ear Plug / Ear Muff is compulsory.

Sr. No.	Particular	Impact	Reason	Mitigation/Enhancement
1	Meteorological factors and climate	Meager Impacts	Conversion of land in to paved surface	• Avenue of tree plantation
2	Dust generation	Short term	Site clearance activities, removal of trees and loading/unloading of construction material	• Sprinkling of water Use of tarpaulin to cover the fine material Construction plant will be installed in downwind direction
3	Gaseous pollutants	Long term	Construction plant, vehicles etc.	• All the vehicles should be warranted with Pollution under control certificate. Proper maintenance of the vehicles.

Plantation

Forest & Plantation:

According to the Environmental Protection Act (enacted by MoEF, GoI), the entire linear stretches of roadside plantation along the state/national highways were declared as protected forest. Although the land is under the control of Public Works department, due to it protected status, approval of Central or State government for using the land for widening and rehabilitation must be granted. The above act was amended in 1980 in an attempt to check the rapid deforestation occurring throughout India. At the State level the Government was empowered to declare reserve and protected forest and was also given the authority to acquire land for extension and preservation of the forest. The Act was modified in 1998 by the MoEF. The spirit behind the act was conservation of natural forest and not strip plantation lost.
In case of the road side plantation, the clearance now may be given by the concerned regional offices of the MoE&F, irrespective of the area of plantation lost. While issuing the approval, the normal provision of compensatory afforestation, it stipulates a condition that for every tree cut at least two trees should be planted.

Flora and Fauna :

- The trees to be cleared in course of construction should be replaced by double in number.

Species suitable to the locality and climate should be planted.
Two-year-old seedlings of fast growing species are chosen. Advance plantation prior to the road construction will help in establishment of the plantations. The species like *Mangifera indica, Azadirachta indica, Acacia auriculiformis, Ficus bengalensis, Ficus religiosa* etc should be planted. The budget for such afforestation should be provided.
Multi row planting should be encouraged than single row. The vegetal cover along the row near to the settlements should cover at least 10 meters both sides.

Plantation

Depending on the availability of Right of way, plantation pattern should be as follows:
1. The first row along the highways will be of small to medium sized ornamental trees.

2. Subsequent rows, depending on the availability of width, will comprise of ornamental and or shade bearing species of more height than those in the first row.
3. planting of dwarf shrub in the median, provide glare free travel to the road user during night time.
4. Planting of herbaceous species are ground cover in the median , special landscape and the embankment slopes.
5. Turfing with grass in the median , special landscape and embankments.

Tree plantation on the road side:

The first and second row of plantations along the highway, except the last row , should be worked out based on the land availability of the RoW along the various sections. Following are recommended species for Roadside plantation :

Sr. No.	Soil	Botanical Name	Local Name	Flowering month/Colour
1	Normal loamy soil	*Acacia auriculiformis*	Vilayati babool	Sep-Oct/yellow
2		*Bauhinia Sps*	Kachnar	Femar/pink
3		*Cassia fistula*	Amaltas	May/Yellow
4		*Cassia nodusa*	Cassia	May-june/pink
5		*Delonix regia*	Gulmohar	May/yellow
6		*Jacaranda mimosarfolia*	Jacaranda	April/blue
7		*Peltophorum ferrugineum*	peltophorum	Oct/yellow
8	Water logged areas	*Cordial dictma*	lasoda	
9		*Syzygium cumini*	Jamun	
10		*Terminalia arjun*	Arjun	
11	Alkaline soils	*Albizzia lebbek*	Kalasiris	
12		*Pongamia pinnata*	Kanji	
13		*Terminalia arjun*	Arjun	

Species recommended for second and Subsequent row:

Sr. No.	Soil	Botanical Name	Local Name
1	Normal Loamy Soil	*Albizzia lebbek*	kalasiris
2		*Pongamia pinnata*	kanji
3		*Terminalia arjun*	Arjun
4		*Malia azadiracta*	Bakain
5		*Dalbergia sissoo*	Shisham
6		*Gravilea robusta*	Silver Oak

Chapter – 5 : Emergency Preparedness Plan/ District Disaster Management Plan

The Emergency Response plan is necessary as a moral and legal obligation of management to protect the safety people, property and environment. The objective of this "Emergency Response Plan" is to provide the organizational guidelines and directions to ensure fast and effective response in any emergency situation in order to save life, property and environment.

At any time, it may be necessary to minimize harm to personal, the environment and business operations. Please remember that saving life and property is only possible if the emergency response procedure is effectively followed. This plan shall be followed in all cases of emergency. Therefore, it is imperative that every employee must be familiar and knowledgeable of what to do in case of emergency.

We have formed our Emergency Response Team in each Base Camp to combat with the Emergency situations.

EMERGENCY PROCEDURES

REMOVE

Anyone in immediate danger

ONLY IF SAFE TO DO SO!

ALERT

Others in immediate area
Fire Wardens
Activate Whistle, Air Horn, Bell, Siren etc. 3 times for 30 sec.
Other Tenants and Adjacent Neighbors

RING THE EMERGENCY SERVICES

5. **Fire Brigade, Police or Ambulance.**
   - ***Advise Site:***
   - ***Advise address:***
   - ***Advise nearest cross street:***
   - ***Provide your Name & phone number***
   - ***Provide details of incident***

DO NOT HANG UP UNTIL THE ADDRESS HAS BEEN REPEATED

CONTAIN THE FIRE

Use correct Fire Extinguisher or Fire Hose Reel
Turn OFF Electricity, Air Conditioning
Close doors and windows to contain fire

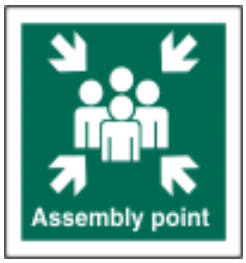
ALL IF ONLY IF SAFE TO DO SO!

EVACUATE

Proceed to the nearest exit.
Gather together at Exit, if safe to do so, *then*
Evacuate via exit and proceed to the Assembly Area

ASSEMBLY AREA

Conduct Head count, Roll call.
Report to the Emergency Services -Advise missing, provide details of incident.
Do not leave the Emergency Assembly Area or attempt to re-enter the building until given the "All Clear" by the Emergency Services.
Long siren of 1 minute.



