LIST OF ANNEXURES

ANNEXURE 4.1: GUIDELINES FOR ENVIRONMENTAL SCREENING AND SCOPING REPORT

1. PURPOSE

The purpose of Screening and Scoping Reports (SSRs) is to undertake a preliminary identification and assessment of environmental and social impacts of a potential project in order to select a preferred option or shortlist of options for further investigating, and to scope further work in the terms of reference for Environmental and Social Impact Assessment.

2. SCOPE OF SCREENING AND SCOPING REPORTS

SSRs should be based on a clear statement of the problems or issues to be addressed by the project and a prior identification of possible options to address the problems or issues.

Screening refers to early identification of environmental and social impacts and a preliminary assessment of the magnitude of these impacts as a basis for determining a preferred option or shortlist of options and the scope of work to be undertaken in an EIA.

Scoping is the process of determining the terms of reference of the EIA process and should cover a preliminary list of the options to be studied, the geographic boundaries of the study to cover the extent of potential environmental and social impacts, the time horizon for assessing environmental and social impacts, and the technical skills and resources required to undertake this study.

The screening of environmental and social impacts and the determination of the scope of work to be undertaken in an EIA should ensure that there is a reasonable understanding at the outset of the project development process of the potential environmental and social impacts, and the project options and measures which will need to be considered to avoid, remedy or mitigate these impacts.

3. PROCESS FOR PREPARING SCREENING AND SCOPING REPORTS

The process for preparing SSRs typically covers

- describing the need for the project, i.e. the issues or problems to be addressed
- describing the proposed project or options
- identifying the potential environmental and social impacts of the projects or options
- undertaking a preliminary evaluation of the potential environmental and social impacts of the project or options
- consulting local officials on the project or options, and the potential impacts
- selecting a preferred project option or short list of options
- identifying the planning approvals which are likely to be required from MOEFCC, SPCB and other regulatory agencies

- determining the terms of reference for an EIA of the preferred option or short list of options.

3.1 Description of the Need of a Project

A clear description is required of the issues or problems to be addressed by the project in order to determine what type of project (or other solution) is most appropriate. Based on a description of the need for the project, options can be determined.

3.2 Description of the Project Options

SSRs should contain a description of the project (or project options) and explain how this project (or project options) relates to the issues and problems which the project aims to address.

Apart from their environmental and social impacts, the characteristics of project options which should be taken into account in determining a preferred option or short list of project options are:

- potential road user and community benefits
- estimated construction costs, generally based on benchmark costs
- estimated land acquisition costs

3.3 Identification of Environmental and Social Impacts

SSRs should identify all significant environmental and social impacts based on a detailed analysis of potential impacts at each stage of the development of a project.

All potential environmental and social impacts which could be significant should be listed. This list should be confined to environmental and social factors on which the project (or project options) are likely to have significant impacts, either directly or indirectly.

Agencies involved with environmental and social issues, and the local community should be contacted to identify potential environmental and social impacts.

3.4 Evaluation of Potential Environmental and Social Impacts

For each of the environmental and social factors which are likely to be impacted significantly by the proposed project (or project options), the impacts should be described and an assessment should be made on whether the impacts are likely to be of high, medium or low significance. For example in considering community effects, an assessment should be made of the number of people who are likely to be affected by the project.

An assessment should also be made of the future environmental and social conditions under a "no project scenario", i.e. the likely change in environmental and social conditions if the project does not proceed.

These assessments of potential impacts should be taken into account in the determination of a preferred project option, or short listing of project options, and in determining the terms of reference for the further evaluation of environmental and social effects in an EIA.

3.5 Early Consultation

Prior to selecting a preferred option or shortlist of options, some preliminary consultation should be held with relevant agencies and the local community. The focus of this consultation should be

on informing relevant agencies and the local community of the proposed project, reviewing the issues and problems which the project aims to address, reviewing the project (or project options) under consideration and identifying any environmental and social impacts.

Stakeholders who should be consulted in the preparation of SSRs are:

- communities directly affected by the project
- government agencies that have a direct role in the project, eg XXX
- government agencies that have an indirect role in the project eg. Water Resources Department, Fisheries Department, Forest Department, etc
- State Pollution Control Board
- Ministry of Environment and Forests.

3.6 Selection of Preferred Project or Shortlist of Options

SSRs should be an input to a wider project feasibility report to determine the feasibility of the project and select a preferred project option or shortlist possible options for further study.

The selection of a preferred project option or shortlist of options should take into account their environmental and social impacts, as well as their benefits to road users and construction and land acquisition costs.

3.7 Planning Approvals

The likely requirement for planning approvals including Environmental Clearances on No-Objection Certificates should be set out in the SSR. This should cover :

- the nature of the approval required
- the regulatory agency responsible for approval
- a brief description of the planning approval process

3.8 Determining the Type and Scope of EIA

The nature and extent of potential environmental impacts of a project (or project options) determines to the type of EIA which needs to be undertaken and the environmental and social impacts which need to be studied.

Where the environmental and social impacts are significant and cannot be readily mitigated, Comprehensive EIAs should be undertaken to thoroughly investigate project options and measures to avoid remedy or to mitigate the environmental and social impacts. Where the environmental and social impacts are significant but can be readily mitigated, Rapid EIAs may be undertaken.

EIAs are not required where the project is likely to have minimal and no adverse environmental and social impacts, or where the effects can be adequately mitigated by the normal standards and guidelines for the design and construction of works, eg. by adopting the normal drainage standards for mitigating effects on water resources.

The identification of potential environmental and social impacts, and the assessment of the significance of these impacts, should provide the basis for determining the type of EIAs undertaken and the scope of work.

4. DATA REQUIREMENTS

While more extensive data is likely to be required for EIAs, some data on baseline conditions will generally be required for SSRs to compare the environmental and social impacts of project options and to assess the extent of any environmental and social impacts.

The robustness of SSRs will often be dependant on the quality of data on baseline conditions and the assessment of projects induced environmental and social impacts. The assessment of baseline conditions should take into account :

- past trends in environmental quality
- community preferences and competing demands for resources
- other current or proposed development programs in the project area.

Good maps are generally required to indicate the spacial relationship between the sources and recipients of the environmental and social impacts. Aerial photographs taken at different times can also be very useful in indicating changes in land use and other environmental features.

5. REVIEW AND APPROVAL

SSRs should be:

- reviewed by the Divisional Environmental Engineer;
- approved by
  - Chief Engineer (Planning, Investigation and Design Wing) for major capital projects
  - Joint Chief Engineer (Planning, Investigation and Design Wing) for minor capital projects

6. REPORTING

SSRs should be set out in the format shown in the Attachment and should provide sufficient information to :

- demonstrate that the environmental and social impacts of the project (or project options) have been properly identified and assessed
- enable the department to
  - select a preferred project option (or shortlist of options)
  - determine the type and scope of EIAs which needs to be undertaken to select (or confirm) a preferred project option and determine appropriate measures to mitigate the environmental and social impacts.

CONTENTS OF THE ENVIRONMENTAL SCREENING REPORT

SCREENING AND SCOPING REPORT (SSR)

1. INTRODUCTION

1.1 Description of Project

Provide a brief description of the project including the location, length, type and purpose of the project e.g.,

This project is to construct X km of two lane road with sealed shoulders for slow moving vehicles on SHX between Y Road and Z Road to improve traffic flows and reduce accidents.

1.2 Purpose of Screening and Scoping Report (SSR)

Explain the purpose of the SSR e.g.

This SSR has been prepared to

- identify potential environmental and social impacts of the proposed project
- assess the significance of these impacts so that they can be taken into account in the determination of a preferred option or shortlist of options
- determine the type and scope of any EIA (if required) and to determine the appropriate measures to mitigate environmental and social impacts.

Aim of an SSR could also be to identify a preferred option.

1.3 Methodology

Outline briefly the methodology adopted for preparing the SSR.

1.4 Structure of SSR

This section should briefly outline the structure of the SSR e.g.

The structure of this SSR is as follows:

- Section 2 contains a description of the existing road and the issues and problems to be addressed by the project
- Section 3 contains a detailed description of the project (or project options)
- Section 4 lists the potential environmental and social impacts in a matrix form containing a description of the impacts compared to the baseline conditions and an assessment of the significance of the impacts
- Section 5 sets out legislation and regulatory framework for obtaining planning approvals, including Environmental Clearances and No-Objection Certificates
- Section 6 sets out terms of reference for undertaking a detailed EIA of the project

2. DESCRIPTION OF EXISTING ROAD

2.1 Existing Road

A description of the existing road should cover :

- location and length of road
- road function including traffic volumes
- road standards including alignment and width
- adjoining development

2.2 Need for the Project

The issues and problems to be addressed by the project should be explained. These may include:

- improving rural access to ... ...
- improving traffic flows
- remedying an accident blackspot

3. REFERRED PROJECT OPTIONS

A description of the project option or options should cover, inter alia

- proposed alignment(s)
- proposed road standards
- proposed access controls

4. SCREENING OF ENVIRONMENTAL FACTORS

The screening of environmental and social impacts should list

- all significant social environmental impacts
- describe the impacts against the baseline conditions
- assess whether the impacts are of high, medium or low significance
- indicate which option would have the least environmental and social impacts (or the most environmental and social benefits)

A detailed matrix should be prepared, setting out the environmental and social impacts. This matrix should include :

- baseline conditions
- type and extent of environmental and social impacts
- significance of the impacts of the project option(s)
- option with least environmental and social impacts or the most environmental and social benefits

This matrix should be completed for each phase of the development of the project including :

- planning and design
- construction
- maintenance and operations

The description of environmental and social impacts should cover :

- natural ecosystem
- natural aquatic ecosystem
- surfacewater drainage patterns
- land stability and erosion
- quality of environmental media – air, surface water, ground water
- and soil
- natural resources
- land use patterns
- existing environmental management practices
- noise and vibration
- archeological and cultural sites
- population displacement
- loss of cultivation land
- use of ROW in urban and rural areas

5. OUTCOME OF CONSULTATION PROCESS

The outcome of consultation process should be recorded including a summary of the views of key stakeholders on the preferred option (or project options).

6. SELECTION OF PREFERRED OPTION OR SHORTLISTED OPTIONS

The preferred option or shortlist of options should be reported including a brief summary of the basis for the selection.

7. PLANNING APPROVALS

The likely requirements for planning approvals including Environmental Clearances or No-Objection Certificates should be set out. This should cover :

- the nature of the approval
- the regulatory agency
- a brief description of the planning approval process

8. TERMS OF REFERENCE FOR EIAs

The terms of reference for EIAs should be set out. This should cover :

- the environmental and social issues which needs to be studied in detail
- the consultation process including stakeholders who need to be consulted
- technical skills required to undertake the EIAs

APPENDIX [EXAMPLES]

APPENDIX A: RANKING MECHANISM UTILISED FOR ASSESSING THE SIGNIFICANCE OF IMPACTS

APPENDIX B: REFERENCES

ANNEXURE 4.2: GUIDELINE FOR PREPARING ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

1. PURPOSE

The purpose of Environmental and Social Impact Assessment (EIAs) is to take environmental and social impacts into account in the selection of preferred project options and to determine appropriate measures to mitigate environmental and social impacts.

2. SCOPE OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENTS

EIAs should cover:

- identification and assessment of environmental and social impacts of the preferred project option or project options
- determination of appropriate measures to mitigate environmental and social impacts in the conceptual design of projects
- documentation for obtaining planning approvals from regulatory agencies

EIAs may take the form of Comprehensive EIAs or Rapid EIAs depending on whether the environmental and social impacts can be readily mitigated. Comprehensive EIAs generally need to rely on data collected over a 12-month period whereas Rapid EIAs can rely on data collected in one season (other than the monsoon season) to facilitate a speedier assessment process.

Rapid EIAs are generally acceptable if the analysis of environmental and social impacts is sufficient for the purposes of selecting a preferred project option and determining appropriate measures for mitigating environmental and social impacts. The outcome of a Rapid EIA process will sometime determine if a Comprehensive EIA is required and, if this is likely, then it will often be more efficient to prepare a Comprehensive EIA from the outset.

3. PROCESS FOR PREPARING ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENTS

The process for preparing EIAs is typically as follows

- document the objectives of the project, and determine the preferred project option or project options for meeting the objectives
- identify the environmental and social impacts of the project options
- assess the environmental and social impacts of the project options
- take environmental and social impacts into account in selecting the preferred option
- determine appropriate mitigation measures for incorporating in the conceptual design of the preferred project option

3.1 Objectives

The objectives, issues and problems which the project aims to address should have been determined in the overall planning of the project. These objectives, issues and problems should be documented.

3.2 Determination of Project Options

To determine the most cost effective option for meeting the objectives of the project and addressing the various issues and problems, a number of project options should generally be considered. These should include low cost as well as high cost options.

Within the basic project options, there may be several alternative treatments for specific elements of the projects which should be considered, eg. for road widening and strengthening projects, a number of alternative forms of intersection or drainage systems may need to be considered.

To ensure that the most cost effective option is selected, mutually exclusive options such as alternative alignments and forms of intersections, and various construction methods and materials, should be considered. Independent features of projects such as shoulders for slow vehicles, service roads and landscaping should be independently justified.

Project options which avoid or minimise environmental social impacts should be considered. This may be achieved, for example, by realigning a section of road away from an environmentally or socially sensitive area.

3.3 Identification of Environmental and Social Impacts

In undertaking EIAs, all possible environmental and social impacts should be identified and assessed. Possible impacts include :

- Air
  - changes in ambient levels and ground level concentrations of air pollutants due to emissions from point, line and area sources
  - effects on soils, materials, vegetation, and human health
- Noise
  - changes in ambient levels due to noise generated from construction equipment, and subsequently from the movement of vehicles during normal traffic operations
  - effect on fauna and human health
- Water
  - availability to competing users
  - changes in quality
  - pollution due to sediment
  - ingress of saline water
- Land
  - changes in land use and drainage pattern
  - changes in land quality including effects of waste disposal
  - changes in shoreline/riverbank and their stability
- Biological
  - deforestation/tree-cutting and shrinkage of animal habitat
  - impacts on fauna and flora (including aquatic species if any) due to contaminants/ pollutants

- impacts on rare and endangered species, endemic species, and migratory path/route of animals
- impacts on breeding and nesting grounds

- Socio-Economic

  - impacts on the local communities including demographic changes
  - impact on economic activities
  - impact on human health

3.4 Assessment of Environmental Impacts

Environmental and social impact analysis of a project (or project options) consists of comparing the expected changes in the biophysical and socioeconomic environment with and without the project. For each potential environmental or social impact, the analysis should predict the nature and significance of the expected impacts or explain why no significant impact is anticipated.

In determining environmental and social impacts, appropriate measures to mitigate the impacts of each option should be considered. These mitigation measures should be determined on the basis of the costs and benefits of the proposed mitigation measures and should be taken into account in assessing the environmental and social impacts of the project.

A number of methods have been developed for presenting the analysis of environmental and social impacts within a structured framework. The most frequently used is a matrix in which socio-economic and biophysical environmental effects are represented either numerically or graphically, eg. histograms where the size of each bar indicates the magnitude of the impact.

To assess the overall environmental and social impacts of a project, a scaling or weighting factor can be applied to each impact to determine an aggregate score of the overall impact of the project. Since all environmental and social impacts are not necessarily of equal importance, weightings need to be assigned to each impact. These weightings should normally be determined by a group representing stakeholders' interests. This group should firstly determine the weighting to be assigned to each type of impact and secondly, assign a score to the impacts for each project option.

Another method for comparing the effects of various project alternatives is the value function method,

In practice, there is no technical solution which weights and ranks "correctly" the wide range of issues that need to be addressed. The final outcomes of analyses of alternatives are usually strongly influenced by political and community based consultative processes; however, these tend to focus on a few main concerns to the exclusion of others. Presentation systems should recognize this and provide information to decision-makers and affected groups, rather than seek to define solutions.

3.5 Selection of Preferred Project Options

While the primary criteria for the selection of preferred project options are generally road user benefits, and construction and land acquisition costs, the comparative environmental and social impacts of project options also need to be taken into account, particularly where these are significant.

An assessment of whether the environmental and social benefits of higher cost options are justified can generally be subjective based on the relative scores for environmental and social impacts of the options. At the least, a determination should be made of the additional cost of options which avoid, remedy or mitigate environmental impacts so that a subjective assessment can be made of whether the environmental and social benefits justify the additional costs. Where the additional cost of avoiding, remedying or mitigating environmental and social impacts are significant, then an attempt should be made to value the environmental and social impacts, eg. by undertaking a willingness to pay survey.

In the case of environmental benefits, consideration should be given to whether more environmental benefits could be achieved, eg. in protecting local flora and fauna, by means of some other environmental enhancement project to judge whether the proposed environmental protection measure is cost effective. In the case of social benefits, the additional costs can often be converted into a cost per affected person as the basis for judging whether the additional costs are justified.

The costs and benefits of project options which avoid, remedy or mitigate environmental and social impacts should be clearly presented to stakeholders to minimise the risk of high cost options being selected under political or community pressure which are not cost effective.

3.6 Environmental Mitigation Measures

When a preferred option has been determined plans to mitigate and monitor environmental and social impacts should be prepared as part of the EIA. The mitigation plan should form the basis of Environmental and Social Management Plans (EMPs) to be prepared during subsequent phases of the project.

As outlined above, the cost and benefits of mitigation measures should be carefully assessed to ensure that they are cost effective, i.e. that the cost of mitigation measures are justified by the benefits. Often, alternative mitigation measures should be considered as a basis for determining the most cost effective measures for incorporating into the preferred project option.

3.7 Public Hearings

Prior to any public hearings, there is a statutory requirement for the public to be informed and consulted on proposed developments after the completion of EIA report. All project affected persons are entitled to have access to the Executive Summary of the EIA.

Affected persons may include:

- local residents
- local community groups
- local environmental groups: active in the area
- any other person affected by the project and any ancillary works

These parties have the right and must be given the opportunity to make written submissions to the MOEFCC or the SPCB.

4 PLANNING APPROVALS

Planning approvals are generally required for road improvement projects. In the case of Category A & B projects involving the construction of new sections of national highway or state

road, or the upgrading of 30 kms or more of national highway or state road involving right-of-way widening of 20 meters or more and land acquisition, Environmental Clearances are required from the Ministry of Environmental & Forests. For other projects, No-Objection Certificates are required from the State Pollution Control Board.

Prior to public hearings, there is a statutory requirement for the public to be consulted and all project affected persons are entitled to have access to the executive summary of the EIA. Project affected persons may include :

- local residents
- local community groups
- local environmental groups: active in the area
- any other person affected by the project or any ancillary works

Regulatory agencies including MOEF and SPCB must approve the tender reference for undertaking EIAs including the procedures for consulting with project affected persons. Thereafter, project affected persons have the right and to make submissions to the MOEF or the SPCB and may be given the opportunity to appear at any public hearings.

5 DATA REQUIREMENTS

Data requirements for undertaking an EIAs include:

- baseline data on environmental media including water and air, data on landuse developments, flora and fauna, noise and vibrations, cultural and archaeological features, and social economic characteristics of the area, etc
- topographic and remote sensing maps
- soil maps and other resource availability maps

6 REVIEW AND APPROVAL

EIAs should be:

- reviewed by the Nodal Environmental Office and Project Director approved by Chief Engineer

In reviewing the project, the reviewer should consider the following :

- is the description of project and baseline conditions adequate?
- are the methods followed and models used in data generation and analysis reliable?
- are the methods followed and models used for impact prediction-comprehensive, relevant and reliable?
- has a risk analysis been done and a disaster management plan been prepared?
- is uncertainty in the assessment of impacts been provided for?
- have project stakeholders been appropriately consulted and their concerns adequately addressed?
- have cumulative and cross-media impacts been investigated and accounted for?
- are the unmitigated impacts acceptable?
- are identified mitigation measures feasible, adequate and cost effective?

7 REPORTING

EIAs should be set out in the format shown in the Attachment and should provide sufficient information to:

- demonstrate that the environmental and social impacts of the project (or project options) have been properly identified and assessed for the purposes of the EIA
- enable the department to
  - select a preferred project option taking due account of environmental and social impacts
  - determine the mitigation measures which should be incorporated in the design of the project and in the EMP
  - obtain the necessary planning approvals at the planning phase of the project

ANNEXURE 4.3: GUIDELINE FOR PREPARING ENVIRONMENTAL MANAGEMENT PLANS

1 PURPOSE

The purpose of Environmental and Social Management Plans (EMPs) is to provide a plan for the management of environmental and social impacts of a project.

2 SCOPE OF ENVIRONMENTAL MANAGEMENT PLAN

The EMP which is variously referred to as the environmental action plan, environmental protection plan or the environmental construction plan, is perhaps the most important element of the environmental and social management process. It should contain set out the proposed actions to mitigate and monitor environmental and social impacts, a timeline with specific responsibility assigned and follow-up actions.

EMPs should include:

- lists of all project related activities and impacts, for each stage of the development of projects, i.e., for the design, construction and maintenance stages
- a list of regulatory agencies involved and their responsibilities
- specific remedial and monitoring measures proposed for each stage:
- a clear reporting schedule, including discussion of what to submit, to whom, and when
- cost estimates and sources of funding for both one-off costs and recurring expenses for implementation of the EMPs.

EMPs should generally be divided into two broad sections, one dealing with the biophysical environment and other dealing with the social environment. The social component most often addresses resettlement and economic impacts and is generally known as a Resettlement and Rehabilitation Action Plan (RAP).

3 PROCESS FOR PREPARING ENVIRONMENTAL MITIGATION MEASURES

3.1 Mitigation Measures

Mitigation is the lessening of negative environmental impacts through:

- changes in the design of the project, construction methods, or the maintenance and operation of the road
- specific actions to protect the biophysical environment, as well as actions to protect individuals who are adversely affected

The extent and timing of mitigation actions should be based on the significance of the predicted impacts.

Some mitigation measures can be incorporated into the design of the project and can largely resolve the potential impacts of a project, e.g., roadside drainage, noise barriers, access roads, and footpaths. Other measures require an ongoing implementation plan to ensure that proposed

actions are carried out at the correct times, that environmental measures such as planting and slope protection are maintained, and that prompt remedial actions are taken when the initial measures are not fully effective.

It needs to be recognised that some mitigation measures may themselves have negative effects. For example, resettlement sometimes has significant negative impacts on residents or the natural environment at the host location. Social issues are the most challenging since perceptions of "winners" and "losers" can develop quite readily. Design and implementation of equitable and balanced mitigation measures requires considerable care and consultation

Some mitigation measures may not be within the exclusive domain of the department to implement. Government departments, local authorities, non-government organisations, neighbours and nearby businesses, all may need to be involved in the design and implementation of mitigation measures. Clear definitions of the responsibilities and reporting requirements of each agency can help to ensure their success.

3.2 Monitoring and Evaluation

Monitoring of environmental and social impacts should be done during both the construction and maintenance phases of a project to ensure that mitigation measures have been properly implemented and are effective, and that the conditions of planning approvals, including the conditions of Environmental Clearances and No-Objection Certificates, are fully complied with.

The monitoring programme should also be designed to check whether the predictions of environmental and social effects, on which mitigation measures were based, were correct. Where environmental and social impacts exceed the predicted levels, corrective actions should be considered. The monitoring and evaluation of environmental effects also enables regulatory agencies to review the conditions of environmental approvals.

The development of EMPs during the design phase provides for continuity between the design, and the construction and maintenance phases, and helps to ensure full implementation of the proposed mitigation measures. The EMPs should contain plans for supervising the implementation of mitigation measures, and the monitoring and evaluation of the effectiveness of the mitigation measures, during both the construction and maintenance phases.

Responsibilities for supervising the implementation of mitigation measures, and the monitoring and evaluation of environmental and social impacts, should be specified in the EMP.

3.4 Documentation

The implementation of mitigation measures, and the monitoring and evaluation of environmental and social impacts needs to be properly documented. The EMP should prescribe the procedures and format for documenting the implementation of mitigation measures during the construction and maintenance phases.

4 DATA REQUIREMENTS

The primary data requirements for the monitoring of environmental and social impacts are accurate information on baseline conditions as a basis for monitoring changes in environmental and social conditions during the construction and maintenance phases of a project.

The data on baseline conditions should also include the predictions of environmental and social conditions with and without the project so that the effect of the project and the associated mitigation measures can be properly assessed.

5 CONSULTATION

Stakeholders who should be consulted in the preparation of the EMP are:

- communities directly affected by the project
- government agencies that have a direct role in the project eg.
  - Ministry of Environment and Forests
  - State Pollution Control Board
  - Department of Environment
- government agencies that have an indirect role in the project eg,
  - Water Resources Department
  - Fisheries Department
  - Forest Department

6 REVIEW AND APPROVAL

The EMPs for for the project should be

- reviewed by Nodal Environmental Officer and Project Director
- approved by the Chief Engineer,

EMPs may also need to be approved by the following government agencies in case of needed environmental clearance :

- Ministry of Environment and Forests, if required
- State Pollution Control Board

7 REPORTING

As set out in the template shown in the attachment, EMPs should :

- set out the measures incorporated in the design of the project to mitigate environmental and social impacts
- document the environmental and social issues which need to be addressed by the contractor during the construction of the project including measures which the contractor should put in place to manage the environmental and social impacts of construction activities
- document the environment and social issues which need to be addressed by the department during subsequent maintenance and operations of the road including measures which the department should put in place to manage the environmental and social impacts of maintenance activities
- reference any planning approvals which have been obtained or which are required for the project including the (proposed) conditions attaching to such approvals
- set down a programme for monitoring environmental and social impacts during the construction and maintenance phases including data on baseline conditions and the predicted environmental and social impacts with or without the project

Separate supporting documents such as a RAP and Communications Plan should be cross-referenced in the EMP.

