Environment and Social Due Diligence Report

September 2014

IND: Accelerating Infrastructure Investment Facility in India –Etawah Chakeri (Kanpur) Highways Pvt. Ltd.

Prepared by

India Infrastructure Finance Company Limited for the Asian Development Bank

INDIA INFRASTRUCTURE FINANCE COMPANY LIMITED

ENVIRONMENTAL & SOCIAL SAFEGUARDS DUE DILIGENCE REPORT

Of

ETAWAH CHAKERI (KANPUR) HIGHWAYS PVT. LTD.

The Sub Project: Widening and Improvement of existing 4 lane to 6-lane from Etawah to Chakeri (km. 323.475 to km.483.687) section of NH-2 in the state of Uttar Pradesh under NHDP Phase-V through public, private partnership (PPP) on design and built-finance-operate and Transfer (DBFOT) Toll basis.

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Environmental and Social Safeguards Due Diligence Report

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ABBREVIATIONS

ADB	:	Asian Development Bank
CA	:	Concession Agreement
CoI	:	corridor of impact
CSR	:	Corporate Social Responsibility
DBFOT	:	Design, Built, Finance Operate and Transfer
DG	:	Diesel Generator
ECKHPL	:	Etawah Chakeri Kanpur Highways Pvt. Ltd.
EIA	:	Environmental Impact Assessment
EMP	:	Environmental Management Plan
EPC	:	Engineering Procurement and Construction
EPF	:	Employ Provident Fund
ESDDR	:	Environmental and Social Due Diligence Report
IIFCL	:	India Infrastructure Finance Company Limited
GoI	:	Government of India
LHS	:	Left Hand Sight
LIE	:	Lenders Independent Engineers'
MoEF	:	Ministry of Environment and Forestry
NABL	:	National Accreditation Board Ltd.
NH	:	National Highway
NHDP	:	National Highway Development Plan
NOC	:	No Objection Certificate
PEMP	:	Project Environmental Management Plan
PPP	:	Public Private Partnership
RHS	:	Right Hand Sight

R&R	:	Rehabilitation and Resettlement
RoW	:	Right of Way
SDDR	:	Social Due Diligence Report
TDP	:	Tribal Development Plan
ToR	:	Terms of Reference
UP	:	Uttar Pradesh

Project Background

1. PURPOSE OF THE REPORT:

1. This Environmental and Social Due Diligence Report (ESDDR) has been carried out by India Infrastructure Finance Company Limited (IIFCL) in consultation with the Concessionaire, Etawah Chakeri Kanpur Highways Pvt. Ltd (ECKHPL) to assess the adequacy of the project with the applicable National Safeguard compliance status. The report has been prepared as per the documents/information received from the concessionaire and the site visit observations. In order to be eligible for funding from the ADB, IIFCL has prepared the Environmental and Social Due Diligence Report (ESDDR) for the sub-project on behalf of the concessionaire ECKHPL. All the information given in the ESDDR is agreed and confirmed by the Concessionaires.

2. SUBPROJECT TITLE

2. Widening and Improvement of existing 4 lane to 6-lane from Etawah to Chakeri (km. 323.475 to km.483.687) section of NH-2 in the state of Uttar Pradesh under NHDP Phase-V through public, private partnership (PPP) on Design, Built, Finance, Operate and Transfer (DBFOT) Toll basis.

3. SUBPROJECT SCOPE

3. The scope of work broadly includes widening and improvement of the existing carriageway section of NH-2 by 6 laning of 160.212 Km from 323.475 to Km. 483.687 widening of the existing 4 lane and strengthening of existing 4 lane, service road strengthening and construction of 228 Km. (including LHS & RHS both side), construction and /or rehabilitation of major bridges, minor bridges, culverts, pedestrian under pass, vehicular under pass, foot over bridge, box culverts, pipe culverts, truck/bus lay bay, road intersections, interchanges, drains, etc and operation and maintenance thereof by the concessionaire. The project has allotted to the concessionaire for the concession period for duration of 16 years (including the construction period of 30 months) from the date of appointment.

4. SUBPROJECT DESCRIPTION:

4. The National Highways Authority of India has awarded the Concession to Etawah Chakeri (Kanpur) Highways Pvt. Ltd (ECKHPL) on 5th day of March 2012 to undertake development, maintenance and management of the existing road from 323.475 to Km. 483.687 (approx. 160.21 Km.) on the Etawah-Chakri (Kanpur) section of National Highways No 2 in the state of Uttar Pradesh (UP) under NHDP Phase-V through public, private partnership (PPP) on Design, Built, Finance, Operate and Transfer (DBFOT) Toll basis.

5. The existing National Highway is 4 – lanes divided carriageway (2x7.0m) with 1.5m wide paved and 1.0m wide earthen shoulders on either side. The width of raised median varies from 1.5 to 5.0m in different stretches. The existing carriageway is proposed to be widened by 3.5 m on the outer side. Total Carriageway width will be 10.5 m. In the sections where existing pavement is of flexible type, the embankment would be widened and flexible pavement 3.5 m wide would be provided.

6. The Etawah –Chakeri section of NH-2 falls in the Delhi–Kolkatta arm of the Golden Quadrilateral. The project road passes through four districts i.e. Etawah, Auraiya, Ramabai Nagar and Kanpur in the State of Uttar Pradesh. The Project Highway starts at km 323.475 at the end of Etawah bypass and ends near Chakeri at km 483.687 on the Agra-Etawah-Kanpur-Allahabad Section of NH-2. The total length of the Project Highway is 160.21 km long approximately.

7. The Project Highway passes through plain terrain in its entire length. The existing Right of Way varies generally between 40 m to 60 m. The carriageway width is 7.0 m with 1.5 m wide paved and 2.0 m wide earthen shoulders for either side traffic. The existing road has both the flexible and rigid pavement. The height of embankment varies from ground level to about 10 m near approaches to structures and other places. The 89.918 km long service road, width varying from 4 m to 7 m, has been provided on both sides, though not continuous. The width of raised median varies from 1.5 m to 5.0 m in different stretches.

8. The alignment has been designed for a minimum speed of 80km/hr. There is one existing bye pass between km 460.475 and km 483.687 at Kanpur with 4 lane dual carriageway as elevated section. The Construction of 4 Lane Highway was done in three sections viz.

- Section 1-C (km 323.475 to km 396.133) 72.660 km long;
- Section II-A (km 396.133 to km 457.498) 61.365 km long;
- Section II-B (km 457.498 to km 483.687) 26.290 km long.

9. The present six – laning project is a combination of three Package i.e. IC, II-A and II-B of four laning of Etawah – Chakeri stretch.

10. The existing RoW for the project stretch is 38 m to 60 m, and the proposed RoW is 60 m. In case of the toll plazas, the proposed RoW is 115 m. The existing road section with 7 m wide bituminous carriageway with 1.5 m wide paved and 1.0 m wide earthen shoulders on both sides. The proposed road section 10.5m + 1.5 m paved shoulder + 2.0 m wide earthen shoulders on both sides.

11. The proposed widening and strengthening work would mainly involve: Toll Plazas, roadside furniture, pedestrian facilities, landscaping and tree plantation, truck lay byes, bus-byes and passenger shelters, cattle crossing / underpasses (vehicular) /flyovers, highway lighting, administrative, operation and maintenance of base camp, vehicle rescue posts, telecom system and highway traffic management systems. The project salient features and the project location is given in below **Table-1 & Figure-1** respectively.

Table-1: Project Salient Features

Sl.No.	Parameter	Information
1	Concessionaire	Etawah Chakeri Kanpur Highways Pvt. Ltd
2	Concessioning Authority	National Highways Authority of India (NHAI)
3	Sub Projects	Widening and Improvement of existing 4 lane to 6-lane from Etawah to Chakeri (km. 323.475 to km.483.687) section of NH-2 in the state of Uttar Pradesh under NHDP Phase-V through public, private partnership (PPP) on design and built-finance-operate (DBFO) Toll basis.
4	Location	Etawah to Chakeri (Kanpur) on NH-2
5	Chainage	Km. 323.475 to km.483.687
6	Total Term Loan	Rs.1550.00 Cr
7	Length (in Kms.)	approx. 160.21 Km
8	By pass	1 at Kanpur (existing)
9	Right of Way (RoW)	The existing RoW is 38 m to 60 m and proposed RoW is up to 60 m except at toll plazas.
10	Service Road	Strengthening and Construction of 229 Km. in both sides.
11	Toll Plaza	2 Nos.

12	Major Bridges	3 Nos.
13	Minor Bridges	35 Nos.
14	Pedestrian Under Pass	27 Nos.
15	Vehicular Under Pass	18 Nos.
16	Foot Over Bridge	4 Nos.
17	Box Culverts	281 Nos.
18	Pipe Culverts	318 Nos.
19	Truck Lay Bay	4 Nos.
20	Bus Lay Bay	88 Nos.
21	Scheduled Commercial Operation Date	11/09/2015

Source: Information Received from Concessionaire and other relevant Documents.

Figure-1: Project Location Etawah Chakeri Kanpur Highways Pvt. Ltd

5. ANALYSIS OF ALTERNATIVES

12. The analysis of alternatives is one of the most important exercises that need to be carried out to find the least cost option with regards to socio-economic and environmental consequences to each alternative, and the cost attributed to it.

13. The project offers some environmental alternatives in order to facilitate the decision making process. Alternative analysis has been carried out 'with' and 'without' project scenarios. This is to justify the proposal of a widening alternative to no widening alternative. The "with" project scenarios will, however, only occur only if the recommendations provided for the construction stage are followed and all construction activities are carried out according to principles of Environment Friendly Road Construction.

5.1 Without Project Scenario

14. The existing project road is 4 lane highways. The capacity of the existing 4 lane highway is insufficient for handling large number of vehicles which needs immediate improvements. The present highway is dotted with settlements and the traffic flow is seriously affected by severe conflicts between the local traffic and the long distance traffic. This is further compounded by the various land use conflicts, in terms of uncontrolled development, along the highway and the encroachments onto the designated highway land (RoW).

15. The population growth, increase in number of vehicles and the economic development along the project road will further exacerbate the already critical situation.

16. The existing unsafe conditions and slow traffic movement, the existing environmental quality along the highway will continue to deteriorate in the absence of proposed improvement/widening of the highway. It will also impede the economic development of the region. Forest land (48.2877), private land (118.58 ha) and Tree cutting (9447) will not be required.

5.2 With Project Scenario

17. This scenario includes the 6-laning of existing 4-laned national highway sections of NH-2 stretch between Etawah to Chakeri (near Kanpur), as envisaged in the project objectives. The "with project scenario", has been assessed to be economically viable and will alleviate the existing conditions. It will, therefore, contribute to the development goals envisaged by the Government of India, and enhance the growth potential of the region.

18. To avoid the large scale acquisition of land and properties, the project envisages the six laning of the highway with the minimum ROW, No bypasses and realignments have been proposed.

19. Due to widening of the road and construction proposed facilities traffic flow will improve, overall safety will increase and drainage along the road will also improve. Rain water harvesting system will also be provided along the road which will enhance the ground water level.

20. In spite of the various development benefits likely to accrue due to the project, some adverse impacts are also envisaged. To meet the land requirement of the project 118.58 ha private land and 48.2877 ha forest land will be used. 9447 number of trees will be cut for the widening of the road, however, about 28341 number of saplings will be planted as compensatory plantation. The potential impacts on the various environmental components can be avoided through good engineering practices. Wherever warranted and avoidance has not been possible, appropriate mitigation and enhancement actions will be worked out to effectively offset the environmental damages inflicted due to the project.

21. On the basis of analysis above analysis it is concluded that "with" project scenario will be more beneficial as compared to "without" project scenario. Therefore, proposed road widening project with

minor reversible impacts is justified. Improvement of existing alignment has been done in following ways which will have significant beneficial impact in terms of

- Minimizing displacement;
- Reducing resistance to the project;
- Minimizing the impact on the existing trees/local environment;
- Maximum benefit in terms of road geometry, pavements, shoulders, embankments, etc.;
- Uninterrupted flow of through traffic along the Project stretch;
- Avoid future possibility of installation of speed breakers by the local administration/public;
- Avoid adverse impacts of the crowded areas along the project stretch;
- Provide scope for wayside amenities.

6. PROJECT ADMINISTRATIVE DETAILS:

22. The administrative and financial details of the project as follows in the below **Table-2**:

Table- 2: Administrative details of the project:

Sl. No.	Description	Project Data
1	Client	National Highways Authority of India
2	Project Cost	Rs. 2251.00 Cr
3	Design Consultant	Lea Associates South Asia Pvt. Ltd.
4	EPC Contractor	M/s Oriental Structural Engineers Pvt. Ltd.
5	EPC Cost	INR 1955 Cr.
6	Independent Consultant	M/s Stup Consultant Pvt. Ltd.
8	Date of Concession Agreement	5th March 2012
9	Date of Commencement	13th March 2013
11	Concession Period	16 Years from the Appointed date including construction period of 30 months.
12	Lenders Independent Engineer	M/s Unihorn India Pvt. Ltd.
13	Ecologically Sensitive Area	There is no wild life sanctuary and national park within l0 km. radius.

Source: LIE Report: July 2014 and other relevant Documents.

7. DEBT COMPONENT OF THE PROJECT:

23. The debt component of the proposed project is being financed by a syndication of loan, ECKHPL has signed a Common Rupee Loan Agreement with consortium of Lenders comprises of Axis Bank (Lead Bank), India Infrastructure Finance Company Limited (IIFCL), Bank of India, Central Bank of India, Corporation Bank and Canara Bank. The total cost of the project is Rs. 2251.00 Cr and the debt component of the project is Rs.1550.00 Cr out of which Rs.355 Cr has been allocated by IIFCL.

8. EPC CONTRACTORS:

24. M/s Oriental Structural Engineers Pvt. Ltd. has signed the Engineering Procurement and Construction Contract (EPC) agreement with M/s Etawah Chakeri Kanpur Highways Pvt. Ltd on 4th day of April 2012 and the EPC cost is INR 1955 Cr.

9. LENDER'S ENGINEER:

25. M/s. Unihorn India Pvt. Ltd has been appointed as Lender's Engineer for the project M/s. Etawah Chakeri Kanpur Highways Pvt. Ltd As per the Lender's Engineer report for the month of June 2014, the financial progress up to end of June is about 54.38% and the physical progress is as projected and running ahead of schedule.

ENVIRONMENTAL SAFEGUARS

ENVIRONMENTAL SAFEGUARD DUE DILIGENCE

10. AVAILABILITY OF EIA/EMP REPORTS:

26. As per stipulations of EIA notifications, 2006 of MoEF, and its subsequent amended the proposed Highway project was considered as Category A project. Terms of Reference (ToR) was obtained from MOEF and draft EIA/EMP reports were prepared as per ToR. Public hearings were conducted as per MOEF's requirement. Final EIA was prepared incorporating the proceedings of public hearings and submitted to MoEF for environmental clearance. Environmental clearance was accorded by MoEF to the proposed project. Copies of the EIA/EMP reports are attached as **Appendix- 1**.

11. ENVIRONMENTAL SENSITIVITY AND DUE DILIGENCE:

27. The project site was visited by the Environmental Safeguard Specialist of IIFCL along with the concessionaire's officials during 10-11 July, 2014 for field verification of environmental safeguards.

- The area along project area represent mostly rural environment. Topographically, terrain of the project road is plain and it passes through 98 villages, 8 tehsils and four districts namely Etawah, Auraiya, Ramabai Nagar and Kanpur Nagar;
- The project road does not pass through any protected area like Wildlife Sanctuary, National Park, Bio Reserve etc.;
- There are no known rare, threatened or endangered flora and fauna species reported in the area close to the corridor of impact (CoI) of the project road;
- 48.2877 ha protected forest (PF) land is involved. Final forest clearance has been obtained under Section-2 of the forest (Conservation) Act, 1980.
- Tree cutting permission has been obtained. Total 9447 number of trees will be cut. About 439, 8799 and 211 number of trees expected to be cut in Etawah, Rambai Nagar and Kanpur districts, respectively.
- As compensatory plantations about 25962 saplings have been planned to be planted as avenue plantation. The predominant tree species in the corridor are Ashok, Gulmohar, Neem, Kikkar, Tamarind and Teak, etc;
- There are no archaeological monuments and cultural sites of national importance within corridor of impact for the project;
- The project management team is in constant interaction with the affected community and conducting environmental awareness programmes regularly;
- Elaborate environmental management and monitoring activities are being conducted;
- The concessionaire has undertaken implementation of environment management measures as per agreed EMP including physical monitoring of environmental parameters during the construction stage of the project;
- As part of EMP implementation, a provision of INR 9.2 crore (approx.) has been proposed.

12. CATEGORIZATION OF SUB-PROJECT:

28. The sub-project may be classified as Category 'B' based upon the Asian Development Bank's policies on environment. This classification is based on the review of EIA/EMP and other available documents provided by the Concessionaire with respect to the environmental sensitivity due to project activities.

13. STATUS OF REGULATORY CLEARANCES:

29. It is required that the sub-project meets the requirements of appropriate State and National legislations by considering appropriate obligations and guidelines of Regulatory Authorities. The sub project needs to have necessary national and local environmental clearances as well as permits and approvals for project implementation and suitable environmental management. The statutory clearances required as part of the proposed strengthening of the sub-project has been assessed and current status of such clearances are given in **Table- 3.**

Table-3: Status of Regulatory Clearances Obtained

Sl. No.	Clearances Required	Statutory Authority	Current Status of Clearance
1.	Environmental Clearance	Ministry of Environment and Forests, GoI, New Delhi	Environmental clearance has been accorded by MOEF vide letter F.No 10-99/2011-IA-III dated 30/11/2012 **(Appendix- II)**.
2.	Forest Clearance	Ministry of Environment and Forests, Government of India	Final approval of Central Govt. has been granted under Section -2 of the Forest (Conservation) Act, 1980for diversion of 48.2877 ha forest land for widening/up gradation ofNH-2 Etawah-Chakeri Section, in districts Etawah, Rambai Nagar and Kanpur vide letter No. 8-43/2012-FC dated 28/06/2013 **(Appendix- III)**.
4.	Environmental Clearance for Borrow Area	State Level EIA Authority	Environmental clearance has been obtained vide letter No. 873/parya/SEAC/Soil-04/2013/DDY dated 24 July, 2013 (**Appendix- IV**).
5.	Permission to Install & Operate	Regional Offices, UP Pollution Control Board	NoCs have been obtained for the installation and operation of Hot Mix Plant, Batching plant, DG sets, etc. **(Appendix- V).**
6.	Tree Cutting Permission	State Government	Permissions have been obtained **(Appendix- V).**
7.	Storage of Petroleum Product	Petroleum & Explosives Safety Organization, Ministry of Commerce & Explosives	Permissions have been obtained **(Appendix- V).**
8.	Borrow Area Permission and Water Drawing from Panchayats	Panchayats and Tehsildars,	NoCs have been obtained **(Appendix- V).**

Source: Concessionaire and Field Observation

30. Copies of all relevant clearance, approvals and permits are attached as **Appendix-II to V.**

14. PUBLIC CONSULTATIONS AND PUBLIC HEARINGS:

31. The public consultations were held at three places as per schedule provided below:

- Bekewar (Etawah Distt.) on 21/10/2010;
- Auraiya (Auraiya Distt.) on 21/10/2010;
- Rania (Kanpur Dehat Distt.) on 10/11/2010

32. The main objectives of the public consultations were to create awareness among local people about the project in general and its potential impacts (both positive as well as negative) on the community and involving them in the decision making.

33. The UP Pollution Control Board has coordinated and arranged public hearings in Kanpur, Ramabai Nagar, Auriaya and Etawah on 30.01.2012, 23.03.2012, 03.05.2012 and 14.03.2013, respectively. The meetings were attended by representatives from public, local bodies, farmers, etc. whose lives are likely to be impacted by the project. The NHAI officials also participated in the meetings. A team from the Consultant made presentation on salient features of the existing road and the new proposals of project to the participants at each location. The widening proposals for 6 laning along with the proposed facilities, particularly from safety and operational requirement of the highway, were discussed in detail. The meetings were well attended and held in congenial atmosphere. The participants appreciated the features of the widening proposals. Provisions are being made in the design to accommodate the suggestions received from public consultation. Main issues/concerns discussed in the meetings are provided below:

- There is need for providing adequate number of sign boards to avoid the accidents;
- Flyover should be provided at Y- Junction of Bakewar and crossing with road to Barthana;
- Due compensation for land has not been paid in some previous cases and needed it to be resolved early;
- Service road should be provided between Sarai Mitthe and Bijauli;
- Some land of burial ground has been acquired. It should be transferred back to Gram Sabha;
- It must be ensured that underpasses do not pose any drainage problems;
- Flyover should be provided in the Urban Area;
- The service road between Chirauli and Bhavpur should be 7 m wide;
- There are some culverts/ cattle passes where stagnation of water takes place;
- Underpass should be provided at km 376.00;
- Bus shelter should be provided at km 376.00;
- Vehicular underpass is needed in km 450 at Raipur;
- Elevated section at Rania should be explored for free movement of the cross traffic;
- Waste from oil mills at Akbarpur and Rania should be suitably discharged away from the road;
- Proper lighting and police help booth should be established on the Kanpur elevated highway;
- An additional exit/ entry ramp should be considered on Kanpur elevated highway.