Incident management Team At ABDTL


3. Help Line Boards (Emergency Contact Numbers) are displayed at CH:
439,459,479,501 (LHS/RHS) but same boards are missing at repetitive black spots
ASHOKA
Help line no. board ch. 496.800
Help line No. board ch. 493
Help line No. board ch. 470
EMERGENCY CONTACT
HIGHWAY CONTROL : 8971999444
POLICE : 08288 274233
Barricading on traffic diversion
Temp. barricading on traffic div
Barricading

Project Chainage wise Hot Spot Details

Road Accident Analysis Report of Q3 (Oct-Dec,2014) ||ABDTL Project site||

Sr. No	Ch.	Sub. Ch.	No. of Accidents	Total	Reason of Accidents	Existing Safety Facilities	Corrective Action	Corrective Action Photos
1	472 median opening	200 LHS	1	4	speed breaker	Solar Blinkers on both sides, Thermo static paint strips, sign boards, cat eyes rumblers & street lights etc. provided	NHAI has decided for under pass and close the median opening as permanent solution to repeated accidents on the spot	
		300 LHS	2		speed breaker, O/Speed			
		350LHS	1		O/Speed			
2	479	100 RHS	1	3	Driver fatigue	Cat eyes, help line no. board, ECB etc. provided	Reason of accidents beyond our control	
		300 LHS	1		O/Speed			
		400 LHS	1		Mechanical Problem (tyre burst)			
3	482 Toll area	500LHS	1	3	Drunk & drive	VMS (with safety messages) errected @ 482.170 LHS & 483.130 RHS, speed breakers/Thermo static paint strips & safety slogan bords on both sides, help line no. board etc. provided	Reason of accidents beyond our control	
		600RHS	1		Mechanical Problem (Breake failed)			
		650LHS	1		Drunk & drive			
4	488 (Ghat with curves)	280 RHS	1	3	Mechanical Problem (Breake failed)	Solar blinker, cat eyes, caution/chevron boards, help line no. boards, etc. provided	proposed to erect multi languages warning board to drivers "Do not put neutral gear"	
		800 LHS	1		Over speed (hit & run)			
		900 RHS	1		Driver negligency			
5	492 (narrow bridge with 2 lanes)	200 RHS	1	5	Driver negligency	Standard sign boards - Narrow bridge & curve, chevron board, cat eyes rumbler etc. provided	Solar blinker (relocated), cat eyes on lane 3 & sign boards provided	
		250 RHS	1		Driver fatigue			
		280 RHS	1		Narrow bridge			
		400 LHS	1		Over speed			
		900 LHS	1		Over speed			
6	512 (only 2 lane)	300 LHS	1	4	Driver negligency	Solar blinkers, cat eye & no parking boards, chevron boards etc. provided	only 2 lane road, 6 lane widening pending for land acquisition. Matter under consideration of higher authorities.	
		450 RHS	1		Over speed (hit & run to pedestrain)			
		700 LHS	1		Over speed (hit & run)			
		850LHS	1		Mechanical Problem (tyre burst)			

Corrective Action on hotspots (Accident from May-14 to Oct-14)

Sr. No	Hotspots Chainages	No. of Accident	Accident Ch.No	Reason of Accidents	Existing Safety Facilities	Corrective Action	Corrective Action Photos
			446.700 LHS	Over speed			
1	446 Median Opening	4	446.360 RHS	Driver negligence	All safety measure provided	Solar Blinker, Thermo static paint strips, sign boards provided	
			446.900 RHS	Over speed & over taking			
			446.500 LHS	Animal crossing road			
2	472 Median Opening & village area	4	472.000 LHS	Wrong side driving of biker	All safety measure provided	Solar Blinker, Thermo static paint strips, cat eyes on mcw, sign boards provided	
			472.400 LHS	Speed breaker			
			472.400 RHS	Speed breaker			
			472.400 RHS	Speed breaker			
3	474 Bridge (Under pass) village area	4	474.800 LHS	Pedestain crossing road	Straight road	New U/pass made, Go slow board being errected	
			474.100 LHS	Driver slept/fatique			
			474.900 RHS	Driver negligence			
			474.400 LHS	Over speed			
4	482	5	482.200 LHS	Driver slept	All safety boards/slogans displayed	VMS (with safety messages) errected @ 482.170 LHS & 483.130 RHS	
			482.600 LHS	Drunk & drive			
			482.400 LHS	Pedestain crossing road			
			482.800 RHS	Drunk & drive			
			482.500 LHS	Over speed			

5	487 (Ghat) Descent	5	487.120 RHS	Over speed & over taking	Sufficient sign boards, cat eye & solar blinker provided	
			487.700 LHS	Drunk & drive		
			487.150 LHS	Driver negligency		
			487.400 RHS	Driver negligency		
			487.500 RHS	Over speed/over taking		
6	488 (Ghat) Steep Descent & curve	6	488.250 LHS	Machanical problem	Sufficient sign boards, cat eye & solar blinker provided	
			488.800 RHS	Driver negligency (Drivers put neutral gear & vehicle becomes uncontrollable & topple		
			488.150 LHS			
			488.400 RHS			
			488.100 RHS			
			488..800 RHS			
7	493 Narrow bridge & curve	4	493.200 LHS	Machanical problem	Standard sign boards provided	Solar blinker, cat eyes on lane 3 & sign boards
			493.100 LHS	Driver slept		
			493.900 LHS	Rash driving		
			493.400 LHS	Over speed		
8	494 median opening, curve, slip in/out & Liquor shop	5	494.900 RHS	Over speed/over taking	Standard sign boards provided	Sign boards provided,
			494.500 RHS	Drunk & drive		
			494.650 RHS	Drunk & drive		
			494.120 RHS	Over speed		
			494.960 RHS	Driver negligency & over speed		
9	496 curve, under pass & village area	7	496.450 RHS	Driver slept or fatigue	Standard sign boards & cat eye provided	
			496.400 LHS	Over loaded & hanging		
			496.500 LHS	Machanical problem		
			496.100 LHS	Road cross of pedestain		
			496.020 RHS	Driver negligency		
			496.800 LHS	Pedestain crossing road		
			496.050 LHS	Drunk & drive		
10	497	4	497.200 LHS	Pedestain crossing road	Standard sign boards & cat eye provided	
			497.250 LHS	Driver negligency & over speed		
			497.300 RHS	Driver slept or fatigue		
			497.100 LHS	Driver slept or fatigue		






Remarks:

1. Km. 495 to 498 informed Tegur to review & erect addl. Chevron/sign boards of GO SLOW, Speed Limit etc.
2. Proposed to erect 1 solar blinker @ 489 RHS (start of Descent, & warning to drivers "not to put neutral, keep 3rd lane, steep descent etc. in multi languages.

Safety Control Measures at Hot Spot

Police Station
Safety precautions at Hot Spots


Provision of Rumblers are ahead sign board


Provision of Do not overtake sign board

Provision of Speed limit 80 km / hr sign board

Provision of stop sign before hot spot zone.

Provision of Police station sign board

Hospital's
Safety precautions at Hot Spots

Provision of Hospital Ahead Sign Board


Provision of Rumblers are ahead sign board


Provision of Do not overtake sign board

Provision of Speed limit 80 km / hr sign board


Provision of Catties installed at padestrian crossing

Provision of stop sign before hot spot zone.


Provision of Solar Blinker before hot spot zone.

Petrol Pump = Safety precautions at Hot Spots


Provision of Petrol pump sign board


Provision of Rumblers are ahead sign board


Provision of Do not overtake sign board

Provision of Speed limit 80 km / hr sign board


Provision of Catties installed at padestrian crossing

Provision of stop sign before school zone.