ANNEXURE-4.4: ENVIRONMENTAL CONCERNS IN HIGHWAY PROJECTS

Table 1: Environmental Concerns in DPR Preparation

S. No.	Activity	Items to consider	Measures to address
A.	**Road Construction**		
1.0	Environmental Inventory	Trees	Inventorisation of environmental features Avoidance, design modifications to minimize adverse environmental impacts Incorporating community concerns into finalizing alignment
		Forests	
		Wildlife sanctuary/National Park/Tiger reserves/ notified Eco-sansitive zones	
		Rivers / water crossings	
		Water bodies	
		Wetland	
		Grazing lands	
		Cultural properties	
		Utilities	
		Community facilities	
		Major junctions	
2.0	Detailed Surveys	Geological, geotechnical studies	Stability analysis and measures to address slope instability, bridge works, etc. Detailing of features
		Topographical surveys	
		Hydrological surveys in flood prone areas	Identification of flood prone areas and measures to avoid afflux Identification of agricultural use of land
3.0	Identification of material sources	Borrow material	Utilizing alternative materials
			Minimize requirements through design modifications
			Location criteria
		Quarry material	Utilizing alternative materials
			Material extraction from existing quarries
		Water availability	Identification of perennial/community/private sources
			Scheduling construction to suit water availability
			Utilizing community water sources without conflict of uses
		Water bodies	Provision of silt fencing
			Rehabilitation of water bodies
		Stability of slopes	Measures for slope stabilization
		Soil erosion	Erosion control measures
		Land use changes	Land use control measures adjacent to the road
			Empowering Gram Sabha to regulate development
		Agriculture lands	Avoidance from setting up construction camps, borrow areas
			Conservation of top soil
			Site restoration after construction
		Cultural properties	Avoidance through design modifications
			Planning for Relocation & rehabilitation
		Common Property Resources	Avoidance through design modification
			Planning for Relocation of consultation with community
		Drainage	Provision of adequate number of CD Structures

S. No.	Activity	Items to consider	Measures to address
		Trees	Compensatory plantation & arrangements for roadside plantation
		Forest areas	Avoidance through design modifications
			Environment Management measures during construction
		Natural Habitats	Avoidance through design modification or formulating additional measures for avoiding impacts
5.0	Precautionary measures during construction to avoid environmental impacts	Top soil	Stockpile topsoil and preservation
		Construction sites	Provision of pollution control measures
			All measures to ensure public & worker's health/safety
			Water Management
		Construction camps	Criteria for identification of sites and Infrastructure arrangements
			Safe disposal of all wastes
			Enforcement of pollution control measures
		Borrow areas	Arrangements with land owners to include redevelopment
		Quarry areas	Rehabilitation of quarry areas if new quarries are opened
		Public/workers health & safety	Personal Protective Equipment to be provided
			Public safety at construction sites to be undertaken
			Measures for worker's health & hygiene at construction camps
6.0	Consultations with community	Land for borrowing	Agreement to include borrow area rehabilitation
		Water for construction	Agreements with owners/community for utilizing water
		Site for construction camps	Rehabilitation of the land after construction
		Removal of trees	Compensation for the trees cut
			Relocation costs to be covered in the project
			Relocation costs to be covered in the project
		Traffic during construction	Provision of alternate routes or prior notice to the users
7.0	Finalization of alignment	Concerns of community	Community concerns to be incorporated
		Environmental impacts identified	Impacts identified are to be mitigated by incorporation of provisions as per guidelines
		Design aspects	Impacts that can be mitigated through design modifications should be incorporated
8.0	Preparation of detailed drawings	All concerns/impacts identified	Designs for enhancements and mitigation measures including cost provisions
9.0	Monitoring of Progress	All environmental aspects identified	Monitoring implementation of Environmental measures

Table 2: Environmental Concerns During Project Implementation –Road Projects

S. No.	Activity and Sub Activity	Impact/s	Measure/s
PC	**Pre – Construction Activities**		
A1.0	**Alignment marking**	-Nil-	(i) Co-ordination with revenue department
A2.0	**Relocation of utilities**	Disruption of services of current use	(i) Identification of relocation site in advance
			(ii) Scheduling the activity in consonance with the community usage pattern

S. No.	Activity and Sub Activity	Impact/s	Measure/s
A3.0	Tree Felling	Compliance with Forest Act in case trees are on forest land (the Roadside Trees are notified Protected Forests along the State Highwys in U.P.)	(i) Prior clearance from Forest Department
		Loss of canopy and warming effect	(iii) Compensatory plantations & landscape designs
A4.0	Clearance of land	Affect on livelihood	(i) Compensation as per project provisions
		Affect on standing crops	(ii) Scheduling of activity and coordination
		Affect on cultural properties	(iii) Relocation of the cultural properties
		Affect on natural habitats such as national park, forest, sanctuaries, notified wetlands, fisheries and aquatic habitats.	(iv) No clearance of vegetation beyond proposed RoW.
A5.0	Diversion of forest land	Compliance with Forest Act	(i) Activity scheduling to avoid delays, conformance to legal requirements
		Affect on vegetation	(ii) Precautionary measures during construction in forest areas
		Pollution from construction activities	(iii) Precautions while operating equipment/machinery
A6.0	Transfer of land ownership	Grievances from community	(i) Addressal through Grievance Redressal Mechanisms & Consultations
		Affect on livelihood	(ii) Provision of entitlements as per resettlement framework
A7.0	Location of Storage Yards, labour camps, and construction sites	Pollution from construction camps, storage yards & labour camps	(i) Location criteria to be adopted
			(ii) Obtain NOC from State PCB
		Pressure on local infrastructure	(iii) Infrastructure arrangements to be as per guidelines
A8.0	Procurement of equipments and machinery	Machinery likely to cause pollution at settlements and natural habitats	(i) Machinery to be procured shall be in conformance with emission standards of CPCB
		Safety concerns in machinery operation	(ii) Safety equipment for workers
A9.0	Identification and Selection of Material Sources	Conflict of uses in case of water	(i) Consultations and arrangements at contractor-individual levels, documentation of agreement
		Borrowing causes depressed lands	(ii) Consultations and arrangements at contractor-individual levels, documentation of agreement
		Pollution due to material extraction from borrow and quarry areas to surrounding environment	(iii) Precautionary measures during siting of borrow areas and quarry areas
		Disturbance to Natural Habitats	(iv) Avoidance of location of material sources in Natural Habitats
A10.0	Identification of designated locations of waste disposal	Pollution due to location close to settlements, water bodies & other sensitive areas	(i) Site selection in conformance to criteria provided

S. No.	Activity and Sub Activity	Impact/s	Measure/s
B	**Construction Activities**		
B1.0	**Site Clearance**		
B1.1	Clearing and Grubbing	Effect on roadside vegetation	(i) Restricting movement of machinery/equipment
		Debris generation creating unsightly conditions	(ii) Disposal / storage of grubbing waste and possible reuse
B1.2	Dismantling of existing culverts and structures, if any	Generation of Debris creating unsightly conditions	(i) Disposal of waste and likely reuse
		Flooding due to interception to drainage paths	(ii) Provision of diversion channels and/or scheduling construction of culverts in dry months
B2.0	**Planning Traffic diversions and Detours**	Trampling of vegetation along traffic diversions	(i) Activity scheduling, identification of alternative track
B3.0	**Material Procurement**	Loss of topsoil	(i) Stripping & Storing topsoil
		Formation of stagnant water pools due to borrowing/quarrying	(ii) Rehabilitation plan for borrow areas & quarry areas
		Illegal quarrying / sand mining	(iii) Conformance of quarries selected to the SPCB requirements, including quarry rehabilitation plans
		Uncontrolled blasting at quarries	(iv) Controlled blasting to the extent required. Conformance to blasting rules as per the Indian Explosives Act
B4.0	**Transport of materials to site**	Fugitive emissions from transport trucks	(i) Covering of material with tarpaulin or use of covered box trucks during transport
		Dust emissions from haul roads	(ii) Haul road management
B5.0	**Materials handling at site**		
B5.1	Storage of materials	Contamination to water sources, leaching into ground water	(i) Provision of impervious base to storage areas
B5.2	Handling of earth	Dust rising and increase in particulate concentration in ambient air	(ii) Use of dust suppressants
B5.3	Handling of fly ash	Increase of particulate concentration and contamination of nearby areas	(iii) Use of dust suppressants
B5.4	Handling of granular material	Risk of injury to workers	(iv) Use of Personal Protective Equipment
B5.5	Handling of bituminous materials	Leaching of materials, contamination of water sources	(v) Provision of impervious base at bitumen storage areas
		Air pollution	(vi) Control of emissions from mixing
B5.6	Handling of oil/diesel	Contamination from accidental spills	(vii) Prevention of accidental spills, affecting cleaning immediately after spill
		Pollution due to incomplete burning	(viii) Use of pollution control equipment
B5.7	Waste management	Littering of debris at construction site	(ix) Waste to be disposed at disposal locations only
		Contamination of surroundings due to runoff from construction site	(x) Prevention of runoff from entering water bodies
B5.8	Operation of construction equipments and machinery	Air & Noise pollution	(xi) Conformance to Emission standards and norms

S. No.	Activity and Sub Activity	Impact/s	Measure/s
		Operational safety of workers	(xii) Conformance to Safety concerns of the road users and workers in operation, first aid provision and mandatory provision of Personal Protective Equipment
B5.9	Movement of Machinery	Trampling of vegetation	(xiii) Restriction of movement within ROW
		Damage to flora & natural habitats	(xiv) Minimizing impact on vegetation
		Damage to road side properties	(xv) Minimizing impacts on private and common properties, including religious structures
B6.0	**Earthworks**		
B6.1	Cutting	Uncontrolled blasting in case of rock cutting	(i) Controlled blasting to be made mandatory
		Loss of topsoil	(ii) Preservation of topsoil for reuse
		Waste generation	(iii) Safe disposal of waste & possible reuse
B6.2	Embankment construction	Interruption to drainage	(i) Drainage channels to be provided with culverts in advance to embankment construction
		Dust Rising	(ii) Dust suppression with water
		Excess water/material usage	(iii) Minimising height of embankment
		Erosion causing impact on embankment/slope stability	(v) Slope stabilization measures as seeding, mulching & bio-engineering techniques
		Formation of rills / gullies	(vi) Construction of temporary erosion control structures as per requirements
		Contamination of water bodies/ water courses	(vii) Control measures as silt fencing, vegetative barriers etc
			(viii) Avoiding disposal of liquid wastes into natural water courses
B6.3	Maintenance at construction camp	Collection of rainwater in construction camps	(ix) Temporary drains during construction
		Waste water from labour camps	(x) Disposal of waste water into soak pits
		Contamination of soil	(xi) Removal of oil / other chemical spills & wastes
B6.4	Cutting embankments of surface water bodies	Impact on the drainage flows in and out of the water body	(xii) Restoration of drainage channels
		Embankment stability	(xiii) Design of slopes of the water bodies, slope protection etc
B7.0	**Sub-Base & Base courses**		
B7.1	Granular sub-base	Extensive extraction of quarry materials	(i) Use of locally available materials
B7.2	Wet mix macadam	Extensive water requirement	(ii) Scheduling the activity in wet months
			(iii) Avoiding conflict of uses due to water extraction from construction
B7.3	Shoulders treatment	Movement of Machinery for compaction	(iv) Restricting movement on adjacent lands
B8.0	**Culverts and Minor Bridge Works**	Interruption to water flow	(i) Provision of diversion channels
		Pollution of water channels during construction	(ii) Control of sediment runoff
		Safety of Workers	(iii) Mandatory use of Personal Protective Equipment

S. No.	Activity and Sub Activity	Impact/s	Measure/s
B9.0	**Surfacing**		
B9.1	Bituminous surface	Worker's safety during handling of hot mix	(i) Mandatory use of Personal Protective Equipment
		Damage to vegetation (burning/ cutting)	(ii) Avoiding use of wood as fuel for heating bitumen
			(iii) Hot mix plant location on waste lands
		Contamination due to bituminous wastes	(iv) Safe disposal of bituminous wastes
		Impacts on Air quality	(v) Ensuring compliance of hotmix plants with the CPCB emission standards
B9.2	Concrete surfacing for roads crossing built up areas	Contamination of surroundings due to concrete mixing	(vi) Mixing concrete at designated locations away from habitation and agriculture lands
B10.0	**Road furniture/Signage**	-Nil-	To be provided as per design
B11.0	**Shoulder protection**	Requires material extraction from quarries	(i) Use locally available material
			(ii) Ensure that all shoulders are clear of debris or construction materials
B12.0	**Enhancements**	-Nil-	(i) To be included in DPR
B13.0	**Monitoring environmental conditions**	-Nil-	(i) To be as per the codes of environmental practice
C	**Post Construction Activities**		
C1.0	**Clearing of construction camps**		
C1.1	Dismantling of campsite	Waste generation at the construction site	(i) Disposal of waste at designated locations (ii) Restoration of site to original or better condition
C1.2	Campsite rehabilitation	Change of land use due to setting up of construction camp	(ii) Campsite to be restored to its original condition as per the rehabilitation plan
			(iii) Restoration of top soil
C2.0	**Clearing of Water Channels, side drains and culverts**	Generation of debris & silt	(i) Removal of Debris and disposal
C3.0	**Rehabilitation of borrow areas**	-Nil-	(i) Top soil restoration, revegetation

ANNEXURE 4.5: GUIDELINES ON ENVIRONMENTAL MANAGEMENT

A details guidelines has been provided on environmental Management Frameworks in the next section

1.0 EMP in Project Planning and Design

There are factors to be considered during project preparation to avoid/address environmental concerns through modifications in project design and incorporation of mitigation measures. Addressal of environmental issues at this stage substantially reduces the magnitude of the likely environmental impacts due to the project. The guideline includes measures to be taken for incorporation of environmental issues in all stages of project design viz., finalisation of alignment and design considerations. Measures to ensure compliance to legal requirements and integrating the environmental provisions within bid documents have also been detailed out. Each of these aspects has been detailed out in the sections below.

1.1 Environmental Considerations

Environmental considerations for various activities and sub-activities as part of road construction are presented in the **Annexure 4.4**. Measures for the same are to be incorporated in the project preparation stage to offset environmental impacts in the subsequent stages. The measures shall be in conformance with the guideline referred against the activities. Environmental concerns of the community shall be incorporated to the extent possible in the project preparation and also in the subsequent stages of the project. Towards implementation of the environmental provisions by the contractor as per the guidelines, he shall nominate one of his senior personnel to ensure that the construction practices comply with the guidelines.

1.2 Specific Concerns During Road Design

1.2.1 Alignment Finalisation

The primary considerations for alignment finalisation include a) shortest possible alignment, b) easy and safe to construct and maintain, c) economical, d) firm ground conditions, e) aesthetic and f) having least adverse environmental and social impacts. In addition, adequate consultations with the communities to identify the concerns and preferences need to be taken up during selection of the alignment. Finalisation of alignment shall be carried out in accordance with the provisions presented below.

Alignment shall conform to the natural topography as far as possible to avoid excessive cut and fill. Also, the alignment should reduce damage to vegetation and minimize changes to natural drainage pattern. In order to do the same, an inventory of environmental features is to be carried out along the proposed road and the same marked on a revenue map. This would be conducted by the Project Implementation Unit (PIU) in co-ordination with the local community and the revenue officials. The environmental features would include:

- Trees;
- Forests if any;
- Wildlife Sanctuary/ National parks/ Tiger Reserves/Notified Eco-sensitive area

- Wetland of ecological impartance
- Drainage lines, rivers and water crossings;
- Irrigation water courses;
- Water bodies;
- Grazing lands;
- Cultural properties;
- Utilities;
- Community facilities;
- Schools;
- Hospitals;
- Major junctions; and
- Seasonal markets or cultural congregations.

A list of recommended practices for alignment finalization has been compiled. These include:

- Utilise existing revenue tracts as far as possible;
- Follow natural topography;
- Conform alignment to within property boundaries;
- Adopt geometrics that do not compromise on safety requirements;
- Avoid crossing power transmission lines, water mains, gas lines etc;
- Avoid alignments affecting vegetation and felling of trees;
- Avoid encroachment of water bodies; and
- Avoid passing through natural habitats such as designated forests, sanctuaries, national parks and wetlands.

Consultations with the local communities are to be conducted to obtain their suggestions and incorporate their concerns to address the potential environmental impacts. Suggestions of the community are to be incorporated, to the extent possible, while finalising the alignment.

In case of flood prone areas and/or areas with very flat slopes, hydrological surveys have to be conducted before alignment finalisation. Inputs derived from these surveys such as the need for provision of culverts/bridges or other cross/roadside drainage structures should be considered in the alignment finalisation. Routes involving higher costs on drainage compared to alternative routes should be avoided. In case of areas of high seismic activity, geological studies have to be conducted to determine locations of loose rock, soil or potential sites for land subside/earthquakes.

1.2.2 Design Considerations

All the road designs should conform to the specifications of the IRC. Additional measures suggested for minimisation of environmental impacts, safety of road users and for enhancement of community benefits are indicated in this guideline.

2.0 Site Preparation

The preparation of site for construction involves: (i) clearing of land required for construction; and (ii) management of different activities during construction. These activities have been detailed out in the subsequent sections.

2.1 Site Preparation Activities

After obtaining the consent of the community on the alignment, the Project Implementation Unit (PIU) of the Divisional Office shall be responsible to stake out the alignment by establishing working benchmarks on ground. It shall be the responsibility of the PIU to take over the possession of the proposed RoW and hand over the land width required clear of all encumbrances to the Contractor. Activities pertaining to the clearance of land and relocation of utilities need to be initiated by the PIU well in advance to avoid any delays in handing over of site to the Contractor. Assistance of the Revenue Department shall be sought in accomplishing the task. To summarize, the PIU's responsibilities before handing over the site to the contractor include:

- Environmental Clearance, if required for State Highway located in Ecosensitive Zones
- Wildlife Clearance for the state highways located withing eco-sensitive zone or other roads located inside the wildlife sanctuary/National Parks boundary
- Clearance of encroachments within proposed RoW;
- Initiation of process for legal transfer of land title;
- Alignment modification or Relocation of common property resources in consultation with the local community;
- Alignment modification or Relocation/removal of utilities in consultation with the various government departments; and
- Obtain clearances required from government agencies for Cutting of trees; and Diversion of stretches of forestlands, etc.

2.2 Site Preparation Activities by Contractor

Site preparation shall involve formation of the road base wherein it is ready for construction of protective/drainage works, carriageway, shoulders, parapets and other road furniture. The PIU/PMC shall transfer the land for civil works to the Contractor after peg marking of the alignment.

The Contractor shall verify the benchmarks soon after taking possession of the site. The Contractor, prior to initiation of site preparation activities, shall highlight any deviations/discrepancies in these benchmarks to the PIU in writing. The contractor shall submit the schedules and methods of operations for various items during the construction operations to the PIU for approval. The Contractor shall commence operations at site only after the approval of the schedules by the PIU.

The activities to be undertaken by the contractor during the clearing and grubbing of the site are as follows:

The clearance of site shall involve the removal of all materials such as trees, bushes, shrubs, stumps, roots, grass, weeds, part of topsoil and rubbish. Towards this end, the Contractor shall adopt the following measures: (i) Limiting the surface area of erodible earth material exposed by clearing and grubbing; (ii) Conservation of top soil and stock piling as per the measures suggested in this Annexure and (iii) Carry out necessary backfilling of pits resulting from uprooting of trees and stumps with excavated or approved materials to the required compaction conforming to the surrounding area.

To minimize the adverse impact on vegetation, only ground cover/shrubs that impinge directly on the permanent works shall be removed. Cutting of trees and vegetation outside the working area

shall be avoided under all circumstances. In case the alignment passes through forest areas, The Forest Ranger shall be consulted for identification of presence of any rare/endangered species within the proposed road way. Protection of such species if found shall be as per the directions of the Forest Department.

The locations for disposal of grubbing waste shall be finalized prior to the start of the works on any particular section of the road. The selection of the site shall be approved by the PIU/PMC. The criteria for disposal of wastes shall be in accordance with the measures suggested in this Annexure

In locations where erosion or sedimentation is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion and sedimentation control features can follow immediately, if the project conditions permit.

Dismantling of CD structures and culverts shall be carried out in a manner as not to damage the remaining required portion of structures and other surrounding properties. The following precautions shall be adopted: (i) The waste generated shall not be disposed off in watercourses, to avoid hindrance to the flow, and (ii) All necessary measures shall be taken while working close to cross drainage channels to prevent earthwork, stonework as well as the method of operation from impeding cross drainage at rivers, streams, water canals and existing irrigation and drainage systems.

The designated sites duly approved by Implementing Agency shall be cleared of its existing cover for setting up of the construction sites, camps and related infrastructure facilities, borrow areas and other locations identified for temporary use during construction. The contractor shall comply with all safety requirements in consideration as specified in the Chapter on**,** “Labour & Worker’s Health and Safety”. Before initiation of site preparation activities along these lands to be used temporarily during construction, it shall be the responsibility of the Contractor to submit and obtain approval of the site redevelopment plan from the implementing agency. The letter/contract agreement between the owner(s) of the land parcel for temporary usage shall include site redevelopment to its original status. The guidelines for the same are furnished in the Chapter on**,** “Construction Plants & Equipment Management”; guideline**,** “Construction and Labour Camps”; and “Borrow areas”.

3.0 Environmental Management for Air and Noise Pollution

Air pollution and noise is a major issue associated with construction activities. Fugitive dust emissions are very common due to excavation, material transportation, operation of heavy equipments and machineries, etc This section deals with the mitigation of adverse impacts due to air and noise pollution.

3.1 Air Pollution

The types of air pollution due to construction activities might include generation of dust, emission from hot mix plants and batching plants, odour from construction labour camps, emission from construction machinery/vehicles etc. The measures for mitigation of impacts from each of these are given below.

3.1.1 Generation of Dust

- All vehicles delivering materials to the site shall be covered to avoid spillage of materials.
- The Contractor shall take every precaution to reduce the level of dust emission from the hot mix plants and the batching plants up to the satisfaction of the Engineer in accordance with the relevant emission norms.
- All existing highways and roads used by vehicles of the contractor, or any of his sub-contractor or supplies of materials or plant and similarly roads which are part of the works shall be kept clean and clear of all dust/mud or other extraneous materials dropped by such vehicles or their tyres.
- Clearance shall be effected immediately by manual sweeping and removal of debris, or, if so directed by the Engineer, by mechanical sweeping and clearing equipment, and all dust, mud and other debris shall be removed completely. Additionally, if so directed by the Engineer, the road surfaces shall be hosed or watered using necessary equipments.
- Plants, machinery and equipment shall be so handled (including dismantling) so as to minimize generation dust.
- All earthwork shall be protected in a manner acceptable to the Engineer to minimise generation of dust.
- The hot mix plant be sited at least 1000m from the nearest habitation. The hot mix plants shall be fitted with dust extraction units in order that the exhausts comply with the requirements of the relevant current emission control legislation.
- Generation of dust should be suppressed during unloading of construction material and also during storage of the building construction material.

3.1.2 Emission from Stone Crusher Plant, Hot-Mix Plants and Batching Plants

- Stone Crusher plants Hot mix plants and batching plants shall be located sufficiently away from habitation, agricultural operations or industrial establishments. Where possible such plants will be located at least 1000 m away from the nearest habitation.
- The exhaust gases shall comply with the requirements of the relevant current emission control legislation. All operations at plants shall be undertaken in accordance with all current rules and regulations protecting the environment.

Odour from Construction Labour camps

- Construction labourers' camp shall be located at least 500 m away from the nearest habitation
- The waste disposal and sewerage system for the camp shall be properly designed, built and operated so that no odour is generated. Compliance with the Factory Act, the Building and other construction workers (regulation of employment and conditions of service) Act, 1996 and all other relevant legislation shall be strictly adhered to.

3.1.3 Emission from Construction Vehicles, Equipment and Machinery

The discharge standards promulgated under the Environment Protection Act, 1986 shall be strictly adhered to. All vehicles, equipment and machinery used for construction shall conform to the relevant Indian Standard (IS) norms.

All vehicles, equipment and machinery used for construction shall be regularly maintained to ensure that pollution emission levels\comply with the relevant Statutory requirements of State PCB & the Engineer.

3.1.4 Pollution from Crusher

- All crushers used in construction shall confirm to relevant dust emissions control as legislated. Clearance for siting shall be obtained from the UP Pollution Control Board Alternatively, material can be procured from licensed crusher only.
- Dust screening vegetation will be planted on the edge of the RoW for all existing roadside crushers.
- The suspended particulate matter contribution value at a distance of 40m from a controlled isolated as well as from a unit located in a cluster should be less than 600 µg/m3. The monitoring is to be conducted at least twice a month for all the 12 months in a year during the crushing operation for the project.

3.2 Noise Pollution

3.2.1 Noise from Vehicles, Plants and Equipment

- The plants and equipment used in construction (including the aggregate crushing plant) shall strictly conform to the GoI noise standards.
- All vehicles and equipment used in construction shall be fitted with exhaust silences. During routine servicing operations, the effectiveness of exhaust silencers shall be checked and if found to be defective shall be replaced. Notwithstanding any other conditions of contract, noise level from any item of plant(s) must comply with the relevant legislation for levels of sound emission. Non-compliant plant shall be removed from site.
- Noise limits for construction equipment used in this project (measured at one meter from the edge of the equipment in free field) such as compactors, rollers, front loaders, concrete mixers, cranes (moveable), vibrators and saws shall not exceed 75 dB(A), as specified in the Environment (Protection) Rules, 1986.
- Maintenance of vehicles, equipment and machinery shall be regular and proper, to the satisfaction of the Engineer, to keep noise from these at a minimum.
- In construction sites within 150 m of the nearest habitation, noisy construction work such as crushing, concrete mixing and batching, mechanical compaction, etc., will be stopped between 2200 hours to 0600 hours. In silence zone (areas up to 100 m around such premises as hospitals, educational institutional and courts) no hot-mix, batching or aggregate crushing plant will be allowed. No construction shall take place within 100 m around hospitals between 2100 hours to 0600 hours.
- Workers in vicinity of strong noise, and workers working with or in crushing, compaction, batching or concrete mixing operations shall wear earplugs.

3.2.2 Noise from Blasting or Pre splitting Operations

- Blasting shall be carried out only with permission of the Engineer. All the statutory laws, regulators, rules, etc., pertaining to acquisition, transport, storage, handling and use of explosives shall be strictly followed.

- Blasting shall be carried out during fixed hours (preferably during mid-day), as permitted by the Engineer. The timing should be made known to all the people within 500m (200m for pre-splitting) from the blasting site in all directions. People, except those who actually light the fuse shall be excluded from the area of 200m (50m for pre-splitting) from the blasting site in all directions at least 10m minutes before the blasting.

4.0 ENVIRONMENTAL MANAGEMENT AT BORROW AREAS

Embankment fill material is to be procured from borrow areas designated for the purpose. Borrow areas cause significant adverse environmental impacts if appropriate mitigation measures are not taken. The scope of this guideline includes measures that are required during project planning and design stage, pre-construction, construction stage and post construction stage. Borrow areas are related only to road construction activities.