34. Details of Public Consultations and Public Hearings are provided in the EIA report **(Appendix- I**).

15. ENVIRONMENT AND SAFETY CLAUSES IN CONCESSION AGREEMENT:

35. The NHAI has signed concession agreements with M/s Etawah-Chakeri (Kanpur) Highway Private Limited. Copy of the Concession Agreement (CA) is attached as **Appendix- VI.**

36. Safety requirements are given under Article 18 in which it is specified that the Concessionaire shall comply with the provisions of this agreement, applicable laws and applicable permits and conform to good industry practices for securing the safety of the users. In particular, the Concessionaire shall develop, implement and administer a surveillance and safety programme for providing a safe environment on or about the project roads and shall comply with the safety requirements.

37. As per Concessionaire Agreement (**Appendix-VI**), the Concessionaire shall comply with safety requirements set forth in Schedule – L (the Safety Requirements). The concessionaire shall comply with the provisions of the Agreement, Applicable Laws and Permits and conform to Good Industry Practices for securing the safety of users of the Contractor.

16. ENVIRONMENT AND SAFETY CLAUSES IN EPC CONTRACT:

38. The Etawah-Chakeri (Kanpur) Highway Pvt. Limited has awarded the EPC works for this project to Oriental Structural Engineers Pvt. Limited. Copy of the EPC Contract for this project has been attached as **Appendix-VII.** As per EPC Contract the Contractor shall take all reasonable steps to protect environment (both on and off site) and limit damage and nuisance due to his operations. The contractor will comply all requirements under applicable permits.

39. The Contractor shall comply with all applicable safety regulations and take care of the safety of all persons entitled to be on the site.

17. EMP IMPLEMENTATION BUDGET:

40. As part of the project, detailed EMP measures have been undertaken including a budget of Rupees 9.2 crore (Approx.) for implementing the same. The EMP budget exclusively includes the following measures:

- Maintenance of air, noise and water quality;
- Monitoring of environmental parameters and preparation of compliance report;
- Sprinkling of water during construction;
- Tree-cutting and plantation of new trees;
- Health & safety;
- Training and awareness on health, safety and environment.

18. ENVIRONMENT MANAGEMENT PLAN (EMP) IMPLEMENTATION:

41. The environmental management plan as appeared in the EIA is provided at **Appendix-I**. The EMP has proposed mitigation measures which are being adopted during the pre-construction and construction phases of the project. The EMP also elaborates on environmental monitoring. The specific Project Environmental Management Plan (PEMP) has also been prepared (**Appendix-VIII**). The PEMP will act as an apex-guiding manual at the project site level, which describes in detail how the significant aspects leading to adverse environmental impacts shall be identified and mitigated. The mitigation measures adopted during construction and operations shall include the ambient air quality management; control of water pollution including treatment and water conservation; spill prevention and control; noise quality management from plant, machineries and vehicles and solid waste management etc.

19. CONCESSIONAIRE AND EPC CONTRACTOR'S HSE PLAN:

42. The Concessionaire has developed Construction Traffic & Safety Management Plan to address good industry practices with regard to worker safety and accident/hazard prevention at work site. Major objectives of developing such a plan is to specifically assess the risk associated with worker's safety and to suggest precautionary measures to avoid accidents; integrate safety with work practices; create safety awareness amongst every individual associated with the project; formulate and effectively maintain the accident prevention program of the project and to achieve the prime goal of zero accident. Copy of the Construction Traffic & Safety Management Plan is attached as **Appendix-IX.**

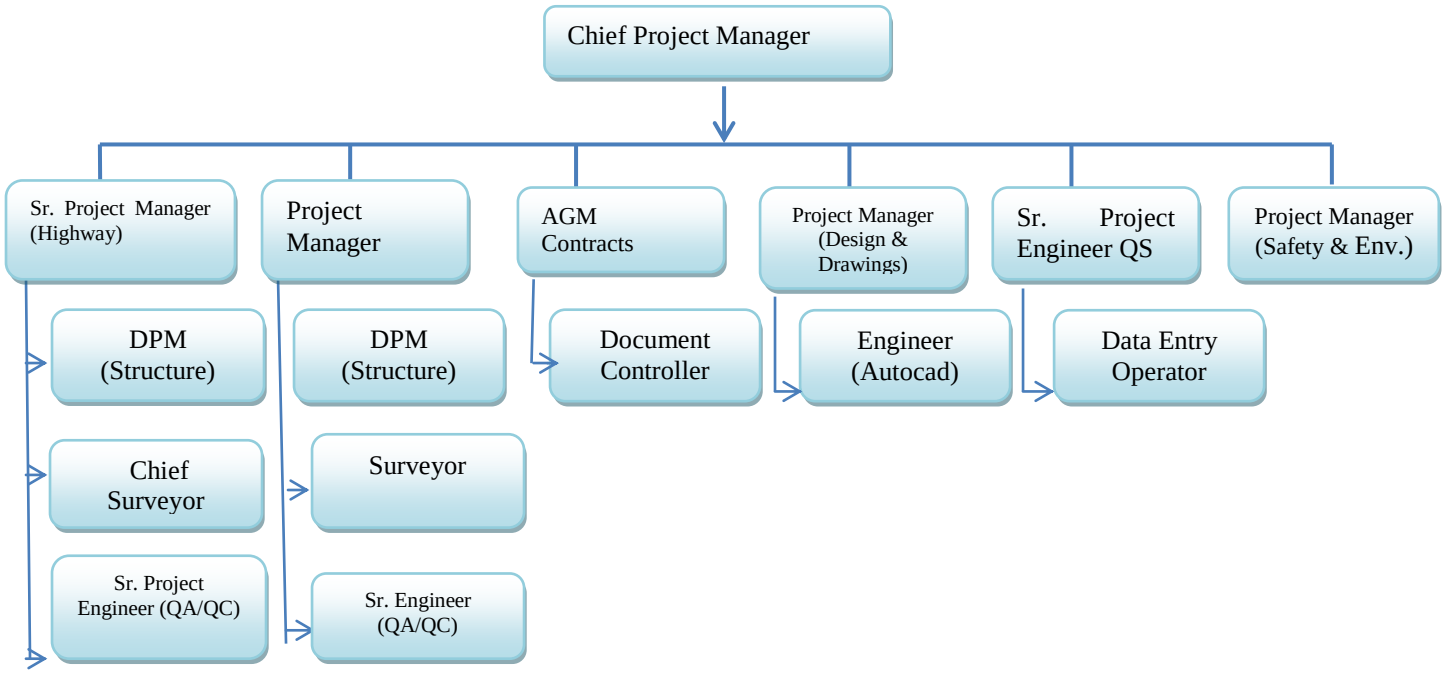
20. ENVIRONMENTAL MONITORING:

43. Monitoring of environmental quality during construction and operation reflects the success of implementation of the mitigation measures and it also provides a chance to review the suggested measure and improve upon the measures. The environmental monitoring is primarily the responsibility of the EPC contractor. Provision has been made to engage the service of a MoEF/NABL approved monitoring agency to oversee monitoring of air, noise, and water and soil quality. Presently, Envirotech East is carrying out the monitoring work.

21. INSTITUTIONAL FRAMEWORK FOR EMP IMPLEMENTATION:

44. The project institutional framework as given in the project EMP (Appendix- I and VIII) indicates that the overall implementation responsibility of the EMP lies with EPC contractor; Head of the project at site office located at Madanpur is supported by project manager (safety & environment). Stup Consultant Pvt Limited is appointed as independent consultant. Unihorn is appointed as lenders engineer. M/s LEA Associates South Asia Pvt Ltd is the design consultant of the project. Right now, the entire responsibility of environment management lies with the EPC's Project Manager (Safety & Environment). The arrangement made for implementation of project including quality assurance, safety and environmental aspects is given in **Figure-2.**

Figure-2: Organization Chart



22. SITE VISIT:

45. A site visit was undertaken by IIFCL's Environmental and Social Safeguard Specialists along with the concessionaire's officials during 10 – 11 July, 2014. The concessionaire has appointed EPC contractor for execution of construction work. EPC contractor/subcontractor has mobilized sufficient staff for construction, survey and quality testing work together with plant, machinery and equipment. QA/QC Lab, stores, machinery, fabrication yard and work shop . During the site visit it has been observed that:

- Four camp offices at Raipur (Kukhat), Madanpur (Sikandra), Janetpur (Auraiya) and Etawah have been developed. Madanpur is the base camp. All site offices including guest houses, and canteens, etc. are well maintained;
- First aid facilities are provided to all camp offices;
- At construction plant sites, crushers have been provided with wind breaking walls and water sprinkler at the start of crushing operation in crusher equipment and the Hot Mix Plants was provided with Bag House filter to control the air pollution;
- Proper traffic diversions and appropriate signages are being provided at appropriate locations at the construction site for the convenience of road traffic;
- Workers are being provided with the required safety gears to be worn during execution of work;
- Necessary barricading and safety precautions are being ensured. Work safety signages have been provided in places where the construction work has begun;
- Staff/labour accommodation facilities at camp sites have been provided with adequate drinking water, mess and sanitation facilities;
- Periodic environmental quality monitoring is being carried out by M/s EnviroTech East, Kolkata;
- Borrow area are being levelled and treated properly. About 250 acre of land has been developed as cultivable land;
- Old trees which are situated inside the camp have been retained and new plantation activities inside the camp are in progress;
- Fly ashes as well as pond ash are being used in the road construction work. Till June 2014, about 14986 MT fly ash and 95051 cum pond ash have been used;
- Regular medium maintenance work is in progress;
- Constructions of longitudinal drains, under passes and cross drainage structure work are is in progress.

23. CONCLUSIONS AND RECOMMENDATION:

46. Based upon the available documents and site visit, it is concluded that the concessionaire through their EPC contractor has undertaken environmental safeguard measures. Project Manager (Safety & Environment) is posted at site that is responsible for the safety and environmental aspects of the project. He reports directly to the Project Director/Chief Project Manager. The sub-project has made sound progress. The conclusion for the sub-projects is given below:

- The project has been prepared by NHAI as per its own funding requirement and not in anticipation to Asian Development Bank's operation;

- Necessary permits/approvals, environmental clearances and forest clearance for project implementation have been undertaken by the concessionaire;

- The proposed project does not affect any eco-sensitive zones as declared by MoEF. Also the project does not pass through any national park or wildlife sanctuary. No historical or archaeologically important monuments are also affected due to these sub-projects;

- All statutory environmental and forest clearances, tree cutting approvals, consents to establish and operate construction equipment, etc. are obtained /renewed as the case may be;

- Continued compliance by the facility owner and the civil works contractors with the terms and conditions stipulated while according statutory environmental clearances /approvals /consents is being carried out.

- Institutional arrangement is also being done for regular environmental management. EPC Contractor has engaged MOEF/NABL approved laboratory for carrying out the environmental parameters monitoring work;

- The proposed project may also has a positive GHG emission reduction due to less fuel consumption for the same traffic density;

- For road safety, IRC guidelines in respect of road signages, service roads bus bays, intersections, pedestrians crossing, etc. should be strictly adhered to;

- Appropriate fencing all around the borrowed/excavated pit should be made to prevent mishap;

- Rainwater harvesting facilities including oil and grease trap should be provided as per approved plan;

- Based on the due diligence findings, it can be deduced that the sub-projects have no significant environmental safeguard issues;

- The Sub-projects, therefore, do not appear to involve any kind of reputational risk to IIFCL and the Asian Development Bank funding on environmental safeguards and is recommended for funding under the proposed head.

SOCIAL SAFEGUARS

SOCIAL SAFEGUARD DUE DILIGENCE REPORT (SSDDR)

24. METHODOLOGY FOLLOWED DURING SSDDR:

47. The social safeguard due diligence study was carried out for the sub-project with the information and documents received from the concessionaire Etawah Chakeri Kanpur Highways Pvt. Ltd. (ECKHPL), social due diligence for the subproject was initiated by IIFCL on behalf of the concessionaire ECKHPL. The methodology followed during the preparation of Social Due Diligence Report (SDDR) is as follows:

- Discussion with the subproject developer regarding the implementation status and progress of the project before the site visit and during the site visit;
- Some of the relevant documents relating to social safeguard have been reviewed, like Feasibility Report, Concession Agreement (CA), Engineering Procurement & Construction (EPC) Contract, Information Memorandum of the project, Lenders Independent Engineers (LIE) June 2014 and most of the applicable clearances/permits and No Objection Certificates (NoCs) applicable for the project.

25. SOCIAL SAFEGUARDS COMPLIANCE REVIEW:

25.1 Minimization of social impacts

48. Efforts have been made during the project planning and design stage to minimize the resettlement impact on the existing structure and minimization of additional land acquisition as far as possible. During finalizing the alignment and bypasses, realignments have been proposed to minimize the social impact of the project. Alternatives have been adopted keeping in mind the prime objective of reducing the displacement of the people and disruption of livelihoods as much as possible. To avoid the large scale acquisition of land and properties, the project envisages the six laning of the highway with the minimum ROW, No bypasses and realignments have been proposed.

26. PUBLIC CONSULTATION:

49. During project planning and preparation stage, consultations were carried out with the different stakeholders along the project road, villages, shopkeepers, project affected people and the people of the different section of the society. Public Consultations have been conducted by the project proponent in three different locations to appraise the stake holders about the project as indicated below. The consultation summaries and photo graphs details has been provided at **Appendix- XII.**

a. Bakewar (Etawah Dist.) on 21-10-2010;

b. Auraiya (Auraiya Dist.) on 21-10-2010;

c. Rania (Kanpur Dehat, Dist.) on 10-11-2010

50. The village wise some of the issues as raised by the local people during the consultation were depicted :

26.1 Meeting at Bakewar:

- Need for providing adequate number of sign boards to avoid the accidents;
- Flyover shall be provided at Y- Junction of Bakewar and crossing with road to Barthana;
- Due compensation for land;

- Service road shall be provided between Sarai Mitthe and Bijauli;
- Some land of burial ground has been acquired. It shall be transferred back to Gram Sabha;
- It must be ensured that underpasses do not pose any drainage problems.

26.2 Meeting at Auraiya:

- Flyover shall be provided in the Urban Area;
- Adequate numbers of safety/ sign boards are needed at different locations to warn the road user to avoid accidents;
- The service road between Chirauli and Bhavpur;
- There are some culverts/ cattle passes where stagnation of water takes place arrangements shall be made for early disposal of water;
- Underpass and bus shelter shall be provided at km 376.00.

26.3 Meeting at Rania:

- Vehicular underpass in km 450 at Raipur;
- Adequate safety boards and road signage are needed for the road;
- Elevated section at Rania for free movement of the cross traffic;
- Waste from oil mills at Akbarpur and Rania shall be suitably discharged away from the road;
- Proper lighting and police help booth shall be established on the Kanpur elevated highway;
- An additional exit/ entry ramp shall be considered on Kanpur elevated highway.

27. PUBLIC HEARING:

51. Moreover during the project planning and design stage, public hearings were also conducted at four different locations. The Uttar Pradesh Pollution Control Board has conducted public hearing in Kanpur, Ramabai Nagar, Auriaya and Etawah district on dated 31/01/2012, 23/03/2012, 03/05/2012 and 14/03/2012 at the premises of District Collector Meeting hall Kanpur, NHAI office Akabarpur, Dr. Ambedkar Community Hall, Auriya and Collector Meeting Hall Etawah respectively.

52. The Public Hearing related communication between State Pollution Control Board and the District Administration and minutes of meeting, notice for the general public to conduct Public Hearing was published on the Vernacular language in the two national daily newspapers on 31/12/2011 and 14th August 2011 in the daily News Paper 'The Dainik Jagaran' and 'The Hindustan Times' . The district wise details of public hearing, newspaper cutting for conducting public hearing, attendance sheets and communications are given in Appendix-**XIII.**

53. Suggestions were received during the project implementation stage and the feasibility of incorporating the suggestions has also been considered by the concessionaire. Provision for service road drainage facility, traffic safety during construction as well as operations, tree plantations, underpasses, etc., are the common demands of the road side villages and the incorporation of the same has been done by the

concessionaire after approval from the Concessioning Authority NHAI. Few of the discussions and provision raised during the public hearing are briefed in Table-4 below.

Table: 4 Incorporation of suggestions in design stage of the project

Sl. No.	Location	Suggestions received	Incorporation in design stage
1.	Ramadevi Village, Kanpur	• Pedestrian under pass at Ramadevi village; • Signboard for local people as well as road users which connects tunnel through flyover: • Plantation of trees in both side of the road.	Pedestrian Underpass has provided. Noted, and complied Tree Plantation is being take care by Forest department.
2.	Rajapurava village, Ramabai Nagar	Maintenance of village road connecting to Hamirpur .	Maintenance work has been under taken by the concessionaire.
3.	Chekkari Road, Kanpur	Provision for safe road crossing without obstructing the traffic	Pedestrian Underpass.
4.	Ramadevi Village, Kanpur	• Provision of proper drainage facility; • Provision of emergency Health care facility to the road users.	Noted and taken care by the concessionaire as per the design specification. Concessionaire has assured of providing ambulance facility at toll plaza locations.

28. LAND ACQUISITION IN THE PROJECT

54. As informed by the developer, no major land acquisition is required for the sub-project, since the existing RoW was sufficient to accommodate the road strengthening work. Efforts have also been made to avoid and to minimize the impact in the settlement area. Since the land was already available with the existing alignment, only a small portion of land were required to be acquired for Toll Plaza location, bus/truck lays shelter and in some places where curve improvement/realignment is proposed.

55. As per the lenders Independent Engineers report June 2014 and the information provided by the concessionaire ECKHPL, the total land required for 6 laning of the project is 1078 Ha. (including 48.2877 Ha. forest land, the forest clearance it attached in Appendix-III), out of which, 961.27 Ha of land was already available with the concessionaire and 116.74 Ha. of additional land required for Toll Plaza, bus/truck lay bays and in some places where curve improvement/realignment is required.

56. During the discussion it was informed by the concessionaire that the land acquisition is being carried out by NHAI after the Gazette notifications were published in the Gazette of India. The notifications for land acquisition have also been published in the Vernacular language in the regional daily newspapers “The Hindustan” and “The Hindustan Times” both on 28th March 2012.

57. The land is being acquired by the Concessioning Authority i.e. NHAI after the official Gazette Notification is published (under subsection (1) of section 3A of the National Highway Act 1956) in the Gazette of India on 29th August 2013, 30th September 2013 and 27th January 2014 for the district Ramabai Nagar, Etawah and Kanpur respectively. A sample copy of the 3D notification is attached as **Appendix-X.** The District wise detail of land acquisition is given in **Table-4.**

Table- 5: District wise land acquisition status

Sl. No.	District	Chainage (Km)	Chainage (Km)	Length in Km.	No of Villages	Land is being acquired (Ha)
1	Etawah	323.475	350.800	27.33	21	31.98
2	Auraiya	350.800	389.300	38.50	39	41.91
3	Kanpur Dehat	389.300	450.600	61.30	37	33.79
4	Kanpur Nagar	450.600	483.687	33.09	6	10.90
Total				**160.22**	**103**	**118.58**

Source: Information compiled from Concessionaire/LIE, July 2014

58. **Gazette Notifications for Land Acquisiltions:-**The Gazette of India is a public journal and an authorized legal document of the Government of India published weekly by the Department of Publication, Ministry of Urban Development. It is authentic in content, accurate and strictly in accordance with the Government policies and decisions. Through the Gazette Notifications for land acquisitions, the Central Government declared its intention to acquire the land for widening, maintenance, management and operation of National Highway No.-2 (NH-2), on the stretch of land from Km. 323. 475 to Km. 483.687 (Etwah-Chakeri-Kanpur section), in the state of Uttar Pradesh, under sub-section (3) of section 3A of the said NHAI Act 1956.

59. During the site visit and discussion with the concessionaire reveals that, major part of land acquisition was completed during the 4 laning and land was already available with the concessionaire. It was also informed that there is no outstanding grievance/issue with respect to the land acquisition and compensation.