Provision of Solar Blinker before school

School / College =
Applicable preventive measures taken at hot spot location


Provision of School Ahead Sign Board


Provision of Rumblers are ahead sign board


Provision of Do not overtake sign board

Provision of Speed limit 80 km / hr sign board


Provision of Catties installed at padestrian crossing

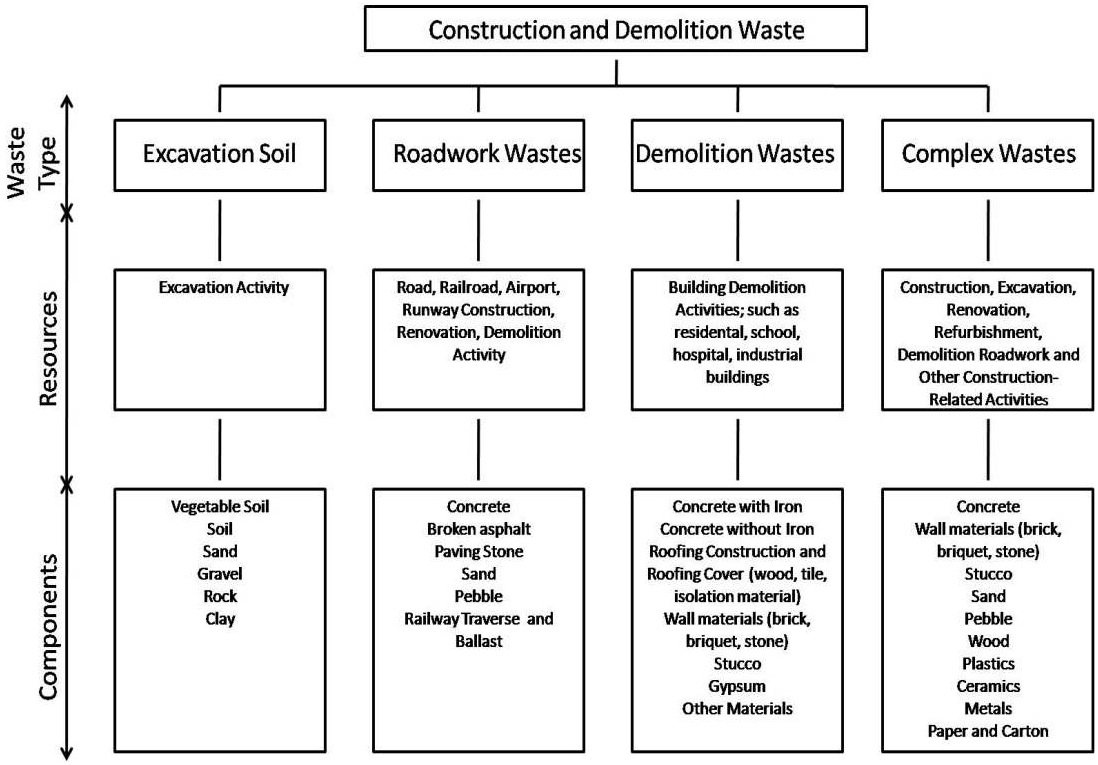
Provision of stop sign before school zone.


Provision of Solar Blinker before school

Chapter – 6: Camp Dismantling Procedure

After the completion of project work we need to dismantle the plant set-up, camps and offices constructed for project work. There are various environmental impacts during dismantling procedure . Following waste is generated during dismantling procedure and its disposal method is as follows

Asphalt
Concrete and concrete blocks
Brick, tile and masonry materials
Ferrous metal
Non-ferrous metals: copper, aluminum … etc
Untreated lumber
Plywood, OSB and particle board
Gypsum wallboard scrap
Paper and cardboard
Beverage containers
Insulation
Rigid foam
Glass
Carpet and pad
Trees and shrubs
Soil
Plumbing fixtures
Windows
Doors
Cabinets
Architectural fixtures
Millwork, paneling and other similar interior finishes
Electric fixtures, motors, switch gear and other similar equipment
HVAC equipment, duck work, control systems, switches and other similar equipment
Others as appropriate



STORAGE AND HANDLING:

A. Site Storage

Remove materials for recycling and recovery from the work locations to approved containers or storage area as required. Failure to remove waste or recovered materials will be considered cause for withholding payment and termination of Contract.
Position containers for recyclable and recoverable waste materials at a designated location on the Project Site. If materials are sorted on site, also provide a sorting area and necessary storage containers.
Change-out loaded containers for empty containers, as demand requires.
If recovered materials are stored on-site for project duration provide adequate security from pilferage.

B. Handling

Deposit indicated recyclable, and recoverable materials in storage areas or containers in a clean (no mud, adhesive, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.
Insure all recovered materials are made safe for handling and storage.
If the contamination chemically combines with the material so that it cannot be cleaned, do not deposit into the recycle containers. In such case, request resolution by the C&D Quality Manager for disposal of the contaminated material. Directions from the C&D Quality Manager do not relieve the Contractor of responsibility for compliance with all legal and regulatory requirements for disposal, nor shall such directions cause a request for modification of the Contract.

PROJECT CONDITIONS:

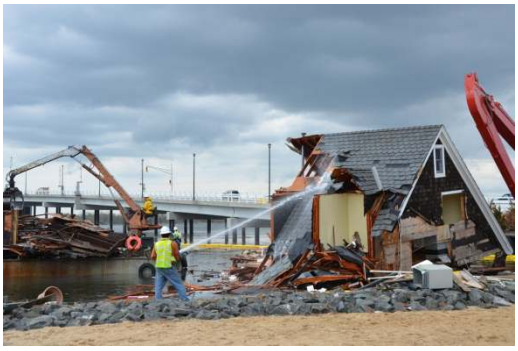
A. Environmental Requirements:

Transport recyclable and recoverable waste materials from the Work Area to containers and carefully deposit in the containers without excess noise and interference with other activities, to minimize noise and dust.
The Contractor shall ensure adequate erosion control and storm water control, if required, to prevent or minimize the negative impact to its surrounding environment.
Provide measures to insure the containment of lead-based paint and dust, nails, asbestos-based products and any biological contaminants that may affect environmental health and safety conditions.

B. Site Condition:

Signs and instructions should be clear, and easy to understand. All recycling containers should be clearly labeled and lists of acceptable and unacceptable materials will be posted throughout the site. Whenever possible, they should be in multiple-languages, especially in Spanish, and in graphic symbols.
The Contractor shall ensure the safety of all personnel involved in the C&D process.
A C&D site management plan shall be created including: work areas, materials processing areas, materials storage and disposal areas, worker hand-washing and changing stations, first aid and medical information.