The guidelines provide basic information to the contractor on how to redevelop the borrow areas to ensure compliance with the environmental requirements of MoEFCC, MORTH and as specified in IRC: 10-1961. The following section provides the guidelines to the contractor for the identification, siting of borrow areas and also the enhancement measures to redevelop the areas with community participation.

4.1 Arrangements for Borrow Area

The Contractor will work out arrangements for borrowing with the land owner/concerned department. The arrangements will include the redevelopment after completion of borrowing. The arrangements will be verified and approved by the PMC/PIU The Engineer of PMC/PIU after inspection of the site to verify the location and rehabilitation plan and its suitability with the contractor and landowner. The contractor shall commence borrowing soil only after the approval by the PMC/PIU The contractor shall submit to the PMC/ PIU the following before beginning work on the borrow areas.

- Written No-objection certificate of the owner/cultivator;
- Estimate extent of earth requires;
- Extent of land required and duration of the agreement;
- Photograph of the site in original condition; and
- Mining and Site redevelopment plan.

4.2 Requirement of Statutory Clearance:

The Contractor has to obtain environmental clearance from State Environmental Impact Assessment Authority (SEIAA) of MoEFCC in compliance to the Supreme Court's order and MoEF conditions vide their circular no. L-11011/47/2011-IA.II(M) dated 20th June, 2013. If the area of a borrow area is less than 5 Ha then this will be treated as Category-B Project and will be appraised and approved based of only Form-1. No EIA study will be required for such area. However if the size of the borrow area is more than 5 Ha then it will be categorized as "Category-B1" and hence will require EIA study, based on which the SEIAA will give clearance for the same.

4.3 Identification of Borrow Area

Specific locations of borrow areas will be identified by contractor. The selection and recommendations of borrow areas; will be based on environmental as well as civil engineering

considerations. Location of source of supply of material for embankment or sub-grade and the procedure for excavation or transport of material shall be in compliance with the environmental requirements of MoEFCC, MoRTH and as specified in IRC:SP10-1961.

Certain precautions have to be taken to restrict unauthorized borrowing by the contractor. No borrow area shall be opened without permission of the Engineer. The borrowing shall not be carried out in cultivable lands, unless and until, it shall be agreed upon by the engineer that there is no suitable uncultivable land in the vicinity for borrowing or private landowners are willing to allow borrowing on their fields. The selection of borrow area shall be based on the following criteria:

- Identify areas having present land use as barren land, riverside land.
- Prefer areas of highland with respect to surroundings;
- Avoid locating borrow area close to any road (maintain at least 30m distance from ROW and 10 m from toe of embankment, whichever is higher);
- Should be at least 1.0 km away from inhabited areas;
- Minimum distance of about 1.0 km from ecologically sensitive area i.e. Reserve Forest, Protected Forest, Sanctuary, wetland etc.;
- Minimum distance of about 1.0 km from school, hospital and any archaeological sites;
- Having adequate approach road with minimum length of earthen road;
- Ensure that unsuitable soft rock is not prominent within the proposed depth of excavation which will render rehabilitation difficult;
- Controlled operation as per agreed / approved plan
- Prior approval of Rehabilitation Plan considering terrain, land use and local need;

4.4 Operation of Borrow Area

- No borrow area will be operational without written consent of the land owner.
- The borrowing/excavation activity shall be restricted to a maximum depth of 2 m below general ground level at the site.
- The borrowing/excavation activity shall be restricted to 2 m above the ground water table at the site.
- The borrowing/excavation activity shall not alter the natural drainage pattern of the area.
- Appropriate fencing all around the borrowed/excavated pit shall be made to prevent any mishap.
- Measures shall be taken to prevent dust emission by covering of borrowed/excavated earth during transportation.
- Safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to borrowing/excavation of earth.
- A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth depth of proposed excavation.
- A minimum distance of 15 m from any civil structure shall be kept from the periphery of any excavation area.
- 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 engineer. The contractor shall evolve site-specific redevelopment plans for each borrows area location, which shall be implemented after the approval of the Engineer.

- Precautionary measures as the covering of vehicles will be taken to avoid spillage during transport of borrow materials.
- To ensure that the spills, which might result from the transport of borrow and quarry materials do not impact the settlements, it will be ensured that the excavation and carrying of earth will be done during day time only.
- The unpaved surfaces used for the haulage of borrow materials will be maintained properly.
- Restricting operation as agreed by landowner and approved by the PMC/PIU as well as the SEIAA.
- The workers working at borrow area shall be provided with adequate and appropriate PPE.
- Following guidelines will be followed for Borrowing of earth at different locations:

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 8 m width shall be left at intervals not exceeding 300m.
- Small drains shall be cut through the ridges, if necessary, to facilitate drainage.
- Borrow pits shall have slopes not steeper than 1 vertical in 2 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, top soil shall be preserved in stockpiles. 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 a depth of not more than 2m or upto the level of surrounding fields.

Borrow pits along Roadside: Borrow pits shall be located 5 m 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 2 horizontal projected from 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 300m. Small drains should be cut through the ridges to facilitate drainage.

Borrow pits on the riverside: The borrow pit should be located not less than 15m from the toe of the bank, distance depending on the magnitude and duration of flood to be withstood.

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 pesciculture purposes and for use as fishponds.

Borrow Area near Settlements: Borrow pit location shall be located at least 0.8km from village and settlements. If unavoidable, they should not be dug for more than 30 cm and should be drained.

4.5 Redevelopment of Borrow Area

Each borrow area should be rehabilitated within one month after completion of extraction of materials to the satisfactions of the land owner and the Engineer. The borrow area shall be redeveloped appropriately as per approved plan and landowner's requirement. The borrow pits

may be developed into pond after leveling the bottom and slope maintenance. The borrow pits may be refilled with earth materials covered with fertile to soil. The upland used as borrow area shall be leveled matching with the level of surrounding area. No scare created due to borrowing of earth should be left unattended. The Contractor should provide completion certificate of redevelopment of each borrow pit issued by the land owner. The redevelopment of borrow areas must comply with MoRT&H, clause 305.2.2.2, MoEF guidelines and EMP requirement. Rehabilitation should be simple and maintenance free.

5. Environmental Management at Quarry

This section present the guidlines pertains to the measures to be taken to address environmental concerns in quarry areas. The general practice adopted is to procure materials from existing quarries operating with the requisite permits. The measures to be taken for operation and management for quarries during all stages of construction have been discussed in this chapter.

5.1 Project Planning and Design Stage

The PIU/PMC shall provide in the DPR / bid document, a list of licensed quarries operating within the district and adjoining districts. In addition, the DPR shall contain the following: (i) Quantity of materials available in quarries (ii) Lead from the various existing quarries and (iii) Adequacy of materials for the project in these quarries. Only in the event of non-availability of existing quarries, shall the Contractor open a new quarry in accordance with A mining lease will required to be obtained from the Directorate OF Geology and Mines and District Collector of respective district under The Minor Mineral lease is granted under UP Minor Mineral Concession Rules 1963 with subsequent amendments.. The Contractor has to pay the royalty as fixed by the State Government for the quantity of quarry materials used. As per Supreme Court's

The construction schedule and operations plans to be submitted to the PIU/PMC prior to commencement of work shall contain a detailed work plan for procuring materials that includes procurement, transportation and storage of quarry materials.

5.2 Construction Stage

Mining of minor minerals such as sand, gravel, clay, marble and other stones will not be allowed in the country without the approval of the Central government. The Hon'ble Supreme Court, vide its order dated 27.02.2012 in I.A.No.12-13 of 2011 in SLP (C) No.19628-19629 of 2009 titled Deepak Kumar etc. Vs. State of Haryana & Ors. has inter alia ordered that leases of minor mineral including their renewal for an area less than 5 ha be granted by the State / Union Territory only after getting environment clearance (EC) from the Ministry of Environment & Forests (MoEF). In order to ensure compliance of the aforesaid order of the Hon'ble Supreme Court, MoEF issued an OM No.L-11011/47/2011-IA.II(M) dated 18.05.2012 stating inter alia that all mining projects of minor minerals including their renewal, irrespective of the size of the lease would require prior EC and that the projects of minor minerals with lease area less than 5 ha would be treated as Category "B" as defined in EIA Notification, 2006 and will be considered by the respective State Environment Impact Assessment Authorities (SEIAAs) notified by MoEF and following the procedure prescribed under the EIA Notification, 2006.In compliance to the Hon'b;e The mining projects having more than 5 Ha of lease area will be Categorised as Category A project and will be appraised by Central Committee of MoEF.

5.2.1 Management at Quarry Area

To minimize the adverse impact during excavation of material following measures are need to be undertaken:

- Adequate drainage system shall be provided to prevent the flooding of the excavated area
- At the stockpiling locations, the Contractor shall construct sediment barriers to prevent the erosion of excavated material due to runoff.
- Construction of offices, laboratory, workshop and rest places shall be done in the up-wind of the plant to minimize the adverse impact due to dust and noise.
- The access road to the plant shall be constructed taking into consideration location of units and also slope of the ground to regulate the vehicle movement within the plant.
- Incase of storage of blasting material, all precautions shall be taken as per The Explosive Rules, 1983.

5.2.2 Setting up of Crushers and Other Equipments

The following measures shall be undertaken for setting up of crushers are other equipments.

The contractor shall acquire “No Objection Certificate (NoC)” from the UP Pollution Control Board.

All vehicles must possess Pollution under Control (PUC) Certificate and shall be renewed accordingly

All machinery, equipments, and vehicles shall comply with existing CPCB noise and emission norms.

The PIU/PMC must ensure that contractor shall submit the copy of NoC and PUC Certificate before the start of work.

5.2.3 Quarry operations

The followings precautions shall be undertaken during quarry operations.

- Overburden shall be removed and disposed as per Waste Management and Debris Disposal Plan
- During excavation slopes shall be flatter than 20 degrees Chapter 11 on to prevent their sliding
- In case of blasting, the procedure and safety measures shall be taken as per The Explosive Rules, 1983
- The Contractor shall ensure that all workers related safety measures shall be done as per measures for, “Labour & Workers Health & Safety”
- The Contractor shall ensure maintenance of crushers regularly as per manufacturer’s recommendation.
- Stockpiling of the excavated material shall be done as per stockpiling of topsoil explained in the section “Topsoil Preservation.”
- During transportation of the material, measures shall be taken as per Chapter 14 “Construction Plants and Equipment Management” to minimize the generation of dust and to prevent accidents.
- The PIU/PMC shall review the quarry site for the management measures during quarry operation, including the compliance to pollution norms.

5.3 Post Construction Stage

- A quarry redevelopment plan shall be prepared by the Contractor. All haul roads constructed for transporting the material from the quarries to construction site shall be restored to their original state.
- The PIU/PMC shall be entrusted the responsibility of reviewing the quarry site for the progress of implementation of Redevelopment Plan.

The plan shall include:

- Photograph of the quarry site prior to commencement.
- The quarry boundaries as well as location of the materials deposits, working equipments, stockpiling, access roads and final shape of the pit.
- Drainage and erosion control measures at site.
- Safety Measures during quarry operation.
- Design for redevelopment of exhaust site.

6.0 Environmental Management at Plant Site

For the construction purpose the major construction plants such as Hot mix plant, Stone Crusher Plants, batch mix plants, etc. will be required to be established. In case the Concessionaire establishes their own plan they have to follow all the applicable statutory norms. The objective of this plan is

- To ensure that statutory / regulatory requirements are complied with
- To ensure that safeguard measures are taken to avoid / mitigate / minimize environmental impacts.

The present section provides general guidelines for siting of plants and environmental safeguard measures based on the statutory requirements:

6.1 Site Selection Criteria for Hot Mix Plant / Stone Crusher Plant

- 1.5 km away from settlement, school, hospital on downwind directions
- 1.5 km from any archaeological site
- 1.5 km from ecologically sensitive areas i.e. forest, national park, sanctuary etc.
- 1.5 rivers, streams and lakes
- 500 m from ponds /lakes or significant water body
- 500 m from National Highway, 250 m from State Highway, 100 m from District roads and other roads (The distance are to be measured from edge of Road to boundary of site).
- Away from agricultural land
- Preference to barren land

6.2 Statutory Requirements

- Obtaining NOC from UP Pollution Control Board (Consent to Establish (CtE) before start of installation and Consent to Operation (CtO)) before start of commissioning and trial run) under Air and Water Acts
- Complying with the terms and conditions laid down in the CtE and CtO, which generally include installation of dust suppression equipment with plant, metallic road inside plant

campus for movement of vehicles, plantation, periodic (monthly) pollution monitoring i.e. ambient air, noise and stack emission

- The suspended particulate matter contribution value at a distance of 40 m from a controlled isolated as well as from a unit located in a cluster should be less than 600 µg/m3 or as shall be prescribed by UPPCB.
- Obtain certificates from manufacturer for Type Approval and Conformity of Production for Diesel Generator (DG) set/s. For DG sets of capacity up to 1000 KVA, the noise level at 1m from the enclosure surface shall not exceed 75 dB (A).

6.3 Pollution Control Measures

- For HMP, ensure adequate stack height as stipulated in NOC obtained from UPPCB, install emission control devices such as bag house filters, cyclone separators, water scrubbers etc., as attached with the plant by the manufacturer or stipulated in NOC obtained from UPPCB.
- Prefer bulk bitumen storage with mechanized handling facilities that storage in drums with manual operation at HMP to prevent / minimize bitumen spillage and thereby contaminating soil and water.
- Impervious platform for storage of bituminous and other liquid hazardous chemical
- Bag house filter / multi-cone cyclone for emission control. For bag house, cartridge filters reported to be more efficient than fabric filters.
- The stone crusher plants should be installed with operational water sprinklers over jaw crusher, conveyor belts and vibratory screens.
- Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc.
- Periodical maintenance of all the plant and equipments to keep the plants in order.
- Damaged bag-house and filters should be immediately replaced.
- All the workers shall use all the time helmets, footwear, earplugs, facemasks etc. when the plants are operational.
- No workers should be allowed to work in loose clothes near conveyor belts.
- Proper lighting arrangement shall be made around plant site if the plants are operated during dark hours.
- Provision of first aid kit, fire fighting equipments at the plant site at appropriate location to respond in case of accident.
- Periodical monitoring of air quality and noise levels as per conditions stipulated under the statutory clearance from UPPCB. Whenever the emission exceeds the permissible level the plants should be stopped and necessary repairing works of faults will be done to bring down the emission levels.
- The office complex, residential units shall be constructed on upwind direction from the plant site.

7.0 Environmental Management for Activities near Water Bodies

Water bodies may be impacted when the road construction is adjacent to it or the runoff to the water body is affected by change of drainage pattern due to construction of embankment. The measures for management of water bodies during construction have been suggested as follows

7.1 Project Planning and Design Stage

All efforts are to be taken to avoid the alignments inside water bodies such as pond, lake or wetlands. Wherever possible, eccentric widening on the opposite side of the waterbody should

be considered. Whereever it is unavoidable the encroachment in the waterbody shall be minimise by providing toewall or retaining wall. Adequate drainage arrangements as per IRC specification have to be provided.

7.2 Construction Stage

- The Contractor will ensure that all construction vehicle parking location, fuels/lubricants storage sites, vehicles, machinery and equipment maintenance sites are located at least 100m away from any water body. The Contractor will also ensure that spillage of fuels and lubricants do not contaminate the ground adjacent to the water bdy
- The slopes of embankment leading to water bodies will be modified and re chanelised so that contaminants do not enter the water body.
- Oil and grease traps will be provided at fuelling locations, to prevent contamination of water.
- The Contractor will arrange for collection, strong and disposal of oily wastes to the pre-identified disposal sites
- .The stream course and drain will be kept free from dumping of solid wastes and earth materials.
- The construction materials and debris will be stored away from water bodies or water ways and only on the designated sites along the construction zones.

7.3 Post Construction Stage

- With the completion of construction, the contractor has to ensure that all the natural water course is free from obstruction this shoulde be verified by the PIU/PMC.
- The area around water body is free from debris and other materials

8.0 Environmental Management at Construction and Labour Camps

The scope of this guideline pertains to the siting, development, management and restoration of construction and labour camps to avoid or mitigate impacts on the environment. The area requirement for the construction camp shall depend upon the size of contract, number of labourers employed and the extent of machinery deployed. The following sections describe the siting, construction, maintenance, provision of facilities in the camps and finally rehabilitation of the construction and labour camps. These are described in three stages, pre-construction, construction and post-construction stage. The issues related to construction camps are similar in the case of road and building construction and hence have been taken together.

8.1 Pre-Construction Stage

Identification of site for construction and labour camps is the first task. The Contractor shall identify the site for construction camp in consultation with the individual owners in case of private lands and the concerned department in case of Government lands. The suitable sites shall be selected and finalized in consultation with the PIU/PMC. **Table 1** gives the lands that could be avoided for construction camps and conversely those that could be preferred.

Table 1: Selection Criterion for Construction Camps

Avoid the following ...	Prefer the following ...
• Lands close to habitations. • Irrigated agricultural lands. • Lands belonging to small farmers.	• Waste lands. • Lands belonging to owners who look upon the temporary use as a source of income.

• Lands under village forests. • Lands within 100m of community water bodies and water sources as rivers. • Lands within 100m of watercourses. • Low lying lands. • Lands supporting dense vegetation. • Grazing lands and lands with tenure rights. • Lands where there is no willingness of the landowner to permit its use.	• Community lands or government land not used for beneficial purposes. • Private non-irrigated lands where the owner is willing. • Lands with an existing access road.

The contractor will work out arrangements for setting up his facilities during the duration of construction with the land owner/concerned department. These arrangements shall be in the form of written agreement between the contractor and the land owner (private/government) that would specify:

- photograph of the proposed camp site in original condition;
- activities to be carried out in the site;
- environmental mitigation measures to be undertaken to prevent land, air, water and noise pollution;
- detailed layout plan for development of the construction and labour camp that shall indicate the various structures to be constructed in the camp including temporary, drainage and other facilities; and
- rehabilitation plan of camp site to previous camp conditions.
- the arrangements will be verified by the PIU/PMC to enable redressal of grievances at a later stage of the project.

8.1.1 Setting up of Labour Camp

The contractor shall provide, free of cost in the camp site, temporary living accommodation to all the workers employed by him for such a period as the construction/maintenance work is in progress. A minimum area of 6 sq.mts per person shall be provided. The rooms of labour shall be well lighted and ventilated. The facilities to be provided for the labour are discussed below:

a) Drinking Water

The contractor shall provide for a continuous and sufficient supply of potable water in the camps, in earthen pots or any other suitable containers.

- The contractor shall identify suitable community water sources for drinking. Only in the event of non-availability of other sources of potable water, the Contractor shall obtain water from an unprotected source only after the testing for its potability. Where water has to be drawn from an existing open well, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with dust proof trap door.
- Every water supply or storage shall be at a distance of not less than 15m from any wastewater / sewage drain or other source of pollution. Water sources within 15m proximity of toilet, drain or any source of pollution will not be used as a source of drinking water in the project.

- A pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection, which shall be done at least once a month.

b) Washing and Bathing Facilities

In every site, adequate and suitable facilities for washing clothes and utensils shall be provided and maintained for the use of contract labour employed therein. Separate and adequate bathing shall be provided for the use of male and female workers. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic conditions.

c) Toilets Facilities

Sanitary arrangements, latrines and urinals shall be provided in every work place separately for male and female workers. The arrangements shall include:

- A latrine for every 15 females or part thereof (where female workers are employee).
- A latrine for every 10 males.
- Every latrine shall be under cover and so partitioned as to secure privacy, and shall have a proper door and fastenings.
- Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers “For Men Only” or “For Women Only” as the case may be.
- The latrines and urinals shall be adequately lighted and shall be maintained in a clean sanitary condition at all times and should have a proper drainage system;
- Water shall be provided in or near the latrines and urinals by storage in suitable containers.

d) Waste Disposal

- Disposal of sanitary wastes and excreta shall be into septic tanks.
- Kitchen waste water shall be disposed into soak pits/kitchen sump located preferably at least 15 meters from any water body. Sump capacity should be at least 1.3 times the maximum volume of wastewater discharged per day. The bottom of the pit should be filled with coarse gravel and the sides shored up with board, etc. to prevent erosion and collapse of the pit. New soak pits shall be made ready as soon as the earlier one is filled.
- Solid wastes generated in the kitchen shall be reused if recyclable or disposed off in land fill sites.

e) Medical and First Aid Facilities

Medical facilities shall be provided to the labour at the construction camp. Visits of doctor shall be arranged twice a month wherein routine checkups would be conducted for women and children. A separate room for medical checkups and keeping of first aid facilities should be built. The site medical room should display awareness posters on safety facilitation hygiene and HIV/AIDS awareness. The medical office should also distribute condoms at regular intervals to labourers.

First Aid Box will be provided at every construction campsite and under the charge of a responsible person who shall always be readily available during working hours. He shall be adequately trained in administering first aid-treatment. Formal arrangement shall be prescribed to carry injured person or person suddenly taken ill to the nearest hospital.

Provision of Shelter during Rest

The work place shall provide four suitable sheds, two for meals and two for rest (separately for men and women). The height of the shelter shall not be less than 3.0m from the floor level to the lowest part of the roof. These shall be kept clean.

f) Creches

In case 20 or more women workers are employed, there shall be a room of reasonable size for use of children under the age of six years. The room should have adequate light and realisation. A caretaker is to be appointed to look after the children. The use of the room shall be restricted to children, their mothers and the caretaker.

9.0 Waste Management and Debris Disposal

This section providd guidances for handling, reuse and disposal of waste materials during road and building construction. The chapter describes waste management measures in all stages of construction. Also, the chapter discusses the measures to be taken for debris disposal.

9.1 Project Planning and Design Stage

As part of DPR preparation, the PIU/PMC shall carry out the following measures

- Finalize road design and alignment to minimize waste generation through balancing of cut and fill operations and minimizing excess cuts requiring disposal.
- Identify the type of wastes as well as sources of waste during construction and suggest options for possible reuse
- Provide guidelines to the contractor for locating waste disposal sites for non-toxic wastes
- Identify existing landfill sites if available for disposal of toxic materials.
- Incase no existing landfill sites are available, identification of landfill site as well as decommissioning of these sites should be undertaken. Towards this, identify the clearance requirements.
- Identify sites of disposal of debris.

9.2 Pre-Construction Stage

The contractor shall identify the activities during construction, that have the potential to generate waste and work out measures for the same in the construction schedule to be submitted to the PIU/PMC. A sequential listing of the activities during road construction and the nature of wastes together with the possible options for reuse are specified in Table 9.1 & 9.2. For the disposal of excess cut and unsuitable (non-toxic) materials, the contractor shall identify the location for disposal in consultation with the community / concerned department. Any toxic materials shall be disposed in existing landfill sites that comply with legislative requirements. Prior to disposal of wastes onto private/community land, it shall be the responsibility of the Contractor to obtain a No-objection Certificate (NOC) from the land owner/community. The NOC shall be submitted to the PIU/PMC prior to commencement of disposal.

The Contractor shall educate his workforce on issues related to disposal of waste, the location of disposal site as well as the specific requirement for the management of these sites.

9.3 Construction Stage

The contractor shall either reuse or dispose the waste generated during construction for roads and building depending upon the nature of waste, as specified in **Table 2 and 3** respectively. The reuse of waste shall be carried out by the contractor only after carrying out the specific tests and ascertaining the quality of the waste materials used, and getting the same approved by the PIU/PMC.

Wastes that were not reused shall be disposed off safely by the contractor. The contractor shall adopt the following precautions while disposing wastes:

- In case of bituminous wastes, dumping will be carried out over a 60 mm thick layer of rammed clay so as to eliminate any chances of leaching. Care should be taken not to dispose these wastes near farmland.
- In case of filling of low-lying areas with wastes, it needs to be ensured that the level matches with the surrounding areas. In this case care should be taken that these low lying areas are not used for rainwater storage
- In case oil and grease are trapped for reuse in a lined pit, care shall be taken to ensure that the pit should be located at the lowest end of the site and away from the residential areas.

The waste management practices adopted by the Contractor, including the management of wastes at construction camps etc shall be reviewed by the PIU/PMC and the National Quality Monitor (NQM) during the progress of construction.

9.4 Post Construction Stage

After decommissioning of construction sites, the Contractor shall hand over the site after clearing the site of all debris/wastes to the PIU/PMC. The site shall be inspected by the PIU/PMC. In case of disposal of wastes on private land, certificate of Completion of Reclamation is to be obtained by the Contractor from the landowner that “the land is restored to his satisfaction”. The same is to be submitted to the PIU/PMC before final payment is claimed.