29. COMPENSATION AND ENTITLEMENT:

60. The land acquisition has been done by NHAI and the compensation for the loss of properties is decided by the Competent Authority. Compensation is being paid to project affected families as per the NH Act.-1956. As informed by developer, in addition to compensation for land and structure, crop compensation has also being paid to the affected people who are losing their crop due to land acquisition. As information provided by the developer 43 farmers were provided crop compensation due to loss of crop.

61. NHAI has prepared this project for its own funding requirement and not in anticipation to ADB's operation, thus the land acquisition has been done by NHAI and the compensation has been paid for loss of properties as determined by the Competent Authority. Compensation is being paid at the market value considering the local market rate obtained from the Revenue Department of the state.

30. RESETTLEMENT IMPACT IN THE SUB-PROJECT

62. As informed by the concessionaire, the major portion of land acquisition was completed during the time of 4 laning of the project so no substantial resettlement impact of any private structures like;

residential, commercial, residential cum commercial structures are being affected due to the 6 laning of the sub-project. Further, it is also confirmed by the concessionaire and observed during the site visit that no kiosks/khokha is affected due to strengthening of the subproject and does not involve any physical displacement. Hence few small shop owners were shifted from the RoW with the help of concessionaire. Further it was also confirmed that no Rehabilitation and Resettlement (R&R) plan was required to be prepared for this sub-project. Moreover, during the site visit it was also observed that there were no hindrance in the physical progress of the main carriage way and the construction work is going on in a good space and running ahead of schedule. Further it is informed by the concessionaire that the main carriage way approx.176 km. of 6 laning on both the side of the project road has been completed.

30.1 Impact on Religious properties

63. As informed by the concessionaire, efforts have been made during the 6 laning of the project that the impact may be minimal/no impact during the construction stage by considering realignment at various locations by minimising the impact on the religious structures. Considering the sentiments of the local people the concessionaire has saved one Mazzar at Chainage 435.440 on right hand side (RHS) by partially shifting the alignment to Left Hand Side (LHS), the photo of the mazzar is given on the cover page of the report (fourth from left). During the site visit it was also informed that the construction work will be carried out without affecting any religious and common/community properties, however one temple (Hanuman Temple) at Sikandra village has been shifted with mutual decision of the local people at Chainage 398.530 which is given on the cover page of the report (sixth from left)

30.2 Impact on Schedule Tribe population

64. The Etawah-Chakri (Kanpur) section of NH-2 is falling under in the state of Uttar Pradesh (UP) and the project road is passing through four districts of Uttar Pradesh i.e., Etawah, Auraiya, Kanpur Dehat and Kanpur Nagar is not a part of the notified Fifth Schedule Area[1]. Further, does not disturb any tribal settlement and does not have any adverse impact or create any threat to the survival of any tribal community along the alignment. Hence no Tribal Development Plan (TDP) is required to be prepared for this sub-project.

30.3 Impacts on Encroachers and Squatters

65. As information provided by the concessionaire, the impacts relating to non-titleholders like encroachers and squatters for the sub project has already been taken care during the 4 laning of the project. Further, it was told that during the 6 laning of the project the concessionaire has helped the small shop owners by providing them man and machines during shifting. The small shop owners were shifted from the RoW with the help of concessionaire. The levelling and land feeling of the identified location were totally done with the help of the concessionaire.

30.4 Local employment Generated by the Concessionaire

66. As informed by the concessionaire, the subproject provides employment opportunities to more than 800 local people during the construction stage of the sub-project, especially with respect to skilled, unskilled labour. Moreover, all the local people are employed in the four camp sites namely Raipur camp, Madanpur camp, Araiya Camp and Etawah camp sites. During the discussion with the concessionaire, it was also informed that the EPC contractor has employed few local people as security guards, driver, cook, administrative assistants, cleaning, sweeping and maintenance of the road etc. Also, few vehicles from the locality have been taken on hire basis for project works and movement. The local labour employed by the concessionaire in the project is given in below **Table-5.**

[1] The Web link of the state wise list of "The Scheduled Areas": http://www.tribal.gov.in/Content/StatewiseListofScheduleAreasProfiles.aspx

Table-6: Employment Generated During Construction Stage of the Project:

Component	Local Labour employed	Total
Skilled	**198**	**198**
Semi-Skilled	**82**	**280**
Unskilled	**521**	**801**

Source: information provided by the Concessionaire

30.5 Impact on Labour Health, Safety, Hygiene of Construction Workers

67. The company has hired skilled and unskilled workers belonging to the project region. As per the labour license given by Ministry of Labour & Employment: office of the Dy. Chief Labour Commissioner (Central), Kanpur, Uttar Pradesh. As per the labour licence the maximum numbers of building workers are to be engaged per day is 1500 Nos. During the site visit it was noticed that, the workers have been provided with adequate safety measures such as safety helmets, safety boots, earplugs, jackets and gloves. Facilities like onsite accommodation with basic amenities like drinking water, toilets, transportation to work site and safety gears. Construction workers have also been provided with ready access to on- or off-site health care check-up facilities and provide first aid for minor injuries. The detail of Labour license is given under **Appendix-XI.**

30.6 Details of Community Welfare Measures Carried out by the Developer

68. As part of goodwill and responsibility towards community, some of the welfare activities have been listed by the concessionaire under Corporate Social Responsibility (CSR). While addressing the needs of the local community, the project authorities have earmarked some of the activities for the local people's development, which are as follows:

- Celebration of Safety Week and organizing road safety awareness ;
- Awareness camp for road users for following safe road use like safe driving, use helmet while driving motorcycle, safe speed, keeping vehicle in condition etc.
- Enhancement/ construction of village road/approach road;
- Rehabilitation of borrow area by converting it as cultivable land;
- Construction of new well at Pikhar village at Chainage 325.708;
- Development of play ground in Rasdhan and Bihari Malasa village
- Concessionaire has organized health checkup camps for the local people;
- Village Temple development and up gradation of approach road to temple;
- Organizing village fair and festivals;
- Community River deepening.

31. DISCLOSURE:

69. The final ESDDR report will be accepted and approved by the Concessionaire and endorsed by IIFCL. After getting the No Objection Certificate (NoC) from the ADB, the report will be uploaded for public disclosure in IIFCL's website Project developer's website as well as ADB's website.

32. MONITORING BY IIFCL:

70. On behalf of NHAI the appointed Independent Consultant M/s Stup Consultant Pvt. Ltd. is being monitored and submitting the periodic compliance monitoring report to NHAI for the subproject which also includes the status of pending land acquisition.

71. On behalf of Lenders the Lenders Independent Engineer (LIE) M/s Unihorn India Pvt. Ltd. is monitoring the financial as well as physical progress of the project and submitting the Monthly Progress Report to the lenders which captures status of land acquisition, status of tree cutting, utility shifting, maintenance and applicable permits.

33. SITE VISIT OBSERVATIONS

72. A site visit was organised by the ESMU team of IIFCL on 10th - 11th July 2014 to understand the project and safeguard procedures adopted by the subproject developer. During the site visit the team along with the members of concessionaire has visited some of the local people along the project road of Raipur Kukahu, Madanpur and Thanuapur villages. During the site visit it was observed that:

- Since the land was already available with the concessionaire, the construction work has been accommodated within the existing RoW and no additional land acquisition has been made in the built up area;
- Borrow area have been developed as cultivable land, during the discussion the developer informed that approx. 250 Acres of barren land have been developed into cultivation land;
- Local people's view have been given due consideration during the project design and planning stage of the sub-projects;
- Local labours are being engaged in the construction activities for unskilled activities;
- During the discussion with the villagers , it was observed that people were generally in support of the project;
- Within the camp site the EPC contractor has maintained proper sanitation facilities of drainage, sewerage, hygiene mess facility, for drinking water they have established RO plant for the workers and their families;
- Construction workers are provided with ready access to on- or off-site health care check-up facilities and are being provided with first aid for minor injuries;
- Proper traffic diversions and appropriate signages are being provided at the site to prevent any disruption of life and the highway traffic.

34. CONCLUSION AND RECOMMENDATIONS

73. Based upon the available documents and site visits it appears that the concessionaire has undertaken social safeguard measures for better and on time implementation of the sub-project. The project is running ahead of schedule and the concessionaire is hopeful to complete the construction work before

the scheduled commercial operation date i.e. September 2015.The key observations on due diligence on the social impacts are summarised as follows:

- The sub-project has been prepared by NHAI as per its own funding requirement and not in anticipation to ADB's operations;
- The land acquisition has been done by NHAI under the Land Acquisition Act 1894 (Act-1 of 1894), and compensation is being paid to the affected families before handing over the land to the concessionaire;
- Since, 94% of land was already available with the concessionaire it seems that there is no major outstanding grievances with respect to the land acquisition and compensation;
- As informed by the concessionaire the compensation have been paid for the land acquisition before the start of the civil construction activity;
- Considering the socio-economic profile of the sub-project areas, it can be noted that the sub-project will improve the quality of life of the people;
- The sub-project will improve better connectivity to the rural area by connecting through State and National Highways;
- Concessionaire has undertaken various community development activities to benefit the local people;
- Local labourers are being hired from the locality for day to day activity and construction purposes. These labourers go back to their own houses in the evening after completing day's work;
- Based on the site visits observations, desk review and during the preparation of the due diligence report, it appears that the sub-projects have no significant social safeguard issue.

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NATIONAL HIGHWAYS AUTHORITY OF INDIA

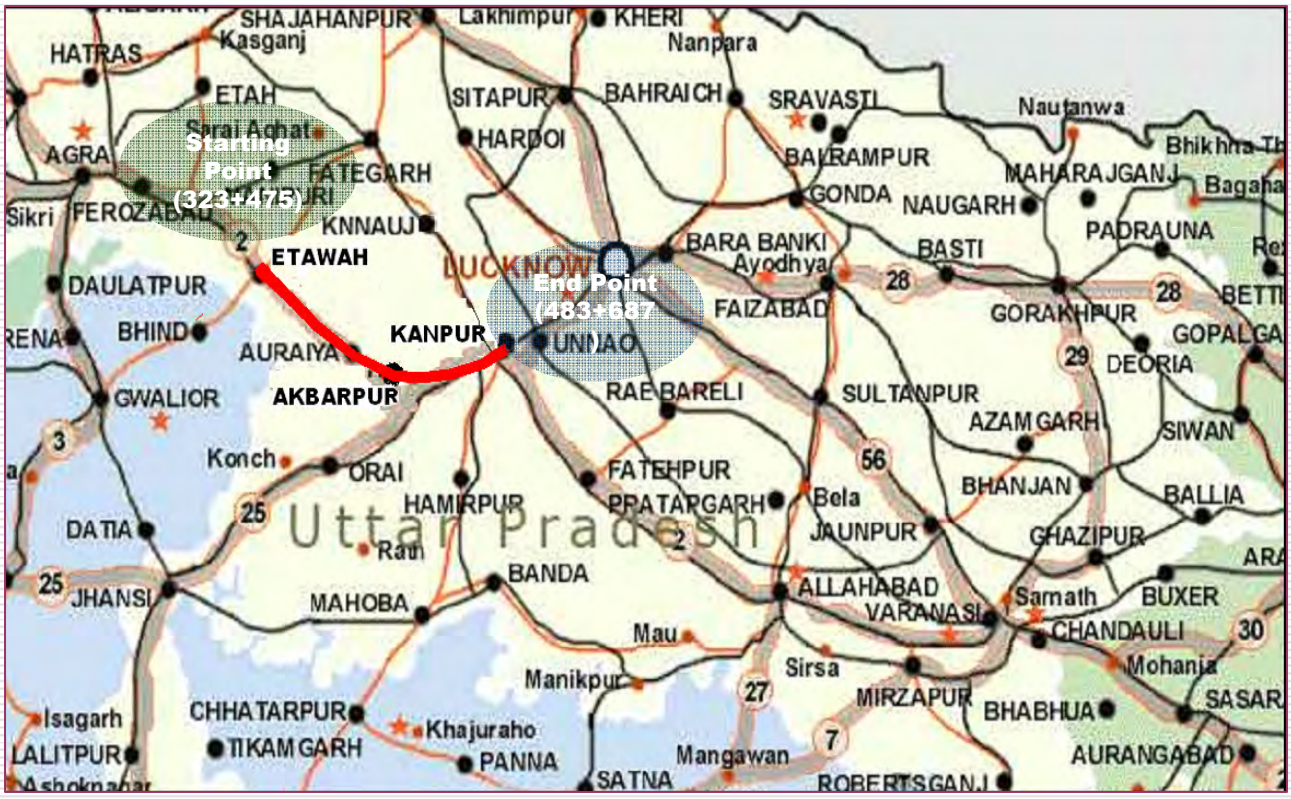
DETAILED PROJECT REPORT

For

REHABILITATION AND UPGRADATION TO 6 LANING OF ETAWAH-CHAKERI , SECTION OF NH-2 (U.P.)

km 323+475 to km 483+687

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN



May 2012

CONSULTING ENGINEERS GROUP LTD
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CONTENTS

FORM -1

(I)	Basic Information	
S. No	**Item**	**Details**
1.	Name of the Project	Widening and improvement of existing 4 lane to 6 lane of selected stretches of NH-2 under NHDP Phase-V (Lot-5) - Group B: Etawah-Chakeri (from km 323.475 to km 483.687) (Pakage No NHAI/NHDP- V/DK- II/ BOT/FR/37)
2.	Sl. No. in the Schedule	7 (f) of Colum 3 of Para II of schedule EIA notification
3.	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled.	Length of the road = 160.212 km
4.	New/Expansion/Modernization	Widening of existing four lane carriageway to 6 lane with paved shoulder.
5.	Existing Capacity/ Area etc.	The existing ROW is 38 m to 60 m and proposed ROW is upto 60 m except at toll plazas.
6.	Category of Project i.e. A or B	Category A as per MoEF notification dated September 14, 2006 and its amendments.
7.	Does it attract the general condition? If yes, please specify.	Not Applicable
8.	Does it attract the specific condition? If yes, please specify.	Not Applicable
9.	Location	The project road starts at km 323.475 at Etawah and ends at Chakeri (Kanpur) at km 483.687 District: Etawah, Auraiya, Ramabai Nagar, Kanpur Nagar Star Point — End Point Lat. 26^0 46`8.31`` — $26^0$ 27`29`` Lon. 79^0 02`10.3`` — $80^0$ 13`7.39``
	Plot/Survey/Khasra No	Not Applicable
	Village Tehsil	There are 98 Villages and 8 Tehsils whose land falls along the project road. Details of major settlements/ towns are given in **Annexure-A**
	District	Etawah, Auraiya, Ramabai Nagar, Kanpur Nagar
	State	Uttar Pradesh
10.	Nearest Railway Station/airport along with distance in km.	(a) Etawah Railway Station- 5 km (b) Kanpur Central Railway Station- 10 km
11.	Nearest Town, city, District Headquarter along with distance in km.	Start Point- End of Etawah bypass End point- End of Kanpur Elevated bypass

12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal address with telephone no)	Kanpur Muncipal Corporation (Personnel Department) Ph-0512-2531215, 2551416, FAX-0512-2531662
13.	Name of Applicant	National Highways Authority of India (Ministry of Road Transport and Highways)
14.	Registered Address	G-5 & 6, Sector- 10, Dwarka, New Delhi- 110075
15.	Address for Correspondence:	
	Name	Mr. V.K. Sharma
	Designation (Owner/Partner/CEO)	Chief General Manager(LA)
	Address	National Highways Authority of India (Ministry of Road Transport and Highways) G-5 & 6, Sector- 10, Dwarka, New Delhi- 110075
	Pin Code	110075
	E mail	vksharma@nhai.org
	Telephone No	011-25074100/ 4200(Ext.- 1205)
	Fax No	011 25093542
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet	Not Applicable
17.	Interlinked Projects	Not Applicable
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act,1980? (b) The Wildlife (Protection) Act, 1972? (c) The CRZ Notification, 1991?	 (a) Yes, about 48.2877 ha land is proposed for diversion. The proposal for the same will be submitted to state govt. (b) Not Required (c) Not Required
22.	Whether there is any Government Order/Policy relevant/relating to the site?	Not Applicable
23.	Forest land involved (ha)	About 48.2877 ha protected forest
24.	Whether there is any litigation pending against the project and /or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No (c) Orders/directions of the Court, if any its relevance with the proposed project.	No

"I hereby give undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost."

Date: September 2011

Place: Delhi

(V.K. Sharma)
Chief General Manager(LA)
National Highways Authority of India
(Ministry of Road Transport and Highways)
G-5 & 6, Sector- 10, Dwarka, New Delhi- 110075

II Activity

1. Construction, operation or decommissioning of the project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S.No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan).	Yes	Additional Land of 141 hectares is required. Mostly land is agricultural.
1.2	Clearance of existing land, vegetation and buildings?	Yes	Additional land is proposed, wherever falling short of requirement. Trees to be felled 9449
1.3	Creation of new land uses?	Yes	Existing agricultural land will be converted for the road development use.
1.4	Pre- construction investigations e.g. bore holes, soil testing?	Yes	Preconstruction investigation viz. topographical survey, traffic surveys, sub grade soil investigation, sub surface investigation, existing pavement composition, existing road strength and roughness survey at various locations and identification of aggregate and filling material sources has been completed.
1.5	Construction works?	Yes	- Service Road: new construction 137.506 km & widening 42.716 km - New Major bridges on main carriageway: 3 nos, 2-3 lane width with footpath - New Minor bridges on main carriageway and service road: 30 nos, LHS & RHS combined 2-3 lane width with footpath. - Minor bridges reconstruction: 5 nos - Reconstruction/ Widening of culverts: 254 nos. - New Vehicular Underpasses: 18 nos. - New Pedestrian Underpasses: 25 nos - Pedestrian Underpasses to be widened: 2 nos - New Foot Over Bridges: 4 nos
1.6	Demolition Works?	Yes	5 minor bridges and 14 culverts shall be demolished.
1.7	Temporary sites used for	Yes	Temporary sites will be used for construction

S.No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
	construction works or Housing of Construction workers?		yard, labor camps and construction camps which shall be demolished and site shall be restored.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations.	Yes	The above ground structures include bridges, underpasses, foot over bridges, toll plazas, truck lay byes and bus bays.
1.9	Under ground works including mining or tunneling.	No	Not Applicable
1.10	Reclamation Works?	No	Not Applicable
1.11	Dredging?	No	Not Applicable
1.12	Off shore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	Yes	Production of concrete and bituminous mixes.
1.14	Facilities for Storages of goods or materials?	Yes	The material for construction such as bitumen, cement, paints; steel etc. will be stored in the construction shed/storage tanks. Storage of perishable construction material will be stored at locations to be designated.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	Waste generated from the construction likely to be reused with zero discharge. The domestic waste which is being generated from the camp side shall be disposed off to the designated dumping site with the permission of local authorities, The liquid effluent shall be discharged to the septic tank before diverting it to soak pit.
1.16	Facilities for long term housing of operational workers?	No	Not Applicable
1.17	New road, rail or sea traffic during construction or operation?	No	Not Applicable
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Traffic diversion will be expected during construction phase and will be done with prior permission from traffic police.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	Yes	During construction, temporary diversion along existing highway/ roads, wherever the project road crosses will be undertaken as per IRC: SP: 55-2001 guidelines for safety in construction zone.