Corrective Measures

Types of waste generated	Environmental and Health Impact	Photographs	Corrective Actions
Concrete Waste	Land Contamination Air Pollution		- Opportunities for recovered materials reuse and recycling on site, - Leave no unnecessary or unstable projections. Reduce by periodically spraying demolition works with water. - Reuse at other locations 
Waste Bricks	Land Contamination		
Waste Cables	Land Contamination		Collection and Sell to Authorized dealer
Waste glass, WASTE CONTAINER, SACK, BIN & SKIP	Potential contamination, hazardous materials	 (a)  (b)  (c)	Recovered Materials for reuse on or off site, Opportunities for recovered materials reuse and recycling on site, Surplus recovered materials not being reused or recycled, Pallet or pallet boxes and packaging of recovered materials to leave site for reuse or recycling, Materials,

Chapter – 7: Reporting Formats

PPE Matrix :

ASHOKA
Ashoka Concessions Ltd, Nasik

PPE Matrix for Road & Bridge Construction Worker

Personal Protective Equipment	Working Location details	Life of PPE	IS Code	Approx Prices in Rs
Safety Helmet	Is compulsory for all working activities	One & half year	IS:2925-1984	200- 350
Safety Shoes	Is compulsory for all working activities	One & half year	IS 1989 –1 986 (Pt.2)	350- 750
Reflective Vest	Is compulsory for all working activities	Three Months		150- 300
Dust Mask	Is compulsory for Crusher, WMM, HMP. CRMB and RMC Workers and employees	Ten Days	IS 9473 – 2002	15- 65
Ear Plug	Is compulsory for Crusher, WMM, and HMP. CRMB, RMC and DG Set Workers and employees	Ten Days	IS 9167 – 1979	10-70
Ear Muff	is compulsory if Noise Level is high greater than 85 dB	Two Year	IS 9167 – 1979	350- 1250
Safety goggle	Is compulsory for Crusher, WMM, and HMP. CRMB, RMC and DG Set Workers and employees	Six Months	IS 8940 – 1978 / IS 1179 – 1967	150 - 350
Cotton Coverall / Dungaree	Petrol pump operator and fuelling operator	One year	IS 8519 – 1977	350 - 500
Hand Gloves	Store Person- Cotton Hand Gloves for Bitumen & Concrete laying – Rubber Hand gloves For Electrical work – Shock proof Hand gloves For Welding Work – Heat proof	Ten Days Six Months One Year One Year	IS 4770 – 1968 / IS 2573 – 1986/ IS 6994 – 1973 part I	10 – 25 30 – 60 150- 450 100- 200
Gumboot (Thermal Proof)	Is compulsory for Bitumen & Concrete laying (Gumboot -Heat proof activity and Concreting activity Rubber-gumboot)	Six Months		300 - 500
Welding Glass	Is compulsory for all welding and cutting activity	One year	IS 8940 – 1978 / IS 1179 – 1967	150- 300
Full Body Harness	Is compulsory for working at height above 1.8 M Should be compulsory for Bridge workers who are working at height.	Two Years	IS 3521 – 1999	750 – 1250

Note: - After Issuing the PPE to worker/staff , Self declaration letter should taken from worker/Staff. If Employee/staff/worker found without PPE'S at work zone area or during the working, He will be penalised and warning letter will be issued immediately. Warning letter format is enclosed herewith.

Anilkumar Shimpi
Prepared, Checked and recommended By

Ashish Kataria
Approved By

Tool Box Talk Form :

Date:	Conducted By :
Project Name:	Location:
Points Discussed :	Job Related Problem Areas/Concerns : ....

Selection of topic by tick (√):

											
Excavation	Concrete Work Safety	Work With Moving Equipment	Electrical Safety	PPE Matrix	Working At Height	Safety Precautions Of Driving	Work Place Monitoring (Slips And Falls)	Material Safety Data Sheet	Preventive Maintenance Of Vehicles	Material Handling Safety	Flagging Traffic at Work / Flagman Work
(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)

												
Road Barricading And Signage's	Welding Work Safety	Working Near Overhead Lines	Road Maintenance Work	Incident / Accident Reporting	Crane Safety	Lifting & Carrying Safety	Emergency Preparedness	Fire Extinguishers Use	Prevent Oil / Chemical Spillage	5 S System	General First Aid Treatment
(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)	(√)

Attendees:

Sr. No.	Name of Employee	Designation	Sign
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

Sign of Area Incharge / Supervisor **HSE Officer** **Section Incharge**

HSE Training

Training are given to employees on various aspects of Environment, Safety and Health. Various training modules are prepared and Training are given as per the training calendar prepared by site safety supervisor and corporate HSE Team

List of Training Modules

Sr. no.	Training Topic
1	ROAD WORKER SAFETY DURING WORKING (Hindi Version) DVD DuPont Sustainable Solution
2	LEADER'S GUIDE & POWERPOINT DVD DuPont Sustainable Solution
3	COMMERCIAL DRIVER CERTIFICATION A License To Drive - (Hindi Version) DVD DuPont Sustainable Solution
4	SAFE DRIVING Real, Real – Life - DVD DuPont Sustainable Solution
5	DEFENSIVE DRIVING A Crash Course (Hindi Version) DVD DuPont Sustainable Solution
6	PRO-ACTIVE SAFETY ATTITUDES Looking Out For Number One (Hindi Version) DVD By Coastal safety solutions
7	CONTRACTOR SAFETY General Requirements (Hindi Version) DVD By Coastal safety solutions
8	SAFETY ORIENTATION It Takes a Winning Attitude (Hindi Version) DVD By Coastal safety solutions
9	AWARENESS ON FIRE, FIRE EXTINGUISHERS By CASEFIRE INDUTRIES LTD
10	BREATH OF AIR By VENUS SAFETY & HEALTH PVT.LTD.
11	HSE for Sustainable Growth National Safety Council
12	ESMS:- Standard Operating Procedure ESSMS:- Environment Safety and Social Management System
13	FIRE FIGHTING, RESCUE, SAFETY AND PPE's BY FOREMOST TECHNICO PVT LTD.
14	CONVEYOR SAFETY 1 General Type Safe Operating Procedure Operating Precautions
15	CRANE OPERATING SAFETY PRECAUTIONS
16	5S AWARENESS TRAINING PROGRAMME
17	ELECTRICAL SAFETY AWARENESS TRAINING
18	EMERGENCY RESPONSE PLAN
19	FIRE EXTINGUISHERS AND ITS USE
20	FIRST AID ON ROAD ACCIDENTS
21	AWARENESS ON HIRA
22	TRAINING PROGRAMME ON MSDS
23	SAFETY PRECAUTIONS AT WORK ZONE
24	QHSE MANAGEMENT SYSTEM
25	TRAINING ON MACHINE GAURDING
26	GENERAL SAFETY RULES AND USE OF PPE
27	ENVIRONMENTAL IMPACTS OF CONSTRUCTION ACTIVITY AND SITE CONTROL PRACTICES
28	WORKING AT HEIGHTS
29	SAFE STORAGE AND HANDLING OF GAS CYLINDERS
30	Monsoon Safety Tips
31	IFC HSE Management Systems
32	Environmental Aspects of Construction