Table 2: Type of Wastes and Scope for Reuse- Road Construction

S. No	Activity	Type of waste	Scope for possible reuse	Disposal of waste
I	**CONSTRUCTION WASTES**			
1	Site Clearance and grubbing	Vegetative cover and top soil	Vegetating embankment slopes	
		Unsuitable material in embankment foundation	Embankment Fill	Low lying areas Land fill sites
2	Earthworks			
i	Overburden of borrow areas	Vegetative cover and soil	Vegetating embankment slopes	
ii	Overburden of quarries	Vegetative cover and soil	Vegetating embankment slopes	
		Granular material	Embankment Fill, Pitching	
iii	Accidental spillages during handling	Dust		
iv	Embankment construction	Soil and Granular Material	Embankment Fill	
v	Construction of earthen drains	Soil	Embankment Fill	

S. No	Activity	Type of waste	Scope for possible reuse	Disposal of waste
3	Concrete structures			
i	Storage of materials	Dust, Cement, Sand,	Constructing temporary structure, embankment fill	
		Metal Scrap		Scrap Yard
ii	Handling of materials	Dust		
iii	Residual wastes	Organic matter	Manure, Revegetation	
		Cement, sand	Constructing temporary structure, embankment fill	
		Metal scrap	Diversion sign, Guard Rail	
4	Reconstruction works			
i	Dismantling of existing pavement	Bitumen Mix, granular material	Sub-base	
		Concrete	Road sub-base, reuse in concrete, fill material and as rip rap on roads	
		Guard rail sign post, guard stone	Reuse for same	
ii	Dismantling of cross drainage structures	Granular material & bricks	Constructing temporary structure, embankment fill	
		Metal scrap	Diversion sign, Guard Rail	
		Pipes	Culvert	
5	Decommissioning of sites			
i	Dismantling of temporary structures	Granular material and bricks	Constructing temporary structure, embankment fill	
6	Maintenance operations			
i	Desilting of side drains	Organic matter and soil	Revegetation	
II	**OIL AND FLUIDS**			
1	Construction machinery – maintenance and refueling	Oil and Grease	Incineration, Cooking, Illumination	
2	Bituminous works			
i	Storage	Bitumen	Low Grade Bitumen Mix	
ii	Mixing and handling	Bitumen	Low Grade Bitumen Mix	
		Bitumen Mix	Sub-base, Paving access & cross roads	
iii	Rejected bituminous mix	Bitumen Mix	Sub-base, Paving access & cross roads	
III	**DOMESTIC WASTES**			
1	Construction camps	Organic waste,	Manure	
		Plastic and metal scrap		Scrap Yard
		Domestic effluent	Irrigation	

Table 3: Type of Wastes and Scope for Reuse- Building Construction

S. No	Activity	Type of waste	Scope for possible reuse	Disposal of waste
I	**CONSTRUCTION WASTES**			
1	Site Clearance and grubbing	Vegetative cover		Compost site
		Other wastes	Filing plinth area	Low lying areas Land fill sites
		Top soil	Filling plinth area	

S. No	Activity	Type of waste	Scope for possible reuse	Disposal of waste
2	Earthworks	Granular material	Flooring, plinth area filling	
	Accidental spillages during handling	Dust		
3	Concrete structures			
i	Storage of materials	Dust, Cement, Sand,	Constructing temporary structure	
		Metal Scrap		Scrap Yard
ii	Handling of materials	Dust		
iii	Residual wastes/Waste from dismantled building	Organic matter	Manure, Revegetation	
		Cement, sand	Constructing temporary structure, embankment fill	
		Metal scrap		Scrap Yard
4	Reconstruction works			
i	Dismantling of existing building	Bitumen Mix, granular material	Sub-base	
		Concrete	Road sub-base, reuse in concrete, fill material and as rip rap on roads	
i	Desilting of side drains	Organic matter and soil	Revegetation	
II	**OIL AND FLUIDS**			
1	Construction machinery – maintenance and refueling	Oil and Grease	Incineration, Cooking, Illumination	
III	**DOMESTIC WASTES**			
1	Labour Activities	Organic waste,	Manure	
		Plastic and metal scrap		Scrap Yard
		Domestic effluent	Irrigation	

9.4.1 Disposal of Debris

For the purpose of disposal of debris, dumping sites need to be selected. The criteria for selection of dumping sites include:

- No residential areas are located downwind side of these locations;
- Dumping sites are located at least 1000 m away from sensitive locations;
- Dumping sites do not contaminate any water sources, rivers etc; and
- Dumping sites have adequate capacity equal to the amount of debris generated;
- Public perception about the location of debris disposal site has to be obtained before finalizing the location;
- Permission from the Village Panchayat is to be obtained for the dumping site selected;
- Productive lands are avoided; and
- Available waste lands are given preference

10. Management of Impact on Cultural Properties

Cultural properties give a direct indication of the social quality of a place. The number and typology of religious structures can be directly co-related to the religious value of the place while the structures themselves can be indicators of the religion prevailing in the area.

Besides the cultural properties in the vicinity and regional context of the project corridors there are local community cultural resources such as temples & shrines which share mutual interest with highway that enhances the quality of experience of highway traveling.

In road improvement project, people strongly feel that community assets especially cultural properties might be threatened given their attachment to them, it becomes imperative project not only to protect but also to enhance, by reasonable means, such assets. In fact, one of the significant findings of the primary survey of highway work was that the population was concerned about its adverse impacts on their community resources which primarily included their temples & shrines Gujarat State, due to the presence of significant historical, traditional and cultural value demands sensitive and sympathetic assessment of her cultural assets in the process of inducting improvement or new development projects.. It is a vital that the old and new are collectively assessed to sustain the cultural significance of region with strong traditional roots having contemporary relevance.

10.1 Approach

The approach to the affected cultural property is not only meant to protect those that are directly affected, but also to avoid indirect impacts on cultural properties that extended on indirect area of influence.

In no way, the safeguard of cultural properties shall be at the cost of the improvement of the project corridors and vice-versa but the interest is to make sure that cultural properties of varying importance are not considered as easy and soft materials for shifting around while facilitating the highway development.

10.2 Methodology

The cultural impact assessment has been conducted through the following methodology.

10.2.1 Establishment of Cultural Baseline

The baseline data for the environmental components should be collected through primary survey for collecting micro level data supplemented by secondary surveys. Strip mapping of corridor is a main source of information, but secondary sources of information, such as the ASI, the UP State Directorate of Archaeology etc. must be consulted especially on identification and invertorisation of archaeological properties.

10.2.2 Identification of Potential Impacts on Cultural Properties

Based on the interrelationship of the cultural properties with the highway the impacts on the various environmental components, due to the proposed road widening were analyzed. The impacts have been classified as insignificant significant / major and critical. Based on the type nature and magnitude, impacts have been classified as short-term, long-term, reversible and irreversible. Impacts have been analyzed for design i.e. pre-construction, construction and operation stage.

10.2.3 Avoidance and Mitigation of Impacts

Based on the significance of impacts and the significance of the cultural property, avoidance and mitigation measures have been in corporate in the road design or at other stage of construction as deemed feasible.

10.2.4 Enhancement Opportunities

Based on the baseline surveys enhancement opportunities for cultural properties have been identified to promote a feeling of respect for local residents values and to provide the road users with a more pleasing view.

10.2.5 Formulation of a Cultural Properties Management Plan

A should be formulated for mitigation or avoidance of each of the identified negative impacts. The mitigation measures have been devised to mitigate impacts at each stage of the project.

10.2.6 Impact Identification

Impacts on cultural properties will be mostly direct when the construction works of highways are already in operation. The impact has been classified as insignificant / significant / major and critical. Based on the type, nature & magnitude, impact has been classified as short-term, long-term, reversible and irreversible. The impacts may be positive as well as negative depending upon the interaction between the cultural property and highway corridor.

Impacts on the cultural properties have been identified in four stages when they occur, namely.

- Planning and Design Stage
- Pre-construction Stage
- Construction Stage
- Road Operation Stage

10.2.7 Impact Zones

Depending upon the degree of impact of the proposed road rehabilitation on the cultural properties the Row has been delineated in to three impacts zones namely.

- High Impacts Zone (0 – 5m)
- Medium Impacts Zone (5 – 10m)
- Low Impacts Zone (10m – RoW)

The high impacts zone as the name signifies means a maximum adverse impact on the cultural properties.

10.2.8 Avoidance and Mitigation of Impact

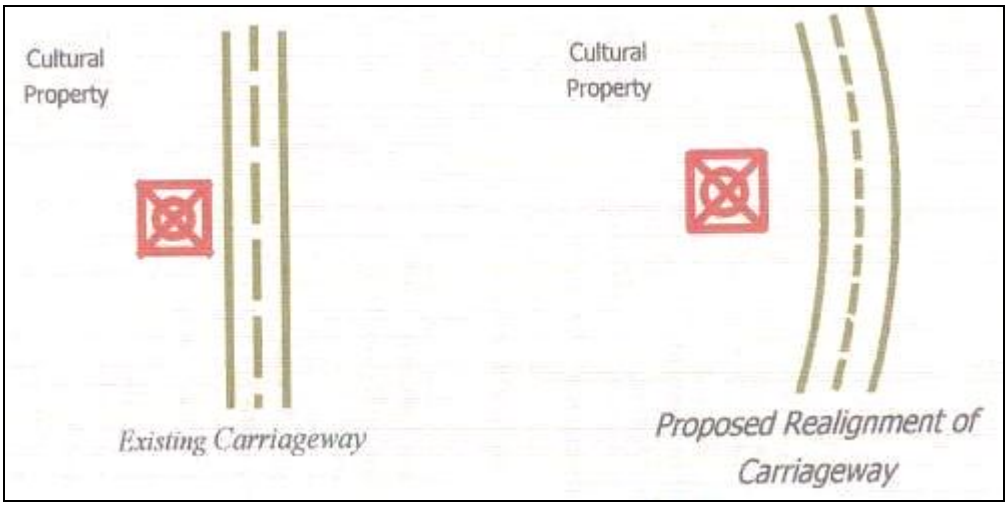
Cultural properties should be identified depending upon their relationship with the road corridor. The impacts may vary from property to property and with time during the road construction and operation phases. The impacts have been identified in order to find location – specific solution to avoid or mitigate possible damages to the cultural properties.

The description of feasible avoidance & mitigation measures during various stages of the project.

1. Avoidance of Impact on Cultural Property

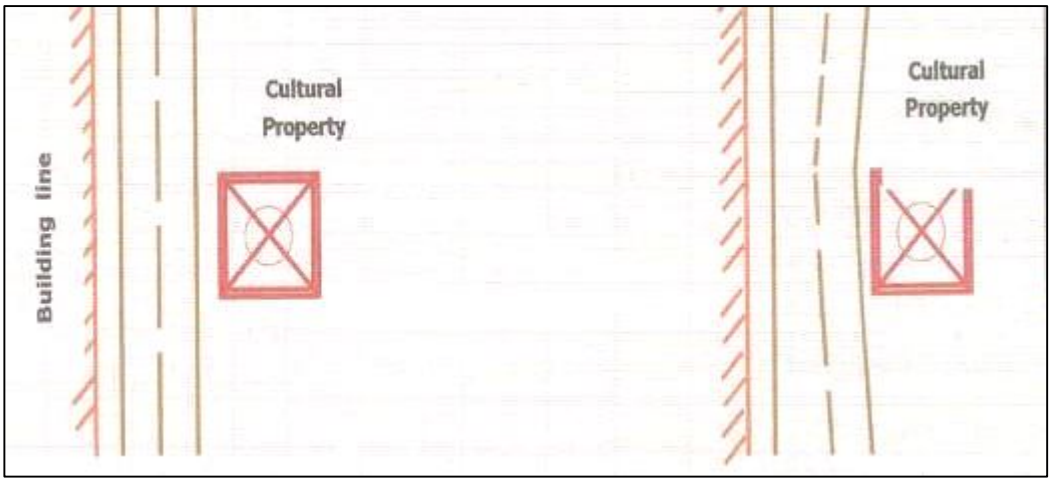
Realignment of the Pavement

This is the first option exercised to avoid impact to the cultural property. The proposed road alignment will be laterally changed to shift the road away from the carriageway in order to minimize or avoid adverse impact to the cultural.



Restriction of Pavement Width

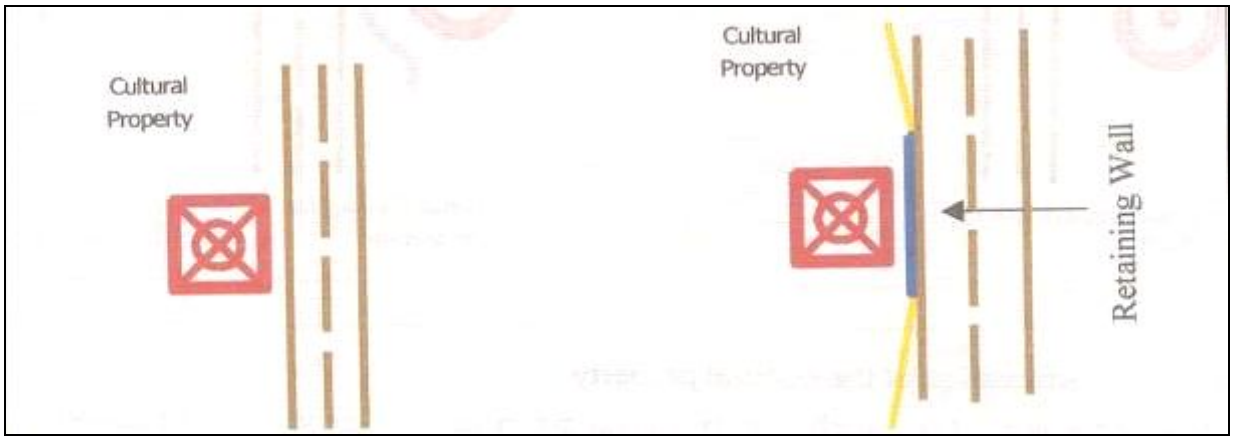
It is not always feasible to realign the carriageway to avoid impacts to a cultural property, especially in case of non-availability of land especially in urban corridors where there are RoW constraints as well as commercial and other types of encroachment. In such cases here is no alternative but to restrict the width of carriageway.



Existing Carriageway **Restriction of Carriageway Width**

Provision of Retaining Wall

As mentioned below the mitigation measures of relocation of the cultural property has been restored to only as a last option and is only considered of small shrines. For larger structures such as temple and mosque that are located on the immediate edge of the carriageway; the provision of retaining wall to restrict the width of the proposed road embankment will be one of the option to save the cultural property in question.

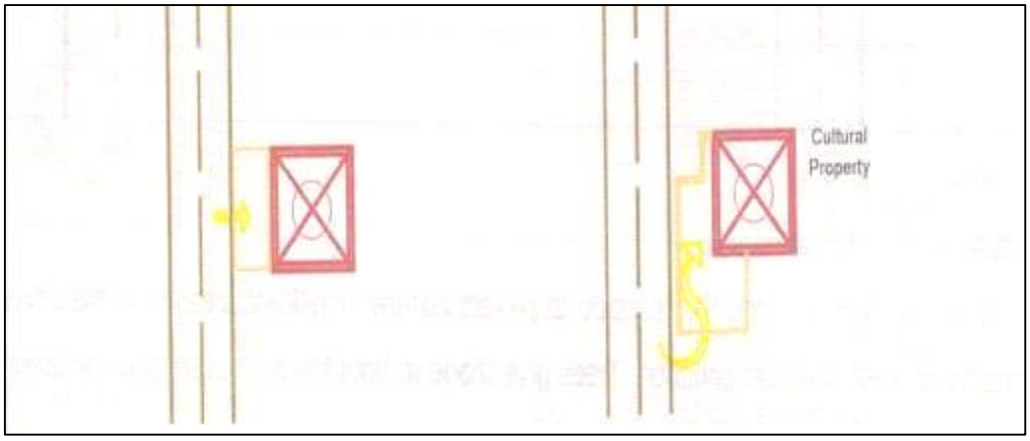


Existing Carriageway **Proposed Retaining Wall**

2. Mitigation of Impact on Cultural Property:

Redefining Access to the Cultural Property

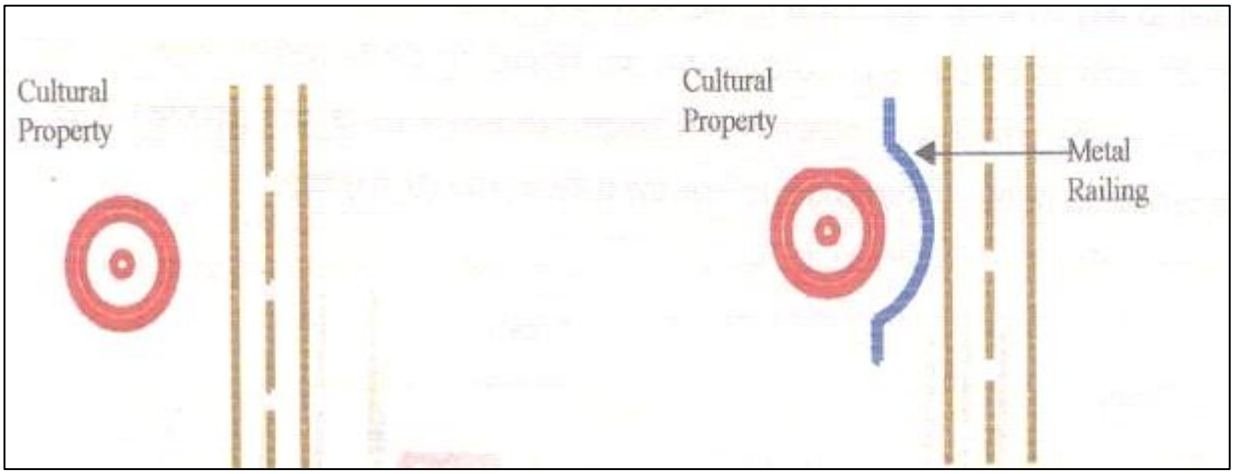
It has been observed that some cultural properties are being accessed from the road, thereby endangering the safety of users. Moreover, the related activities spill on the road space, disrupting the fast moving traffic. In such instances the major entry will be relocated to the side. The original entry will be retained but its use will be restricted by means of a protective barrier, which will prevent activities from spilling on to the road space. This mitigation measure is symbiotic as it benefits the highway and the temple user.



Existing Access **Redefining access of the cultural property**

Protective Barriers

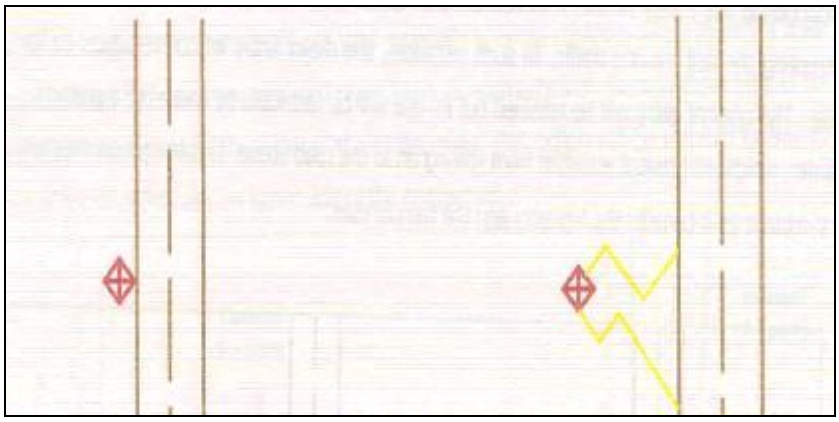
Protective barrier will be constructed to safeguard cultural properties close to the road.



Cultural Property along Road side	Metal Railing for Protection

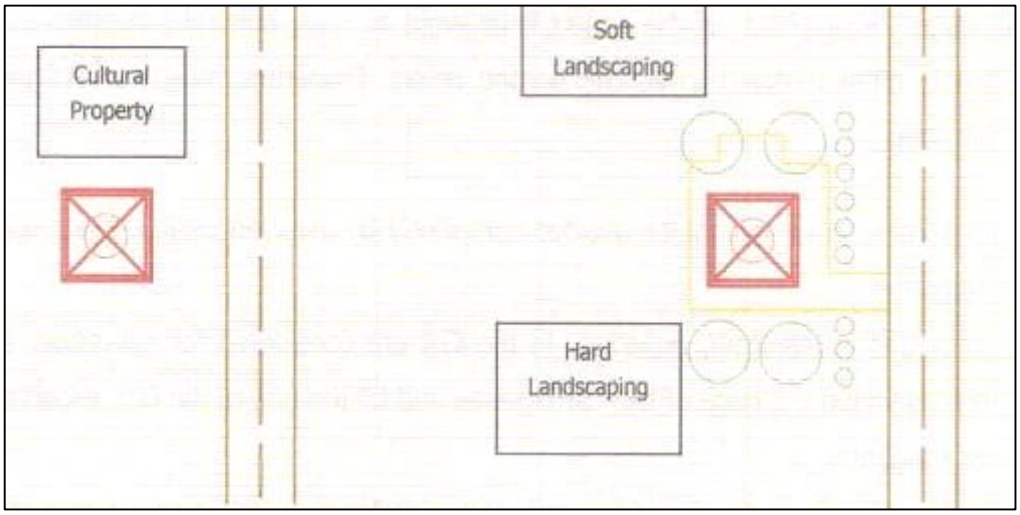
Relocation of the Cultural Property

Relocation is the last option, which is to be carried out in consultation with the concerned community and only for very small shrines. Depending upon design imperatives such as available width of the carriageway, requisite design speeds at vertical and horizontal curves cultural properties in close proximity to the road corridor are subjected to hazard from speeding vehicles. In such instances, after making a thorough comparison of the costs involved in changing road alignment with the religious significance and cultural importance of the cultural property, relocation of the property in question is recommended.



Landscaping:

Trees will be planted along the roadside to protect cultural significant areas from the adverse impacts of noise and dust pollution. Trees give shade to both the road users and the users of the cultural property. Hard landscaping measures such as a slightly raised curb to form a segregation zone between the road and the cultural property on the road edge is an effective method of creating visual as well as physical space between the two. This measure can be combined in with protective barriers to effectively mitigate the adverse impacts of the proposed project.



Existing Carriageway	Proposed Landscaping

Use of Cautionary Measures

In some instance cultural properties do not qualify for enhancement but are located dose to the corridor. The use of hazard markers at such locations will caution approaching vehicles about the structures well in advance. Specific mitigation and avoidance measures adopted for cultural properties on basis of their location and the impacts that they are subjected have been described earlier. Cultural properties, which have mitigation, and avoidance measures applied to them have been discussed in the section in the chapter on enhancement of cultural properties. Wherein both issues have been addressed collectively and design solution can be both mitigation as well as enhancement oriented.

11.0 Environmental Monitoring

It is essential that an effective monitoring programme designed & carried out for effective implementation of the environmental management plan (EMP). Sampling programme as a part of Environmental Study of the highway can be a sufficient baseline information for department to compare the condition during the construction and operation with a “no develop” condition along the critical corridors.

Sampling programme during the construction stage has to be supplemented by site visits, visual observation and reports from sites to ensure that provisions of the EMP are being complied with. The objectives of the monitoring programme are:

- To ensure that the measures suggested herein are being taken during construction.
- To evaluate the efficiency of the proposed mitigation and enhancement measures.
- To provide an update on baseline condition of the corridor and work towards the development of air-shed models for the in vicinity of the corridor where air sampling is carried out regularly.
- To investigate the adequacy of the EMAP as well as suggest improvements to it.
- To generate data that could be incorporated in future EMAPs: and
- To evaluate what additional enforcement is required for the effective implementation of the EMP.

11.1 Ambient Air Quality Monitoring

Ambient air quality parameters recommended for road transportation development are PM10, PM2.5, CO, Nox, SO_2 , HC and Pb. These are to be monitored at designated locations once in quarterly for at least five years from the commencement of construction. The sensitive locations should be specifically monitored that include forests, biodiversity rich areas, hospitals, educational institutions, etc. Twenty four hourly basis air quality data should be generated over three days at all identified locations.

11.2 Water Quality Monitoring

Water quality will be monitored for pH (6.5–8.5), Total Dissolved Solids (2000), Total Suspended Solids, Oil & Grease, COD, Chloride, Lead, Zinc and Cadmium by standard method. Monitoring should be carried out once in a year at starting time at the scheduled time of construction for five year, and consequently in the month of January for remaining period of completion of project.

11.3 Ambient Noise Monitoring

Noise level measurement will be carried out at all designated locations along the road corridor and plant sites quarterly for 24 hours during construction and operational phase. Noise should be recorded at a “A” weighted frequency using a “slow time response mode” of the measuring instrument. The sensitive locations should be specifically monitored that include forests, biodiversity rich areas, hospitals, educational institutions, etc

Appendix-1 gives the standards limits for ambient air quality, water quality and noise pollution levels

APPENDIX-1

1.0 NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Method of Measurement
(1)	Sulphur Dioxide (SO_2) $\mu g/m^3$	Annual*	50	20	Improved West and Geake Method Ultraviolet Fluorescence
		24 hours**	80	80	
(2)	Oxides of Nitrogen (NO_x) $\mu g/m^3$	Annual*	40	30	Jacob & Hochheiser Modified (Na-Arsenite) Method Chemiluminescence
		24 hours**	80	80	Gas Phase Chemiluminescence
(3)	Particulate Matter (Size less than 10 µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	Gravimetric TOEM Beta attenuation
		24 hours**	100	100	
(4)	Particulate Matter (Size less than 2.5 µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	Gravimetric TOEM Beta attenuation
		24 hours**	60	60	
(5)	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	UV Photometric Chemiluminescence Chemical Method
		1 hour**	180	180	
(6)	Lead (Pb) $\mu g/m^3$	Annual*	0.5	0.5	ASS/ ICP Method after sampling on EPM 2000 or equivalent Filter paper ED – XRF using Teflon filter
		24 hours**	1.0	1.0	
(7)	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	Non Dispersive Infra Red (NDIR) Spectroscopy
		1 hour**	04	04	
(8)	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	Chemiluminescence Indophenol blue method
		24 hours**	400	400	
(9)	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	Gas Chromatography based continuous analyzer Adsorption and Desorption followed by GC analysis
(10)	Benzo (a) pyrene (BaP) – Particulate phase only, ng/m^3	Annual*	01	01	Solvent extraction followed by HPLC/GC analysis
(11)	Arsenic (As) ng/m^3	Annual*	06	06	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
(12)	Nickel (Ni) ng/m^3	Annual*	20	20	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

*Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform interval.

**24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Source: National Ambient Air Quality Standards, Central Pollution Control Board Notification No. 29016/20/90/PCI-I dated 18 November, 2009

2.0 NATIONAL AMBIENT NOISE MONITORING STANDARDS

Area/Class	Noise Level (Leq dB (A))*	
	Day Time	Night Time
Industrial	75	70
Commercial/Mixed	65	55
Residential/Rural	55	45
Sensitive	50	40

Note-:

1. Day time shall mean from 6 a.m. to 10 p.m.

2. Night time shall mean from 10 p.m. to 6 a.m.

3. Silence Zone is an area comprising not less than 100 meters around hospitals, education institutions, courts, religious places or any other area, which is declared as such by Competent Authority.

4. Mixed categories of areas may be declared as one of the four above-mentioned categories by the Competent Authority.

**dB(A) Leq denotes the time weighted average of the level of decibels on scale A which is related to Human Beings*

A "decibel" is the unit in which noise is measured

"A" in dB(A) Leq, denotes the frequency weighted in the measurement of the noise corresponds to frequency response characteristics of the human ear.

Leq: It is an energy means of the noise level over a specified period.