S.No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
1.20	New or diverted transmission lines or pipelines?	Yes	Existing transmission lines, electric poles and pipe lines will be required to be relocated along designated utility corridor of the highway as per Final feasibility report.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not Applicable
1.22	Stream crossings?	Yes	3 rivers cross the project highway.
1.23	Abstraction or transfer of water from ground or surface waters?	Yes	For normal construction work 600 KLD of water is required for construction. Water will be abstracted from surface and ground sources during construction period only and necessary permission would be requested from competent authority.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not Applicable
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	The construction material and also labourers will be transported during construction from different sources. Material shall be procured from existing sources or new quarries.
1.26	Long-Term dismantling or decommissioning or restoration works?	No	Not Applicable
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not Applicable
1.28	Influx of people to an area either temporarily or permanently?	Yes	There will be temporary influx of people to the area as labor and other people who will be involved directly or indirectly during the construction of highway; however preference will be given to local people in the employment.
1.29	Introduction of alien species?	No	Not Applicable
1.30	Loss of native species or genetic diversity?	No	Not Applicable

S.No.	Information/ Checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information
1.31	Any other actions?	No	Not Applicable

2. Use of Natural resources for Construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply) :

S. No.	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	Land to be Acquired = 141 ha a) Agricultural = 127 ha b) Built-up area = 14 ha
2.2	Water (expected source & competing users) unit: KLD	Yes	Normal construction works require about 600 KLD for construction. Water will be abstracted from surface and ground sources during construction period only and necessary permission would be requested from competent authority.
2.3	Minerals (MT)	No	Not Required
2.4	Construction material- stone, aggregates, and /soil (expected source- MT)		Aggregate: 3048800 MT Soil: 2127500 MT Cement: 190000 MT Steel: 30000 MT Bitumen: 30240 MT
2.5	Forests and Timber (source- MT)	No	Not applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Approx 15000 kilo litre LDO/ diesel fuel consumption for site construction works, excavation works, filling works GSB, transportation and borrow area opération.
2.7	Any other natural resources (Use appropriate standard units)	Yes	Sand: 250,000 MT

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

Sl No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies).	Yes	Approx. 20, 00,000 litres diesel and 30240 tons bitumen shall be used. Contractors will store fuel oil for DG sets for construction plant and machinery. The respective contractors will obtain necessary license from the chief controller of Explosive, Nagpur. Storage quantities of fuel oil/HSD will be at construction camp.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Adequate precaution shall be taken to prevent stagnation of sewage and grey water from labor camp. Routine inspection of disinfectants shall be made to prevent outbreak of water born disease.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	The project will result in improved movement of people and goods at reduced travel time and road accidents will reduced. Overall there will be improvement in quality of life of people. Better transport facility & better living condition.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	In long term, the project shall benefit in providing better communication and transportation. The road will improve conditions for on hospital patients, children and elderly as FOB/ Underpasses are provided on congested habitations for safe movements.
3.5	Any other cause	No	Not Applicable

4. Production of solid wastes during construction or operation or decommissioning (MT/ month)

S.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not Applicable
4.2	Municipal waste (domestic or commercial wastes)	Yes	Construction Phase Domestic waste shall be generated from temporary construction camps@125 kg/day. Operation Phase Domestic waste to be produced from labor camp will be disposed off at municipal disposal site. Commercial waste will generated during operation phase from way side amenities and will be handled as per established rule.
4.3	Hazardous waste (as per Hazardous Waste Management Rules)	No	Used/waste oil and lubricants will be utilized in oiling shuttering and remaining balance will be sold to authorized recyclers.
4.4	Other industrial process wastes	No	Not Applicable
4.5	Surplus product	No	Not Applicable
4.6	Sewage sludge or other sludge from effluent treatment.	No	Not Applicable
4.7	Construction or demolition wastes	Yes	The dismantled structures shall be reused and the marginal steep bituminous surface likely to be reused under sub base. Detail quantity will be provided in draft EIA after finalization of TOR.
4.8	Redundant machinery or equipment	No	Not Applicable
4.9	Contaminated soils or other materials	No	Not Applicable
4.10	Agricultural wastes	No	Not Applicable
4.11	Other solid wastes	No	Not Applicable

5. Release of pollutants or any hazardous, toxic or noxious substances to air (kg/hr)

S. No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationery or mobile sources.	Yes	Emission from diesel generator (DG) sets, hot mix plants and construction machineries. Quantities will be finalized after detailed design.
5.2	Emissions from production processes	Yes	During operation of hot mix plants will be finalized after detailed design.
5.3	Emissions from materials handling including storage or transport.	No	Dust may emit from material transportation by trucks. However. Trucks will be covered with tarpaulins to prevent fugitive emissions.
5.4	Emissions from construction activities including plant and equipment.	Yes	Emission from hot mix plant and construction machinery. Quantities will be finalized after detailed design. The hot mix plant will be located at least 500 m down windward direction of human settlement and away from major water bodies. They will be fitted with dust separators.
5.5	Dust or odors from handling or materials including construction materials, sewage and waste.	Yes	Dust will be generated from earth mixing sites, asphalt mixing site and crushers. Water will be sprayed regularly to prevent dust generation from these areas.
5.6	Emissions from incineration of waste	No	Not Applicable
5.7	Emission from burning of waste in open air (e.g. slash materials, construction debris)	No	Burning in open air will be avoided during construction activity.
5.8	Emissions from any other sources	Yes	Emission of PM_{10}, $PM_{2.5}$, NO_2, SO_2 and CO from vehicles used for transportation of construction materials.

6. Generation of Noise and Vibration, and Emissions of Light and Heat

S.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise generation from various construction equipments will be in the range of 80-90 dB(A). use of protective equipment , scheduling of activities, maintenance and isolation of equipment will be practiced.
6.2	From industrial or similar processes	No	Not Applicable
6.3	From construction or demolition	Yes	Nominal noise shall be generated
6.4	From blasting or piling	Yes	Noise will be generated during blasting at rock quarry location
6.5	From construction or operational traffic	Yes	During construction nominal noise will be generated from trucks for transportation of material, crushers HMP, etc
6.6	From lighting or cooling systems	No	Not Applicable
6.7	From any other sources	No	Not Applicable

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, ground water, coastal waters or the sea:

S.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates. Wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials.	No	Short term accidental spills possible. To avoid contamination from fuel and lubricants, the vehicles and equipment shall be properly maintained and repaired.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge).	No	There shall not be direct discharge of sewage in to water or on land. The sewage system shall be properly designed and built so that no water pollution takes place to any water body or water course.

S.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates. Wherever possible) with source of information data
7.3	By deposition of pollutants emitted to air into the land or into water	No	There will not be any deposition of pollutants. • Water spraying will be carried out for dust suppression during construction stage. Venue plantation will be carried out along the project road, which will help to reduce dust pollution stage during operation stage. • The slopes of embankment leading to water bodies shall be modified and re-channelized so that contaminants may not enter the water body.
7.4	From any other sources	No	In any case, no pollutants will be allowed to be discharged to land or water bodies
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Long-term built-up of pollutants in environment is not anticipated from any sources.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment.

S.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances.	Yes	There is possibility of risks from handling of diesel/LDO/Bitumen, Fire safety equipments and first aid kit will be provided at such locations.
8.2	From any other causes?	No	Not Applicable
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquake, landslides, cloudburst, etc)?	No	Not Applicable

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

Sl.No	Information /Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates. Wherever possible) with source of information data
9.1	Lead to development of supporting, utilities, ancillary development or development stimulated by the project, which could have impact on the environment e.g. • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc) • Housing development • Extractive industries • Supply industries • Other	Yes	After implementation of this project travel on the road will become more safe and it will result in reduced travel time. This will result in economic development of the region
9.2	Lead to after –use of the site, which could have an impact on the environment.	No	Not Applicable
9.3	Set a precedent for later developments.	Yes	Due to better road connectivity there is chance for development of industrial sector and other business in the region.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects.	No	Not Applicable

(III) Environmental Sensitivity

S.No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil	Not Applicable

S.No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
2	Areas which are important or sensitive for ecological reasons – Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.	NIL	Not Applicable
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration.	NIL	Not Applicable
4	Inland, coastal, marine or underground waters	NIL	Not Applicable
5	State, National boundaries	NIL	Not Applicable
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	No	There are no routes or facilities by the public for access to recreation or other tourist, pilgrim areas affected by the project.
7	Defense installations	No	Not Applicable
8	Densely populated or built-up area	Yes	Etawah, Auraiya, Akbarpur, Rania, Kanpur
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	There are 47 sensitive receptors with in proposed ROW.
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil	Not Applicable
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil	Not Applicable
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	Nil	Not Applicable

Annexure-A

Major Settlements/ Towns along the project road

Sl. No	Name	Chainage (km)
1	Etawah	323.475 - 325.375
2	Ekdil	329
3	Sarai Jalal	334
4	Bijauli	337
5	Sarai Mithe	339
6	Anantram	352
7	Babarpur	357
8	Auraiya	381
9	Mahtauli	391
10	Sikandra	395
11	Rajdan	404
12	Mungisapur	414
13	Akbarpur	431-433
14	Rania Industrial Area	444-449
15	Raipur	451
16	Bhaunthi	455
17	Kanpur town/ bypass	461- 485.687

EXECUTIVE SUMMARY

ES-1 INTRODUCTION

The Environmental Impact Assessment and Environment Management Plan report for the proposed improvements to the project road has been prepared according to EIA Notification 2006 and it's subsequent by Ministry of Environment and Forests (MoEF), Government of India. The EIA is based on detailed field reconnaissance surveys, inventories and available secondary information.

As per EIA procedure the following major tasks were conducted as part of EIA:

- Preliminary reconnaissance survey and collection of secondary information to identify environmentally sensitive issues relating to the project;
- Identification of base- line status of various environmental parameters through environmental monitoring study;
- Assessment of potential impacts of the project on these base-line conditions;
- Formulation of Environment Management Plan (EMP) incorporating appropriate mitigation measures to offset the identified adverse impacts and environmental Monitoring Plan for evaluating the effective implementation of EMP;
- Estimation of cost for EMP and Monitoring Plan; and
- Formulation of institutional arrangements for the implementation of EMP.

ES-2 PROJECT DESCRIPTION

Project is 6-laning of 160.212 km long section of NH-2 Etawah - Chakeri (Kanpur) from existing 4-lane National Highway. The project highway passes through 4 districts Etawah, Auraiya, Ramabai Nagar, Kanpur Nagar, 98 villages and 8 Tehsils. Agriculture is the predominant land use between Etawah and Chakeri. The industrialization and urbanization is increasing towards Kanpur.

ES-3 ANALYSIS OF ALTERNATIVES

The analysis of alternatives has been made on the basis of "Long term Scenario with projects and Long term Scenario without project" in terms of potential environmental impacts.

To asses the overall project impacts a quantitative analysis is carried out. This shows that the project has generally significant, positive impacts. The project is recommended with the adoption of mitigation measures is crucial in order to avoid adverse negative impacts.

ES-4 DESCRIPTION OF EXISTING ENVIRONMENT

As defined in the scope of works baseline data on various physical, biological and social aspects have been collected, analyzed and compiled in order to get the picture of the existing environment condition in the project area.

Physical Resources

Topography and Geology

The entire project road lies predominantly on plain terrain with an elevation 126.9 m at Etawah and 126.9 m at Chakeri. The road is not passing through any hilly and rolling area. The District has no mineral wealth and there are no mines or stone quarries. Brick earth is available everywhere. Lime-stone in the shape of kankar is found in the district both in the block and nodular forms, makes a better and smoother road.

Soil type

The Project Highway, in general traverses through predominantly clayey type of soil. Clay soil contains high nutrient levels plants grow well if drainage is adequate. The project region falls within south western plain agro-ecological region.

Meteorology

The project area has a humid sub-tropical climate. Minimum temperature during winter is 4 to 6 degree Celsius while maximum temperature during summer is 38 to 42 degree Celsius.

Rainfall

The Average rainfalls in Etawah, Auraiya & Kanpur are 750, 792 mm & 940 mm respectively. July& August are the months with heaviest rainfall.

Humidity

The annual mean relative humidity during morning hours is 60% and 45% during the evening hours

Seismic Profile of the area

The project road lies within Zone-II of seismic activity zone of the country (National Informatics Centre). The seismic risk in Zone-II is relatively low according to the seismic zoning map of India (BIS 2000, zones),

Surface and Ground Water resources

The project highway crosses three rivers in Kanpur district Sengar river, Rhind river & Pandu river. Rhind is a perennial Stream, which shrinks considerably in size in the hot weather.

Many groundwater sources such as wells and ponds are located on both sides out of the existing road ROW. Most important drinking water sources are public water supply schemes, hand pumps or bore wells, energized bore well schemes, shallow tube wells or filter point wells

Water Quality

The ground water analysis results reveal that the water quality is slightly alkaline (pH 7.5-8.1); total hardness varies 108- 372 mg/l as $CaCO_3$; Chlorides at all location was found 10-180 mg/l; and Conductivity was found in range of 774-2120 µS/cm. The results indicate the ground water quality is good except Total Dissolve Solids & hardness were quite high but under the prescribed potable water standards.

Ambient Air Quality Levels

Ambient Air Quality Monitoring stations were set up at 5 locations along the project road (February to April 2012) representing different conditions like rural, residential commercial and industrial areas. The monitoring was done for 24 hrs twice in month for one season. The ambient air quality result reveals that the seasonal average concentration of PM_{10} ranges from 210 to 301 µg/m^3, $PM_{2.5}$ varies between 64 to 90 µg/m^3, SO_2 range between 8 to 11 µg/m^3 and NOx ranges between 15 to 23 µg/m^3. The value of PM_{10} was found more than prescribed limits at the location of Sikandara and Akbarpur. The values

of PM_{10}, $PM_{2.5}$, SO_2, and NOx are well within the prescribed limits of National Ambient Air Quality Standards for the Industrial and Commercial areas published by Ministry of Environment & Forest Notification 16th November 2009 .Ambient air quality of the area lies within permissible limits as per the discussion with the State Pollution Control Board personnel's owing to the highway passing through industrial area and agricultural land. The results show that all the ambient air quality parameters are well within the revised NAAQ Standards at all the locations.

Ambient Noise level: Five representative locations as indicated mostly close to the project road covering industrial, commercial, and residential areas were selected for measuring the present status of ambient noise level. A sound level meter was used for monitoring of background noise level.

The ambient noise level monitoring results that daytime equivalent sound level at all locations were varying from 68.3 to 73.0 dB (A) and night time from 61.9 to 67.4 dB (A). The results of ambient noise at all the locations indicate that the noise levels in respective category area are within prescribed limits

Biological Environment

There are a total number of 9449 trees existing in the ROW. Most of the trees present within the ROW are Mango-*Mangifera indica*, Amlakhi- *Phylanthus ambilica*, Banyan-*Ficus indicus*, Khair- *Acacia catechu*, Kikar or Babul- *Acacia nilotica*, Neem-*Azadirachta indica,* **Dhak** (*Butea monosperma*), **Aonla** (*Emblica officinalis*), , **Ashok** (*Polyalthia longifolia*), **Asna** (*Terminalia alata*), **Bahera** (*Terminalia bellirica*), **Bargad** (*Ficus bengalensis*), **Barhal** (*Artocarpus lakoocha*), **Bel** (*Aegle marmelos*), **Eucalyptus** (*Eucalyptus tereticornis*), **Gular** (*Ficus glomerata*), etc.

Wildlife Sanctuaries, National Park and Biosphere Reserves

The project road is not passing through any Wildlife Sanctuary and National Parks within 10 km of the road buffer on either side of the road.

Socio Cultural Environment

The project road is passing through 4 districts Etawah, Auraiya, Ramabai Nagar, and Kanpur Nagar. No archaeologically important monument, arts and cultural site exist on either side of the project road within 10 km of COI.

ES-5 ANTICIPATED ENVIRONMENT IMPACTS AND MITIGATION MEASURES

Impacts on environmental parameters and proposed mitigation measures are detailed in the EIA Report.

ES-6 ENVIRONMENTAL MONITORING PROGRAM

An Environmental Monitoring Plan is proposed as part of the EMP to evaluate the efficiency of implementation of mitigation measures recommended in the EMP and facilitate management decisions for the project.

ES-7 Additional Studies

Summary of consultations/discussions held with the public at different levels e.g. villagers, project affected persons (PAPs), and other stakeholders such as Govt. Officials, during the project preparation stage to record people's perceptions of the project and potential impacts.

ES-8 PROJECT BENEFITS

Highways projects generally promote access to markets, materials and opportunities by facilitating movement of persons and goods and improve earning and thereby level of living. The ultimate aim of the developmental activities, such as NH-02 is to promote societal welfare of the Etawah, Auraiya, Ramabai Nagar, and Kanpur Nagar districts in the Uttar Pradesh state. The developments of above widening project play a significant role in changing the socio-economic condition of the living of people of a region through dynamic externalities that such development often generates.

ES-9 ENVIRONMENT MANAGEMENT PLAN

Environmental management plan has been prepared for mitigation/management/ avoidance of the potential adverse impacts and enhancement of various environmental components along the project road. Mitigation measure to be carried out its location, time frame, implementation and overseeing/ supervising responsibilities has been identified. Monitoring plan for construction and operation phase has been framed to ensure effective implementation EMP.

ES-10 ENVIRONMENTAL BUDGET

A tentative cost, for implementing environmental management plan on different items is estimated to be **Rs. 9.20 crore /-.**This costs includes the cost of mitigation measures, implementation of monitoring plan as well as enhancement measures.

ES.11 DISCLOSURES OF CONSULTANT ENGAGED

Description of the name & brief resume of the consultant engaged in the preparation of EIA report.

ES-12 CONCLUSIONS AND RECOMMENDATIONS

Benefits of the project will be the reduction in air pollution due to better service levels of the road, reduction in travel time and accidents, better connectivity.

The proposed widening of the road requires diversion of 48.2877 ha of forest land.

But as already existing road is there and the forest is of large number of trees, significant impacts are not anticipated. The project also envisages for compensatory afforestation and avenue plantation throughout the stretch with indigenous species which are suitable to the environment. The project requires cutting of about 9449 trees. Temporary impacts on air quality, water quality and noise levels are anticipated during the construction phase and an increase in the ambient noise level is anticipated during the operation phase of the project.

Proper mitigation measures are proposed in the EMP for mitigating the negative impacts. The environmental monitoring plan and reporting mechanism proposed as part of the EMP will ensure the proper implementation of the EMP. Thus the overall benefits of project outweigh the negative impacts of the project.

The project requires the following environmental clearances:

Environmental Clearance from MoEF: As per Ministry of Environment and Forest EIA Notification 14th September 2006, under 7 (f) the Environmental Clearance is required for Expansion of National/State Highways greater than 30 km, involving additional right of way greater than 20m involving land acquisition and passing through more than one state are required to take environmental clearance.

The length of the project road is 160.212 km and involves land acquisition of more than 20 m in width put together. Therefore it requires Environment Clearance

Clearance from State Forest Department: As the project envisages diversion of 48.2877 ha forest land (Protected Forest) for widening of the project road it requires clearance from MoEF through state Forest Department.

Table ES-1; Salient Feature of Project Road

Particulars	Existing	Proposed
Road Length (km)	160.212	160.212
Carriageway	7 m wide bituminous carriageway with 1.5 m wide paved and 1.0 m wide earthen shoulders on both sides.	(10.5m + 1.5 m paved shoulder + 2.0 m wide earthen shoulders) on both sides.
ROW (m)	37- 80	40 – 60 generally but 115 at toll plazas
Bypasses (No)	1 (elevated at Kanpur)	1 (elevated at Kanpur)
Junctions(No)	Major- 15, Minor- 230	Major- 15, Minor- 230
ROB/RUB(No)	`	2
Vehicular Underpasses	23	41
Pedestrian/ Cattle Underpasses(No)	9	25
Foot Over bridges (No)	Nil	4
Bus bays and shelter (No)	-	44 (LHS) 44 (RHS)
Truck Lay byes (No)	-	4
Rest Area (No)	Nil	Nil
Toll Plazas (No)	2	2
Major Bridges (No)	3	3

Minor Bridges (No)	17	18
Flyover (No)	-	-
Culverts (No)	279	279
Service Road (km)	89.918 (both sides)	223.464 (both sides)

Table ES-1: Abstract of Cost Estimate

Sr. No	Items	Cost in Crores INR
1	Total Construction costs	1258.00
2	Environmental Cost	9.20
3	R&R Cost	124.95

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Purpose of this report preparation is to establish the baseline environmental aspects of the Project corridor and to analyze all the expected impacts, required avoidance and the possible cost effective mitigation measures. Further these mitigation measures need to be stream lined with the engineering design and the contracting process for effective implementation.

1.2 IDENTIFICATION OF PROJECT PROPONENT & PROJECT ROAD

The National Highways Authority of India has been entrusted with the development, maintenance and management of such of the National Highways as entrusted to it by the Government of India. The NHDP Phase-V has also been entrusted to National Highways Authority of India.

The NHAI had invited tenders from eligible Consultancy firms for carrying out feasibility study and preparation of Project Feasibility Report for rehabilitation and up gradation to 6 Laning of Etawah-Chakeri section of NH-2. M/s Consulting Engineers Group Ltd (the Consultants), India have been selected as the preferred bidder for Etawah-Chakeri Section of NH-2 in the State of Uttar Pradesh. On the 24th day of December, 2009, the NHAI, under the administrative control of Ministry of Shipping, Road Transport and Highways (MORTH), Govt. of India (the Client), signed an Agreement with the Consultants for carrying out the above consultancy services.

The Project Highway is Etawah-Chakeri section of NH-2 (160.212 km long). Index map of the Project Highway is given in **Figure 1.1**. Location map of the Project Highway is given in Figure 1.2. The Project Highway starts at km 323.475 at the end of Etawah bypass and ends near Chakeri at km 483.687 on the Agra-Etawah-Kanpur-Allahabad Section of NH-2.

Figure 1-1: Index Map of Project Highway

Figure 1-2: Location Map of Project Highway

1.3 SIGNIFICANCE OF THE PROJECT ROAD

Road projects are generally undertaken for:-

- Improving the traffic speed
- Minimizing road accidents
- Improved transportation of agriculture based products;
- Improved pattern of surrounding areas;
- To assess market jobs;
- Separation of local traffic through service road.