IDLH / HIRA and Control Measures

ASHOKA BUILDCON LTD, ASHOKA HOUSE, ASHOKA MARG,ASHOKA NAGAR, NASHIK – 422 011			
Health, Safety and Environment Work Instructions			
Doc. No.: FR/CO/DO/PR/HSE/03	REF.: WI/CO/DO/PR/HSE/27		Pages : 1 of 1
Issue No: 02	Issue Date:1st Aug, 2013	Rev. No.: 00	Revision Date : 1st Aug, 2013
Title : Hazard Identification, Risk Assessment and determining controls (Risk Register)			
SITE:	Road Project		

Sr. No.	Dept/ Area	Activity	Hazard	RISK RATING				Control /Remark /SOP
				S	P	Risk Level	Significance	
1	Store	Diesel Store Yard	Fire / explosion	4	3	12	Moderate	SOP No.33
2	Store	Computer Operating	Electric shock due the current leakage	3	2	6	Low	SOP No. 23
3	Store	Storage of Diesel	Fire explosion	4	3	12	Moderate	SOP No. 43
4	Store	Transporting -Internal Truck & dumper	Trap / engulfment	4	3	12	Moderate	SOP No.30
5	Store	Shuttering stacking	Trap / Struck	2	2	4	Low	
6	Store	Cement Bag Stacking	Trap / Engulfment	3	2	6	Low	
7	Store	Consumable Items Stacking	Trap / engulfment	3	2	6	Low	
8	Store	Waste Oil Separation & Storing	Fire / explosion	4	3	12	Moderate	SOP No.34
9	Store	Office work - Office chair & table	Back pain	3	3	9	Low	SOP No.02
10	Store	Office work - Continuous working on Computer	Visual defect - Radiation Hazard	3	3	9	Low	SOP No. 38
11	Q. C. LAB	Testing, usage of chemicals	Inhalation of gases/ vapors	3	2	6	Low	Use of Chemical Mask while Working
12	Q. C. LAB	Handling of cubes	Fall of objects / Body Injury	3	2	6	Low	SOP No. 02
13	Q. C. LAB	Aggregate Test / Soil Test	Exposure of Dust	3	2	6	Low	Use of Proper PPE (Dust mask, Goggle)
14	Q. C. LAB	Bitumen Test	Exposure of Gas / Dust	3	2	6	Low	Use of Chemical Mask while Working
15	Q. C. LAB	Sample Collection from side	Trap / Struck / Fall hazard	3	2	6	Low	
16	Q. C. LAB	Storage of Chemical	Fall /skin irritation due to Leakage	3	2	6	Low	
17	Q. C. LAB	Working on the CBR Machine	Exposure of High Noise / Vibration	3	2	6	Low	Use of Proper PPE (Ear plug / muff if needs)
18	Q. C. LAB	Heating of Chemical & material on Hot plate	Exposure of Heat	3	2	6	Low	
19	Q. C. LAB	Handling of Benzene & Flammable Chemicals in Laboratory	Fire / Explosion	3	3	9	Low	SOP No.28, Follow MSDS
20	Q. C. LAB	Bitumen dry material	Inhalation / skin irritation	3	2	6	Low	
21	Q. C. LAB	Handling Bitumen Cube	Burn / Injury	2	2	4	Low	
22	HR & Admn.	Office work - Office chair & table	Back pain	3	3	9	Low	SOP No.38
23	HR & Admn.	Office work - Continuous working on Computer	Visual defect - Radiation Hazard	3	3	9	Low	SOP No.38
24	HR & Admn.	Travelling for Out Duty	Accidents	3	3	9	Low	SOP No. 31
25	Canteen	Cooking (Leakage of Gas)	Fire Hazard	3	2	6	Low	Adequate Ventilation
26	P & M	Running of DG Set	Exposure of High Noise	3	3	9	Low	SOP No.38
27	P & M	working at height	Fall Hazard	4	3	12	Moderate	SOP No.5
28	P & M	Electrical maintenance	Slip, Trips & falls, electric shock from electrically operated machines	4	3	12	Moderate	SOP No.24
29	P & M	Maintenance of machines	Minor injury while working with un guarded machines	2	2	4	low	SOP No.10
30	P & M	Vehicle movement (Truck, Dumper, Excavator, Earth movers)	Serious accident while the movement	4	3	12	Moderate	SOP No.16
31	P & M	Material handling Loading / Unloading Process	Falling of material,	4	2	8	low	SOP No.03
32	P & M	Cutting and Welding Operation	FIRE HAZARD	4	3	12	Low	SOP No.23
33	P & M	Cutting and Welding Operation	Electric Shock / gas inhalation/Radiation	3	3	9	Low	SOP No.27
34	I T	Installation of system and maintenance	Electric Shock	3	2	6	Low	
35	I T	Programing and support	Visual defect - Radiation Hazard	3	2	6	Low	

36	I T	Refilling of ink in cartridge	Exposure to Ink	2	2	4	Low	
52	Milling machine	Scratch for exiting road	object from machine	2	2	4	Low	
54	SURVEY	Working along the road site	Struck Hazard	2	3	6	Low	OHSMP No.1
55	SURVEY	Movement on road for Survey	Struck hazard	2	3	6	Low	
56	EQA	Tree Cutting	Falling/ Engulfment	2	2	4	Low	
57	EQA	Wood Transportation	Struck and Trip Hazard	2	2	4	Low	
58	EQA	Excavation	Slippery	2	2	4	Low	SOP NO. 9
59	EQA	Excavation	Cave inn /collapse of sides	2	2	4	Low	Benching or shoring should be provided
60	EQA	Excavation	Radioactive, gases, Vapors	2	2	4	Low	
61	EQA	Concerting	Mechanical	2	2	4	Low	
62	EQA	Loading/unloading of cements	Inhalation of dust particles	3	3	9	Medium	OHSMP No.1
63	EQA	EXCAVATION	Falling of person under the pits, minor injury, injury requiring first aid	2	2	4	Low	SOP NO. 9
64	EQA	Shuttering	Trap hazard	2	2	4	Low	
65	EQA	Centering	Slippery	2	2	4	Low	
66	EQA	Shifting Material	Machine Breakdown	2	2	4	Low	
67	EQA	Concreting	Slippery	2	2	4	Low	
68	EQA	Convency	Firing	2	2	4	Low	
69	EQA	Work at height	Fall of person	2	2	4	Low	safety belt / safety helmet / safety net etc.
70	EQA	Crane installation	Fall down material	3	2	6	Low	
71	EQA	Material handing	Friction / cuts	2	2	4	Low	Hand gloves
72	EQA	scaffolding fixing	Spelt hand	3	2	6	Low	
73	EQA	Diversion	Roads Accidents	3	2	6	Low	Solar Blinker for night .
74	EQA	RE - Wall fixing	Accidents	3	2	6	Low	Fixing for wood box with nut bolts & supports wooden bellies.
75	EQA	H.D.P Pipe work waterline	Fire	2	2	4	Low	Provide fire Extinguisher site security.
76	HOT MIX PLANT	Bitumen unloading	Fire (Due to static Electricity)	2	3	6	Low	
77	HOT MIX PLANT	Bitumen Heating in the tank	Fire (Due to the over heating & leakage))	3	2	6	low	
78	HOT MIX PLANT	Supply of Electrical energy	Short circuit due electrical appliances	4	2	8	Low	
79	HOT MIX PLANT	Inspection & Routine Maintenance	Falling from Height	4	2	8	Low	SOP NO.5
80	HOT MIX PLANT	Loading of Hot mix	Exposure of Heat	4	2	8	Low	
81	LABORATORY	Test Soil Density Gauge	Radiation (NDT Machine)	2	2	4	Low	