3.0 WATER QUALITY STANDARD AS PER BIS (IS: 10500:1991)

S. No.	Parameters	Desirable Limit	Max. Permissible Limits in the absence of alternate source
Essential Characteristics:			
1.	Colour	5	25
2.	Odour	Unobjectionable	Unobjectionable
3.	Taste	Agreeable	Agreeable
4.	Turbidity, NTU	5	10
5.	pH Value	6.5 to 8.5	No relaxation
6.	Total Hardness (as $CaCO_3$), mg/l	300	600
7.	Iron as Fe, mg/l	0.3	1.0
8.	Chloride as Cl, mg/l	250	1000
9.	Residual free Chlorine, mg/l	0.2	-
Desirable Characteristics			
10.	Dissolved Solids, mg/l	500	2000
11.	Calcium as Ca, mg/l	75	200
12.	Copper as Cu, mg/l	0.05	1.5
13.	Manganese as Mn, mg/l	0.10	0.3
14.	Sulphate as SO_4, mg/l	200	400
15.	Nitrate as NO_3, mg/l	45	100
16.	Fluoride as F, mg/l	1.0	1.5
17.	Phenolic Compounds as C_6H_5OH, mg/l	0.001	0.002
18.	Mercury as Hg, mg/l	0.001	No relaxation
19.	Cadmium as Cd, mg/l	0.01	No relaxation
20.	Selenium as Se, mg/l	0.01	No relaxation
21.	Arsenic as As, mg/l	0.05	No relaxation
22.	Cyanide as CN, mg/l	0.05	No relaxation
23.	Lead as Pb, mg/l	0.05	No relaxation
24.	Zinc as Zn, mg/l	5.0	15.0
25.	Anionic detergent as MBAS, mg/l	0.2	1.0
26.	Chromium as Cr^{6+}, mg/l	0.05	No relaxation
27.	Polynuclear aromatic hydro carbon as PAH, g/l	-	-
28.	Mineral Oil, mg/l	0.01	0.03
29.	Pesticide, mg/l	Absent	0.001
30.	Radioactive materials: Alpha Emitters, Bq/l Beta Emitters, Bq/l	 - -	 0.1 1.0
31.	Alkalinity, mg/l	200	600
32.	Aluminum as Al, mg/l	0.03	0.2
33.	Boron, mg/l	1.0	5.0

4.0 USE BASED CLASSIFICATION OF SURFACE WATERS IN INDIA

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfections	A	i. Total Coliforms Organism MPN/100ml shall be 50 or less ii. pH between 6.5 and 8.5 iii. Dissolved Oxygen 6mg/l or more iv. Biochemical Oxygen Demand 5 days 20^{o}C 2mg/l or less
Outdoor bathing (Organized)	B	i. Total Coliforms Organism MPN/100ml shall be 500 or less ii. pH between 6.5 and 8.5 iii. Dissolved Oxygen 5mg/l or more iv. Biochemical Oxygen Demand 5 days 20oC 3mg/l or less
Drinking water source after conventional treatment and disinfections	C	i. Total Coliforms Organism MPN/100ml shall be 5000 or less ii. pH between 6 to 9 iii. Dissolved Oxygen 4mg/l or more iv. Biochemical Oxygen Demand 5 days 20oC 3mg/l or less
Propagation of Wild life and Fisheries	D	i. pH between 6.5 to 8.5 ii. Dissolved Oxygen 4mg/l or more iii. Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	i. pH between 6.0 to 8.5 ii. Electrical Conductivity at 25oC micro mhos/cm Max.2250 iii. Sodium absorption Ratio Max. 26 iv. Boron Max. 2mg/l

Source: Guidelines for Water Quality Management – CPCB 2008.

12. Integrating Environmental Provisions in Bid Documents

The design and environmental considerations discussed above have to be incorporated suitably in the DPR and the bid document to ensure implementation. Towards this end, the following steps should be taken by the Project In-charge in the PIU/PMC at the divisional office:

Detailed Drawings for the environmental provisions as per the guidelines are to be included in the DPR. The drawings are to include specifications of the materials used and also the detailed bill of quantities in the bid document.

Cost implications of environmental measures suggested by the guideline have to be included in the estimates for the project. Monitoring arrangements towards the implementation of the environmental provisions are to be specified. Also, the contractor's contract shall include these as part of the Bill of Quantities.

ANNEXURE 4.6: TERMS OF REFERENCE FOR DETAILED SPECIFICATIONS FOR ENVIRONMENTAL ANALYSIS, DESIGN AND MANAGEMENT ACTION PLAN

Objectives

The main objectives of Environmental Analysis and Design are to improve decision making and ensure that the highway improvement options under consideration are environmentally sound, sustainable and contribute to the development of environmental assets. The main objectives of the Environmental Management Action Plan are to provide for the execution of mitigation measures and for the protection and enhancement of environmental assets during and after construction according to an agreed implementation schedule. Environmental analysis involves undertaking full Environmental Assessment (EA), in such a manner as to ensure compliance with State, MoEF (GOI) and World Bank environmental guidelines and regulations. The EA and the associated Environmental Impact Assessment (EIA) are to be finalized by the PMC, agreed to by the relevant State authorities and MOEF, and available in draft form at least six weeks prior to Bank appraisal of the project.

Both GOI and the Bank have elaborated guidelines and regulations for environmental assessment. The analysis, studies and reporting requirement to be undertaken under this TOR must conform to these guidelines and regulations.

(a) In the case of GOI, these comprise, inter alia. The Environmental Impact Assessment Notification, 2006 and amendment thereafter, and Environmental Guidelines of MOEF

(b) In the case of the World Bank, these comprise, inter alia Operational Directive OD4 01: Environmental Assessment, 1991; Operational Policy OP4 04: Natural Habitats, 1995. Environmental Assessment Sourcebook 1991; and Road and the Environment: A Handbook, 1994.

Scope of Work

The scope of work comprises the following main tasks, comprising three main elements

A. Environmental Analysis

(a) Carry out a preliminary environmental screening of the highway network todetermine the magnitude of actual and potential impact and ensure that environment considerations are given adequate weight in the selection and design of proposed highway improvements. Ascertain , whether the project attracts the provisions of General Conditions as per EIA , notification 2006 of MoEF, GOI. The Environmental compliance status of the project is also to be explained.

(b) Collect information on existing environmental baseline conditions and undertake a preliminary evaluation of road sections selected for improvement in order to define the focus of the environmental assessment, design and management studies.

(c) Identify positive and negative impacts by road section and area of focus and propose cost-effective measures to enhance positive impacts and to avoid and/or mitigate negative impacts.

(d) Complete the relevant Environmental Assessment documentation for the respective State-level, GOI and World Bank environmental reviews and clearances; and

(e) Consultation with affected groups and NGOs

B: Environmental Design

(a) Select existing areas which have experienced environmental degradation (e.g. loss of tree cover) and prepare cost-effective proposals appropriate for each area to upgrade and develop their environmental quality in a sustainable manner (e.g. through tree and ground cover planting); and

(b) Select areas which provide opportunities as a result of the proposed highway improvements and associated environmental mitigation measures for environmental enhancement (e.g. provision of facilities for non-motorized transport) and the development of cost-effective sustainable environmental assets.

C: Environmental Management Action Plan

(a) Produce an implementation schedule and supervision program with associated costs and contracting procedures for the execution of environmental mitigation and design work;

(b) Develop a program for monitoring environmental impacts during and after construction.

(c) Specify any requirements for institutional strengthening and training: and

(d) Recommend any further studies of environmental issues which should be undertaken during project implementation.

MORE DETAILED SPECIFICATIONS FOR THESE THREE ELEMENTS FOLLOW BELOW.

A: Environmental Analysis

1. Preliminary environmental screening. The objectives of preliminary environmental screening are to determine the magnitude of actual and potential impact and ensure that environmental considerations are given adequate weight in the selection and subsequent design of proposed highway improvements. The results of the preliminary screening will enable the identification and classification of any priority roads as

(a) those with major environmental issues which should either be excluded from the improvement program or be the subject of a full and detailed EA in order to determine appropriate mitigation measures, and

(b) those with little to no potential impact and hence requiring a limited environmental analysis.

2. The preliminary environmental screening will make use of available information from official andnon-official (e.g. NGOs) sources concerning the location, type and sensitivity of all critical natural habitats (such as conservation areas, wildlife sanctuaries, sacred groves, major wildlife migration routes, wetlands etc.) supplemented by site visits. This information will be plotted on a map in such a manner as to identify any major potential environmental conflicts with the proposed road improvements and show the resultant classification of roads as (a) or (b), as outlined above. In addition, the results of the preliminary environmental screening will be tabulated and presented in report format to identify, in the case of roads with major environmental issues, the nature and extent of the issues along with recommendations as to how to proceed toward resolving them. These recommendations will be derived from discussion and deliberation within the PMC team and from discussion and deliberation with the State authorities concerned.

3. The type of issue or conflicts which should be considered during the preliminary environmental screening would comprise, but not be limited to, the risk of (a) disturbances during construction leading to destruction or temporary or permanent degradation of existing or potential environmental assets; and (b) disturbances following construction and resulting from increases in traffic volumes or speeds, changes in vehicle composition, induced

development (resulting from improved accessibility) and/or increased accessibility into sensitive areas. Ideally, this risk analysis should derived from an assessment of the environmental capacity of environmental assets along, adjacent or near the road alignment to "absorb" disturbance without degradation. In addition, and given the fact that most road sections designated for improvement already exist and carry traffic, the preliminary screening should take into account any degradation which has already occurred and include recommendations to rectify the situation. The location of existing road, carrying traffic, within or adjacent to a critical natural habitat or feature should not be considered a reason for assuming "there is no problem" or "there will be no problem as the road is already there"

4. **Preliminary Environmental Evaluation:** The objective of the preliminary environmental evaluation is to collect information on existing environmental baseline conditions of the proposed road improvement sections resulting from the preliminary environmental screening and define the focus of the environmental assessment studies concerning

   (a) **urban settlements and villages** measures to limit and control, inter alia, noise, vibration, vehicle emissions and dust; measures to ensure safety, provide for non-motorized transport (non-motorized vehicles and pedestrians) enforce speed limits, prevent encroachments, avoid severance and improve access, etc.

   (b) **agricultural areas** measures to avoid embankment erosion, disturbance to surface water flows and to rice-fields and farms during construction, etc.

   (c) **natural habitats and other sensitive areas** measures to protect critical natural habitats (such as conservation areas, sanctuaries, sacred groves, etc.) and migration routes, avoid "induced development", preserve and protect historic, cultural and religious buildings and sites; protect archaeological sites and tourism areas, etc.; and

   (d) **areas of environmental degradation** measures such as landscaping, planting, tree-planting, earthworks to re-establish and/or enhance the environmental quality of areas within the right-of way (ROW) which have suffered degradation.

5. **Environmental Impact Assessment:** As a result of the above studies, identify positive and negative impacts likely to result from the proposed improvements by road section and area of focus and propose cost-effective measures to enhance positive impacts and to avoid and/or mitigate negative impacts. In the case of potential major impacts, this will involve the analysis of alternatives with regard to alignments, improvement measures and their timing or phasing.

   The impact on emission of greenhouse gases and climatic change due to the project should also be incorporated in the report. The fuel saving and the CO2 reduiction should be assessed in "with" and "Without" project scenario.

6. **Environmental Assessment:** A full EA is warranted for assessing major or significant impacts. The EA report should be concise and should focus on significant environmental issues. The level of detail and sophistication should be commensurate with the potential impacts. The target audience should be the project designers, implementing agencies, and client and World Bank staff. The following are essential topics that should be included in the EA draft final reports.

   (a) **Executive summary** concise discussion of significant findings and recommended actions.

   (b) **Policy, legal and administrative framework** Discussion of the policy, legal and administrative framework, within which the EA is prepared.

(c) **Project description** Concise description of the project's geographic, economical social and temporal context, including any off-sites investments that may be required by the proposed project (e.g. access roads, resettlement, etc.).

(d) **Baseline data** Assessment of the dimensions of the study area (ROW and adjacent areas) and description of relevant physical, biological and socio-economic conditions, including any changes anticipated before the project commences. Current and proposed development activities within the project area (but not directly connected to the project) should also be taken into account.

(e) **Environmental impacts** Identification and assessment of the positive and negative impacts likely to result from the proposed project mitigation measures and any residual negative impacts that cannot be mitigated should be identified. Opportunities for environmental enhancement should be explored. The extent and quality of available data key data gaps, and uncertainties associated with predictions should be identified/estimated, topics that do not require further attention should be specified. A summary table of negative environmental impacts should be made along with an assessment of their potential magnitude.

(f) **Analysis of alternative** In the case of minor impacts which can be successfully mitigated within the ROW and without change in alignment, there will be no need for the analysis of alternative. In all other case, and especially in the case of major or critical issues, a systematic comparison will be undertaken of the proposed investment design, site, technology and operational alternatives of terms of

(i) their potential environmental impacts.
(ii) capital and recurrent costs.
(iii) Suitability under local conditions and
(iv) institutional, training and monitoring requirements

For each of the alternatives, the environmental costs and benefits should be quantified to the extent possible, and economic values should be attached where feasible. The basis for the selection of alternative proposed for the project design must be stated.

(g) Mitigation plan Identification of feasible and cost effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels and estimation of the potential impacts, capital and recurrent costs, and institutional training and monitoring requirements of those measures. The plan which will form the basis for the Environmental Management Action Plan (see below) should provide details on proposed work programs and schedules such details help ensure that the proposed environmental actions are in phase with engineering and other project activities throughout implementation. The plan should include compensatory measure if mitigation measures are not feasible of cost-effective (e.g. planting of trees to compensate for any which have to be removed within the (ROW). To ensure that involved agencies will implement these measures, a description of them should be included in construction contracts, and adequately reflected in construction drawing and bill of quantities. Effective inspection and supervision measures to be followed by borrower should also be specified.

(h) Environmental management and training Assessment of the existence role and capacity of environmental units on-site, or at the agency and ministry level. Based on these findings, recommendation should be made concerning the establishment and /or expansion of these units, and the training of staff, to the point that the EA recommendation can be implemented (these recommendation will serve as inputs to the environmental Management action plan, see below).

(i) Environmental monitoring plan specification of the type of monitoring who would do it, how much it would cost, and what other inputs (for example training) are necessary (and will serve as inputs to the environmental management action plan, see below).

(j) Appendices

(i) List of EA contributors/participants (individuals and organizations).

(ii) References written materials used in study preparation. That list is especially important given the large amount of unpublished documentation often used, and.

(iii) Record of interagency/forum/consultation meetings, including list of both invitees and attendees. The record of consultations for obtaining the informed views of the project-affected people and local NGOs should be included. The record should specify any means other than consultation that are used to obtain the views of project-affected groups and local NGOs.

7. **Consultation and disclosure of information**: the views of affected groups and NGOs should be fully taken into account in the preparation of the EA. This process is important in order to understand both the nature and extent of any environmental impact and the acceptability of proposed mitigation measures. Particularly to affected groups. Such consultations should occur, shortly after the preliminary screening has been completed and once the draft EA has been prepared. The consultant will therefore prepare relevant information prior to these consultations in a timely manner and in a form that is meaningful for, and accessible to the groups being consulted. Such information should normally include (a) for the initial consultation, a summary of the project description and objectives, and potential adverse effects of the proposed project, and (b) once the EA report has been prepared, a summary of its conclusions in a form and language meaningful to the groups being consulted. In addition, the consultant should prepare sufficient copies of the EA report to be available at some place accessible to affected groups and local NGOs for their review and comment.

B. Environmental Design

1. **Areas of environmental degradation**: the consultant will prepare designs to recuperate existing areas which have experienced environmental degradation (e.g. loss of tree cover) and prepare cost-effective proposals (including capital and recurrent costs) appropriate for each area, to upgrade and develop their environmental quality in a sustainable manner (e.g. through tree and ground cover planting).

2. Opportunities for enhancement: the consultant will prepare designs and cost-effective proposals (including capital and recurrent costs) for areas which provide opportunities as a result of the proposed highway improvements and associated environment mitigation measures, for environmental enhancement (e.g. provision of facilities for non-motorized transport) and the development of cost-effective sustainable environmental assets (as landscaping, tree planting, etc)

C. Environmental Management Action Plan

(i) **Implementation schedule and supervision program**: The consultant will finalise an implementation schedule and supervision program with associated costs (including capital and recurrent costs) and contracting procedures for the execution of environmental mitigation and design works to be financed under the project. The Implementation schedule should be designed to fit in with the road improvement implementation

arrangements and contracting procedures. The Implementation schedule should specify work to be under taken during and after the construction of road improvements.

(ii) **Monitoring and evaluation**: The consultant will prepare a program for monitoring environmental impacts during and after contraction and for the evaluation '' ex ante'' and ''ex post'' of environmental measures financed under the project. The program will specify who would do it, who would receive its outputs, how much it would cost, how it would be financed and what other imputes (for example training) are necessary. In addition, the program will specify what action should be taken and by whom in the event that the proposed mitigation measure fail, either partially of totally, to achieve the level of environmental protection expected.

(iii) **Management and training**: The consultant will make an assessment of the role and capacity of environmental units on-site, or at the agency level, and of the appropriateness of environmental guidelines, standards and regulation. Based of these findings, recommendations should be made concerning the establishment and/or expansion of these units, and the training of staff, (a) to ensure that the SEA or EA recommendations should be made concerning any changes to guidelines, standards and regulations which would improve environmental mitigation and design in the highway sector within the State.

ANNEXURE 4.7: TERMS OF REFERENCE - REQUIRED QUALIFICATIONS AND EXPERIENCE OF ENVIRONMENTAL SPECIALIST OF PMC

For carrying out the above exercise and supervising and monitoring of implementation of ESMF the Consultant has to appoint Environmental Specialist. The required qualification and experience of the Environmental Specialist is as follows:

Minimum Educational Qualifications	Master's Degree or equivalent in Environment Sciences or related field
General Experience	Minimum total work experience after post-graduation – 15 years
Relevant Experience	(i) Minimum 7 years of total work experience on carrying out environment impact assessments of road development projects (ii) Desirable - Environmental Expert in at least two World Bank funded projects
Essential Knowledge and Experience	(i) The candidate must have knowledge of the World Bank's guidelines, procedures and operational policies/directives. (ii) Candidate should be conversant with all the activities expected to be undertaken for Environmental / Forest / Wild life clearance procedures and pertinent guidelines of Ministry of Environment & forests (MoEF), Government of India. (iii) The candidate must have the experience of preparing environmental management plans and supervising & monitoring implementation of the plans.

ANNEXURE 4.8: TERMS OF REFERENCE FOR CONTRACTORS ENVIRONMENT AND SAFETY OFFICER

Minimum Educational Qualifications	B.E. (Civil)/ Master's Degree in Environment Sciences / M.Tech. (Environmental Engineering) or equivalent or related field
General Experience	Minimum total work experience after post-graduation – 5 years
Relevant Experience	(i) Minimum 3 years of total work experience in implementation of EMP in road development projects (ii) Desirable - experience in at least one World Bank funded projects
Essential Knowledge and Experience	(i) The candidate must have knowledge of environmental issues related to road construction activities (ii) Should familiar with the World Bank's guidelines, procedures and operational policies/directives. (iii) Candidate should be conversant with all the activities expected to be undertaken for implementation of EMP
Job Responsibility	He shall be responsible for implementation of EMP and compliance of the environmental and safety safeguards as per EMP, He shall maintain close interaction with Environmental Specialist of PMC and Environmental; and Social Nodal Officer of PIU/PMU for environment and safety measure. Maintain of records and checklist on daya to day implementation of environmental safeguards. Preparation of documents for approval of borrow areas/ quarry sites and other establishment for approval from Engineer Receiving instruction from Environmental Specialist/ Engineer Maintaining action taken reports on NCR on environmental issues.

ANNEXURE 5.1: DETAILED SPECIFICATION FOR SOCIO-ECONOMIC BASELINE STUDIES (BSES) AND PREPARATION OF A RESETTLEMENTS AND REHABILITATION ACTION PLAN (RAP)

I INTRODUCTION AND OBJECTIVES

1. The improvements mostly include road rehabilitation with raising of formation levels, pavement strengthening, widening and realignment, where necessary.

3. Where the project will entail acquisition of land, structures and other assets, and/or cause displacement of loss of assets within the public Right of Way (ROW), the National Rehabilitation and Resettlement Policy, 2007 GOI and subsequent adoption thereof by U.P. Government with certain amendments applies . The project is under consideration for World Bank financing, and must therefore also be in compliance with the World Bank's policy on '' Involuntary Resettlement'' as described in Operational Directive 430 .

4. It is the responsibility of the Borrower to prepare a plan complies with the Government of India's, Government of UP's and the World Bank's policy guidelines and directives on land acquisition and involuntary resettlement. This Plan is referred to as a Resettlement and Rehabilitation Action Plan (RAP). The RAP will be prepared in two phases. The Government of U.P. and the World Bank will first agree on an appropriate Entitlement Framework, on the basis of which a detailed RAP will be developed.

5. The RAP has three main objectives

   (a) to present the project area and the impacts of land acquisition for project civil works on the people who own properties to be acquired, live on the land to be acquired, and/or derive their income from the land or enterprises operating on the land to be acquired.

   (b) to present the entitlement policy for compensation and assistance to people affected by the project.

   (c) to present an action plan for delivery of the compensation and assistance outlined in the policy, to the persons identified as entitled to such assistance.

6. GOI ,GoUP and World Bank policy is based on the principle that the population affected by the project should receive benefits from it, or at the very least not be worse off than before. Acquisition of land and other assets, both of private holdings and within the ROW, are integral part of project design and implementation. Undertaking a social impact assessment and preparing a RAP should be incorporated as part of the project design from the start, and undertaken in close coordination with environmental analysis, the Environmental action plan, and the engineering design and implementation.

7. The World Bank policy emphasizes that involuntary resettlement should be avoided or minimized where possible by exploring other alternative project designs. Therefore, the initial screening for social and environmental impacts should be part of the feasibility studies to determine the final selection of roads to be included in the project.

8. In cases where displacement, loss of assets, or other negative impacts of people are unavoidable, the project shoud assist the project Affected Persons (PAPs) with the means to improve their former living standards, income earning capacities, production levels or at least maintain the previous standards of living of those suffering losses.

9. Since a key principle is that no civil works should be undertaken on any stretch of road before land acquisition has been completed and compensation or assistance carried out according to the RAP, it is essential that the planning and implementation of civil works be coordinated with the RAP.

10. Preparation of a RAP requires thorough understanding of social, economic and cultural factors influencing the lives of the adversely affected people. Detailed baseline studies need to be conducted, and a participatory approach through consultation with potentially affected persons and other stakeholders such as local NGOs, municipal authorities, etc is essential. Appropriate skills and experience to coordinate and implement this must be available within the responsible agencies.

11. In cases of impacts of indigenous communities, the World Bank's Operational Directive 4.20 on Indigenous People also applies. In such cases, the TOR requires the consultants to prepare the plans mandated by this directive, in addition to the other elements of the RAP. This planning will specifically include the consultation with and informed participation of the tribal population. The outcome of the consultation process should be the formulation of either an Indigenous People's Development Plan (IPDP) or a specific strategy to ensure that the affected tribal population benefits from the project activities. In the case of an IPDP, the information guidelines mandated by OD 4.20 should be followed.

12. The Terms of Reference for the work undertaken may be modified according to local contexts, subject to approval by the State Government and the World Bank.

II SCOPE OF WORK

Social Impact Assessment

13. The objectives of the Social Impact Assessments are

(a) to provide the minimum information on social impacts as part of the preliminary screening of road sections.

(b) to verify the legal boundaries of the Right of Way, document existing structures, land plots, and other physical assets within the ROW to establish a cut-off date for entitlements in accordance with the policy to be developed, and

(c) to provide the socio-economic baseline information required for preparation of the entitlement framework.

14. **Preliminary Screening**: The consultant shall make initial visits to all the different stretches of road under consideration for project. Coordinated with the other screening exercises being undertaken (environmental, techno-economic), an assessment shall be made of the potential magnitude of social impacts, Any major social impact issues such as large scale resettlement, dense urban clusters, and tribal population shall be identified. Stretches with no or minor social impacts shall be identified, and given priority in the selection of roads to be improved.

15. Following the selection of road stretches to be included in the project, a verification exercise is undertaken. The verification shall establish the legal boundaries of the Right of Way, and identified current usage of the land in terms of squatters, land encroachments, fixed and movable structures, trees and wells, etc. This shall be jointly verified by the (PWD) and the State's Department of Revenue, in the field, the information gathered should be reflected in maps and records, jointly verified by signature of the responsible senior (PWD) and Revenue officials. The following guidelines shall be followed.

(a) Where it is likely that dislocation of people will be required, suitable resettlement sites of government owned land in close proximity to the current locations of the affected persons should be recorded.

(b) All encroachments within the public ROW, as well as private holding of land and other assets in areas where it is probable that the corridor of impact will go shall be documented.

(d) Assets both within and outside of the ROW such as structure, land holdings, tree and wells, etc shall be recorded on strip maps, and be numbered in each named settlement and administrative unit.

(e) The information gathered shall be recorded on strip maps, and if possible computerized Photography and/or video recordings should be used to document existing structures and land holdings, and circumstances for identification and planning.

16. Following this a public notification of the intent to undertake a project shall be issued, in accordance with the legal requirements of the State. This represents the cut-off date for entitlements under the project. Only those people with land or other assets identified as existing prior to this date will be entitled to support under the project. This is to prevent land invasions, erection of new structures for speculation purposes, and other attempts at false claims. The consultants shall assist the appropriate authorities in undertaking this work.

17. **Socio-economic baseline information**: This will be collected by means of a sample socio-economic survey, of the pre-selected roads. The survey shall gather information on the various categories of losses and other adverse impacts likely under the project. The losses shall be categorized according to type. These losses will vary based on the local context. They may include but not be limited to

(a) loss of land and other productive resources such as trees.

(b) loss of structures, temporary of fixed, within or outside of ROW.

(c) loss of access to public services (roads, water supply, schools, medical facilities, shops).

(d) loss of customers and supplies.

(e) loss of fishing, grazing, or forest areas.

(f) loss of access to common property resources, and

(g) Disruption of social, cultural, religious, or economic ties and networks.

18. Furthermore, the sample socio-economic survey shall identify potentially affected populations, with special attention to vulnerable groups such as indigenous/tribal populations, scheduled castes, landless households, and women-headed households. It shall include but not be limited to

(a) demographic characteristics (ages, sex, numbers, and categories of affected people)

(b) ethnic/tribal/caste composition of the population, and settlement pattern by ethnic/tribal/caste groups.

(c) main forms of livelihood including specification of the resource base, seasonal and permanent use of resources including land based of salaried employment for different household members, labor mobility, the importance of informal networks and labor exchange patterns and the potential impact of disrupting these patterns, and

(d) if any persons have already been displaced, information on them should be collected for two time periods at the time of displacement and at present

19. As part of the sample socio-economic survey, an assessment shall also be made of what the likely replacement value of the various assets lost is based on the following considerations

(a) entitlements to affected persons shall be based on replacement value rather than registered land prices etc. which tend to be undervalued.

(b) this assessment is also important as a means of preventing inflated claims to compensation.