1.4 OBJECTIVES OF THE EIA STUDY

Environmental Impact Assessment (EIA) can be defined as the systematic identification and evaluation of the potential impacts of proposed project relative to the physical-chemical, biological, cultural and socioeconomic components of the total environment. The primary purpose of the EIA process is to encourage the consideration of the environment in planning and decision - making and to ultimately arrive at actions which are more environmentally compatible.

The main objectives of the EIA study are:

- To facilitate the incorporation of the environment as a factor in project decision making, along with engineering and economic factors;
- To arrive at those actions which are environmentally more compatible;
- To enable environmental issues to be presented before the public and ensure public participation in decision making;
- To help in identifying management and mitigation measures;
- To determine the magnitude of actual and potential environmental concerns and to ensure that environmental considerations are given adequate weight age in carrying out proposed road improvements during detailed engineering design;
- To recommend environmental considerations to be taken into account for the selection of road section that should be improved, based on the overall environmental impacts, both adverse and beneficial, and
- Preparation of Environmental Mitigation and Management plan to be implemented at the construction phase for enhancing the positive impacts and mitigating negative impacts including Institutional arrangement, reporting system and monitoring.

1.5 SCOPE OF THE STUDY

The main aim of the Initial Environmental Impact Assessment (EIA) is to ensure that the project proposals are environmentally sound and sustainable on a long-term basis. The adverse effects of the proposal need to be identified in advance and duly considered in the preparation of the project's engineering designs.

The scope of work for preparing the Environmental Impact Assessment (EIA) is comprised of the following terms of references:

The generic structure and contents of the Environmental Impact Assessment document as provided in Appendix III of the EIA Notification dated 14th September 2006 is being followed.

The baseline environmental information in the study area viz., climate, physiographic features, drainage, geology, flora, fauna, ambient air, water, noise and socioeconomic conditions.

Assessment of the potential significant impacts and identification of the mitigative measures to address impacts adequately.

The study of analysis of alternatives incorporating environmental concerns including 'with' and 'without' project scenario and modification in the proposed project due to environmental considerations.

Preparation of Environmental Management Plan (EMP) & its integration into the project cycle for mitigating and reducing Environmental Issues which may arise during the construction and operation phase viz., compensatory afforestation, soil disposal, utility restoration, noise and vibration control, campsite management and disaster management.

Special attention to the environmental enhancement measures are being considered for the project highway as follows :

- Cultural property enhancement along the highways;
- Bus bays and bus shelters including a review of their location;
- Highway side landscape and enhancement of the road junctions;
- Enhancement of highway side water bodies and
- Redevelopment of the borrow areas located on public land.

The monitoring network with regard to air, water and noise pollution including the inputs in the areas of performance indicators and monitoring mechanisms for environmental components during construction and operational phase of the project.

Suggestion of mitigation measures along with implementation cost and proposal for staffing, training and institutional requirements for the Environmental Management Unit.

The scope of Environmental Assessment as described in the Terms of Reference (TOR) provided by NHAI, and in accordance with the MOEF's, Government of India legal and procedural requirements is provided below. The emphasis during environmental analysis, design and management action plan is to facilitate decision-making and will ensure that the corridor improvement options are environmentally sound, and contribute to the development of the environmental assets.

Table 1- 1: Scope of Environmental Analysis, Design and Environmental Management Action Plan

Environmental Analysis	To carry out a preliminary environmental screening of the highway alignment to determine the magnitude of actual and potential impacts and ensure that environmental considerations are given adequate weight age in the selection and design of the proposed highway improvement; To collect information on existing environmental baseline conditions and undertake a preliminary evaluation of the highway alignment selected for improvement in order to define the focus of the environmental assessment, design and management studies; To identify positive and negative impacts of upgrading the highway and to propose cost-effective measures to enhance positive impacts and to avoid and / or mitigate negative impacts; To carry out Public Consultations with affected groups and NGOs
Environmental Design	From Environment Assessment, to identify adverse impacts such as soil erosion, loss of flora and fauna, physical resources etc. and prevent them through judicious design changes by adopting appropriate mitigation measures such as plantation of trees, installation of proper drainage system, provision of suitable mitigation measures etc. Prepare cost – effective proposals to implement appropriate mitigation and remedial measures to upgrade and enhance the environmental quality along the highway in a sustainable manner; and Selecting stretches along the highways, which provide opportunity for environmental enhancement and the development of cost-effective sustainable environmental assets.

Environmental Management Action Plan	To prepare an implementation schedule and supervision program with associated costs and contracting procedures for the execution of environmental mitigation and design works; To develop a program for monitoring environmental impacts during construction and operational phases; To spell out specific requirements for institutional strengthening and training; and To recommend further studies on environmental aspects, which are required to be undertaken during project implementation, if required.

1.6 PRESENT STATUS OF THE PROJECT

NHAI has submitted application to the MoEF for obtaining Environmental clearance. The proposal was considered by the Honourable Expert Committee in its 106th meeting held on 17th -18 th Oct 2011.

During discussion, the Committee finalized the following additional TOR for further study:

(i) Examine and submit a brief description of the project, project name, nature, size, its importance to the region/state and the country.

(ii) The proposal indicates the acquisition of 48.2877 ha forest land. Necessary stage ?I forestry clearance shall be obtained as per OM dated 31.03.2011 and submitted along with final EIA report.

(iii) Any litigation(s) pending against the proposed project and/or any directions or orders passed by any court of law/any statutory authority against the project is to be detailed out.

(iv) Submit detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive places, mangroves, notified industrial areas, sand dunes, sea, river, lake, details of villages, tehsils, districts and states, latitude and longitude for important locations falling on the alignment by employing remote sensing techniques followed by ground truthing and also through secondary data sources.

(v) Submit Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railway tracks, ports, airports, roads, and major industries etc. and submit a detailed ground surveyed map on 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archaeological & religious, monuments etc. if any.

(vi) Study regarding the Animal bypasses / underpasses etc. across the habitation areas shall be carried out. Adequate cattle passes for the movement of agriculture material shall be provided at the stretches passing through habitation areas.

(vii) It is indicated that 8,654 no. of tress are proposed to be cut, the information should be provided about their species and whether it also involved any protected or endangered species. Necessary green belt shall be provided on both side of the highway with proper central verge and cost provision should be made for regular maintenance.

(viii) The proposed route is passing through a city or town, with houses and human habitation on the either side of the road, the necessity for provision of bypasses/diversions/under passes shall be examined and submitted. The proposal should also indicate the location of wayside amenities, which should include petrol station/service centre, rest areas including public conveyance, etc.

(ix) Submit details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges.

(x) Assess whether there is a possibility that the proposed project will adversely affect road traffic in the surrounding areas (e.g. by causing increases in traffic congestion and traffic accidents).

(xi) Examine and submit the details of use of fly ash in the road construction, if the project road is located within the 100 km from the Thermal Power Plant.

(xii) Examine and submit the details of sand quarry, borrow area and rehabilitation.

(xiii) Climate and meteorology (max and min temperature, relative humidity, rainfall, frequency of tropical cyclone and snow fall); the nearest IMD meteorological station from which climatological data have been obtained to be indicated.

(xiv) The air quality monitoring should be carried out as per the new notification issued on 16th November, 2009.

(xv) Identify project activities during construction and operation phases, which will affect the noise levels and the potential for increased noise resulting from this project. Discuss the effect of noise levels on nearby habitation during the

construction and operational phases of the proposed highway. Identify noise reduction measures and traffic management strategies to be deployed for reducing the negative impact if any. Prediction of noise levels should be done by using mathematical modelling at different representative locations.

(xvi) Examine the impact during construction activities due to generation of fugitive dust from crusher units, air emissions from hot mix plants and vehicles used for transportation of materials and prediction of impact on ambient air quality using appropriate mathematical model, description of model, input requirement and reference of derivation, distribution of major pollutants and presentation in tabular form for easy interpretation shall be carried out.

(xvii) Also examine and submit the details about the protection to existing habitations from dust, noise, odour etc. during construction stage.

(xviii) If the proposed route involves cutting of earth, the details of area to be cut, depth of cut, locations, soil type, volume and quantity of earth and other materials to be removed with location of disposal/ dump site along with necessary permission.

(xix) If the proposed route is passing through low lying areas, details of fill materials and initial and final levels after filling above MSL, should be examined and submit.

(xx) Examine and submit the water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity and quality likely impacts on them due to the project.

(xxi) Examine and submit details of water quantity required and source of water including water requirement during the construction stage with supporting data and also classification of ground water based on the CGWA classification.

(xxii) Examine and submit the details of measures taken during constructions of bridges across river/canal/major or minor drains keeping in view the flooding of the rivers and the life span of the existing bridges. Provision of speed breakers, safety signals, service lanes and foot paths should be examined at appropriate locations throughout the proposed road to avoid the accidents.

(xxiii) If there will be any change in the drainage pattern after the proposed activity, details of changes shall be examined and submitted.

(xxiv) Rain water harvesting pit should be at least 3 - 5 m. above the highest ground water table. Provision shall be made for oil and grease removal from surface runoff.

(xxv) If there is a possibility that the construction/widening of road will cause impact such as destruction of forest, poaching, reductions in wetland areas, if so, examine the impact and submit details.

(xxvi) Submit the details of road safety, signage, service roads, vehicular under passes, accident prone zone and the mitigation measures.

(xxvii) IRC guidelines shall be followed for widening & upgradation of road.

(xxviii) Submit details of social impact assessment due to the proposed construction of road.

(xxix) Examine road design standards, safety equipment specifications and Management System training to ensure that design details take account of safety concerns and submit the traffic management plan.

(xxx) Accident data and geographic distribution should be reviewed and analyzed to predict and identify trends ? incase of expansion of the existing highway and provide Post accident emergency assistance and medical care to accident victims.

(xxxi) If the proposed project involves any land reclamation, details to be provided for which activity land to reclaim and the area of land to be reclaimed.

(xxxii) Details of the properties, houses, businesses etc. activities likely to be effected by land acquisition and their financial loses annually.

(xxxiii) Detailed R&R plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternative livelihood concerns/employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the project specific

(xxxiv) Submit details of Corporate Social Responsibility. Necessary provisions should be made in the budget.

(xxxv) Estimated cost of the project including environmental monitoring cost and funding agencies, whether governmental or on the basis of BOT etc and provide details of budget provisions (capital & recurring) for the project specific R&R Plan.

(xxxvi) Submit environmental management and monitoring plan for all phases of the project viz. construction and operation.

Point-wise compliance of the final TOR issued by the MoEF vide letter 28-10-2011 is as under:-

COMPLIANCE REPORT

S. No	Particulars asked by EAC	Measures Proposed
1	Examine and submit a brief description of the project, project name, nature, size, its importance to the region/state and the country.	Present project is 4-lane to 6-laning of Etawah to Chakeri, section of NH-02 in Uttar Pradesh State. This highway connect kanpur, Allahabad, Auriaya Etawah and pilgrimage of Uttar Pradesh. Total length of this road is 160.2 Km. Existing ROW width varies 37-60m and proposed ROW width is 40-60 m **(**For details please refer to **Page 2-6)** .
2	The proposal indicates the acquisition of 48.2877 ha forest land. Necessary stage? I forestry clearance shall be obtained as per OM dated 31.03.2011 and submitted along with final EIA report.	Application has been submitted to concern forest departments. Recently proposal has been forwarded to Deputy chief conservator of forest (MoEF) New Delhi (**Annexure 4A**).
3	Any litigation(s) pending against the proposed project and/or any directions or orders passed by any court of law/any statutory authority against the project is to be detailed out.	No
4	Submit detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive places, mangroves, notified industrial areas, sand dunes, sea, river, lake, details of villages, teshils, districts and states, latitude and longitude for important locations falling on the alignment by employing remote sensing techniques followed by ground truthing and also through secondary data sources.	The detailed alignment plan has been provided in **Annexure 2A**

S. No	Particulars asked by EAC	Measures Proposed
5	Submit Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railway tracks, ports, airports, roads, and major industries etc. and submit a detailed ground surveyed map on 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archaeological & religious, monuments etc. if any.	Land use map of the study is Provided in **Annexure 2A**.
6	Study regarding the Animal bypasses / underpasses etc. across the habitation areas shall be carried out. Adequate cattle passes for the movement of agriculture material shall be provided at the stretches passing through habitation areas.	At present there are 23 vehicular underpasses and 9 Cattle Underpasses. Additional 18 new vehicular underpasses and 25 cattle underpasses have been proposed at various locations **(For details please refer to page 2-10)**.
7	It is indicated that 9449 no. of tress are proposed to be cut, the information should be provided about their species and whether it also involved any protected or endangered species. Necessary green belt shall be provided on both side of the highway with proper central verge and cost provision should be made for regular maintenance.	Application has been submitted to the competent authority. Compensatory afforestation / plantation in the ratio of 1:3 will be carried out. **(For details please refer to page 4-18 to 4-19)**
8	The proposed route is passing through a city or town, with houses and human habitation on the either side of the road, the necessity for provision of bypasses/diversions/under passes shall be examined and submitted.	The present road is 4-lane and on the time of 4-lanning major cities and town had been saved through bypasses so presently there is no need of additional bypasses and realignment. About 48.2877 ha forest land (road side plantation /notified protected forest) is

S. No	Particulars asked by EAC	Measures Proposed
	The proposal should also indicate the location of wayside amenities, which should include petrol station/service centre, rest areas including public conveyance, etc.	required for diversion. The proposal for the same area has been submitted in concern forest departments (**Annexure 4A**). 25 additional cattle under pass, 18 vehicular underpasses have been proposed. **(For details please refer to page 2-10)**.
9	Submit details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges.	In the widening of the project road 18 new vehicular underpasses, 25 pedestrian/ cattle underpasses and 4 foot over bridges, 88 no's of Bus Bays, Shelters and 4 Truck Lay Byes have been proposed.
10	Assess whether there is a possibility that the proposed project will adversely affect road traffic in the surrounding areas (e.g. by causing increases in traffic congestion and traffic accidents).	The present road is 4-lane and its up gradation to 6 lanes will cause reduction in traffic congestion and accidents
11	Examine and submit the details of use of fly ash in the road construction, if the project road is located within the 100 km from the Thermal Power Plant.	The Fly ash from Panki Thermal Power Plant shall be used in the construction work of 6-lane road.
12	Examine and submit the details of sand quarry, borrow area and rehabilitation.	Details of sand quarry and borrow area are provided in **Annexure 5A**.
13	Climate and meteorology (max and min temperature, relative humidity, rainfall, frequency of tropical cyclone and snow fall); the nearest IMD meteorological station from which climatological data have been obtained to be indicated.	Meteorological data have been collected from nearest IMD station. Details are given in **Ch- 4 of EIA/EMP** report.

S. No	Particulars asked by EAC	Measures Proposed
14	The air quality monitoring should be carried out as per the new notification issued on 16th November, 2009.	Air quality monitoring has been carried out for all the parameters as per new guidelines. (**Please refer page 4-12 to 4-14**)
15	Identify project activities during construction and operation phases, which will affect the noise levels and the potential for increased noise resulting from this project. Discuss the effect of noise levels on nearby habitation during the construction and operational phases of the proposed highway. Identify noise reduction measures and traffic management strategies to be deployed for reducing the negative impact if any. Prediction of noise levels should be done by using mathematical modelling at different representative locations.	Noise Level at different locations (sensitive locations and major habitation areas) along the project road are given in **Ch- 4** of EIA Report and proposed mitigation measures area given in **Ch-5 5** of EIA report.
16	Examine the impact during construction activities due to generation of fugitive dust from crusher units, air emissions from hot mix plants and vehicles used for transportation of materials and prediction of impact on ambient air quality using appropriate mathematical model, description of model, input requirement and reference of derivation, distribution of major pollutants and presentation in tabular form for easy interpretation shall be carried out.	Impacts and mitigation measures during construction phase due to generation of air and fugitive dust emission from hot mix and crusher plants are given in **Chapter 5 of EIA/EMP** report.
17	Also examine and submit the details about the protection to existing habitations from dust, noise, odour etc. during construction stage.	Noise barrier in the form of concrete wall (by path difference technique or by curved FRP sheets) will be provided depending upon the land availability and acceptance of local habitat at all sensitive locations. Details have been given in chapter **5 of EIA/EMP** report.

S. No	Particulars asked by EAC	Measures Proposed
18	If the proposed route involves cutting of earth, the details of area to be cut, depth of cut, locations, soil type, volume and quantity of earth and other materials to be removed with location of disposal/ dump site along with necessary permission.	Terrain is totally plain so there is no need to cut the earth surface.
19	If the proposed route is passing through low lying areas, details of fill materials and initial and final levels after filling above MSL, should be examined and submit.	The proposed route does not pass through any low laying areas.
20	Examine and submit the water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity and quality likely impacts on them due to the project.	Rhind, Sengar, Pandu rivers crosses the project road. The natural drainage pattern is retained. The hydraulic system is kept unaffected due to the project.
21	Examine and submit details of water quantity required and source of water including water requirement during the construction stage with supporting data and also classification of ground water based on the CGWA classification.	Water requirement during the construction phase is nearly 600 KLD Which will be obtained from surface and ground water .Water required for construction purpose will be drawn only from surface water. Ground water will be used only for domestic purpose. Please refer **chapter 4 and 5 of EIA/EMP** for detail.

S. No	Particulars asked by EAC	Measures Proposed
22	Examine and submit the details of measures taken during constructions of bridges across river/canal/major or minor drains keeping in view the flooding of the rivers and the life span of the existing bridges. Provision of speed breakers, safety signals, service lanes and foot paths should be examined at appropriate locations throughout the proposed road to avoid the accidents.	Last 50 years HFL and 50 years 24-hours rainfall for the zone has been considered to design vertical profile of the bridges. Adequate vertical clearance provided for all the major and minor bridges. Lined drains are provided on either side of the carriageway at settlement areas and earthen drain is provided at rural areas. Pile foundation shall be constructed for bridges. The duration of the work is few months only. Traffic diversion as per need will be provided for uninterrupted movement of Traffic during monsoon. Suitable Traffic Safety measures will be provided to avoid accident. Please refer **Ch- 7** of EIA/EMP for more detail about safety measures.
23	If there will be any change in the drainage pattern after the proposed activity, details of changes shall be examined and submitted.	It is ensured that there shall be no change in the drainage pattern after the proposed activity. (Drainage map of the project area is provided in **Annexure 4B)**
24	Rain water harvesting pit should be at least 3 - 5 m. above the highest ground water table. Provision shall be made for oil and grease removal from surface runoff.	Rain water structures will be provided as per guideline. Details have been provided in **Fig. 9.1 and Fig.9.2**
25	If there is a possibility that the construction/widening of road will cause impact such as destruction of forest, poaching, reductions in wetland areas, if so, examine the impact and submit details.	Road side trees along the project road are in protected forest category. About 48.2877 ha forest land (road side plantation) is proposed for diversion. There is no reserve forest, national park, sanctuary or any protected areas. So there is minimum possibility of poaching and reductions in wetland areas.
26	Submit the details of road safety, signage, and service roads, vehicular under passes, accident prone zone and the mitigation measures.	For the safety of local users, 25 new cattle under pass, 18 vehicular underpasses have been proposed. In addition, 2 existing pedestrian/ cattle

S. No	Particulars asked by EAC	Measures Proposed
		underpasses are proposed for widening by providing additional lanes. All major and minor junctions (total 245 nos) will be improved. MS crash barrier, traffic safety devices and traffic blinking signals will be provided to control the road accidents.
27	IRC guidelines shall be followed for widening & upgradation of road.	IRC Guidelines are followed for designing and preparation of the project report. **Please refer Annexure-1A** for details.
28	Submit details of social impact assessment due to the proposed construction of road.	Social impact assessment including R&R plan is provided in **Annexure 7A**.
29	Examine road design standards, safety equipment specifications and Management System training to ensure that design details take account of safety concerns and submit the traffic management plan.	Project road has been designed according to IRC guidelines and standards. Structures required for road safety have been proposed. 2. The detailed study of the traffic management plan is given in chapter 7 of EIA/EMP report.
30	Accident data and geographic distribution should be reviewed and analyzed to predict and identify trends? In case of expansion of the existing highway and provide Post accident emergency assistance and medical care to accident victims.	Accidents spots and their geographic distribution have been reviewed to predict and prevention of future works.
31	If the proposed project involves any land reclamation, details to be provided for which activity land to reclaim and the area of land to be reclaimed.	Not required
32	Details of the properties, houses, businesses etc. activities likely to be effected by land acquisition and their financial loses annually.	There are about 1444 properties/ structures affected due to the widening of the existing road. Out of the total number of properties that are likely to be affected, there are 11 schools and 47 religious structures. Affected families will be compensated as per NHAI policy.