Risk Matrix

Severity	High	4	4	8	12	16	20
		3	3	6	9	12	15
		2	2	4	6	8	10
		1	1	2	3	4	5
	Low	0	1	2	3	4	5
	Low						High
	Probability						

Colour Code	Rating	Risk Level
High	16 to 20	HIGH IMPACT RISK – Must implement extensive risk controls.
Moderate	10 to 15	MODERATE RISK – Conduct formal risk analysis; may require risk controls
Low	< 9	LOW RISK – Some risk controls may still be justified

Environmental Aspect Impact and Control Measures

ASHOKA BUILDCON LTD, ASHOKA HOUSE, ASHOKA MARG,ASHOKA NAGAR, NASHIK – 422 011			
Health, Safety and Environment Work Instructions			
Doc. No.: FR/CO/DO/PR/HSE/01	REF.: WI/CO/DO/PR/HSE/28		Pages : 1 of 1
Issue No: 02	Issue Date:1st Aug, 2013	Rev. No.: 00	Revision Date :
Title : Identification of Environmental Aspects and Impacts and control significant impacts (Environment Aspects register)			
SITE			Road Project

Sr. No	Dept/ Area	Activity	Aspect	Direct / Indirect D/I	Impact	Condition	Rating						Significance	Control Measures
							A	B	C	D	E	F		
							Legislation	Impact	Occurrence	Control	Detection	F=BxCxDxE		
1	HR/ADMIN	House Keeping	Dust Inhalation	I	Air Pollution	N	N	1	2	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual Water sprinkling system provided
2	HR/ADMIN	Urinal Facility	Biodegradable waste generation	I	Water Pollution and Land Contamination	AN	N	2	1	1	1	2	Low	SOP No. 44
3	HR/ADMIN	Depositing of Bio-degradable waste	Biodegradable waste generation	D	Contamination of land and water	N	N	1	2	1	1	2	Low	SOP No. 44
4	HR/ADMIN	Usage of Electricity	Usage of Natural Resources	D	Resource wastage	N	N	1	2	1	1	2	Low	Energy Saving Tips
5	EQA	Concreting	Generation of Cement Dust	I	Air Pollution	N	NA	1	2	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual Water sprinkling system provided
6	P & M	DG Set Running	Generation of Noise	D	Noise Pollution	N	Y	1	3	2	1	6	HIGH	Chapter N.7, Environment Management Practices / DG Set kept at isolated area, with lock & key
7	P & M	Transportation of vehicles	Generation of Noise	D	Noise Pollution	N	Y	1	3	2	1	6	HIGH	Chapter N.7, Environment Management Practices- Noise Level Management
8	P & M	Drilling / Cutting	Fumes and Sound generation	D	Noise Pollution	AN	NA	1	2	1	1	2	Low	Chapter N.7, Environment Management Practices- Noise Level Management
9	P & M	Welding, Gas Cutting	Fumes and Sound generation	D	Air Pollution	N	NA	1	1	2	1	2	Low	
10	P & M	Preventive Maintenance	Usage of Oil, Diesel	D	Land Contamination	N	YES	2	1	1	2	4	HIGH	Disposal through Authorized Dealer
11	P & M	Running of RMC Plant : Loading of Aggregate to Feeding point by Dozen	Generation of Dust	D	Air Pollution	N	YES	2	1	1	1	2	HIGH	SOP No. 45
12	P & M	Running of RMC Plant : Loading of Aggregate to Feeding point by Dozen	Generation of Noise	D	Noise Pollution	N	YES	2	1	1	1	2	HIGH	
13	P & M	Running of Conveyor Belt Manufacturing of RMC-	Generation of Dust	D	Air Pollution	N	NA	2	1	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual the conveyor belt is completely covered)
14	P & M	Diesel Distribution	Leakages, Spillages	D	Land Contamination	AN	N	2	1	1	1	2	Low	

15	P & M	Depositing of Non-bio-degradable waste	Electrical wastages, wire pieces etc.	D	Contamination of land and water	N	N	2	1	1	1	2	Low	
16	P & M	D.G. Set Chimney Operation	Chimney height, air pollution	D	Smoke Emission (Air Pollution)	N	N	1	2	1	1	2	Low	
17	P & M	Maintenance work	Wastage after the maintenance such as Oil soak cotton waste, Engine oil container	D	Land Contamination	N	Y	1	2	1	1	2	Low	Disposal through Authorized Dealer
18	P & M	Maintenance work	Waste Oil generation	D	Land Contamination	N	Y	1	2	1	1	2	Low	Disposal through Authorized Dealer
19	P & M	Transportation of RMC by TM	Dust generation	D	Air Pollution	N	N	1	4	1	2	8	High	EMP. No. 5
20	P & M	TM Cleaning	waste water generation	D	Water pollution	N	Y	1	4	1	2	8	High	As EMP No 1 conventional treatment was fail due to this New EMP No.4
21	P & M	Vehicle Movement	Dust generation	D	Air Pollution	N	N	1	4	1	2	8	High	Chapter No.06 _ Environment Management Manual for RMC Manual Water sprinkling system provided
22	RMC-Operation	Manufacturing of RMC- Transportation of Aggregate by Dumper	Generation of Dust	D	Air Pollution	N	NA	2	1	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual Water sprinkling system provided
23	RMC-Operation	Manufacturing of RMC- Transportation of Aggregate by conveyor belt	Generation of Dust	D	Air Pollution	N	NA	2	1	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual the conveyor belt is completely covered)
24	RMC-Operation	Manufacturing of RMC - Feeding of cement	Generation of Dust	D	Air Pollution	N	NA	2	1	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual Water sprinkling system provided
25	RMC-Operation	Manufacturing of RMC - Washing of RMC Plant	Generation of waste water	D	Water Pollution	N	Y	2	2	1	1	4	Low	EMP. No. 1
26	RMC-Operation	Use of Admixtures	Generation of Empty barrels of Admixture	D	Land Contamination	N	Y	1	2	1	1	2	Low	Sending to Authorized Dealer
27	RMC-Operation	Use of Cement Bags	Generation of waste cement bags	D	Land Contamination	N	N	1	2	1	1	2	Low	Clean it is ETP Area, Reuse for store/ sending it to authorized person
28	ROAD MAINTENANCE	Repair Work of Block & Panel Crack	Dust Inhalation	I	Air Pollution	AN	N	2	1	1	1	2	Low	
29	ROAD MAINTENANCE	Concreting	Damage of top Soil	D	Land Contamination	N	N	2	1	1	1	2	Low	
30	STORE	Storage of Chemicals	Leakages, Spillages	I	Land Pollution	AN	YES	3	1	1	1	3	Low	Chapter No. 10 _Environment Management Manual for RMC Manual (Selling to Authorized vender)
31	STORE	Storage of Cement Bags	Generation of Dust	D	Air Pollution	N	YES	2	1	1	1	2	Low	