(c) as part of this assessment, consultations and discussions shall be held with a representative number to the different categories of affected persons, to assess their views on what constitutes fair compensation or assistance, their preferences for resettlement actions, and reactions towards the project and

(d) a suitable methodology shall be developed to classify different types of assets, and the measurements taken to determine quantities of losses, i.e different types of land, tree, crops, structures, businesses etc, and the unit of measurement such as area of land, number of trees, floor area or other measurements for houses etc.

20. The sample survey shall form the basis for the full base line socio-economic survey to be undertaken subsequently of all PAPs. By conducting if first for a sample population, it may be modified and improved prior to undertaking the full survey.

21. **Reporting**. The findings from the Social Impact Assessment shall be presented in a report. This shall include

(a) assessment of current land acquisition practices, their appropriateness and potential impacts for this project.

(b) estimates of the type of losses expected as a result of the project, broken up in categories of cultivated, homestead, enumeration of structures, trees and other assets

(c) identification of the categories of affected persons, bases on the identified losses, and estimates of their numbers.

(d) it is important to analyze the data in such a way that the report captures the likelihood that some persons may lose different kinds of assets. Therefore, the number under each category is not mutually exclusive and in identifying different person's losses and entitlements, provision must be made for recording and compensation for more than one. Kind off loss and

(e) the status of squatters and encroachers within the public Right of Way.

22. Based on this information the consultants shall prepare a draft Entitlement Framework, which will form part of the agreement between the State Government and the Bank. The following considerations are essential

(a) the framework will be adopted as policy for this project, and will have an objective to provide a basis for development of more general, sectoral policy for social impacts and resettlement within the State's road infrastructure sub-sector.

(b) the entitlement framework shall be prepared by the consultants. However , its is essential that this be done in close consultation with the agencies responsible for the subsequent implementation of the Resettlement Action Plan, to ensure full understanding and agreement on the issues.

(c) the framework should be placed within the legal context of India and the State and the Bank's Operational Directive 4.30 must be adhered to, if there is a divergence between domestic law and practice, and the World Bank's Directives, this should be clearly identified and analyzed before the framework is finalized. If necessary, consultation between the Bank and the State authorities should be held to arrive at a framework acceptable to both.

(d) a key consideration should be to develop a methodology to document to what extent the objectives are achieved. Indicators should be developed which can be used for systematic monitoring and comparison with the baseline data over time.

(e) as a general principle, there ought to be more than one option offered to PAPs within each category of impact. The entitlement framework should analyze these options, the risks and benefits of each, and how to implement the various programs in a transparent manner.

(f) Wherever possible, land for land ought to be a priority. Cash compensation should only be undertaken when it can be clearly documented that land for land or other types of assistance are not available. If cash payments are made, special arrangements should be made to assist the most vulnerable in marking productive use of the money. The entitlement framework should also describe how payments can be made in a transparent manner, for example by doing it publicly with independent verification.

(g) the entitlement framework shall specify the period of notification about acquisition of assets, and establish that no civil works may start on a stretch of road before the Resettlement Action Plan has been implemented there. This is a key principle, and must be taken account of when awarding contracts for civil works. Improper or delayed implementation of the RAP may lead to costly delays in civil works.

(h) As the project will work in different areas at different time, the framework and RAP should be prepared in such a way that people's assets are not acquired many months or years before actual work stats. The framework should therefore also contain provisions as how the compensation and assistance levels may be re-evaluated and adjusted in case of price increases. Such reassessment should be done at least on an annual basis, ideally on a six-monthly basis.

23. The framework shall be presented in a tabular form

Type of Loss	Entitled Person	Entitlement	Implementation Issues/Guidelines	Organizations Responsible

Preparation of Resettlement Action Plan

24. The information collected during the Social Impact Assessment shall form the basis for preparing a Resettlement and Rehabilitation Action Plan (RAP). The RAP should contain at a minimum the following section

(a) Summary findings from the Social Impact Assessment

(b) Entitlement framework.

(c) Data on expected impacts and numbers and categories of affected persons.

(d) Institutional arrangements,

(e) Implementation procedures

(f) Consultation and participation arrangements, of RAP and other stakeholders including grievance procedures.

(g) Budget and costs,

(h) Timetable of activities, with Gantt charts showing the various elements of the plan, coordination of land with road design, contracting, and construction, and

(i) Monitoring and evaluation of land acquisition and resettlement process.

25. In preparing the RAP, the likely alignment and corridor of impact for the roads to be improved shall be determined. This shall be done as a joint exercise, coordinating the various design aspects of the project (engineering, environmental, socio-economic). The corridor of impact is defined as the width required for the improved road and the civil works necessary to construct it,

including the new pavements, shoulders, support slopes, and necessary safety zone. People who live or have assets outside of this corridor of impact and who will not be affected by the project will not be considered as PAPs and will not be entitled to compensation of other forms of assistance. The following considerations are important.

(a) The identification of the corridor of impact shall be undertaken as a joint exercise between the planners responsible for engineer design environmental assessment, and social impact and R& R planning.

(b) Public consultation shall be undertaken, to determine what local people consider to be the best alignment for the improved road.

(c) The corridor of impact will normally fall within the existing Right of Way, but the study shall assess where private land acquisition may be required.

(d) It is likely that the exact road alignment and therefore the corridor of impact may shift following detailed engineering designs. The purpose of this early estimate is to get as complete a picture as possible of the expected scope of land acquisition required, number of PAPs categories and entitlements, and budgets and time frame required for the implementation of the Resettlement Action Plan. However, this shall be updated and corrected as required following the final engineering designs.

  (i) the land acquired should be the minimum needed to improve and upgrade the existing road alignment to the defined technical standard,

  (ii) lower value land should be acquired where possible

  (iii) wherever possible, the alignment should be designed so as to avoid acquiring buildings in which permanent businesses operate.

  (iv) re-alignments should only be done where it is necessary for safety reasons or when it is preferable for environment reasons or because it has less asset acquisition impact.

26. Based on the agreed entitlement framework, the full baseline socio-economic survey and a joint on-site verification shall take place for the total length of highways to be improved. The baseline socio-economic survey shall be conducted within the corridor of impact.

27. The survey shall be full census of all entitled persons and a baseline socio-economic survey. It shall uniquely identify all entitled persons under the policy. The survey shall use the methodology developed for the sample survey undertaken earlier, and provide the data for an overall estimate of total numbers of people affected, assets to be acquired by the project, and scope of resettlement and rehabilitation measures to be taken. The joint on-site verification will determine the precise nature and quantity of assets to be acquired and the losses to be compensated.

28. The consultants shall advise the project authorities about the best way to coordinate this activity. The following considerations are important.

(a) the survey and verification should be done jointly by representatives of the project authorities and the PAPs and other authorities such as local revenue officials, as appropriate based in local rules.

(b) during this survey, the PAPs shall be explained the likely impact of the project authorities and presented with a copy the entitlement framework in his/her local language.

(c) the assets to be acquired shall be tabulated, bearing in mind that each PAP may have losses in more than one category. The compensation or assistance he/she is entitled to shall be clearly explained, as well as the likely timetable for when the acquisition is likely to take place.

(d) Where different options have been developed, these shall be explained along with the likely risks involved. Wherever possible, the principal of high vulnerability/ low risk should

be followed i.e. those among the PAPs identified as particularly vulnerable should be encouraged to choose the assistance or compensation that offers the least risk. This choice shall not be made on the spot, but provision should be made in the RAP for further consultation, and sufficient time should be given to the PAPs to make their choices.

(e) the table of likely losses and types of entitlements shall be verified by the three parties present, and signed by each of them. The PAP shall be given a copy this will serve as proof of his status as PAP, and each PAP should be given a unique identification code. Other measures such as identity cards may be considered if necessary.

(f) this information should be coded and computerized, and updated as required following finalization of the data. Developing a data base to track PAPs entitlement and compensation of assistance given should be considered to ensure accurate and efficient implementation of the RAP.

(g) it should be made clear to the PAP that if the final road design and the choice of alignment mean that he/she is no longer within the corridor of impact, no compensation will be given.

(i) the PAP shall also be informed about the mechanism set up for grievance procedures.

(j) provision should be made for how missing data can be collected later, and other mechanisms for information sharing and local participation should also be developed.

(k) undertaking the baseline socio-economic survey and joint verification is a time consuming exercise. People are not always available, and it may be difficult to coordinate the movements of local government officials with the project authorities. It is therefore essential to allow sufficient time for the survey and verification before any civil work start, and to coordinate the planning of the different project components.

(l) Summary information shall be tabulated based on districts, with length of road, land to be acquired (cultivated and homestead listed separately), temporary and permanent buildings, and number of households and total persons affected (broken down by gender by gender and other relevant categories such as major/minors tribal's, etc.)

29. **Institutional Arrangements**. Responsibilities for implementation of various parts of the RAP should be clearly delineated

(a) while elements of the plan may be undertaken by other institutions (for example by contracting with NGOs to facilitate R & R , awareness raising and income-generating activities the overall coordination and capacity to monitor the project should be maintained by the PWD as the main responsible agency.

(b) for task involving coordination among different agencies of government of community organization, appropriate mechanisms should be identified and established. The organizational structure and type of skills required should be creating a joint task force or steering committee with representatives of different agencies involved as well as from local government and representatives of the PAPs should be explored.

(c) Appropriate monitoring and evaluation arrangements should be developed. It should be the responsibility of the implementing agency to systematically monitor the progress of the RAP, and analyze and report on its impacts compared with the baseline data. Suitable indicators should be developed for this. Independent evaluation or supervision should be provided for, and guidelines prepared for how this is to be undertaken.

(d) A grievances and appeals mechanism should be evolved.

(e) It is essential to document the institutional capacity of the agency or agencies responsible for implementing the RAP. Where institutional capacity is yet to be developed or identified, a realistic plan shall be presented for how this is to be achieved, bearing in mind likely constraints and delays.

30. Assessment of institutional capacity will be a key factor in the appraisal of the RAP

31. Following agreement on an entitlement framework, a summary publication with project description, estimates of land acquisition losses and entitlements, both in English and local languages, should be prepared. This is to be distributed among the local communities and to other stakeholders.

ANNEXURE 5.2: R & R POLICY

संख्या– /23–12–2014–4(सा0)/2012

प्रेषक,

जिन्नूरैन अहमद खाँ
उप सचिव
उत्तर प्रदेश शासन।

सेवा में,

प्रमुख अभियन्ता (विकास) एवं विभागाध्यक्ष,
लोक निर्माण विभाग, लखनऊ।

लोक निर्माण अनुभाग–12 लखनऊ : दिनांक 19 अगस्त, 2014

विषयः–विश्व बैंक के ऋण से प्रस्तावित उत्तर प्रदेश कोर रोड नेटवर्क परियोजना के अन्तर्गत पुर्नस्थापना एवं पुनर्वास नीति के अनुमोदन के सम्बन्ध में।

महोदय,

उपर्युक्त विषयक मुख्य अभियन्ता, विश्व बैंक परियोजना (मार्ग), लो0नि0वि0 लखनऊ के पत्र सं0–119/1–09/यू0पी0सी0आर0एन0डी0पी0/सी0ई0डब्लू0बी0/2014 दिनांक 05.082014 (छायाप्रति संलग्न) का कृपया अवलोकन करने का कष्ट करें, जिसके द्वारा उत्तर प्रदेश कोर रोड नेटवर्क परियोजना के अन्तर्गत पुर्नस्थापना एवं पुनर्वास नीति के अनुमोदन हेतु प्रस्ताव उपलब्ध कराया गया है।

2– इस सम्बन्ध में मुझे यह कहने का निदेश हुआ है कि उत्तर प्रदेश कोर रोड नेटवर्क परियोजना के अन्तर्गत पुर्नस्थापना एवं पुनर्वास नीति के सम्बन्ध में सैद्धान्तिक अनुमोदन प्रदान किया जाता है। प्रकरण में अन्तिम अनुमोदन प्रदान करने पर यथासमय निर्णय लिया जायेगा। कृपया तदनुसार आवश्यक कार्यवाही सुनिश्चित कराने का कष्ट करें।

संलग्नक –उपर्युक्तानुसार।

भवदीय,

(जिन्नूरैन अहमद खाँ)
उप सचिव

संख्या– 1195 (1)/23–12–14–तद्दिनांक।

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :–

1– प्रमुख अभियन्ता (ग्रामीण सड़क), लोक निर्माण विभाग, लखनऊ।
2– मुख्य अभियन्ता, विश्व बैंक परियोजना (मार्ग), लो0नि0वि0 लखनऊ के पत्र सं0–119/1–09/यू0पी0सी0आर0एन0डी0पी0/सी0ई0डब्लू0बी0/2014, दिनांक 05.082014 के संदर्भ में।
3– गार्ड फाइल।

आज्ञा से,

(जिन्नूरैन अहमद खाँ)
उप सचिव

S.O. G.O. 2014 (R) 213

PUBLIC WORKS DEPARTMENT
GOVERNMENT OF UTTAR PRADESH

UTTAR PRADESH CORE ROAD NETWORK DEVELOPMENT PROGRAMME

RESETTLEMENT AND REHABILITATION POLICY

JULY, 2014

1 INTRODUCTION

1.1 Government of Uttar Pradesh has plans to improve the Core Road Network. The aim and the objective are to improve and strengthen the state's road transport network.

1.2 Apart from the positive aspects of the road up-gradation, the project may cause loss of land, structures, other immobile properties and various sources of livelihood. This document describes the principles and approaches to be followed in minimizing and mitigating negative social and economic impacts caused by projects so that the affected are able to restore and improve their standard of living.

1.3 This policy is based on the Right to Fair Compensation and transparency in land Acquisition, Rehabilitation and Resettlement Act, 2013 subject to subsequent supplements by GoUP orders and World Bank Operational Policy 4.12 on involuntary resettlement.

2 BROAD PRINCIPLES

2.1 This policy recognizes that involuntary resettlement dismantles a previous production system and a way of life, all such rehabilitation programs will adopt a developmental approach rather than the welFair approach. These guidelines details out the assistance in re-establishing the homes and livelihoods of the Project Affected People (PAP) during the course of projects. The broad principles of the Resettlement and Rehabilitation (R&R) policy are as given below :

a) All negative impacts including displacement should be avoided or minimized wherever feasible by exploring all viable alternative project designs
b) Where negative impacts are unavoidable, efforts should be made either to improve the standard of living of the affected persons or at least assist them in restoring their previous standard of living at no cost to them.
c) Ensure people's participation during the course of the project cycle.
d) Effort should be made towards the enhancement of the positive impact of the projects.

2.2 The project will broadly have three impacts that require mitigation measures. These are :

a. Loss of immovable assets viz., land, house, commercial establishments wells, ponds etc.
b. Loss of livelihood or income opportunities viz, for agriculture labours, helping hands in commercial establishments etc.
c. Impact on the community in terms of loss of common property resources.

The first two categories represent direct impacts on an identified population. The people likely to be affected will be surveyed and registered, and project monitoring and evaluation will compare long term impacts against baseline socio economy data.
The third category represents a group impact, where gains and losses of a group oriented nature are not quantifiable in terms of impact on the individual. Mitigation and support mechanism will be collectively oriented, and the monitoring will focus on impact on such groups.

2.3 All acquisition of private land would be by direct purchase as per G.O. No. 271/83-अव0-13-39(अवस्थापना)/13 Avasthapna Vikash Anubhag – 13 dt 02.09.2013 and subsequent amendments theirof. However the provisions of rights to Fair compensations and transparency in land acquisition, rehabilitation and resettlement act, 2013 and subsequent supplements by GoUP shall prevail in case direct purchase fails.

a) Support will be extended under the broad principles of this policy to meet the replacement value of the assets and loss of livelihood.
b) The policy further recognizes extension of support to non-titleholders for the loss of livelihood and replacement value for assets other than land.
c) The common property resources will be replaced as far as feasible and if not then assistance will be provided at replacement value to the group.

2.4 Major widening and strengthening work planned will take place within the Right of Way (ROW) based on land availability, gradient, traffic and congestion of population along the road length. Efforts will be made during implementation to minimise any disturbance in the daily activities of the local people.

2.5 Before taking possession of the acquired lands and properties, all compensation, resettlement and rehabilitation would be made in accordance with this policy.

2.6 In case of displacement, resettlement sites will be developed as part of the project. In such circumstances care should be taken so that there is no/or minimum adverse social, economic and environmental effects of displacement on the host communities and specific measures would be provided in the Resettlement and Rehabilitations Action Plan (RAP) to mitigate any such impacts.

2.7 Before taking possession of acquired property sufficient time would be provided to harvest the crop.

2.8 The implementation of the R&R Action Plan will be synchronized with the civil works.

2.9 The project will ensure that no civil works are initiated before compensation and assistance to affected population has been provided in accordance with this policy.

3 ABBREVIATIONS AND TERMS

ABBREVIATIONS USED

BPL	Below Poverty Line
SOR	Schedule of Rates
CBO	Community Base Organisation
COI	Corridor of Impact
CPR	Common Property Resources
DC	District Collector
EP	Entitled/Eligible Person
HCA	House Construction Allowance
NGO	Non Governmental Organisation
PAP	Project Affected Person
PAF	Project Affected Family
PDP	Project Displaced Person
PDF	Project Displaced Family
PIU	Project Implementation Unit
RFCTLAR&R	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement act, 2013
PWD	Public Works Department
R&R	Resettlement and Rehabilitation
RAP	Rehabilitation Action Plan
ROW	Right of Way
RRO	Resettlement and Rehabilitation Officer
SLAO	Special Land Acquisition Officer
SES	Socio-Economic Survey
SC/ST	Schedule Caste and Schedule Tribes
u/s	Under Section
SIA	Social Impact Assessment

TERMS

Below Poverty Line : Annual Income from all sources is less than a designated sum as fixed by the Planning Commission, Government of India.

Corridor of Impacts : Width of the land required for upgradation of the road.

Development Block : A number of villages grouped together with Block Development Officer as its administrative head.

District Collector : Administrative head of the District

4 DEFINITIONS

Cut off Date : i) In case of land acquisition affecting the legal title-holders, the cut off date would be the date of issuing the publication of preliminary notification u/s 11 (1) of RFCTLAR&R, Act, 2013.

ii) For the non-title holders cut off date would be the date of Census Survey.

Project Affected Persons : Person who is affected in respect of his/her land including homestead land and structure thereon, trade and occupation due to construction of the project

Project Displaced Person : A person who is compelled to change his /her place of residence and/or workplace of business due to the project.

Project Affected Family : Family includes a person, his or her spouse, minor children, minor brothers and minor sisters dependent on him. Provided that widows, divorcees and women deserted by families shall be considered separate families;

Explanation – An adult of either gender with or without spouse or children or dependents shall be considered as a separate family for the purpose of this Act.

Land Over : "land owner" includes any person –

(i) Whose name is recorded as the owner of the land or building or part thereof, in the records of the authority concerned; or

(ii) Any person who is granted forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or

(iii) Who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or

(iv) Any person who has been declared as such by an order of the court or Authority.

Marginal Farmer : "marginal farmer" means a cultivator with an un-irrigated land holding up to one hectare or irrigated land holding up to one half hectare.

Small Farmer : "small farmer" means a cultivator with an un-irrigated land holding up to two hectares or irrigated land holding up to one hectare, but more than the holding of a marginal farmer.

Encroacher : A person who has trespassed Government/ private/community Land, adjacent to his or her land or asset to which he/she is not entitled and who derives his/her livelihood and housing there from prior to the cut off date.

Squatter : A squatter is a person who has settled on publicly owned land for housing or livelihood without permission or who has been occupying publicly owned building without authority prior to the cut off date.

Landless/Agriculture Labour: A person who does not hold any agriculture land and has been deriving his main income by working on the lands of others as sub-tenant or as an agriculture labour prior to the cut-off date.

Below Poverty Line : A household, whose annual income from all sources is less than the designated sum as fixed by the planning commission of India, will be considered to be below poverty line (BPL).

Vulnerable Person : The Vulnerable group may include but not be limited to the following:

a. those people falling under Below Poverty Line category as defined by GoUP;
b. Member of Scheduled Caste/Tribe community/other backward community;
c. Women Headed households;
d. Senior Citizen – person above the age of 60 years;
e. Landless.
f. Village artisan -

* PAP includes project displaced person, but all PAPs may not be displaced persons.

5 BROAD PROCEDURES

5.1 Basic Approach

a) The policy recognizes that along with the positive aspects of infrastructure development, there are also negative socio-economic impacts.
b) The policy principle is to provide R&R assistance to both PDPs and PAPs.
c) Every effort should be made during project design and preparation to minimise acquisition of land and other assets and to reduce negative socio-economic impacts. The structures/assets falling outside the COI and within the ROW would be left undisturbed.
d) People losing their home represent a particular challenge in the resettlement program. Every effort will be to ensure that new housing is available before people are displaced.
e) If the project impact leads to people being unable to continue with their previous occupation, the project will provide support and assistance through alternative employment strategies. Long-term earning opportunities will be provided though strategies such as vocational training, employment counseling, income generating schemes, and access to credit, etc.
f) Absence of legal title to land will not bar the people from rehabilitation assistance. However, compensation for land will not be extended to the encroachers and squatters, considering the illegal nature of their possession.
g) The identification of encroachers and squatters, in case they do not posses ration cards, would be sought from voter's list, or any other legal documents or information from the community. In the absence of any supporting legal documents, findings of the Census survey shall be relied upon.
h) Efforts should be made to ensure consultation, involvement and participation of the people, non-government organizations (NGOs) and stakeholders in planning, implementation and monitoring of the project through focus group discussions, workshops at district level and also at state level. The PAPs and particularly in the case of vulnerable individuals and groups, who will be encouraged to choose the options, which entail the lowest risk.
i) Copies of this document, information of its salient features or its executive summary, will be displayed at the notice board of the offices of the project authority, and prominent public places for general information to the public. Summary of the policy with entitlement framework translated in local language will be distributed to the affected people. Interested persons may contact project authorities for further details.
j) The R&R assistance for each and every PAP will be determined as per their respective entitlement as defined in annex I.

5.2 Compensation and R&R

a) All eligible PAPs will be entitled to R&R assistance over and above the compensation received under RFCTLAR&R Act,2013. Those PAPs who are not entitled for compensation (encroachers and squatters) will get R&R benefits as per their entitlement under this policy.
b) The compensation for land and building shall be provided within the ambit of RFCTLAR&R Act,2013 and to meet the replacement value, R&R assistance will be provided.

c) All losses, including loss of income, will be compensated within the overall R&R package as per the entitlement framework. The unit of entitlement will be the family as defined in section 4.0.

d) In case of acquisition of houses/community buildings/or any other assets, the replacement value will be considered. In case the replacement value is more than the compensation at market value determined by the competent authority, the difference is to be paid in form of assistance.

e) The entitlement of compensation and assistance will be extended to only those PAPs who are identified on or prior to the cut off date. Claims regarding R&R regarding R&R assistance should be dealt by Grievance redress committee

5.3 General Assistance

a) The shifted population will be assisted in getting their names included in voter's lists of the area of their resettlement.

b) PAPs falling under vulnerable groups will be provided suitable assistance to minimise the adverse impacts through various means including implementation of development activities. All mitigatory measures will be described in depth in RAP.

c) Provision will be made for infrastructure facilities at resettlement sites.

d) Dumping sites for earth spoils will be identified in consultation with the community.

e) The project will ensure that PAPs get preference in job with the contractors during construction phase.

6 SOCIAL IMPACT ASSESSMENT AND RESETTLMENT PLANNING

6.1 Corridor of Impact

Displacement will be limited to the corridor required for the road, which included the safety zone. This corridor is referred to as the Corridor of Impact (COI) and comprises typically the total construction width, inclusive of drains/embankments, shoulders. The COI may have different extent to the left and right from the road centre line and may vary as the social requirement is to avoid / minimise adverse impacts.

6.2 Surveys

For proper rehabilitation of the project affected and displaced persons, social impact assessment shall be undertaken. This will help in assessing the magnitude of displacement, losses to be sustained by PDP's and PAPs, better targeting of vulnerable groups, ascertaining the cost of R&R, drawing out the rehabilitation package and administering the same.

The social impact assessment survey will include both census to identify PAP, type & degree of social impact and base line socio economic surveys;

6.2.1 The purpose of the census is to register and document the status of the potentially affected population within the project impacts area, demographic, social and economic profile of the PAPs and to prepare strip maps indicating individual, community and public assets along the road stretches.

Where a preliminary notification under section 11 is not issued within twelve months from the date of appraisal of the Social Impact Assessment report submitted by the Expert Group under section 7, then, such report shall be deemed to have lapsed and a fresh Social Impact Assessment shall be required to be undertaken prior to acquisition proceedings under section 11. Provide that the appropriate Government, shall have the power to extend the period of twelve months, if in its opinion circumstances exist justifying the same; provided further that any such decision to extend the period shall be recorded in writing and the same shall be notified and be uploaded on the website of the authority concerned.

The census would also include collection of information of the following:

a) The economy base of the affected people including owned the modes and magnitude of production, consumption pattern, related economic institutions and allocation of various productive resources.
b) Household census covering immovable property owned by the PAPs and other resources in their possessive/use. These surveys would be carried out in association with local and host communities as well as with the local representatives. The data generated will be gender disaggregated.
c) The social structure, norms, customs, cultural centres, traditional patterns of leadership and institutions of social networking and impact on common property resources (CPR) that will be affected.
d) The census will prima facie identify tenants, sharecroppers, encroachers, squatters and agricultural labourers. This will also identify PDPs, minorities and vulnerable people.

6.2.2 Through baseline socio-economic survey following information would be collected:

a) Accurate and up to date maps of the project area.
b) Analysis of social structures and income resources and expenditure pattern of the population.
c) Information on health, development process of the habitations, indebtedness, etc.
d) Inventories of the resources which the PAPs use, as well as data on their system of economic production.
e) The relationship of tribal to other local groups. Baseline studies should capture the full range production and marketing activities in which the PAPs in general and more specifically if tribal are affected.

6.3 Rehabilitation Action Plan

a) The census, which serves to provide baseline socio-economic information about the affected person, will be completed before initiation of the finalization of the RAP.
b) A comprehensive plan for resettlement will be drawn up in advance by the project authorities based on socio-economic surveys. The entire plan for resettlement should be prepared by the project authorities in consultation with all stakeholders including local representatives, NGOs/CBOs and representatives of PAPs.
c) The RAP should be brought to the notice of the displaced and affected persons with the help of the local NGOs, the representatives of PAPs and the host communities so that they are able to make their suggestions.
d) The completed RAP will include census of affected people, their entitlements to restore losses, budget, institutional mechanisms and schedule of tasks, assessment of the feasibility of income restoration mechanism and avenues for grievances redress and participatory monitoring of results.

