

**ENVIRONMENT, WASTE AND ENERGY MANAGEMENT
PLAN**

KNR CONSTRUCTIONS LIMITED



1.0 Introduction & Purpose of this plan

KNR Constructions Limited (“KNRCL” or “the Company”), incorporated in the year 1995, construct, build and develop infrastructure projects like roadways and highways, irrigation projects. These projects contribute to the social and economic development of the Country.

With each year the Company kept on consolidating its experiences and expertise and continued to acquire the latest equipment, employing up-to-date technology to ensure that the roads they built will become landmarks for years and years to come.

KNRCL is committed to execute an effective system in order to prevent pollution and any negative impact on the environment throughout the projects. KNRCL acknowledges that climate change poses a number of threats to civilization, increase in the frequency of extreme weather conditions, negative impact on human health due to air and water pollution.

We have formulated a multi-faceted approach to execute an effective environment, waste and Energy Management plan in order to systematically work to reduce potential negative impacts whilst maximising positive impacts.

2.0 Environmental Planning and Implementation

This document details the mitigation measures to be implemented to minimize environmental impacts during construction and to ensure compliance with environmental regulations. Environmental planning refers to the complete planning of the project (pre-construction, construction and Post Construction) in a systematic way. This gives the methodology for the project to operate in an environmentally responsible manner, anticipate and meet growing environmental performance expectations, and ensures ongoing compliance with regulatory and legislative requirements. It allows addressing, controlling and improving the short-term and long-term impacts of construction activities, its products and services on the environment. This helps in controlling the significant environmental aspects and thereby reducing adverse environmental impacts which evolved during the construction activities.

3.0 Standard Operating Procedures

a) Borrow Areas:

No productive land is used for borrow areas to the maximum extent possible. Roadway excavated material, desilting/deepening of irrigation tanks, barren lands, raised land are used to borrow. Borrow areas close to the roads is discouraged.

b) Embankment slopes:

Suitable cross drainage structures and drains are constructed to maintain free flow of water in the project areas to avoid water logging and flooding. Necessary measures are taken such as planting/developing vegetation are taken to control soil erosion across the embankment slopes.

c) Cutting of trees for widening/new construction of roads.

Median plantation and road side plantation within the available land is taken up. Afforestation measure as per the norms is also taken up on the selected areas outside the project area.

d) Loss of top soil

In agricultural areas or in other productive soil areas, the top soil from all areas of cutting and all areas to be permanently covered is stripped to a specific depth of 150mm and stored in stockpiles. Such stockpiled top soil is reused to cover the embankment/cut slopes for development of vegetation.

e) **Disposal of construction waste & E-waste**

- **from fuel and lubricants:**

Vehicles and machines are maintained and refilled with due care to avoid spillage. Fuel storage and refilling sites are kept away from cross drainage structures and water bodies. In case any spillage takes place, the contaminated area is cleared and the same is disposed of in appropriate manner.

- **Concrete waste**

The construction wastes are dumped in selected pits and norms of SPCB are followed while filling the pits by such wastes.

- **Bituminous mix waste**

Bituminous mix waste and waste concrete be used as clean fill, collected separately away from running water or rain water clogging area.

- E-waste, lights/lamps should be managed intact under all circumstances and should be disposed of through authorised recycling companies.
- Dead batteries should be disposed of through licenced third party companies and the same shall be recorded.
- Chocked filters, metal scrap, scrap tyres shall be disposed of through licenced third party companies and shall be recorded.

- Waste lubricant oil/ other hydraulic oil should be stored separately and disposal of the same shall be through licenced vendor. Appropriate efforts shall be made to prevent spillage of oil.

f) Drainage and run off water:

At cross drainage channels the earth/stone or any other construction waste material is properly disposed of so as not to block the flow of water.

g) Contamination of water due to construction waste:

All waste arising from the project is disposed of as per the norms of SPCB. Waste products are collected, stored and transferred to disposal location that are away from water bodies.

h) Water usage for construction

The supply and storage of water is made in such a way that the water availability and supply to the nearby communities remain unaffected. Efforts are made for optimum utilisation of the water so as to minimize the wastage of water.

i) Emissions from the construction vehicles and machinery.

All vehicles, equipment and machinery used for construction are regularly maintained to ensure that the pollution emission levels are within the prescribed limits of respective SPCBs.

j) Noise pollution from vehicles, plant & equipment:

The Machinery used in construction are regularly maintained so as to keep the noise level within the prescribed CPCB noise standards. Noise levels are monitored regularly at the sites and in order to minimise the disturbance.

ENERGY CONSERVATION

The main area of operations of the Company is construction and is mainly dependent on fuel which is used for the operation of vehicles and plant & machinery. Keeping in mind the large consumption of fuel (diesel/LDO) due care is taken for optimal utilisation of fuel by taking the following measures:

- Timely maintenance of vehicles and Plant & Machinery
- Proper planning of construction operations for optimal utilisation of equipment.
- Proper selection of stone and earth quarries to minimise the leads for transportation of materials to the project site.
- Proper maintenance of haulage roads to minimize the consumption of fuel.
- Such other steps as may be appropriate and necessary.