32	STORE	Transporting	Dust generation	D	Air Pollution	AN	NA	2	1	1	1	2	Low	Chapter No.06 _ Environment Management Manual for RMC Manual (Vehicle Movement)
33	STORE	Transporting	Use of Natural Resource	I	Air/ Natural Resource	N	NA	1	1	1	1	1	Low	
34	STORE	Storage of Diesel	Spillage of diesel	I	Air, Land	N	NA	1	2	1	1	2	Low	Chapter No. 10 _Environment Management Manual for RMC Manual (Selling to Authorized vender)
35	STORE	Cement Loading/Unloading	Generation of Dust	I	Air, Land	N	NA	1	2	2	1	4	Low	
36	STORE	Diesel Distribution	Leakages, Spillages	D	Land Contamination	AN	NA	1	2	1	1	2	Low	
37	STORE	Storage of LPG cylinders	Leakages, Spillages	D	Air Pollution	E	NA	2	1	1	1	2	Low	
38	STORE	Diesel storage	storage	D	Plant & Machinery.	N	Y	2	1	1	1	2	Low	Chapter No. 10 _Environment Management Manual for RMC Manual
39	STORE	Usage of paper	Improper & unplanned paper consumption	D	Resource wastage	N	N	1	1	1	1	1	Low	
40	STORE	Usage of Electricity	Consumption of Energy	D	Resource wastage	N	N	1	1	2	1	2	Low	

Memorandum :

ASHOKA CONCESSIONS LTD, ASHOKA HOUSE, ASHOKA MARG,ASHOKA NAGAR, NASHIK- 422011			ASHOKA
Health, Safety and Environment Work Instructions			
Doc. No.: ABL/FR/CO/DO/PR/HSE/12	REF.: WI/CO/DO/PR/HSE/23		Pages: Page 1 of 1
Issue No: 01	Issue Date: 4th Jan, 2014	Rev. No.: 00	Revision Date : 4th Jan, 2014
Title : Violation Letter			

MEMORANDUM

PROJECT: - Memo. No:

Department:

CONTRACTOR/A.B.L.: Date: Time: Ch. No:

NAME OF EMPLOYEE:

DESIGNATION/TRADE:

MEMORANDUM NO: (A) 1st [ ] (B) 2nd [ ] (C) 3rd [ ] (D) 4th [ ]

TYPE OF VIOLATION (To be Written by HSE Officer):-
(HSE Officer shall attach the evidence of violence such as photograph and IOC issued)

- **Not using the following PPE on duty time.** (Use {√} mark as proper violence option below.)

1) SAFETY JACKET. ☐ 2) SAFETY HELMET. ☐ 3) NOSE MASK. ☐ 4) SAFETY SHOES. ☐
5) HAND GLOVES. ☐ 6) GOGGLES. ☐ 7) EAR PLUG. ☐
8) RUBBER HANDGLOVES ☐
9) WELDING SCREEN. ☐ 10) SAFETY BELT. ☐ 11) GUMBOOT. ☐

- **Any other violence :-**

- **Department Head action against the violator:-**

Sign of employee Sign. Of DH/ Supervisor Sign of HSE Officer Sign of Project In charge

HSE & S and HR & Admin. Department

Head HSE & S Comments:-

DGM (HR & Admin.) Comments:-

IMS Director Comments:-

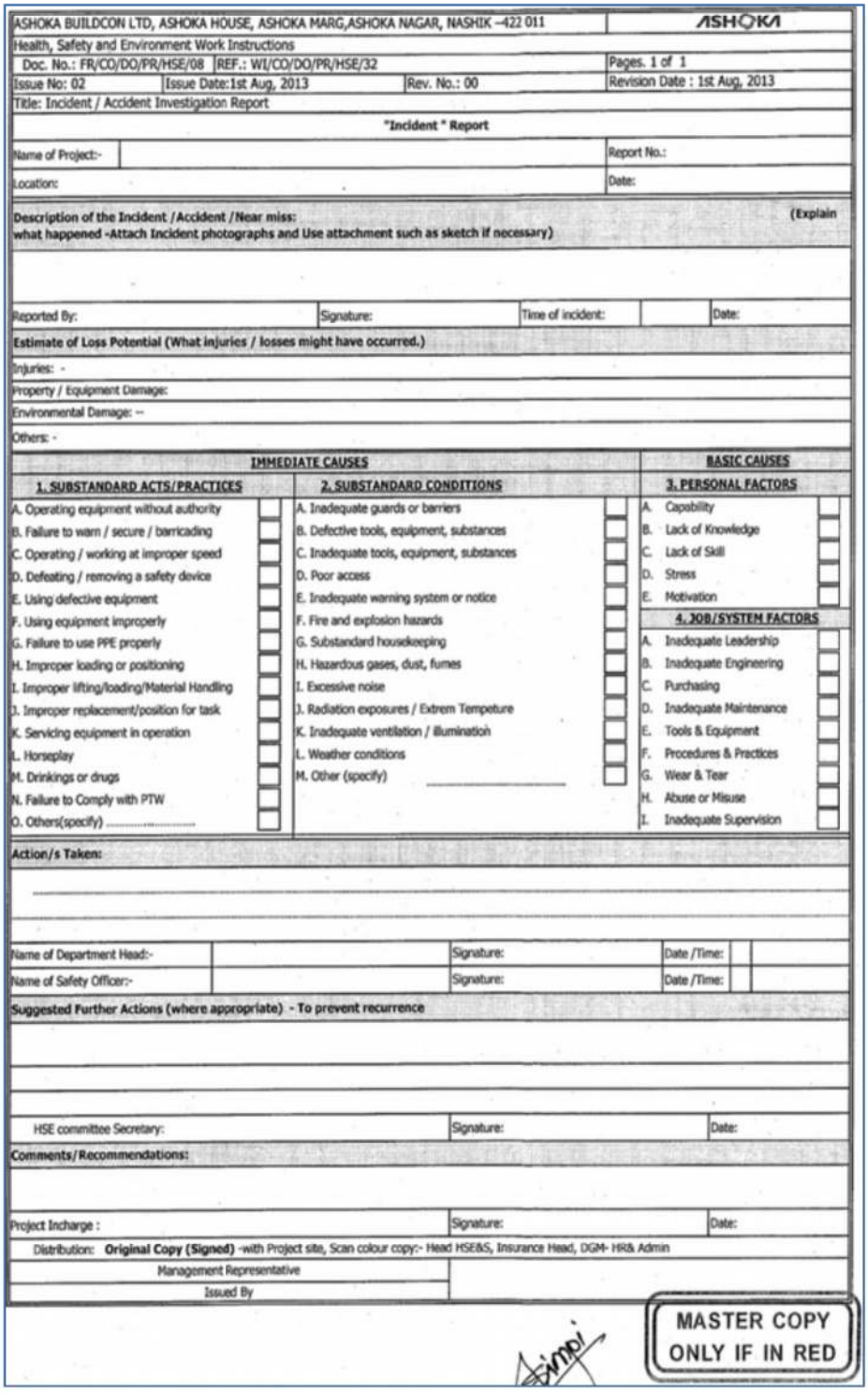
1st Violation – Warning and information for employee personal file.
2nd Violation – Counseling by project in charge/safety committee.
3rd Violation – Will be treated as monetary loss one day.
4th Violation – Will be treated as suspension letter or final counseling by IMS director.