7 ACQUISITION OF LAND AND OTHER IMMOVABLE PROPRTIES

OPTION I

Clause 46 of RFCT LA R&R, 2013 : Direct purchase

- Project to identified land parcels to be purchased & owners is consultation with the local revenue officials.
- List of such land owners intent to purchase & purpose of purchase will be forwarded to the DM for direct purchase. A committee will be set up as per GO 271/83-अव-13-39 (अवस्थापना)/13 dt 02.09.2013 for direct purchase issued by GoUP.
- The base price of the land will be as per RFCT LA R&R, 2013.
- The rate will be finalized by the committee.
- The rate agreed upon will be exclusive of R&R assistance.
  (a) Any PAP getting displaced due to loss of shelter will be eligible for R&R assistance as per the entitlement matrix (Annexure I)
  (b) Any PAP where land post acquisition becomes economically unviable will be eligible for R&R assistance as per entitlement matrix (Annexure I)
- Rules and procedures will be as per GO 271/83-अव-13-39 (अवस्थापना)/13 dt 02.09.2013 amended time to time by GoUP by GO,

OPTION II

7.1 Land surveys for payment of compensation shall be done on the basis of updated official records and grounds facts. The land records shall be updated relating to title/classification/current use of land expeditiously for ensuring adequate cost compensation. For determining classification/current land use, official records as they are on the cut off date shall be taken into account.

7.2 If the residual land is less than the 0.5 Hectare in case of irrigated land and 1.0 Hectare in case of un-irrigated land and if remaining structure is unlivable, owner of such land/property shall have the right to seek acquisition of his entire contiguous holding/property.

7.3 The compensation amount for the land and properties to be acquired shall be paid according to the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, rehabilitation and resettlement act, 2013.

7.4 The value of houses, buildings and other immovable properties of the PAPs including the PDPs shall be determined for the purpose of payment of compensation at the relevant SOR without deducting the depreciation value.

7.5 Compensation for properties belonging to the community or for common places of worship which are acquired for the project shall be provided to enable construction of the same at the new place through the local self-governing bodies or will be replaced by the project.

7.6 Compensation for trees will be based on their market value in case of timber bearing trees and replacement cost in case of fruit bearing trees as per the rates decided by the competent authority in consultation with department of Agriculture, forest, Horticulture, Sericulture etc. as the case may be.

7.7 Compensation shall be paid and efforts will be made to complete the R&R of PAPs/PDSs before taking possession of the land /properties. The PDPs and PAPs shall hand over the land and properties acquired to the Government free from all encumbrances such as mortgage, debt etc. pertaining to the lands and properties acquired. However, in case of any loans, on such acquired lands and properties given to the PAP by any Govt. agency, remains unadjusted as per the information furnished by the PAPs or by the loaner agency then such amounts shall be deducted out of total compensation.

Disposal of acquired properties :

7.8 The acquired land and properties shall vest in the department/ organization paying compensation for such lands/properties.

7.9 Even after payment of compensation, PDPs and PAPs will be allowed to salvage the materials from their houses, shops, etc acquired by the project and no charges will be levied upon them from the government. Project authorities will give a notice to people to salvage the material within 15 days of the issue of the notice.

7.10 Government will provide support to PDPs to carry the salvaged materials and other belonging to the alternate site.

7.11 The affected persons should either be paid the compensation for the trees and he/she should be allowed to take the cut tree.

RESETTLEMENT AND REHABILITATION

8.1 Agricultural land for land compensation will be provided to vulnerable person as defined in section 7.3

8.2 New resettlement sites with housing /shopping complexes should be developed, if opted by 25 EPs for house and 15 EPs for shops. However, where PDPs do not opt for such site and prefer cash, then adequate assistance towards the cost of infrastructure development will be given to the PDPs.

8.3 Plots for agricultural land/houses/shop at the new resettlement sites will be provided to the PDPs free of cost in the Joint name of husband and wife. Cost of registration to that effect would be borne by the project authority. The new resettlement site, as far as possible will be close to the original habitation.

8.4 At the new resettlement centres, basic civic amenities as listed by Government of India, viz, drinking water, internal and link roads, medical facilities, schools, electricity, etc, will be provided along with any other amenities which the PDPs enjoyed at their abandoned place.

8.5 People losing access to public land and other properties due to widening and upgradation of the road will be assisted as per the procedures in the entitlement framework.

8.6 Personal and individual attention will be paid towards assisting affected families during their resettlement. The focus will be on minimizing the transition period involved in resettlement.

8.7 Identity cards will be issued to all PAPs in order to establish their bonafide claim.

8.8 Rehabilitation Assistance

a) One time resettlement allowance shall be provided to the affected families;
b) Subsistence grant and Transportation cost shall be provided to the affected people;
c) Training for upgradation of skills or those related to income generation will be provided as a part of rehabilitation assistance.

8.9 The R&R activities in respect of the tribal should be adapted to their needs and environment. Customary right and land tenure system of the tribal PDPs and PAPs should be protected.

9 MONITORING AND POST – PROJECT EVALUTION

On completion of implementation of the R&R work, project authorities shall monitor resettlement & rehabilitation activities and its impact on the PAPs & the host population. The socio-economic survey undertaken during the project preparation will provide benchmarks for comparison on the socio-economic status of the PAPs in the post project period. While regular monitoring of physical and financial aspects of the project will be conducted by the project authorities, annual, mid-term and end-term evolution of resettlement and rehabilitation implementation process will be carried out by an external agency with the participation of the representatives of the PAPs. Suggestion made in the evolution report will incorporated in the RAP/revised RAP to make the R&R programmes more effective.

10 ORGANISATIONAL STRUCUTURE

The project will have an R&R cell with one Resettlement and Rehabilitation Officer (RRO) and a Land Officer at the rank of assistant engineer at the Project Implementation Unit. The RRO and the revenue officer will co-ordinate the R&R and land acquisition activities with the district level committees set up for the implementation for the project.

At district level, District Collector (DC) would be the head of R&R Cell, supported by an Executive Engineer from PWD and representatives of various line departments. The District Level Committees will assess the market value of the property and advice the R&R cell accordingly as well as on any other matter concerning the social aspects of the resettlement.

11 COST AND BUDGETING

The cost of all compensation and R&R works will be integral part of the overall projection cost which well be borne by the project.

12 GRIEVANCE REDRESS

For grievance redress cell will be set up for the purpose of the project which will address the grievances related to project implementation.

13 SCOPE FOR MAKING AMENDMENTS IN THE R&R POLICY

The State Government may make amendments in this R&R policy, after annual review of the policy.

Annex I

Entitlement Matrix

Sl. No.	Application	Definition of Entitled Unit	Entitlement	Details
A. Loss of Private Agricultural, Home-Stead & Commercial Land				
1	Land within the Corridor of Impact (COI)	Titleholder family and families with traditional land Right	Compensation at Market value, Resettlement and Rehabilitation	a) Land for land, if available. Or, Cash compensation for the land at Market value, which will be determined as provided under section 26 of RFCTLARR Act 2013. b) The land if allotted will be in the name of both husband and wife. c) If post acquisition, residual land is economically unviable, the land owner will have the choice of either retaining or sell off rest of the land. d) Refund of stamp duty and registration charges incurred for replacement land to be paid by the project; replacement land must be bought within a year from the date of payment of compensation to project affected persons. e) Subsistence allowance of Rs. 36000 as one time grant f) One time grant of Rs. 500,000 or annuity g) Compensation at market value for loss of crops if any
B. Loss of Private Structures (Residential/Commercial)				
2	Structure within the Corridor of Impact (CoI)	Title Holder/ Owner	Compensation at Market value, Resettlement & Rehabilitation Assistance	a) Cash compensation for the structure at Market value which would be determined as per as per section 29 of the RFCTLARR Act 2013. House under Indian Awas Yojna in rural area or Rs 50000 in lieu off and house under RAY in urban area or Rs 100,000 in lieu off. The house if allotted will be in the name of both husband and wife. b) Right to salvage material from the demolished structures. c) Three months' notice to vacate structures. d) Refund of stamp duty and registration charges for purchase of new alternative houses/shops at prevailing rates on the market value as determined in (a) above. Alternative houses/shops must be bought within a year from the date of payment of compensation. e) In case of partially affected structures and the remaining structure remains viable, additional

Sl. No.	Application	Definition of Entitled Unit	Entitlement	Details
				10% to restore the structure. In case of partially affected structures and the remaining structure becomes unviable additional 25% of compensation amount as severance allowance. f) Subsistence allowance equivalent to Rs. 36000 as one time grant. g) Each affected family getting displaced shall get a one-time financial assistance of Rs 50,000 as shifting allowance. h) Each affected family that is displaced and has cattle, shall get financial assistance of Rs 25,000/- for construction of cattle shed. i) One time grant of Rs. 50,000 as resettlement assistance j) Each affected person who is a rural artisan, small trader or self-employed person and who has been displaced (in this project owner of any residential–cum commercial structure) shall get a one-time financial assistance of Rs 25,000/- for construction of working shed or shop. j) One time grant of Rs. 500,000.
3	Structure within the Corridor of Impact (CoI)	Tenants/ Lease Holders	Resettlement & Rehabilitation Assistance	a) Registered lessees will be entitled to an apportionment of the compensation payable to structure owner as per applicable local laws. b) In case of tenants, three months written notice will be provided along with Rs 50,000 towards shifting allowance.
C. Loss of Trees and Crops				
4	Standing Trees, Crops within the Corridor of Impact (CoI)	Owners and beneficiaries (Registered/ Un-registered tenants, contract cultivators, leaseholders & sharecroppers	Compensation at market value	a) Three months advance notice to project affected persons to harvest fruits, standing crops and removal of trees. b) Compensation to be paid at the rate estimated by: i) The Forest Department for timber trees ii) The State Agriculture Extension Department for crops iii) The Horticulture Department for fruit/flower bearing trees. c) Registered tenants, contract cultivators & leaseholders & sharecroppers will be eligible for compensation for trees and crops as per the agreement document between the owner and the beneficiaries. d) Un-registered tenants, contract cultivators, leaseholders & sharecroppers will be eligible for compensation for trees and crops as per mutual understanding between the owner and the beneficiaries.

Page 11 of 14

Sl. No.	Application	Definition of Entitled Unit	Entitlement	Details
D. Loss of Residential/ Commercial Structures to Non-Titled Holders				
5	Structures within the Corridor of Impact (CoI) or Govt. land	Owners of Structures or Occupants of structures identified as per Project Census Survey	Resettlement & Rehabilitation Assistance	a) Non vulnerable encroachers shall be given three months' notice to vacate occupied land b) Vulnerable encroachers will be provided cash assistance at replacement cost for loss of structures as described in section 29 of the RFCTLARR Act 2013. c) Any encroacher identified as non-vulnerable but losing more than 25% of structure used will be paid cash assistance at replacement cost for loss of structures. The amount will be determined as per section 29 of the RFCTLARR Act 2013. d) All squatters to be paid cash assistance for their structures at replacement costs which will be determined as mentioned in section 29 of the RFCTLARR Act 2013. e) All squatters (other than kiosks) will be eligible for one time grant of Rs 36000 as subsistence allowance. f) All squatters other than Kiosks will be given shifting allowance of Rs 50,000 per family as one time grant for a permanent structure and Rs. 30,000 for a semi permanent structure and Rs. 10,000 for a temporary structure. g) Each affected person who is a rural artisan, small trader or self-employed person assistance of Rs 25,000/- for construction of working shed or shop. h) In case of Kiosks, only Rs. 5000 will be paid as one time grant.
E. Loss of Livelihood				
6	Families living within the Corridor of Impact (CoI)	Title Holders/ Non-Title holders/ sharecroppers, agricultural labourers and employees	Resettlement & Rehabilitation Assistance	a) Subsistence allowance of Rs. 36,000 as one time grant. (PAPs covered under 1(f), 2 (f) and 5 (e) above would not be eligible for this assistance). b) Training Assistance of Rs 10,000/- for income generation per family. c) Temporary employment in the project construction work to project affected persons with particular attention to vulnerable groups by the project contractor during construction, to the extent possible.

Sl. No.	Application	Definition of Entitled Unit	Entitlement	Details
F. Additional Support to Vulnerable Families				
7	Families within the Corridor of Impact (CoI)	SC, ST, BPL, WHH families	Resettlement & Rehabilitation Assistance	One time additional financial assistance of Rs. 50,000. Squatters and encroachers already covered under clause 5 are not eligible for this assistance.
G. Loss of Community Infrastructure/Common Property Resources				
8	Structures & other resources (e.g. land, water, access to structures etc.) within the Corridor of Impact (CoI)	Affected communities and groups	Reconstruction of community structure and common property resources	Reconstruction of community structure and Common property resources in consultation with the community.
H Temporary Impact During Construction				
9	Land & assets temporarily impacted during construction	Owners of land & Assets	Compensation for temporary impact during construction e.g. diversion of normal traffic, damage to adjacent parcel of land / assets due to movement of heavy machinery and plant site.	Compensation to be paid by the contractor for loss of assets, crops and any other damage as per prior agreement between the 'Contractor' and the 'Affected Party'.
J.	**Resettlement Site**			
11	Loss of residential structures	Displaced titleholders and non-titleholders	Provision of resettlement site/ vendor market	Resettlement sites will be developed as part of the project, if a minimum of 25 project displaced families opt for assisted resettlement. Vulnerable PAPs will be given preference in allotment of plots/flats at the resettlement site. Plot size will be equivalent to size lost subject to a maximum of provision given in RFCTLARR Act 2013. Basic facilities shall be provided by the project at resettlement site as per the provisions given in the Third Schedule of RFCTLARR Act 2013. Similarly, if at least 25 displaced commercial establishments (small business enterprises) opt for shopping units, the Project Authority will develop the vendor market at suitable location in the nearby area in consultation with displaced persons. Basic

Sl. No.	Application	Definition of Entitled Unit	Entitlement	Details
				facilities such as approach road, electricity connection, water and sanitation facility, will be provided in the vendor market by the project. Vulnerable PAPs will be given preference in allotment of shops in vendor market. One displaced family will be eligible for only one land plot at resettlement site or shop in the vendor market.

SO(PD)

ANNEXURE 5.3: TERMS OF REFERENCE FOR FACILITATING NGOS

Uttar Pradesh CORE ROAD NETWORK DEVELOPMENT PROJECT
Implementation of Resettlement Action Plan
TERMS OF REFERENCE FOR FACILITATING NGOs

1. Background of the Project

2. The Government of Uttar Pradesh has requested the World Bank through Government of India to provide assistance for improvement of the Core Road Network of the state.

3. The state has a road network of 299,604 km, out of which 174,451 km are under the U.P.P.W.D. The roads under U.P.P.W.D. comprise 7,550 km of National Highways (NHs) 7,530 km of State Highways (SHs), 7,264 km of Major District Roads (MDRs), 39,245 km of Other District Roads (ODRs) and 118,166 km of Village Roads. Only about 60% of SHs are double lane. In the entire state 62% of MDRs and 83% of ODRs have widths less than 7 m.

4. A strategic option study carried earlier in 1996 indicated that the state lacked in terms of good quality roads compared to many other states of the country in terms of traffic capacity and road condition and a strategic core road network was identified for improvement. Based on that study, the U.P. State Roads Project-II was completed in the year 2010, wherein almost 2,600 km of roads out of the network were upgraded or rehabilitated with World Bank assistance.

5. It is amply clear in view of the emerging traffic trends that there is an urgent need for further improving the road network of the state and redefining the core road network from time to time. Keeping this in mind a study to prepare a road network master plan of the state was under way, wherein the consultants have identified an updated Core Road Network for the state comprising:

National Highway	7,550 km
State Highways	7,530 km
Major District Roads	5,761 km
Other District Roads	3,254 km
Total	**24,095 km**

6. The Government of Uttar Pradesh has a long-term program to improve the Core Road Network (CRN) and, as part of this program, has applied for a financial assistance from the World Bank for developing the Uttar Pradesh Core Road Network Development Project (UPCRNDP) – hereinafter referred as “the Project”. Although National Highways are an integral and significant part of Core Road Network, their widening/strengthening and maintenance activities are carried out through the resources of the Government of India (GoI). Therefore the entire 7,550 km length of National Highways within the state has not been included in the UPCRNDP. Instead the project will focus on remaining part of the CRN.

7. Uttar Pradesh Core Road Network Development Project (UPCRNDP) will envisage approximately upgradation of 1000 km. of State Highways and a Bridge over river Sharda at

Pachperighat in district Lakhimpur-kheri. Government of UP has identified 30% civil works under UPCRNDP as follows:

S. No.	Name of Road/Bridge	Length (km.)
1	Hamirpur-Rath-Gursahayganj-Jhansi Road (SH-42) (Ch. 0.000 to Ch. 168.000 km)	168
2	Gola-Shahjahanpur Road (SH-93 (Ch. 0.000 to Ch. 59.000 km)	59
3	Utraula-Faizabad Road (SH-9) (Ch. 0.000 to Ch. 59.000 km)	59
4	Lipulekh-Bhind Road (In district Farrukhabad & Mainpuri) (SH-29) (Ch. 524.000 to 577.000 km)	54
5	Badaun-Bilsi-Bijnaur Road (SH-51) (Ch. 58.500 to 137.500 km)	79
6	Bridge over river Sharda at Pachperighat in district Lakhimpur-Kheri	--

Rest of the 70% civil works are to be finalized by Project Management Consultant on board from 08-08-2014 from the following list:

S. No.	Name of Road/Bridge	Length (km.)
1	Etah-Tundla Road (SH-31) (Ch. 0.000 to 58.000 km)	58
2	Panipat-Khatima Road (SH-12) (Ch. 131.000 to Ch. 170.000 km)	40
3	Moradabad-Haridwar-Dehradoon Road (SH-49) (Ch. 37.000 to Ch. 74.000 km)	36
4	Pilibhit-Puranpur-Lakhimpur-Balrampur-Basti Road (SH-26) (Ch. 376.000 ls Ch. 422.000 km.)	49
5	Panipat-Khatima Road (SH-12) (Ch. 18.000 to Ch. 130.000 km.)	113
6	Bijnaur-Chajlait Road (SH-76) (Ch. 0.00 to Ch. 65.000 km)	65
7	Hamidpur-Kuchesar Road (SH-100) (Ch. 1.000 to Ch. 36.000 km)	36
8	Chandausi-Devai-Aligarh-Agra Road (SH-39) (CH. 194.000 to Ch. 274.000 km)	81

The total estimated cost of the project is Rs. 3500 crore. This is evident from the above two list of works that works are likely to be scattered all along the UP.

2. Objectives of the Assignment

2.1 The main objective of the NGO consultancy is to facilitate the affected community in their resettlement and rehabilitation processes and help UP PWD in the implementation of RAP. Specifically, the main tasks of the selected NGO would be as follows:

- Assist PMC consultants in identification of PAPs
- Assist UP PWD/Project in **undertaking information, education and communication** (IEC) campaigns in the project areas to inform about the project and proposed measures.
- **Educate PAPs** regarding their likely losses due to the project, their entitlements as per the Resettlement policy of UP PWD and the obligations under the RAP.
- Ensure that **PAPs get the compensation** for the loss of their land and other assets at the prevailing market value. At the same time, it is important to ensure that PAPs receive their full entitlements under the RAP and use them productively. Where options are available, the NGO shall provide advice to PAPs on the relative benefits of each option.

- **Assist the physically displaced PAPs in their relocation** including counselling and coordination with the local authorities, particularly on housing and infrastructure in the places where PAPs will be relocated.
- **Assist PAPs in their economic rehabilitation** including counselling and coordination with the local authorities, particularly those implementing the government schemes for the socio-economic upliftment of the affected communities.
- Assist PAPs in the **redress of their grievances** through the system implemented as part of the RAP. In this regard, inform PAPs about the functional aspects of various committees set up by the project/ District Administration and assist them in benefiting from such institutional mechanisms.
- Assist UP PWD / Project in ensuring **social responsibilities of the project**, such as compliance with the labour laws, prohibition of child labour, HIV/AIDS and gender issues.
- **Any other relevant task** that would be assigned by the project during the course of the consultancy period

3. Scope of Work

3.1 The NGO will be one of the stakeholders in the entire project cycle with primary responsibility of facilitating the implementation of RAP and help UP PWD in mitigating the adverse impacts of the project. This necessarily requires the selected NGO to only work with PAPs but also interface between the local communities of the project area and UP PWD. At the same time, NGO will function as a link between the UP PWD and the District Administration and relevant government agencies. The NGOs shall remain responsible for the development of a comprehensive livelihood system and facilitate PAPs to take advantage of the options available (as per the RAP). More detailed scope of work is provided in the following sections.

3.2 Administrative Responsibilities

- Develop rapport with the Project authority, project staff as well as with the head quarter level Social and Environmental Cell of the UP PWD. This will be achieved through regular meetings and attending reviews carried out by the Project/UP PWD.
- Assist UP PWD in ensuring compliance with the safety, health and hygiene norms; gender mainstreaming and actions proposed for HIV/AIDS and Child labour awareness/prevention campaign, .
- Report to the project office at district level on a monthly basis. The report should include physical and financial progress both in terms of quantitative and qualitative reporting. The report should prominently feature the problems and issues addressed and tackled with the PAPs and the solutions found. The report should have a separate chapter covering the gender issues, their problems and what has been done (within the framework of the RAP) to ensure their participation in decision making as well as the options made available for them to access economic opportunities, marketing and credit. The report should clearly include the number of field units made by the NGO's staff and the outcome of consultation with the people.
- NGO shall also produce quarterly process documentation report for UP PWD head quarter at Lucknow.

4. Responsibility of implementation of the RAP will include:

4.1 Undertake IEC Campaigns

Undertake a public information campaign at the commencement of the project as well as continuing through project implementation to inform the affected communities of

i. The need for land acquisition
ii. The reasons and need for eviction of displaced households; and
iii. The likely consequences of the project on the community's livelihood
iv. Proposed mitigation measures.

Thus the NGOs shall establish rapport with the PAPs, consult them, provide them information about the respective entitlements as proposed under the RAP and distribute identity cards to the eligible PAPs.

4.2 Verify Social Assessment Results

- Undertake a verification exercise of PAPs identified in the SIA Report to check the validity of the information on the affected and eligible families including the individual losses. This activity will be simultaneously carried out while PMC consultants will be carrying out census survey.
- Based on the above verification exercise, the NGO shall prepare a list of PAPs eligible for R&R assistance and relocation, enlisting their entitlement as per the Policy and RAP after verification. The NGO shall display the list of eligible PAPs in prominent public places like Panchayat office or village school or any other public place in the vicinity.
- During the verification of the eligible PAPs, the NGO shall ensure that each of the PAPs is contacted and consulted either in groups or individually. The NGO shall specially ensure consultation with the women headed families.
- Participatory methods should be applied in assessing the needs of the PAPs, especially, with regard to the vulnerable group. The methods of contact may include (i) village level meetings (ii) gender participation through group interactions (iii) individual meetings and interactions.
- **B**ased on the final list of PAPs, NGOs will help the Project to prepare Identity Cards for individual PAPs and distribute it to them.
- Prepare micro plan for each PAP and get it approved from competent authority

4.3 Land Acquisition and Counselling PAPs

- Assist project in arriving at land cost for private negotiation
- Facilitate private negotiation with the land owners
- Explain to the PAPs, the need for land acquisition, the provisions of the policy and the entitlements under the RAP
- Help project in disbursement of compensation in timely manner
- Hold specific discussions with the vulnerable groups of the affected community and help them understand their losses and entitlements
- Distribute the copy of approved project specific Resettlement & Rehabilitation Policy and the translated version of the policy (into Hindi) to each and every PAF which would help them understand their entitlements and decide on their R&R options
- Disseminate information to the PAPs on the possible consequences of the project on the community's' livelihood systems and the option available.
- Help PAPs in making decisions and finalizing their option with regard to relocation and income restoration measures.
- Help PAF to enter in to a written agreement with /UP PWD as an acceptance to the R&R options.

4.4. Disbursement of R&R Assistance

- Determine the R&R alternatives opted by PAPs and accordingly document their R&R entitlements (for each PAF) on the basis of the RAP. In case of discrepancies, the NGO shall

try to resolve it in consultation with the UP PWD on the basis of policy guidelines and if necessary, pursue the matter through the grievance redress mechanism.

- Assist the project in ensuring a smooth transition during the relocation of the displaced families. In close consultation with the PAPs, the NGO shall inform the UP PWD about the shifting dates agreed with the PAPs in writing and the arrangements (to be made by the Project) desired by the PAPs with respect to their relocation.
- Assist the PAPs in opening a joint bank accounts explaining the implications, the rules and the obligations of a joint account, and how she / he can access the resources she / he is entitled to.
- Ensure proper utilization of the R&R support provided to PAPs and help restore their lost income/assets.
- Identify means and accordingly advise the UP PWD to disburse the entitlements to the eligible persons / families in a manner that is transparent.

4.4 Address Grievances of PAPs

- The NGO shall ensure that PAF's representatives are nominated in the Grievance Redress Committee (GRC) and also a suitable person from its own staff to be a member of the GRC.
- The NGO shall make PAPs aware of the availability of GRC and the grievance redress procedures. Organize training for PAPs on the procedures to file a grievance application and to confirm that a statement of claim from the concerned PAF accompanies each grievance application. In this regard, the NGO shall help PAPs in filing their grievances and also in clearing their doubts about the procedure as well as the context of the GRC award.
- The NGO shall record the grievance and bring the same to the notice of the GRC within a reasonable time (at least within 15 days) after receiving the grievance from the PAPs. It shall submit a draft resolution with respect to the particular grievance of the PAF, suggesting multiple solutions, if possible, and deliberate on the same in the GRC meeting through the NGO representation in the GRC.
- The NGO shall accompany PAPs to the GRC meeting on the decided date, help them express his / her grievance to GRC members. The NGO will inform the PAPs of the decision taken by the GRC within 3 days of receiving a decision from the GRC (The time frame for the GRC to take a decision is 45 days).

4.5 Assist Displaced Families in Their Relocation

- Obtain PAPs' choice in terms of (i) site for relocation; (ii) identification of land for alternate housing; (iii) shifting plan and arrangements; (iv) resettlement assistance utilization plan; (v) community asset building plan; and (vi) institutional arrangements for maintenance of the community assets developed by the project for resettlers.
- Assist PAPs in accessing government housing program (particularly for vulnerable groups) and in accessing institutional housing construction loans.
- Guide PAPs in the construction of houses using locally available construction material, in procuring quality construction material at reasonable prices and check exploitation by vested interests.