S. No	Particulars asked by EAC	Measures Proposed
33	Detailed R&R plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternative livelihood concerns/ employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the project specific	R&R plan is provided in **Annexure 7A**.
34	Submit details of Corporate Social Responsibility. Necessary provisions should be made in the budget.	Please refer "RAP" provided in chapter 7 of EIA/EMP and **Annexure 7A**. An amount of Rs 124.95 Crores have been proposed for re-settlement and rehabilitation implementation measures
35	Estimated cost of the project including environmental monitoring cost and funding agencies, whether governmental or on the basis of BOT etc and provide details of budget provisions (capital & recurring) for the project specific R&R Plan.	Total project cost is 1573 Crores which includes 9.20 crores as environmental cost and 124.95 Crores R&R cost.
36	Submit environmental management and monitoring plan for all phases of the project viz. construction and operation.	Environmental management Plan for this project is provided in Chapter 9 – Generic Environment Management Plan of EIA/EMP report. Environment Monitoring Plan for all phases in given in chapter 6 of EIA/EMP report.

1.7 STRUCTURE OF THE EIA REPORT

This EIA report is organized in accordance with the stipulations of the Environmental Impact Assessment Notification of September 2006, form-I, GOI's Handbook of Environmental Procedures and Guidelines and Environmental Guidelines for Rail/Road

and Highway Projects. Accordingly, the EIA report has been structured into the following chapters:

Executive Summary:

Briefly discusses key environmental issues and recommended actions.

Chapter 1: Introduction

Provide the significance of the project, Objectives & Scope of the EIA study and Structure of the EIA Report.

Chapter 2: Project Description

Provide the description of the project which includes location, type, need and purpose of the project.

Chapter 3: Analysis of Alternatives

Discusses the criteria for identification and analysis of alternatives, description of various alternatives including "No Change" alternative.

Chapter 4: Description of the Existing Environment

Describing the environmental setting of the project area baseline conditions relating to meteorology, physical environment, water resources, noise, air as well as flora and fauna.

Chapter 5: Analysis of Environmental Impacts and Mitigation Measures

Identification and quantification of the potential impacts and mitigative measures based on analysis of secondary and primary data.

Chapter 6: Environmental Monitoring Programme

Discuss the objective & methodology for the monitoring of Air Quality, Water Quality & Noise Quality parameters.

Chapter 7: Additional Studies

Summary of consultations/discussions held with the public at different levels e.g. villagers, project affected persons (PAPs), and other stakeholders such as Govt. Officials, during the project preparation stage to record people's perceptions of the project and potential impacts.

Chapter 8: Project Benefits

Description of benefits from proposed project will be included in this section.

Chapter 9 Environmental Management Plan

Provide Cost effective environmental management plan to eliminate/ offset the identified environmental impact, so that development will become environmentally sound.

Chapter 10: Environmental Budget

Environmental budget for the various environmental management measures proposed in the EMP at construction and operation stages are summarized in this chapter.

Chapter 11: Disclosures of Consultant Engaged

Describe the name & brief resume of the consultant engaged in the preparation of EIA report.

Annexure 1A:

Indian Road Congress Code of Practices for Highway Projects

S.No	Subject matter related to recommended code of practices	IRC Code
1.	Hill Road Manual	IRC: SP-48-1998
2.	Recommendations for Road Construction in Waterlogged Areas	IRC: 34-1970
3.	Guidelines for use of Fly Ash in Road Embankments	IRC: SP: 58-2001
4.	Ribbon development along Highways and its prevention	IRC: SP: 15-1996
5.	Guidelines for Environmental Impact Assessment of Highway Projects	IRC: 104-1988
6.	Guidelines on Road Drainage	IRC: SP: 42-1994
7.	Report containing recommendations of the IRC regional workshops on Highway Safety	IRC: SP: 27-1984
8.	Recommended practice for Borrow pits for Road Embankments constructed by Manual operation	IRC: 10-1961
9.	Road accident Forms	IRC: 53-1982
10.	Proceedings of International Seminar on sustainable development in Road Transport	8.10.2001
11.	Highway Safety Code	IRC: SP: 44-1996
12.	Guidelines for Pedestrian Facilities	IRC: 103-1988
13.	Guidelines on Safety in Road Construction Zones	IRC: SP: 55:2001
14.	Recommended practice for treatment of embankment slopes for erosion control	IRC: 36 – 1974
15.	Guidelines on bulk bitumen transportation and storage equipment	IRC: SP: 39
16.	Manual on landscaping of roads	IRC: SP: 21 – 1979
17.	Road safety for children	IRC: SP: 32 – 1988

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CHAPTER - 2

PROJECT DESCRIPTION

2.1 GENERAL

Etawah- Chakeri (Kanpur) 160.212 km long section of NH-2 (Delhi – Kolkata) project comprises 6-laning of existing 4-laned national highway. The Project will benefit the state in improving connectivity of the road network, and facilitate traffic movement between rural areas to the state and national highway networks.

The six laning scheme is formulated to meet the following objectives

- To augment the capacity of existing road
- To enhance the safety of the traffic, the road users and the people living close to the highway
- To enhance mobility
- To provide the feasible and constructible options for the project without being prohibitively expensive.

Benefits include:

- ❖ Involving the private sector in financing the construction, maintenance and operation of National Highways and wayside amenities
- ❖ Improvement, maintenance and augmentation of the existing National Highways network.
- ❖ Implementation of road safety measures and environmental management.

The broad objective of the Project is rehabilitation of existing road network involving rising of formation levels, strengthening of pavements and, where necessary, widening and realignment of roads. However, the specific objectives of the Project are;

- ❖ Provide scope for more efficient transportation of passengers and goods.
- ❖ Reduce transport operating costs by improving the quality of the road.
- ❖ Reduce journey time by minimizing congestion in urban centers.
- ❖ Minimize road accidents by increasing road widths, improving intersections and road geometry.
- ❖ Provide better accessibility and reduce pavement distress on the arterial highways passing through the state.

- ❖ Improve accessibility to existing and proposed industrial estates, SEZ's and mega-industrial complexes for efficient transport of goods.
- ❖ Up gradation of existing roads to all weather roads by improving drainage and raising road levels.
- ❖ Provide structurally sound roads capable of achieving their design life.

2.2 BROAD DETAIL OF THE PROJECT AND LOCATION:

2.2.1 Location:

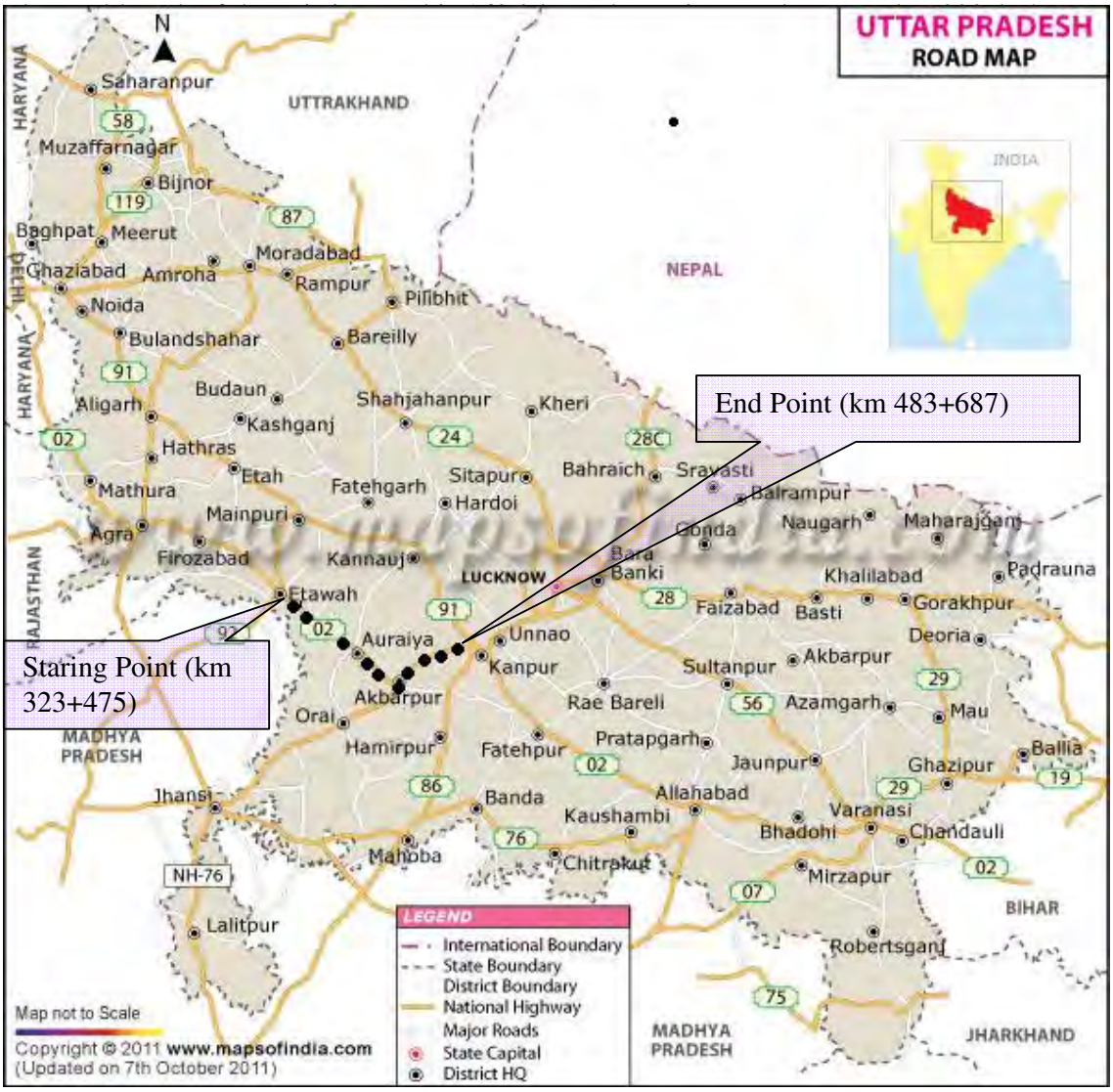


Figure 2.1: Location of Proposed Project Highway

2.2.2 Project Highway

The National Highway No. 2 runs between Delhi and Kolkata. In the Delhi-Varanasi Section km 0.0 is at Delhi and increases towards Varanasi. Between Varanasi-Calcutta Km 0.0 is at Varanasi and increase towards Calcutta. The Project Highway is situated in between Etawah at Km 323+475 and Chakeri at Km 483+687 of Delhi-Varanasi section. The alignment passes through a number of towns/settlements . The alignment has been designed for a minimum speed of 80km/hr. There is one existing bye pass between km 460.475 and km 483.687 at Kanpur with 4 lane dual carriageway as elevated section. The Construction of 4 Lane Highway was done in three sections viz.

Section 1-C (km 323.475 to km 396.133) 72.660 km long.

Section II-A (km 396.133 to km 457.498) 61.365 km long.

Section II-B (km 457.498 to km 483.687) 26.290 km long.

The present six – laning project is a combination of three Package i.e. IC, II-A and II-B of four laning of Etawah – Chakeri stretch.

Major Settlements / Towns along the Project Road:

The Project Highway passes through 4- districts namely Etawah, Auraiya, Ramabai Nagar, Kanpur Nagar, 98 villages and 8 Tehsils in Uttar Pradesh State.

Table 2.1 Major Settlements/ Towns along the project road

SI. No	Name	Chainage (km)
1	Etawah	323.475 - 325.375
2	Ekdil	329
3	Sarai Jalal	334
4	Bijauli	337
5	Sarai Mithe	339
6	Anantram	352
7	Babarpur	357
8	Auraiya	381
9	Mahtauli	391
10	Sikandra	395
11	Rajdan	404

SI. No	Name	Chainage (km)
12	Mungisapur	414
13	Akbarpur	431-433
14	Rania Industrial Area	444-449
15	Raipur	451
16	Bhaunthi	455
17	Kanpur town/ bypass	461- 485.687

The areas of direct influence will be confined in a linear fashion along the corridor where the construction activities take place.

2.2.3 Geography and Terrain

The Project Highway traverses through the districts of Etawah, Auraiya, Ramabai Nagar, Kanpur Nagar. The geographical details of project districts are given in Table 2.1

Table 2.2: Geological Details

Place	Location	Elevation
Etawah	26° 46' 08.31″ N, 79° 02' 10.3″ E	126.9 m
Auraiya	26° 48' 8.0424" N, 79° 30' 22.77" E	115.4m
Ramabai Nagar	26°20′39″N, 79°58′02″ E	110.2m
Kanpur	26° 27' 29″ N, 80° 13' 7.39″ E	107.43 m

The Project Highway passes through plain terrain in the entire length.

2.2.4 Land Use

While the predominant land use between Etawah and Chakeri is agriculture. The industrialization and urbanization is increasing towards Kanpur(land use plan in 10 km radius is given in Annexure 2A and 2B).

Land acquisition

Total Land required = 808 ha

Available Land = 667 ha

Land to be Acquired = 141 ha

Protected Forest Land = 48.2877 ha

2.3 Existing and proposed Features of Project Highway:

S.N.	item	Existing	Proposed
1.	Start point End point	Km 323+475 Km 483+687	Km 323+475 Km 483+687
2.	Road length	160.212 km	160.212 km
3.	Carriageway	7*2m wide with 2m paved shoulder and 1.0m earthen shoulder	10.5*2m wide with 1.5m paved shoulder and 2.0m earthen shoulder
4.	ROW	37-60m	40-60m
5.	Junction-Major -Minor	15 230	15 230
6.	ROB	2	2
7.	VUP	23	41
8.	PUP/CUP	9	25
9.	Foot over bridge	Nil	4
10.	Bus bays and shelter	Nil	LHS : 44 RHS : 44
11.	Truck lay byes	Nil	LHS : 2 RHS : 2
12.	Toll plaza	2	2
13.	Major bridge	3	3
14.	Minor bridge	17	18
15.	Culverts	279	279
16.	Service road	89.918 km	223.464 KM
17.	Environment cost		5.40 crores

2.3.1 Right Of Way (ROW)

The existing right of way generally varies between 37-80m. The proposed ROW is given below:

(a) Rania Industrial Area (km 443.210- km 445.200): varying from 40 m to 46 m

(b) VUP and approaches at km 430.800 to km 432.233 : varying from 55 m to 68 m

(c) VUP and approaches at km 458.500 to km 459.500 : varying from 38 m to 46 m

(d) Kanpur bypass (km 460.473- km 483.687) : 60 m

(e) Built up areas (except at a, b and c above) : 52.5 m

(f) At all other locations except Structures) : 60 m

2.3.2 Carriageway Width

The existing National Highway is 4 – lanes divided carriageway (2x7.0m) with 1.5m wide paved and 1.0m wide earthen shoulders on either side. The width of raised median varies from 1.5 to 5.0m in different stretches. The existing carriageway is proposed to be widened by 3.5 m on the outer side. Total Carriageway width will be 10.5 m. In the sections where existing pavement is of flexible type, the embankment would be widened and flexible pavement 3.5 m wide would be provided.

2.3.3 Service Road

The service road is already provided in length of 89.918 km with 4 m to 7.25 m width. In the proposed road 223.464 km long service road with 7.0m width shall be provided.

Slip in / Slip Out to and from service road

The connection between the service road and the six lane carriageway shall be with 5.5 m wide slip in / slip out roads provided.

2.3.4 Entry/ Exit Ramps

At Naubasta crossing (km 471.600 of Kanpur bypass), the entry / exit ramps, for movement of traffic to and from the elevated portion and to ease the traffic congestion on the service road, shall be provided

2.3.5 Vehicular Underpasses/ Flyover

At present there are 23 vehicular underpasses and 41 have been proposed **(Annexure 2E**). 17 additional underpasses shall be facilitated closure of some existing at grade junctions.

2.3.6 Pedestrian / Cattle Underpasses

The existing 9 pedestrian underpasses /cattle passes are not widened due to RE walls and kept as 4-lane. In the widening of the project road 25 new pedestrian/ cattle underpasses have been proposed. In addition, 2 existing pedestrian/ cattle underpasses are proposed for widening by providing additional lanes.

2.3.7 Foot Over Bridges

Three new foot over bridges (FOBs) have been proposed to facilitate the movement of pedestrians in some of the built up/ habitation sections. The length shall be covering the main carriageway and both side service toad.

2.3.8 Bridges

Major Bridges

The existing major bridges at km 421.700 and 450.587 have 2 lanes on both sides and are in good condition. These bridges have well foundation, which cannot be widened.

- The third major bridge is at km 467.400 and is on pile foundation. This is a part of existing elevated section in Kanpur.
- 2 New Bridge on Main Carriageway Parallel to Existing Major Bridge are proposed.
- Major Bridges on service roads for repair & rehabilitation (RR): 1

Minor Bridges

- Minor bridges are proposed to be widened to match the adjacent roadway. The existing minor bridges which are in distress would need to be rehabilitated. There are some minor bridges of PSC girder and pile foundation type, which cannot be widened. So new bridges with foot path.
- Minor Bridges on main carriageway for repair & rehabilitation (RR): 17
- Minor Bridges on main carriageway to be widened -Nil-
- No. of new bridge on main carriageway parallel to existing minor bridge :14
- Minor bridges on main carriageway to be reconstructed due to poor conditions. :5
- Minor bridges on service roads for repair & rehabilitation (RR):3
- Minor Bridge on Main Carriageway at New Location:-2
- New Minor Bridge on service road :5

2.3.9 Culverts

There are 279 existing culverts on the road, out which 17 will be reconstructed, 238 widened and repaired and 24 to be repaired only. Locations of proposed culverts have been provided in Annexure 2C.

2.3.10 New Bypasses and realignment

There is a one existing bypass and no new bypass has been proposed.

2.3.11 Rail-Road Structures

Two 4-lane road over bridges are existing and they are proposed for repairing and rehabilitation. No new ROB is proposed.

2.4 WAYSIDE AMENITIES

2.4.1. Toll plaza

There exist two toll plazas at km 353.900 and 399.500. The existing toll plazas have 4 bays, 2 bays for each direction. The present Toll Plazas are not equipped with facilities as per manual. The new toll plazas shall be located at (i) km 353.000 and (ii) km 437.000 Specifications and other requirements.

2.4.2. Road side furniture

i. **Traffic Signs:** Traffic signs include roadside signs, overhead signs and kerb mounted signs along the entire Project Highway.

ii. **Overhead signs:** Over head signs at Toll Plazas and other locations.

iii. **Pavement Markings**: Pavement markings for the entire Project Highway.

iv. **LED Traffic Beacons**: For the entire Project Highway near pedestrian crossings, public gathering places (Educational Institutions, Hospitals, Worshipping Places, etc.), cross roads, median openings & slip in/ slip out roads from main carriageway.

v. **Crash Barrier:**

- In case of median having width 2.5m and below, crash barriers shall be provided and suitable antiglare measures such as plastic screens shall be provided to reduce headlight glare from opposite traffic. The total height of screen including the height of barrier shall be 1.5m. In case of median wider than 2.5m suitable shrubs shall be planted.

- W-beam metal crash barrier with delineating reflectors fitted on them at the edge of the formation in case embankment height is more than 3 m.

vi. **Delineators and studs:** The studs (100mm x 100m x 10mm) with reflective panels of dual prismatic cube capable of providing total reflection of light entering the lens face for lane marking and delineation for night time visibility for the entire project highway.

vii. **Boundary stones**: For the entire Project Highway.

viii. **Hectometre/Kilometre stones**: For the entire Project Highway.

2.4.3. Highway Lighting:

4 **High Mast:** High mast shall be provided at toll plaza locations and other dance habituated areas.

5 **Street Lighting :** Lighting shall be provided for main carriageway and service road at the stretches having service road, built up areas, flyovers, underpasses (PUP and VUP), Foot over bridges, Bridges (major and minor), Toll plaza and its approaches.

2.4.4. Pedestrian facilities

Pedestrian facilities shall include the provision of the;

i. Pedestrian guardrail: Provide 100 m of pedestrian guardrail at each bus bay and underpass location.
ii. Pedestrian walkway: Provide pedestrian walkway in all urban areas.
iii. Pedestrian Crossings: Provide pedestrian crossing facilities on service roads.

2.4.5. Landscaping and tree plantation

The landscaping and tree plantation shall be provided as :-

i. Median Plantation
ii. Landscaping
iii. Avenue plantation.

2.4.6. Truck Lay byes

Truck lay byes shall be provided at following locations,.

1. km 377.600 (LHS)
2. km 378.000 (RHS)
3. km 438.500 (RHS)
4. km 439.500 (LHS)

Any change in location shall be made with the approval of the Independent Engineer.