I. It should be against the Risk Register, Environmental Impact Register, Risk is IDLH (immediate danger to life and health) and legal requirement.
II. Site HSE Officer should write a report and after comments from DH and project in charge should sent to head HSE & S and DGM - HR & Admin.

MASTER COPY ONLY IF IN RED

Management Representative	
Issued By	

Incident Reporting :



ASHOKA BUILDCON LTD, ASHOKA HOUSE, ASHOKA MARG,ASHOKA NAGAR, NASHIK –422 011 | ASHOKA

Health, Safety and Environment Work Instructions

Doc. No.: FR/CO/DO/PR/HSE/08	REF.: WI/CO/DO/PR/HSE/32		Pages. 1 of 1
Issue No: 02	Issue Date:1st Aug, 2013	Rev. No.: 00	Revision Date : 1st Aug, 2013

Title: Incident / Accident Investigation Report

"Incident " Report

Name of Project:-		Report No.:
Location:		Date:

Description of the Incident /Accident /Near miss: (Explain what happened -Attach Incident photographs and Use attachment such as sketch if necessary)

Reported By:	Signature:	Time of incident:		Date:

Estimate of Loss Potential (What injuries / losses might have occurred.)

Injuries: -

Property / Equipment Damage:

Environmental Damage: --

Others: -

IMMEDIATE CAUSES

1. SUBSTANDARD ACTS/PRACTICES

- A. Operating equipment without authority
- B. Failure to warn / secure / barricading
- C. Operating / working at improper speed
- D. Defeating / removing a safety device
- E. Using defective equipment
- F. Using equipment improperly
- G. Failure to use PPE properly
- H. Improper loading or positioning
- I. Improper lifting/loading/Material Handling
- J. Improper replacement/position for task
- K. Servicing equipment in operation
- L. Horseplay
- M. Drinkings or drugs
- N. Failure to Comply with PTW
- O. Others(specify) .....

2. SUBSTANDARD CONDITIONS

- A. Inadequate guards or barriers
- B. Defective tools, equipment, substances
- C. Inadequate tools, equipment, substances
- D. Poor access
- E. Inadequate warning system or notice
- F. Fire and explosion hazards
- G. Substandard housekeeping
- H. Hazardous gases, dust, fumes
- I. Excessive noise
- J. Radiation exposures / Extrem Tempeture
- K. Inadequate ventilation / Illumination
- L. Weather conditions
- M. Other (specify) _____

BASIC CAUSES

3. PERSONAL FACTORS

- A. Capability
- B. Lack of Knowledge
- C. Lack of Skill
- D. Stress
- E. Motivation

4. JOB/SYSTEM FACTORS

- A. Inadequate Leadership
- B. Inadequate Engineering
- C. Purchasing
- D. Inadequate Maintenance
- E. Tools & Equipment
- F. Procedures & Practices
- G. Wear & Tear
- H. Abuse or Misuse
- I. Inadequate Supervision

Action/s Taken:

Name of Department Head:-		Signature:	Date /Time:	
Name of Safety Officer:-		Signature:	Date /Time:	

Suggested Further Actions (where appropriate) - To prevent recurrence

HSE committee Secretary:	Signature:	Date:

Comments/Recommendations:

Project Incharge :	Signature:	Date:

Distribution: **Original Copy (Signed)** -with Project site, Scan colour copy:- Head HSE&S, Insurance Head, DGM- HR& Admin

Management Representative	
Issued By	

MASTER COPY
ONLY IF IN RED

Road accident statistics

ASHOKA

Ashoka Concessions Ltd,

Ashoka House, Ashoka Marg Nashik

Format -ACL /FR/HSE/07

National Highways Authority of India

National Highway No : 222. Month : Oct-2014

Sr. No.	Date	Time of Accident pm /am	A	B	C	D	E	F	G	H	Vehicle Responsible	No. of affected persons				Nos. of animals killed if any	Help provided by ambulance / private vehicle	Remarks
			Accident Location	Nature of Accident	Classification of accident	Causes	Road features	Road conditions	Intersection type	Weather conditions		Fatal	Grievous	Minor	Non Injured			
1																		
2																		
3																		
4																		
5																		

A : Urban/Rural and details of surrounding land use.
B : 1) Overturning 2) Head on collision 3) Rear end collision 4) Collision brush side swift 5) Right turn collision 6) Skidding 7) Others (Pl. Specific)
C : 1) Fatal 2) Grievous injury 3) Minor injured 4) Non injury.
D : 1) Drunken 2) Overspeeding 3) Vehicle out of control 4) Fault of driver of motor vehicle/ driver of other vehicle 5) Defect in mechanical condition of motor vehicle.
E : 1) Single lane; 2) Two Lane; 3) Three Lane or more without central divider (median); 4) four lanes or more with central divider.
F : 1) Straight road 2) Slight curve 3) Sharp curve 4) Flat road 5) Gentle incline 6) Steep incline 7) Hump & dip.
G : 1) T Junction 2) Y Junction 3) Four arm junction 4) Staggered junction 5) Junction with more than four arms 6) Round about junction 7) Manned rail crossing 8) Unmanned rail crossing.
H : 1) Fog 2) Mist/fog 3) Cloudy 4) Light Rain 5) Heavy Rain 6) Hail or sleet 7) Snow and strong wind 8) Dust strom 9) Very Hot 10) Other extraordinary weather condition.

All formats of reporting

Sr. No.	ACL Format No	Detail Description
1	ACL/FR/HSE/01	Environment & Social Management Plan
2	ACL/FR/HSE/02	Land Acquisition Summary Report
3	ACL/FR/HSE/03	Hot Spot details and issue Report
4	ACL/FR/HSE/04	Legal Matrix Report
5	ACL/FR/HSE/05	Legal compliance
6	ACL/FR/HSE/06	Project Water Consumption Report
7	ACL/FR/HSE/07	Road Accident Summary Report
8	ACL/FR/HSE/08	ACL- HSE - Monthly Report
9	ACL/FR/HSE/09	Incident Report format
10	ACL/FR/HSE/10	Tree Plantation
11	ACL/FR/HSE/11	NCR-HSE Compliance Summary Report
12	ACL/FR/HSE/12	Emergency report (Mock Drill Report)
13	ACL/FR/HSE/13	Road Project GHG Tool
14	ACL/FR/HSE/14	Complaint register