4.6 Assist PAPs in Their Economic Rehabilitation

- Define, evolve and implore alternative methods of livelihood using the local skill, resources and opportunities available both in the project and outside. Help the PAPs in realizing and optimizing the indigenous technology knowledge through the use of local resources.
- Assist PAF, interested in land-based economic rehabilitation, in identifying suitable land for continuing with agriculture. This will require a survey of land market in the area, both for

identification of land and negotiating price. Land based economic rehabilitation for tribal PAPs is an essential feature of the R&R policy agreed for the project.

- Inform eligible PAPs about various economic opportunities available with UP PWD such as employment (including with contracting agencies); allotment of shops/kiosks, award of petty contracts, vehicle hiring; PCO/internet kiosk; news paper vending; etc. NGO shall also help PAPs and local people in the formation of cooperatives and facilitate in their registration. Coordinate with the project staff to ensure that these cooperatives get contracts from the project on a prefential basis.
- Undertake a training need assessment for PAPs, particularly on the activities opted by PAPs for their economic rehabilitation. Organize training programs on various income generation activities.
- Coordinate the training and capacity building program with the project and relevant government and non-government training agencies and ensure that skill level of PAPs is upgraded to help them in their income restoration process. This will include the training to be given to members of the self-help group in accounting, record maintenance, skill acquisition in the chosen enterprise and marketing etc. This will also include training to the members of the labour cooperatives.
- Establish linkages with the district administration for ensuring that the PAPs get access to public sector schemes available for the socio-economic development of the people, particularly those belonging to vulnerable sections. Similar efforts need to be made for the PAPs interested in availing institutional credit for scaling the operation of economic schemes. The focus for this component of the NGO's work shall be the vulnerable PAPs for their income restoration. The NGO shall maintain a detailed record of such facilitation.

4.7 Inter-agency Linkages for Income Restoration and Other R&R Support

- Develop good rapport with the local financial institutions and facilitate PAPs to access credit at acceptable terms and conditions.
- Work closely with local Government agencies and District Administration to ensure dovetailing their socio-economic development programs and help enrolling PAPs in their development schemes, particularly for housing and improving the economic the economic status of PAPs.
- Coordinate with the local Training institutes for imparting skill and management of training programs for enterprise development.
- Identify and work with marketing agencies and ensure forward and backward linkages to the economic activities opted by PAPs.

4.8 Assisting UP PWD in its Social Responsibility

- As part of social responsibility, UP PWD might plan and implement a number of programs focused on the socioeconomic development of the communities in the project area. The facilitating NGO will help UP PWD to plan this component in such way that it meets the requirement of the local population (including the affected community) as well as to ensure that such activities help in their socioeconomic development.

- Undertake IEC campaign and media/advertisement in collaboration with line agencies (such as National AIDS Control Organization and Uttarakhand State AIDS Control Society) local NGOs and international donor agencies active in the State. Besides NGO needs to ensure that signage / hoardings are available at suitable locations in and around the project area. There is also a need to link the HIV/AIDS and other sexually transmitted diseases with the medical facilities available in the area. In this regard, focussed attention is required on labour camps of the project and flow of new population in the project area. The NGO shall assist the UP PWD to implement these measures, including collaborating with the line agencies.

- The NGO shall assist UP PWD to ensure that the contractors are abiding by the applicable laws, concerning women's and the child labour issues, parity in wages, control of HIV/AIDS, etc. Any divergence from women's and child labour issues should be brought to the notice of the HQ level Social Development Specialist and Project Director of UP PWD.

5. Monitoring and Evaluation

5.1 The implementation of RAP requires regular monitoring – both internal and external monitoring. The NGO involved in the implementation of the RAP will not only monitor the implementation and collect the required information, it should also provide the required information and documents for both internal and external monitoring. To this end, the contracted NGO shall keep proper documentation of its work and the R&R processes employed in RAP implementation. The NGO will be responsible for the upkeep and updating of such data/information and relevant documents regularly. The documents shall include photographs and videotapes of the pre-intervention, intervention and post intervention scenario of all R&R measures undertaken in the area.

6. Reporting System

6.1 The NGO selected for the assignments shall be responsible to

- Prepare and submit an inception report **within three weeks** on signing up of the contract, detailing the plan of action, manpower deployment, time schedule, detailed methodology and a withdrawal plan at the end of the period of contract. The withdrawal plan shall be detailed and shall reflect how the PAPs/local communities will maintain the assets created and transferred to the PAPs.
- Prepare monthly progress reports to be submitted to the Project/UP PWD indicating the weekly progress and its synchronization with the project construction schedule. Prepare any other report as required by the Project.
- Collect data required on monitoring of RAP implementation and on selected impact indicators at monthly frequency.
- Submit a completion report at the end of the contract period summarizing the actions taken during the project, the methods and personnel used to carry out the assignment, a summary of supports / assistance given to the PAPs and lessons drawn.
- Submit all other reports / documentation as described in the terms of reference.

6.2 All progress reports shall include data on input and output indicators as required by the Project. Documentation should be in writing as well as in photographs, videotapes etc. taken during the assignment which should be submitted to the Project long with the reports. Accounts on expenditure, office administration, training and other heads shall be submitted in the form of quarterly reports and final report along with the completion report.

6.3 The NGO shall document in full details the consultation / counselling processes, the process of identification of the resettlement sites (if found necessary) and a full description of the training imparted (or facilitated) as part of the assignment. These documents shall be submitted to the UP PWD as annual reports.

7. Conditions of Services

7.1 The NGO shall ensure that the RAP is implemented on an effective and proper manner. The prime responsibility of the NGO shall be to ensure that each and every eligible PAF receive appropriate and due entitlement (within the R&R policy of UP PWD). Additionally, the NGO shall help the UP PWD in all other matters deemed to be required to implement the RAP in its spirit and entirety. All documents created, generated or collected during the period of contract in carrying out the services under this assignment will be the property of the UP PWD. No information gathered or

generated during and in carrying out this assignment shall be disclosed by the NGO without the explicit permission of the UP PWD.

7.2 In order to carry out above tasks, NGO staff (responsible for RAP implementation) will have to be stationed in the project area. While the NGO will have its office at Lucknow, its team members will be stationed in project corridors. Besides contacting PAPs on an individual basis to regularly update the baseline information, group meetings and Gram Panchayat (village level or habitation level in case of urban or peri urban areas) meetings will be conducted by the NGOs on a regular basis. The frequency of such meetings will depend on the requirements of the PAPs but should occur at least once a month to allow the PAPs to remain up to date on project development. NGO will encourage participation of individual PAPs in such meetings by discussing their problems.

8. Time Frame for Services

8.1 The NGOs will be contracted initially for a period of Thirty six months from the date of their appointment. This contract can be renewed, on mutual agreement, for another year based on the performance of the selected NGO to the satisfaction of the Project/UP PWD.

9. Data, Services and Facilities to be provided by the Client

9.1 The UP PWD will provide the NGO copies of the social assessment report, RAP, R&R policy, the list of the PAPs, the land acquisition plan and any other relevant reports/data prepared by the Social Assessment Consultants.

9.2 All facilities and support required in the performance of the assignment. shall be extended to the NGO.

10. Staff Requirement

10.1 The NGO team will have the following staff.

S. No.	Position	No. of Positions	Qualification
1.	Team Leader	1	The Team Leader should be a post-graduate, preferably in social sciences, and should have experience of working in road sector projects and specifically in state or national highways. S/he should have about 5 years experience in implementing R&R and rural development works. S/he should have held management position in previous assignments should possess participatory management skills and must have good knowledge of the local language. Experience of working in conflict situation is preferred.
2.	R&R Expert	1	Should be at least a graduate in social sciences. S/he should have about 5 years of working experience of which about 2 years in road sector. Should have specific experience in R&R of road projects. Should have sound understanding of the land acquisition process and experience in participatory management. Knowledge of local language is a desirable qualification. Experience of working in other linear projects is preferred.
3.	Documentation Specialist	1	Should be at least Graduate in Social Sciences and have about 5 years working experiences of which 2 years in either R&R or Rural Development Projects in documenting the implementation processes. Should have adequate knowledge of handling large scale database and qualitative survey techniques. Should have participated in awareness campaigns of HIV/AIDS and Child Labour in previous projects.

S. No.	Position	No. of Positions	Qualification
4.	Livelihood expert	4	Should be at least Post Graduate in Social Sciences and have about 5 years working experiences of which 2 years in either R&R or Rural Development Projects. Should have adequate knowledge of various poverty alleviation schemes of state and central government. Should have knowledge about the local area, its people and socio-political set up.

10.2 The organization will deploy a 'technical support' team to work at the site. Knowledge of local language is necessary qualification. Administrative staff will not be considered as 'technical support' professionals. The support staff should have one qualified accounts professional who shall be responsible for maintenance of not only internal accounts of the NGO, but also the disbursements made to the PAPs under different heads as per the approved R &R policy.

10.3 The accounts of NGO will be subjected to internal audit by UP PWD on half yearly basis.

ANNEXURE 5.4: TERMS OF REFERENCE FOR CONCURRENT MONITORING AND MIDTERM EVALUATION

1. Aim, Objectives and Scope of Work

The aim of the monitoring is not only to ensure smooth implementation of the R&R program, but also to ensure that NGOs have followed the steps provided in RAP and approved policy of the project authority. The periodic evaluation will provide an assessment of RAP implementation to enable timely adjustments of implementation setup and also to verify whether the objectives of resettlement have been achieved or not. To achieve this aim, objectives of the project are:

- to ensure timely implementation of Resettlement Action Plan (RAP) without deviation
- to assess whether the implementation of the RAP is as per the R&R policy and RAP document
- to evaluate whether the outcome of the social development objectives of the project are being achieved with respect to
- those who have been physically resettled (displaced families)
- those who have been assisted in re-establishing their income
- those who have lost their land
- functioning of reconstructed common property resources

2. Scope of work

The scope of work for consultants would be:

2.1 Concurrent Monitoring

a) To develop methodology and formats for concurrent monitoring

b) To ensure that deployment of professionals by NGO is as agreed in their technical proposal.

c) Based on available information, prepare baseline monitoring indicators

d) To provide on the job training to NGO and PWD project staff and guide them on RAP implementation

e) To ensure that PWD / NGO aadheres to the agreed time-plan during implementation

f) To ensure proper documentation by PWD / NGO *interalia* (i) documentation of socioeconomic data; (ii) preparation of micro plans; (iii) documentation of consultations; (iv) documentation of GRC meetings; (v) NGO's monthly progress reports; and (vi) skill mapping and income restoration activities

g) Field-checking of the delivery of the (i) preparation and adequacy of resettlement sites; (ii) adequacy and quality of houses in resettlement sites; (iii) IRP and strategy in terms of adequacy and potential income level; (iv) various trainings, including process adopted for training needs assessment, selection of trainees, trades selected for training, selection process of master trainer or training agency; (v) identification and rehabilitation (including assistance) of vulnerable groups in line with the entitlement framework; (vi) identification of relocation sites for PAPs and CPRs; and (vii) relocation of PAPs

h) Survey among sample PAPs to assess their knowledge and concerns regarding the resettlement process, entitlements, and rehabilitation process.

i) Observe public consultations for PAPs; review the documentation of consultations held by implementing NGO; identification of gaps (if any) and suggest remedial measures (defined format for documentation).

j) Observe the functioning of the resettlement operation at all levels in order to assess its effectiveness and compliance with RAP.

k) Check the type of grievance issues and the functioning of grievance redress mechanisms by reviewing appeals at all levels and interviewing aggrieved PAPs.

l) Advise PWD regarding possible improvements in RAP implementation.

m) To validate and sign off monthly progress report submitted by NGO and PWD (Results of validation should come in the progress report)

n) To conduct consultation with PAPs in order to validate progress report

o) To ensure that compensation and R&R assistance is paid prior to physical possession of land and structure

2.2 Midterm Evaluation

The consulting agency (CA) shall undertake mid-term Evaluation of the R&R components of the project. The midterm evaluation primarily focuses on the effectiveness of the processes adopted for implementation and extent of implementation and its relative completeness. It shall include but not limited to the following aspects:

a) The process of implementation of the RAP;

b) Consultations;

c) Transparency;

d) Delivery of the R&R services within the timeframe;

e) The grievance redress processes and systems;

f) Compensation disbursement and assistance;

g) Relocation;

h) Rehabilitation, which includes restoration of livelihood;

i) Training of staff of the PWD and the PAPs;

j) Institutional arrangement and capacity to implement the RAP.

k) Gender sensitivity and empowerment (decision making power at household and community level)

l) To assess whether the compensation and resettlement assistances provided were sufficient for short term income restoration

m) Utilisation pattern of compensation and assistances

n) Quality of resettlement sites including civic amenities provided

o) Benefits accrued to PAPs and difficulties encountered

p) HIV/AIDS prevention awareness especially in labour camps and habitation close to labour camps- the relocated Haat village

The CA shall undertake an assessment of people's perception about the processes adopted for implementation of the RAP including about the (a) compensation and/or assistance received; (b) new relocation sites; (c) relation with the host communities; (d) grievance redress committees; and (e) the services of the NGO and PWD

3. Sampling

The consultants shall take at least 50 percent of the total affected households as sample size for concurrent monitoring and at least 25% of the total households for impact evaluation. The distribution of households for both concurrent monitoring and impact evaluation should be proportionate to the number of households in different categories of impact. In case of host population, consultant must consult at least 10% of the total host population.

4. Consultants' Team

Consultant shall provide following experts to carry out the assignment:

Position	No. Of Positions	Deployment Period	Qualification
Key Professionals			
Resettlement Expert cum Team Leader	1	10 months	The Team Leader should be a post-graduate, preferably in social sciences, and should have experience of working in World Bank projects. S/he should have about 7 years experience in implementing R&R and rural development works. S/he should have held management position in previous assignments should possess participatory management skills and must have good knowledge of the local language. The team leader should have working knowledge of land acquisition process.
Income Restoration Expert	1	6 months	Should be at least a post graduate in social sciences. S/he should have about 5 years of experience in R&R or rural development projects. Should have sound understanding of the working of SHGs; income restoration schemes / options and experience in participatory management. Knowledge of local language is a desirable qualification.
Support Professionals			
Research Associate	1	12 months	Should be at least a post graduate in social sciences. S/he should have about 2 years of experience in R&R or rural development projects. Should have sound understanding of the working of SHGs; income restoration schemes / options and experience in participatory management. Knowledge of local language is a desirable qualification.
Research Investigators and Facilitators*			Should be at least graduate in social science. Should be able to speak the local language and should have knowledge of the local area, its people and socio-political set up.

The curriculum viate of key professionals will be evaluated.
*****as per consultants' own understanding.

5. Time Frame for Services

The consultancy firm will be contracted for a period of twenty four months from the date of their appointment.

6. Data, Services and Facilities to be provided by the Client

The PWD will provide the copies of the social assessment report, RAP, R&R policy, the list of the PAFs, the land acquisition plan and any other relevant reports/data prepared by the Social

Assessment Consultants.

All facilities and support required in the performance of the assignment shall be extended to the consultants. PWD will provide office space to the consultants for the period of consultancy.

7. Deliverables

The consultants shall provide following deliverables:

S. No.	Output	Timeframe
1	Inception Report – (will describe proposed approach, methodology, formats for field surveys, schedule of field work; and procedures proposed to be adopted for data collection.)	Within 30 days of signing of the contract
2	Monthly progress report	Every month for one year from the date of signing of contract
3	Quarterly process documentation	Every quarter for two years from the date of singing of the contract
4	Half yearly progress report	Every sixth month from the start of second year.
5	Midterm impact evaluation	At the end of 18 month from the date of signing of contract
6	Project Completion Report	At the end of 24th month from the date of signing of contract

ANNEXURE 5.5: TERMS OF REFERENCE FOR END TERM EVALUAITON

1. Aim, Objectives and Scope of Work

The **aim** of the project is provide an assessment of RAP implementation to enable timely adjustments of implementation setup and also to verify whether the objectives of resettlement have been achieved or not. To achieve this aim, **objectives** of the project are:

- to evaluate whether the outcome of the social development objectives of the project are being achieved with respect to
- those who have been physically resettled (displaced families)
- those who have been assisted in re-establishing their income
- those who have lost their and
- functioning of reconstructed common property resources

2. Scope of work

The scope of work for consultants would be:

The consultants shall undertake an end-term Evaluation of the R&R components of the project. The end term evaluation mainly focuses on the outcomes of the implementation. It shall include but not limited to the following aspects:

- Assess whether the goal of the RAP to improve or restore the livelihood of the PAPs has been achieved;
- Assess the changes in the living standards and occupational pattern of the affected people as a result of acquisition of land for the project;
- Assess as to whether the consultations and participation of the people enabled better implementation of the RAP;
- Assess as to whether the vulnerable groups benefited from the project, and to what extent;
- Assess the effectiveness of the provisions of the RAP in the context of the diverse social and cultural groups;
- Assess the socio-economic impacts of the project on agriculture and the agrarian population in the vicinity of the project
- Assess the impact of the project specific measures to address the issues of (a) the quality of life of the PAPs; (b) health and hygiene; (c) gender sensitivity and empowerment; (d) sexually transmitted diseases (STDs) including HIV/AIDS; and (e) trafficking of women and children

The consultants shall undertake an assessment of people's perception about the processes adopted for implementation of the RP including about the (a) compensation and/or assistance received; (b) new relocation sites; (c) relation with the host communities; (d) grievance redress committees; (e) the services of the NGO and PWD.

3. Sampling

The consultants shall take at least 50 percent of the total affected households as sample size for the end term impact evaluation. The distribution of households for impact evaluation should be proportionate to the number of households in different categories of impact. In case of host population, consultant must consult at least 10% of the total host population.

4. Consultants' Team

Consultant shall provide following experts to carry out the assignment:

Position	No. of Positions	Deployment Period	Qualification
Resettlement Expert cum Team Leader	1	1 month	The Team Leader should be a post-graduate, preferably in social sciences, and should have experience of working in World Bank projects. S/he should have about 5 years experience in implementing R&R and rural development works. S/he should have held management position in previous assignments should possess participatory management skills and must have good knowledge of the local language.
Income Restoration Expert	1	1 months	Should be at least a post graduate in social sciences. S/he should have about 5 years of working experience of which about 2 years in R&R or rural development projects. Should have sound understanding of the working of SHGs; income restoration schemes / options and experience in participatory management. Knowledge of local language is a desirable qualification.
Research Investigators and Facilitators	10	5 months (0.5months*10)	Should be at least graduate in social science. Should be able to speak the local language and should have knowledge of the local area, its people and socio-political set up.

The curriculum viate of first two positions will be evaluated.

5. Time Frame for Services

The consultancy firm will be contracted for a period of three months from the date of their appointment.

6. Data, Services and Facilities to be provided by the Client

The PWD will provide the copies of the social assessment report, RAP, R&R policy, the list of the PAFs, the land acquisition plan, midterm evaluation report and any other relevant reports/data prepared by the Social Assessment Consultants.

All facilities and support required in the performance of the assignment shall be extended to the consultants.

7. Deliverables

The consultants shall provide following deliverables:

S. No.	Output	Timeframe
1	Inception Report – (will describe proposed approach, methodology, formats for field surveys, schedule of field work; results of pre-testing and procedures proposed to be adopted for data collection.)	Second week from the date of signing of the contract
2	Draft end term impact evaluation	10th week from the date of signing of contract
3	Final End term impact evaluation	Within 15 days of receiving comments from the client

8 Terms of Payment

S. No.	Time Frame	Cumulative Payment (% of total)
1	10% on signing of the contract	10
2	15% on submission of the inception report	25
3	60% on submission of the draft report	85
4	15% on approval of the final report	100

ANNEUXRE 5.6: PROCEEDINGS OF THE STAKEHOLDERS' WORKSHOP ON ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Proceedings of the stakeholders' workshop on Environmental and Social Management Framework (ESMF) for screening of the projects under Uttar Pradesh Core Road Network development Programme held on Nov.07,2014

Participants

Apart from the Senior Officers of UP PWD, Experts from Egis Consultant and the World Bank, State level Officers of Rural Development Department; Forest & Environment Department attended the Workshop along with field level officers from the UP PWD. An important feature of the Conference was participation of different Stakeholders like Project affected persons of the proposed roads and Community leaders from the project area of District Hamirpur.

Presentation by Mr. J.P. Jain, CE,- on features and steps Involved in ESMF

Mr. J.P. Jain Chief Engineer, Chief Engineer, World Bank Project (Roads), UP PWD gave a presentation on preparedness of the State and procedures followed for Environmental and Social Screening of the sub-projects. He further explained the steps taken for Social & environmental screening of the projects. He stressed that the ESMF is an essential ingredient aligned with the project cycle and is to be followed through the entire project cycle such as; Site identification, Screening & review, Implementation of EMP, Monitoring and outcomes. He also explained the key steps involved in the screening process as:

Step 1: Ascertain presence of any environmentally sensitive areas

Step 2: Confirm applicability of regulations

Step 3: Conduct reconnaissance site visits

Step 4: Revisit the screening check list and ascertain outcomes

Step 5: Determine the requirement of an EIA / SIA study & its scope and other applicable rules /regulations and clearances

Step 6: If EIA/SIA is required, then:

- Prepare ToR for EIA / SIA studies and appoint Environment and Social Management Consultants
- Conduct EIA / SIA as per the scope defined in the ToR along with preparation of the detailed DPR documents.

Step 7: Check for applicable NOC / Clearances from MoEF/ State PCB's etc as applicable

Step 8: Ensure integration of EMP measures (as applicable) with bid documents and contract provisions.

Step 9: Project implementation and monitoring to ensure EMP / RAP implementation

Mr. Vinod Kumar one of the PAP from village Muskra under Hamirpur Rath road shared his observation that being the market area,speed restraction should be placed before the starting of the market and end of the market. He suggested that no bypass should be proposed at Village Muskara as hundereds of people livehood is concerned with this market.

Mr. Imam Khan one of the PAP from village Rath under Hamirpur Rath road demanded a bypass from chainage 76+500 to avoid mass dismantle of the Rath market.He was supported by other PAPs (Updesh Kumar,Vinay Kumar & Shikeel Alam)of the same area.

Mr. Ramesh Chand Gupta one of the PAP from village Rath under Hamirpur Rath road shared that the available width between chainage 76+500 to 78+400 where market for Rath is located, the available ROW is 8 m only. He strongly recommended for a bypass or to minimize the impact on residential & commercial buildings.

Ganesh Kumar, PAP of Muskra village wanted to know the compensation fixed for squatters & kiosks. During the question Answer session ,Dr Kaul explained him that entitlement under Resettlement & rehabilitation policy framed for this project is as :

All squatters other than Kiosks will be given shifting allowance of Rs 50,000 per family as one time grant for a permanent structure and Rs. 30,000 for a semi-permanent structure and Rs. 10,000 for a temporary structure.

In case of Kiosks, only Rs. 5000 will be paid as one time grant.

Dr, Sudesh Kaul, Social Specialist, in his remarks opined that ESMF is a scientific approach to guide the executing agency in the field. It helps implementation of Country's policies on different issues like R&R Policies..

In concluding remarks, Mr Sunil .Bhasin, Project Director UP PWD hoped that the preparatory works including those relating to ESMF will be completed by Government of Uttar Pradesh in time. He called upon the officers of the line Departments to monitor the field activities of the consultant in the field.As regards the design of roads; he suggested that cost is not a factor for creating a durable asset. Yet, the design may be finalized in consultation with the World Bank. He thanked all the participants including officers from UP PWD and World Bank, Project affected persons (PAPs) and field officers for their active participation in the workshop.

The workshop ended with vote of thanks to the Chair and the participants

List of the invites for attending the ESMF Work Shop

1 Chief Conversertor of forest
2 Chief Conversertor of forest, Nodal Officer
3 District Magestrate-Hamirpur
4 District Magistrate -Badaun
5 District Magestrate-Sambal
6 District Magestrate-Shahjahanpur
7 District Magistrate-Jhansi
8 Divisional officer-Hamirpur
9 Divisional officer-Jhansi
10 Divisional officer-Badaun
11 Divisional officer-Sambal
12 Divisional officer-Shahjahanpur
13 Mr. J.P Jain Chief Engineer World Bank Lucknow
14 Sathish Kumar S.E World Bank, Muradabad
15 Vinod Kumar Lakhera - PAP from Hamirpur
16 Updesh Kumar - PAP from Hamirpur
17 Vinay Kumar - PAP from Hamirpur
18 Raheel ahmed - PAP from Hamirpur
19 S.K Goyal S.E World Bank Kanpur
20 Ganesh Kumar - PAP from Gola
21 Imam Khan - PAP from Hamirpur
22 Ramsh Chandra Gupta - PAP from Muskhura Village
23 A.K Diwakar E.E World Bank Kanpur
24 Sanjay Gupta E.E World Bank Lucknow
25 Nirdhosh Kumar Suman E.E World Bank Hamirpur
26 Salil Kumar Yadhav E.E World Bank PWD Lucknow
27 Matwor Rao
28 R.D Pal A.E World Bank Sitapur
29 B.C Mishra A.E World Bank Aligarh
30 Kamlesh Kumar A.E World Bank Aligarh
31 Shushil Kumar A.E World Bank Lucknow
32 Ram Kumar A.E World Bank Lucknow
33 R.J Prasad E.E World Bank Sitapur
34 Ashok Kumar E.E World Bank Lucknow

35 Uma Shenkar S.E World Bank Lucknow
36 Shashikanth S.E PWD Lucknow
37 R.K. Singh E.E
38 Sunil Bhasin S.E
39 Anurag Ashtana EE
40 J.P.Singh,A.E
41 I.A Siduqi-Egis Social
42 R.K. Mishra A.E
43 Santosh Kumar Tripathy, A.E
44 Harimani Verma A.E
45 Sudesh Kaul Egis Social
46 Atul Mishra Egis Social
47 Ravindra Kumar Singh Egis Project Manager
48 Praveen Tiwari
49 Gaurav D Jhoshi Envermental Specialist World Bank
50 Rajeev Gupta, Egis Dy.Team Leader
51 Vishnoi, ENC
52 Vikram Singh Social Officer
53 Neeraj Kashyap
54 Satpal Verma A.E
55 S.S Deepak Envermental Specialist

Photograph During Public consultations


BELL DESK


BELL DESK