2.4.7. Bus Bay and Bus Shelters

There is no Bus Bays and shelters but at 88 locations Bus Bays and shelters shall be provided as per details given **Annexure 2D.**

Highway Patrol: Provide the facility of highway patrolling covering the entire Project Highway.

Emergency Medical Services: Provide the ambulance(s) services covering the entire Project Highway.

Vehicle rescue posts: Provide the vehicle rescue services covering the entire Project Highway.

Telecom system: Provide the communication systems covering the entire Project Highway.

2.5 TRAFFIC

The improvements of the identified project road are proposed based on the present and projected traffic as it is the most important criterion of determination of the level of improvement to be carried out. The traffic along the corridors selected in project road is a mix of slow and fast moving traffic.

The proportion of slow moving to fast moving traffic is given in **Table 2.3** below:

Table 2.3: Present traffic along the project road.

Stations	Chainage	ADT	PCUs (ADT)	AADT	PCUs (AADT)
Anantram	352.500	14717	25188	16189	27707
Barra	438.000	19813	36434	21794	40077
Kanpur Elevated	466.000	7292	16043	8021	17647
Kanpur Service Road	466.000	19642	27540	21606	36334

Projected Traffic

The classified traffic volumes obtained during the traffic surveys were analyzed both in terms of the vehicles and PCUs. Annual Average Daily Traffic (AADT) on the study stretch was estimated from the 7- days observed counts including diverted and generated traffic and compared with the traffic data of the feasibility study. Traffic on different sections of the project road is forecast to 2045 using growth rates furnished by the feasibility consultants and given for vehicle type in **Table 2.5**.

Table 2.4: Projected traffic growth (Most Likely Scenario)

Location/Year		2015	2020	2025	2030	2035	2040
Anantram at Km 352.500	AADT	**20661**	**26370**	**33655**	**42953**	**54821**	**69967**
	PCUs	**35362**	**45132**	**57601**	**73515**	**93826**	**119749**
Anantram at Km 353.500	AADT	**19143**	**24431**	**31181**	**39796**	**50791**	**64824**
	PCUs	**30707**	**39191**	**50019**	**63838**	**81476**	**103986**
Sikandra at km 399.550	AADT	**13105**	**16725**	**21346**	**27244**	**34771**	**44377**
	PCUs	**22029**	**28115**	**35883**	**45797**	**58450**	**74598**
Barra at km 438.00	AADT	**27815**	**35500**	**45308**	**57826**	**73802**	**94192**
	PCUs	**51150**	**65282**	**83318**	**106337**	**135717**	**173213**
Kanpur Elevated at km 466	AADT	**10061**	**12840**	**16388**	**20916**	**26694**	**34070**
	PCUs	**22488**	**28700**	**36630**	**46750**	**59666**	**76151**
Kanpur Service Road at km 466	AADT	**26114**	**33329**	**42537**	**54289**	**69288**	**88431**
	PCUs	**42712**	**54512**	**69573**	**88795**	**113327**	**144637**

2.6 Natural Resources

Detailed analysis of the availability of water requirement and construction material such as selected soil, hard rock, fine aggregates and coarse aggregates was carried out as part of detailed engineering design. During the investigations soil borrow areas and quarries for fine and coarse aggregates were identified.

Raw Materials: Details of the each type of material source, quantity required are summarized in below **Table 2.5**

Table 2.5 Raw Material Required During Construction

S. No.	Item	Quantity	Mode of transport	Source
1	**Metal (aggregates)**	17,90,000 cum	Dumper	Quarries at km 323.000, 381.000, 414.000, and 431.000 at a distance of 125 to 275 kms off the main highway.
2	**Sand**	3,25,000 cum	Dumper	Quarries at km 323.000, 380.000, 381.000, 431.000, and 480.000 at a distance of 6 to 60 kms from highway.
3	**Bitumen**	40,000 MT	Tanker	Mathura refinery
4	**Diesel**	31,92,500 liters		Depot
5	**Low Density Oil (LDO)**	21,00,000liters		Refinery depot
6	**Soil**	1,02,05,000 cum	Tipper	From quarries at km 380.000, 381.000, 414.000, 480.000 at a distance of 0.5 to 5.00 kms
7	**Fly ash**	As much available	Tipper	km 465.000 at Kanpur

2.7 Water Requirement

Water requirement for permanent works has been calculated assuming construction period of nearly 600 days. Average total water requirement spread over complete stretch of about 160.212 kms shall be nearly 600 KL/Day. It shall be met from rivers and other surface water sources. Use of ground water for construction purposes shall be avoided.

Details of the water requirement assessed for the project is presented in Table 2.6.

2.8 PROJECT IMPLEMENTATION SCHEDULE

Project Milestone-I

Project Milestone-I shall occur on the date falling on the …. day from the Appointed Date (the "Project Milestone-I").

Prior to the occurrence of Project Milestone-I, the Concessionaire shall have commenced construction of the Project Highway and expended not less than 10 % of the total capital cost set forth in the Financial Package.

Table 2.6 Water Required During Construction

S. No	Purpose	Demand	Source
1	Dust Suppression at work zone	600 KLD	Surface Water (Ground water will be used only for domestic purpose)
2	Curing		
3	Laboratory		
4	Haul roads		
5	Crusher		
6	Plant and workshop washing		
7	Domestic purpose		
8	Others		

Project Milestone-II

Project Milestone-II shall occur on the date falling on the …. day from the Appointed Date (the "Project Milestone-II").

Prior to the occurrence of Project Milestone-II, the concessionaire shall have commenced construction of all bridges and expended not less than 35 % of the total capital cost set forth in the Financial Package.

Project Milestone-III

Project Milestone-III shall occur on the date falling on the …. day from the Appointed Date (the "Project Milestone-III").

Prior to the occurrence of Project Milestone-III, the Concessionaire shall have commenced construction of all Project Facilities and expended not less than 70 % (Seventy per cent) of the total capital cost set forth in the Financial Package.

Scheduled Six Laning Date

The Schedule Six-Laning Date for section from Km 323.475 to Km 483.687 shall occur on the 3 years from the Appointed Date. On or before the Scheduled Project Completion Date, the Concessionaire shall have completed the Six-Lane Project Highway in accordance with this Agreement.

ANNEXURE 2A

Alignment Plan on Satellite Imagery

ANNEXURE 2C

Locations of proposed culverts

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
1	**2**	**3**	5	**6**	**7**	**8**
1	323.795	HP	1x0.6	2x8.5	28.1	Reconstruct
2	323.9	HP	1x1.0	2x8.5	39	Widening & RR
3	325.095	HP	1x1.0	2x8.5	35.3	Widening & RR
4	325.661	Slab	1x4.2x2.5	2x8.5	27	Widening & RR
5	325.775	Slab	1x3.5x2.3	2x8.5	19.1	Widening & RR
6	326.827	RCC Box	1x1.5x3	2x8.5	24.4	Widening & RR
7	327.2	RCC Box	1x1.5x2.35	2x8.5	27.2	Widening & RR
8	328.075	HP	1x0.9	2x8.5	32	Widening & RR
9	328.8	RCC Box	1x2x1.5	2x8.5	32	Widening & RR
10	329.443	HP	1x1.0	2x9	37.5	Widening & RR
11	329.885	RCC Box	1x1.5x3	2x9	27.4	Widening & RR
12	332.59	RCC Box	1x1.5x3	2x8.5	24	Widening & RR
13	333.1	RCC Box	1x1.5x2.23	2x9	35.1	Widening & RR
14	334.408	RCC Box	1x1.5x2.67	2x8.5	24.9	Widening & RR
15	335.719	RCC Box	1x0.9	2x8.5	30.1	Widening & RR
16	336.325	HP	1x1.5x3	2x8.5	24.3	Widening & RR
17	337.885	RCC Box	1x1.5x1.32	2x8.5	24.5	Widening & RR
18	338.006	RCC Box	1x1.5x2	2x8.5	24	Widening & RR
19	338.245	RCC Box	1x1.5x2.23	2x8.5	36.9	Widening & RR
20	339.201	RCC Box	1x3x1.85	2x8.5	29	Widening & RR
21	339.532	Slab	1x0.9	2x8.5	41.7	Widening & RR
22	339.755	HP	1x0.9	2x8.5	28	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
23	340.16	HP	1x0.9	2x8.5	28.1	Widening & RR
24	340.435	HP	1x0.9	2x8.5	28.1	Widening & RR
25	340.617	HP	1x0.9	2x8.5	39.5	Widening & RR
26	341.1	HP	1x0.9	2x8.5	39.9	Widening & RR
27	341.26	HP	1x3x3.21	2x8.5	39.9	Widening & RR
28	341.56	Slab	1x0.9	2x8.5	28.1	Widening & RR
29	341.708	HP	1x3x2.5	2x8.5	27.1	Widening & RR
30	341.941	RCC Box	1x0.9	2x8.5	31.8	Widening & RR
31	342.215	HP	1x1.0	2x8.5	29.9	Widening & RR
32	342.379	HP	1x2x2.8	2x8.5	39.8	Widening & RR
33	342.555	Slab	1x1.0	2x8.5	43	Widening & RR
34	343.1	HP	1x1.0	2x8.5	32.6	Widening & RR
35	344.205	HP	1x1.0	2x8.5	32.8	Widening & RR
36	345.2	HP	1x1.0	2x8.5	35	Widening & RR
37	345.288	HP	1x3x3	2x8.5	29	Widening & RR
38	345.535	RCC Box	1x0.9	2x8.5	32	Widening & RR
39	345.828	HP	1x3x3	2x8.5	22.6	Widening & RR
40	345.93	RCC Box	1x1.0	2x8.5	28.1	Widening & RR
41	346.02	HP	1x1.0	2x8.5	28.1	Widening & RR
42	346.158	HP	1x0.9	2x8.5	28.1	Widening & RR
43	346.395	HP	1x1.0	2x8.5	28.1	Widening & RR
44	346.675	HP	1x1.0	2x8.5	28.1	Widening & RR
45	347.022	HP	1x5.5x4	2x8.5	24.9	Widening & RR
46	347.4	Slab	1x0.9	2x8.5	49	Widening & RR
47	347.7	HP	1x1.0	2x8.5	36	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
48	347.8	HP	1x0.9	2x8.5	36	Widening & RR
49	349.428	HP	1x3x2.5	2x8.5	26	Widening & RR
50	349.695	Slab	1x1.0	2x8.5	28.1	Widening & RR
51	350.205	HP	1x1.0	2x8.5	36	Widening & RR
52	350.213	HP	1x3x2.5	2x8.5	25	Widening & RR
53	350.455	RCC Box	1x1.0	2x8.5	35	Widening & RR
54	350.775	HP	1x1.0	2x8.5	35	Widening & RR
55	350.945	HP	1x0.9	2x8.5	28.1	Widening & RR
56	351.15	HP	1x1.0	2x8.5	28.1	Widening & RR
57	351.635	HP	1x1.0	2x8.5	35	Widening & RR
58	352.095	HP	1x1.0	2x8.5	41	Widening & RR
59	354.875	HP	2x1.0	2x8.5	33	Widening & RR
60	355.895	HP	1x0.9	2x8.5	35	Widening & RR
61	356.055	HP	1x1.0	2x8.5	51	Widening & RR
62	356.195	HP	1x0.9	2x8.5	46	Widening & RR
63	357.075	HP	1x1.0	2x8.5	31.2	Widening & RR
64	357.62	HP	1x1.0	2x8.5	32	Widening & RR
65	358.019	HP	1x1.0	2x8.5	31	Widening & RR
66	358.908	HP	1x1.0	2x8.5	37	Widening & RR
67	359.2	HP	1x1.0	2x8.5	31	Widening & RR
68	359.715	HP	1x0.9	2x8.5	31	Widening & RR
69	360.084	HP	1x1.0	2x8.5	31	Widening & RR
70	360.22	HP	1x0.9	2x8.5	30.4	Widening & RR
71	360.395	HP	1x1.0	2x8.5	37	Widening & RR
72	360.68	HP	1x1.0	2x8.5	36	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
73	360.92	HP	1x1.0	2x8.5	34	Widening & RR
74	361.085	HP	1x1.0	2x8.5	34	Widening & RR
75	361.386	HP	1x1.0	2x8.5	28.1	Widening & RR
76	362.571	HP	1x1.0	2x8.5	29.4	Widening & RR
77	362.895	HP	1x0.9	2x8.5	30.6	Widening & RR
78	363.278	HP	1x0.9	2x8.5	37	Widening & RR
79	363.5	HP	1x1.5x1.5	2x8.5	30	Widening & RR
80	363.655	Slab	1x1.0	2x8.5	31	Widening & RR
81	363.76	HP	1x1.0	2x8.5	31	Widening & RR
82	363.955	HP	1x0.9	2x8.5	31	Widening & RR
83	364.357	HP	1x2x2	2x8.5	27	Widening & RR
84	364.509	RCC Box	1x1.5x1.5	2x8.5	29.6	Widening & RR
85	364.979	Slab	1x1.0	2x8.5	31	Widening & RR
86	365.218	HP	1x3x2.3	2x8.5	31	Widening & RR
87	365.355	RCC Box	1x1.0	2x8.5	30.6	Widening & RR
88	365.455	HP	1x0.9	2x8.5	26	Widening & RR
89	365.615	HP	1x0.9	2x8.5	26	Widening & RR
90	365.625	HP	1x1.0	2x8.5	30.6	Widening & RR
91	365.881	HP	1x1.0	2x8.5	31	Widening & RR
92	366.105	HP	1x1.0	2x8.5	31	Widening & RR
93	366.3	HP	1x3.5x2	2x8.5	26	Widening & RR
94	366.35	Slab	1x1.0	2x8.5	31	Widening & RR
95	366.8	HP	1x1.0	2x8.5	31	Widening & RR
96	366.835	HP	1x1.0	2x8.5	31.2	Widening & RR
97	367	HP	1x1.0	2x8.5	41	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
98	367.1	HP	1x3x3	2x8.5	33	Widening & RR
99	367.649	RCC Box	1x1.0	2x8.5	37	Widening & RR
100	367.89	HP	1x1.0	2x8.5	35	Widening & RR
101	368.445	HP	1x1.0	2x8.5	35	Widening & RR
102	368.815	HP	1x1.0	2x8.5	28.1	Widening & RR
103	369.165	HP	1x0.9	2x8.5	32.4	Reconstruct
104	369.483	HP	1x3x2	2x8.5	26	Widening & RR
105	370.071	RCC Box	1x0.9	2x8.5	30.4	Widening & RR
106	370.468	HP	1x1.0	2x8.5	30.4	Widening & RR
107	370.82	HP	1x0.9	2x8.5	27	Widening & RR
108	371.319	HP	1x2x1.5	2x8.5	28	Widening & RR
109	371.475	Slab	1x0.9	2x8.5	27	Widening & RR
110	372.792	HP	1x1.5x1.67	2x8.5	27	Widening & RR
111	374.078	RCC Box	1x0.9	2x8.5	27.6	Widening & RR
112	374.725	HP	1x0.9	2x8.5	29	Widening & RR
113	374.85	HP	1x1.0	2x8.5	29	Widening & RR
114	376.643	HP	1x1.0	2x8.5	28.1	Widening & RR
115	376.83	HP	1x1.5x2.5	2x8.5	24.4	Widening & RR
116	377.768	Slab	1x1x1.75	2x8.5	23.6	Widening & RR
117	378.2	Slab	1x1.0	2x8.5	26.4	Widening & RR
118	379.4	HP	1x1.0	2x8.5	44.2	Widening & RR
119	380.405	HP	1x2x2.5	2x8.5	40.8	Widening & RR
120	380.726	RCC Box	1x2x2	2x8.5	22.1	Reconstruct
121	381.109	Slab	1x2x3	2x8.5	22.1	Reconstruct
122	381.54	Slab	1x1.5x2	2x8.5	21.7	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
123	382.31	Slab	1x2x2	2x8.5	48	Reconstruct
124	382.5	Slab	2x1.0	2x8.5	35.6	Widening & RR
125	383.129	HP	1x0.9	2x8.5	38	Widening & RR
126	383.79	HP	1x2x1.3	2x8.5	22.6	Widening & RR
127	384.582	RCC Box	1x2x1.5	2x8.5	40	Widening & RR
128	385.537	Slab	1x0.9	2x8.5	31	Widening & RR
129	386.126	HP	1x0.9	2x8.5	29	Widening & RR
130	386.305	HP	1x4x3	2x8.5	29	Widening & RR
131	386.696	Slab	1x2x2	2x8.5	31.4	Widening & RR
132	387.136	RCC Box	1x0.9	2x8.5	41.8	Widening & RR
133	387.604	HP	1x2x1.3	2x8.5	32.8	Widening & RR
134	387.642	RCC Box	1x0.9	2x8.5	39.2	Widening & RR
135	387.856	HP	1x0.9	2x8.5	30	Widening & RR
136	388.812	HP	1x0.9	2x8.5	30	Widening & RR
137	389.291	HP	1x0.9	2x8.5	29.4	Widening & RR
138	389.582	HP	1x1.0	2x8.5	40	Widening & RR
139	390.532	HP	1x0.9	2x8.5	30.4	Widening & RR
140	391.695	HP	1x1.5x1.86	2x8.5	24	Widening & RR
141	392.629	RCC Box	1x2x3	2x8.5	26.2	Widening & RR
142	393.246	RCC Box	1x1.5x2.5	2x8.5	24.4	Widening & RR
143	393.619	RCC Box	1x1.5x2	2x8.5	24.6	Widening & RR
144	394.073	RCC Box	1x0.9	2x8.5	28.1	Widening & RR
145	395.42	HP	1x1.0	2x8.5	25.6	Widening & RR
146	395.542	HP	1x0.9	2x8.5	25.2	Widening & RR
147	395.739	HP	1x2x1.5	2x8.5	24.4	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
148	396.203	Slab	1x1x1.5	2x8.5	25.6	Widening & RR
149	396.302	RCC Box	1x1.0	2x8.5	31	Widening & RR
150	396.797	HP	1x1x3.0	2x8.5	26	Widening & RR
151	397.356	RCC Box	1x1x3.0	2x8.5	26.6	Widening & RR
152	397.541	RCC Box	1x1x1.0	2x8.5	24.8	Widening & RR
153	397.733	RCC Box	1x1.0	2x8.5	29	Widening & RR
154	398.206	HP	1x1x1.0	2x8.5	26.6	Widening & RR
155	399.2	RCC Box	1x1x1.0	2x8.5	26.4	Widening & RR
156	399.367	RCC Box	1x1x1.0	2x8.5	26.4	Widening & RR
157	400.173	RCC Box	1x1x1.0	2x8.5	26.4	Widening & RR
158	400.27	RCC Box	1x1.0	2x8.5	28.8	Widening & RR
159	400.4	HP	1x1x1.0	2x8.5	26.2	Widening & RR
160	400.678	RCC Box	1x1x1.0	2x8.5	25.2	Widening & RR
161	401.284	RCC Box	1x1x1.0	2x8.5	26.4	Widening & RR
162	401.708	RCC Box	1x1.0	2x8.5	29.8	Widening & RR
163	403.156	HP	1x1x1.5	2x8.5	26.6	Widening & RR
164	403.4	RCC Box	1x1.0	2x8.5	2.6	Widening & RR
165	403.541	HP	1x1x1.5	2x8.5	26.6	Widening & RR
166	404.424	RCC Box	1x0.6	2x8.5	28.8	Widening & RR
167	405.309	HP	1x0.6	2x8.5	29.1	Reconstruct
168	405.607	HP	1x0.6	2x8.5	25.6	Reconstruct
169	405.74	HP	1x1.0	2x8.5	25.6	Reconstruct
170	406.3	HP	1x0.6	2x8.5	29.2	Widening & RR
171	406.909	HP	1x0.6	2x8.5	29.4	Reconstruct
172	407.06	HP	1x1.0	2x8.5	24.6	Reconstruct

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
173	407.498	HP	1x1.0	2x8.5	28.6	Widening & RR
174	407.84	HP	1x0.6	2x8.5	28.8	Widening & RR
175	408.414	HP	1x1.0	2x8.5	28.4	Reconstruct
176	408.7	HP	1x1.0	2x8.5	28.2	Widening & RR
177	408.773	HP	1x1x1.0	2x8.5	26.4	Widening & RR
178	409.107	RCC Box	1x1x1.5	2x8.5	26.4	Widening & RR
179	409.484	RCC Box	1x1x1.5	2x8.5	26.4	Widening & RR
180	410.271	RCC Box	1x0.6	2x8.5	29	Widening & RR
181	410.784	HP	1x0.6	2x8.5	29.6	Reconstruct
182	410.9	HP	1x0.6	2x8.5	28.8	Reconstruct
183	411.2	HP	1x1.0	2x8.5	29	Reconstruct
184	411.4	HP	1x1.0	2x8.5	28.4	Widening & RR
185	411.7	HP	1x1.0	2x8.5	28.8	Widening & RR
186	412.2	HP	1x0.6	2x8.5	28.8	Widening & RR
187	412.539	HP	1x0.6	2x8.5	28.4	Reconstruct
188	413.4	HP	1x1.0	2x8.5	26.6	Reconstruct
189	413.9	HP	1x1x1.5	2x8.5	26	Widening & RR
190	414.4	RCC Box	1x1x1.0	2x8.5	27.8	Widening & RR
191	414.7	RCC Box	1x1x1.5	2x8.5	27.2	Widening & RR
192	414.9	RCC Box	1x1x1.5	2x8.5	27.2	Widening & RR
193	414.923	RCC Box	1x1.0	2x8.5	28.6	Widening & RR
194	415.574	HP	1x1x1.0	2x8.5	27.2	Widening & RR
195	416.6	RCC Box	1x1.0	2x8.5	28.6	Widening & RR
196	416.808	HP	1x1x1.0	2x8.5	26.8	Widening & RR
197	417.645	RCC Box	1x1x1.0	2x8.5	26.2	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
198	418.192	RCC Box	1x1x1.5	2x8.5	27	Widening & RR
199	418.801	RCC Box	1x1x1.5	2x8.5	26	Widening & RR
200	419.726	RCC Box	1x1x3.0	2x8.5	27	Widening & RR
201	420.659	RCC Box	1x1x1.5	2x8.5	26.8	Widening & RR
202	421.433	RCC Box	1x1x1.5	2x8.5	25.2	Widening & RR
203	422.961	RCC Box	1x1x1.5	2x8.5	26.6	Widening & RR
204	423.717	RCC Box	1x1x1.5	2x8.5	29	Widening & RR
205	423.873	RCC Box	1x1.0	2x8.5	28.4	Widening & RR
206	424.954	HP	1x1x2.5	2x8.5	26.6	Widening & RR
207	425.4	RCC Box	1x1x1.5	2x8.5	26.6	Widening & RR
208	427.075	RCC Box	1x1x1.5	2x8.5	26.15	Widening & RR
209	427.429	RCC Box	1x1x1.0	2x8.5	26.15	Widening & RR
210	428.76	RCC Box	1x1x3.0	2x8.5	26.15	Widening & RR
211	429.123	RCC Box	1x1.0	2x8.5	28.7	Widening & RR
212	430.698	HP	1x1x1.5	2x8.5	28	Widening & RR
213	431.627	RCC Box	1x1.0	2x8.5	28.7	Widening & RR
214	432.022	HP	1x1.0	2x8.5	28.7	Widening & RR
215	432.143	HP	1x1.0	2x8.5	28.7	Widening & RR
216	434.243	HP	1x1x1.5	2x8.5	27	Widening & RR
217	435.254	RCC Box	1x1x1.5	2x8.5	27	Widening & RR
218	435.774	RCC Box	1x1.0	2x8.5	24.2	Widening & RR
219	435.913	HP	1x1.0	2x8.5	28.4	Widening & RR
220	436.283	HP	1x1x1.5	2x8.5	25	Widening & RR
221	436.493	RCC Box	1x1x1.5	2x8.5	24.8	Widening & RR
222	437.133	RCC Box	1x1x3.0	2x8.5	27.5	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
223	437.5	RCC Box	1x1x3.0	2x8.5	27.5	Widening & RR
224	437.933	RCC Box	1x1x2.0	2x8.5	25	Widening & RR
225	438.383	RCC Box	1x1x5	2x8.5	25.2	Widening & RR
226	439.498	RCC Box	1x1x3.0	2x8.5	28.1	Widening & RR
227	439.933	RCC Box	1x1x3.0	2x8.5	25.2	Widening & RR
228	440.228	RCC Box	1x1x1.5	2x8.5	25	Widening & RR
229	441.533	RCC Box	1x1.0	2x8.5	32	Widening & RR
230	442.103	HP	1x1x2.5	2x8.5	28.1	Widening & RR
231	442.858	RCC Box	1x1x1.5	2x8.5	30	Widening & RR
232	444.183	RCC Box	1x1x1.0	2x8.5	29	Widening & RR
233	445.753	RCC Box	1x1x2.5	2x8.5	29.5	Widening & RR
234	446.463	RCC Box	1x1x1.5	2x8.5	29.5	Widening & RR
235	447.093	RCC Box	1x1x1.5	2x8.5	29.5	Widening & RR
236	447.663	RCC Box	1x1x1.5	2x8.5	28	Widening & RR
237	448.658	RCC Box	1x1.0	2x8.5	28	Widening & RR
238	448.996	HP	1x1x1.5	2x8.5	26.4	Widening & RR
239	499.3	RCC Box	1x0.6	2x8.5	26.4	Widening & RR
240	450.031	HP	1x1x1.5	2x8.5	27.4	Reconstruct
241	451.693	RCC Box	1x1.0	2x8.5	28.4	Widening & RR
242	452.3	HP	1x1x2.0	2x8.5	26	Widening & RR
243	452.6	RCC Box	1x1.0	2x8.5	28.6	Widening & RR
244	453.7	HP	1x1x1.5	2x8.5	32	Widening & RR
245	454.408	RCC Box	1x1x1.5	2x8.5	26	Widening & RR
246	454.553	RCC Box	1x1x1.5	2x8.5	27.2	Widening & RR
247	454.808	RCC Box	1x1x2.0	2x8.5	27	Widening & RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
248	454.858	RCC Box	1x1x1.5	2x8.5	26.15	Widening & RR
249	455.013	RCC Box	1x1x1.5	2x8.5	26	Widening & RR
250	455.25	RCC Box	1x1x1.5	2x8.5	27	Widening & RR
251	455.909	RCC Box	1x1x1.5	2x8.5	23	Widening & RR
252	456.313	RCC Box	1x1.0	2x8.5	30.88	Widening & RR
253	457.898	HP	1x1x1.5	2x8.5	34	Widening & RR
254	458.831	RCC Box	1x1x1.5	2x8.5	36.4	Widening & RR
255	459.32	RCC Box	1x1x1.5	2x8.5	33.4	Widening & RR
256	460.666	RCC Box	1x1x1.5	2x8.5	33.4	RR
257	461.448	RCC Box	1x1x6.0	2x8.5 +2x7.25	42.8	RR
258	461.802	RCC Box	1x1x1.5	2x8.5 +2x7.25	40.2	RR
259	462.092	RCC Box	1x1x5.0	2x8.5 +2x7.25	40.2	RR
260	462.289	RCC Box	1x1x1.5	2x8.5 +2x7.25	39.6	RR
261	462.674	RCC Box	1x1x1.5	2x8.5 +2x7.25	39.6	RR
262	464.905	RCC Box	1x1x6.0	2x8.5 +2x7.25	38.2	RR
263	466.563	RCC Box	1x1.0	2x8.5 +2x7.25	38.2	RR
264	468.507	HP	1x1x1.5	2x8.5 +2x7.25	41.2	RR
265	468.759	RCC Box	1x1x1.5	2x8.5 +2x7.25	41.2	RR
266	469.437	RCC Box	1x1x1.5	2x8.5 +2x7.25	41.2	RR
267	472.4	RCC Box	1x1x6.0	2x8.5 +2x7.25	42.65	RR
268	473.367	RCC Box	1x1x6.0	2x8.5 +2x7.25	40.6	RR
269	473.563	RCC Box	1x1x1.5	2x8.5 +2x7.25	40.6	RR
270	474.181	RCC Box	1x1x1.5	2x8.5 +2x7.25	44	RR
271	474.592	RCC Box	1x1x1.5	2x8.5 +2x7.25	41	RR
272	474.991	RCC Box	1x1x1.5	2x8.5 +2x7.25	40	RR

S.No.	Location (km)	Type of Structures	Size of opening (no.x span x height or No. X Dia) (m)	Carriageway Width (m)	Width of Culvert (m)	Proposal
273	476.466	RCC Box	1x1x1.25	2x8.5 +2x7.25	38.8	RR
274	476.952	RCC Box	1x1x3.0	2x8.5 +2x7.25	40.6	RR
275	477.111	RCC Box	1x1x1.5	2x8.5 +2x7.25	40.6	RR
276	477.949	RCC Box	1x1x3.0	2x8.5 +2x7.25	40.6	RR
277	478.816	RCC Box	1x1x1.5	2x8.5 +2x7.25	40	RR
278	481.723	RCC Box	1x1x6.0	2x8.5 +2x7.25	40	RR
279	483.591	RCC Box	1x1x1.25	2x8.5 +2x7.25	39	RR

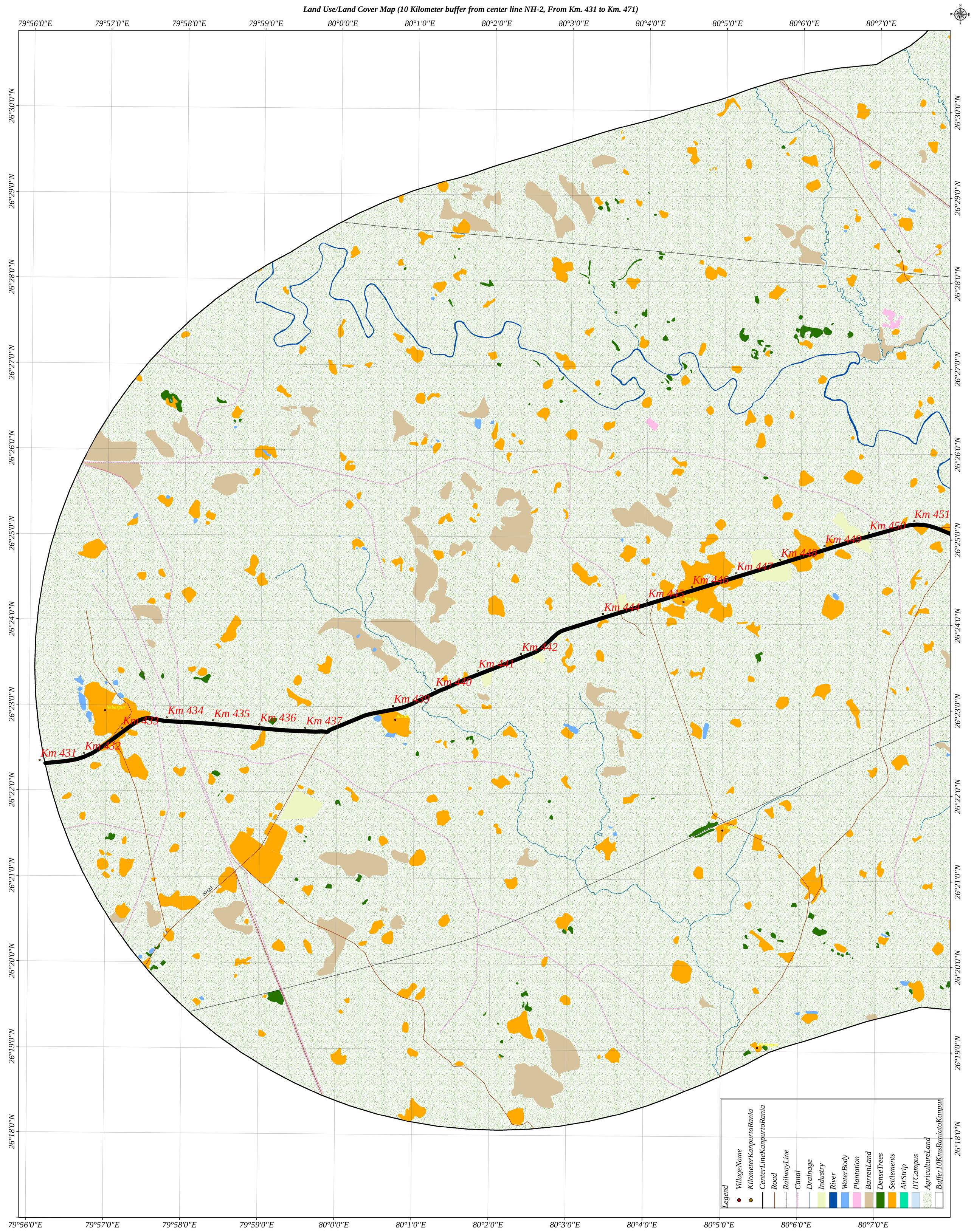
ANNEXURE 2D

Location of Bus Bays and Bus Shelters

S. No	Name of Village	Chainage (km)	
		LHS	RHS
1	Etawah	323.500	323.400
2	Chadanpur	326.000	326.200
3	Ekdil	328.600	328.300
4	Sarai Jamal	333.400	333.800
5	Sarai Mitthe	338.400	338.600
6	Bakewar	341.200	341.600
7	Bahera	344.800	344.900
8	Mahewa & Uajyani	347.000	347.100
9	Anantram	351.900	351.200
10	Phoolpur & chandpur	354.000	354.100
11	Babarpur	356.100	356.700
12	Ajitmal	360.100	360.200
13	Bhikhepur	363.500	364.050
14	Muradganj	368.200	368.800
15	Mihauli	373.400	374.000
16	Chirauli	377.100	377.800
17	Auraiya	379.300	379.000
18	Auraiya (Khanpur)	381.400	381.600
19	Janetpur	385.000	385.200
20	Bhairaupur	388.100	388.400
21	Mahtauli	390.000	390.100
22	Amrahat & Dera	393.500	393.800
23	Sakin Bujurg	396.300	396.500
24	Sikandara	398.000	399.000
25	Rashdhan	403.600	404.400
26	Madanpur	406.000	407.500
27	Kandhi	409.300	410.200

S. No	Name of Village	Chainage (km)	
		LHS	RHS
28	Bhadpura &Mugisapur	412.200	413.500
29	Mawai Mukta	416.000	416.800
30	Bihari	420.400	420.800
31	Kumbhi & Goraiyapur	423.000	423.800
32	Mohammadpur	425.500	425.000
33	Badapur &Akberpur	428.500	430.000
34	Banar Alipur	433.500	434.500
35	Bara	436.000	436.500
36	Umran	438.900	439.400
37	Khanchandpur	440.800	441.000
38	Visayakpur	447.100	448.000
39	Raipur Kukhat	450.100	450.200
40	Gadankheda	451.200	451.000
41	Sachendi	454.425	454.400
42	Chakarpur	456.000	455.850
43	Bhaunti	459.500	458.357
44	Kapli & Panki Bhausingh	461.500	461.700

Land Use/Land Cover Map (10 Kilometer buffer from center line NH-2, From Km. 431 to Km. 471)



Client:
NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highway Government of India)

Design Consultant:-
CONSULTING ENGINEERS GROUP LTD.
CEG Tower, B-11 (G), Malviya Industrial Area
Jaipur-302017 (Rajasthan) India
Tel: +91-141-2751801/802/803/804
Fax: 2751806, E-mail: ceg@cegindia.com

Project:
Rehabilitation and Upgradation of 6 Laning of Etawah-Chakeri, Section of NH-2 (U.P.)

Drawing No. 01	Drawn By:	Designed By:	Checked By:	Approved By:
Date: May, 2012	*Vikas kumar Samaria*	*Vikas Kumar Samaria*	*Vikas Kumar Samaria*	*M K Jain*

Source: IRSP-6, LISS-IV Data

Scale: *1:25,000*

Projected Coordinate System:
WGS_1984_UTM_Zone_44N
Projection: Transverse_Mercator
False_Easting: 500000.00000000
False_Northing: 0.00000000
Central_Meridian: 81.00000000
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Latitude_Of_Origin: 0.00000000
Linear Unit: Meter

Geographic Coordinate System:
GCS_WGS_1984
Datum: D_WGS_1984
Prime Meridian: Greenwich
Angular Unit: Degree

Land Use/Land Cover Map (10 Kilometer buffer from center line NH-2, From Km. 431 to Km. 471)

80°8'0"E 80°9'0"E 80°10'0"E 80°11'0"E 80°12'0"E 80°13'0"E 80°14'0"E 80°15'0"E 80°16'0"E 80°17'0"E 80°18'0"E 80°19'0"E

26°33'0"N 26°32'0"N 26°31'0"N 26°30'0"N 26°29'0"N 26°28'0"N 26°27'0"N 26°26'0"N 26°25'0"N 26°24'0"N 26°23'0"N 26°22'0"N 26°21'0"N 26°20'0"N

NH34

Kiyanpur AirStrip

IIT Kanpur

Swaraj Nagar Panki

Dhir Samadhipur

Kanpur

Bilhaur

Km 452 Km 453 Km 454 Km 455 Km 456 Km 457 Km 458 Km 459 Km 460 Km 461 Km 462 Km 463 Km 464 Km 465 Km 466 Km 467 Km 468 Km 469 Km 470 Km 471

Legend
- VillageName
- KilometerKanpurtoRania
- CenterLineKanpurtoRania
- Road
- RailwayLine
- Canal
- Drainage
- Industry
- River
- WaterBody
- Plantation
- BarrenLand
- DenseTrees
- Settlements
- AirStrip
- IITCampus
- AgricultureLand
- Buffer10KmsRaniatoKanpur

Client: *NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highway Government of India)*

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Drawing No. 01

Date: May, 2012

Drawn By:	Designed By:	Checked By:	Approved By:
Vikas kumar Samaria	*Vikas Kumar Samaria*	*Vikas Kumar Samaria*	*M K Jain*

Source: IRSP-6, LISS-IV Data

Scale: *1:25,000*

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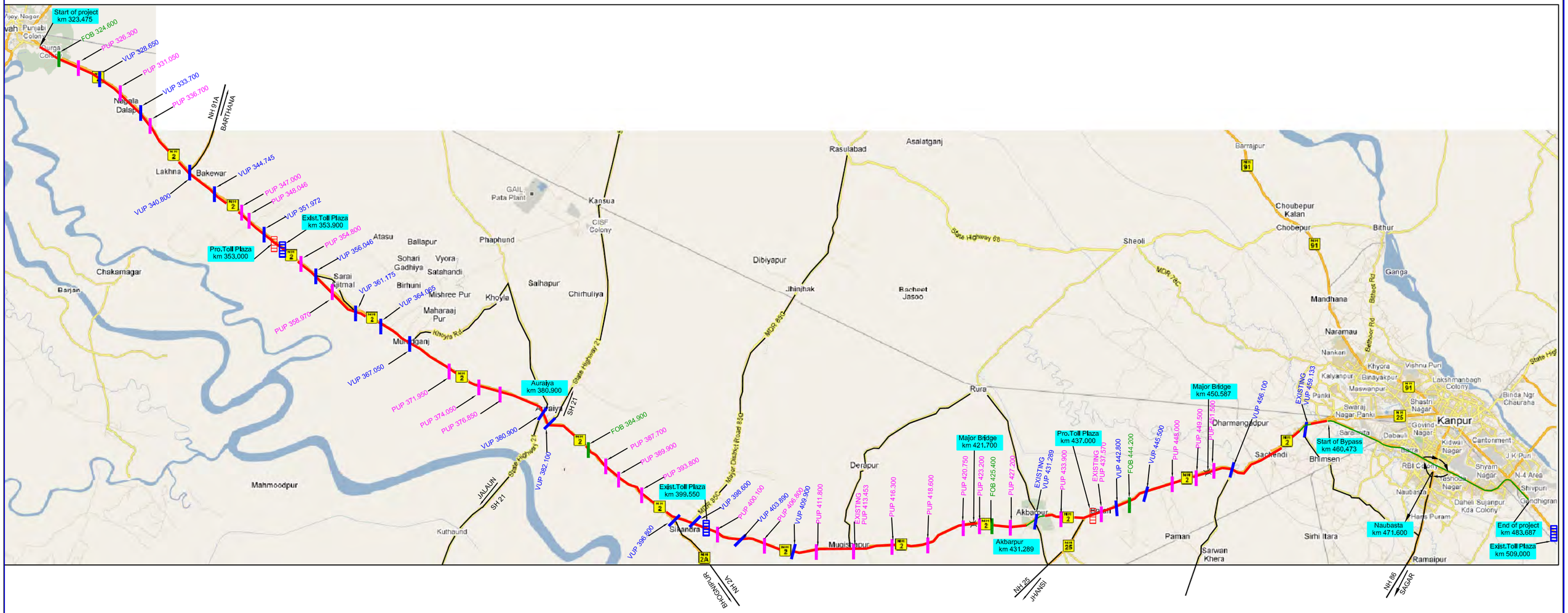
Scale_Factor: 0.99960000
Latitude_Of_Origin: 0.00000000
Linear Unit: Meter

Geographic Coordinate System:
GCS_WGS_1984
Datum: D_WGS_1984
Prime Meridian: Greenwich
Angular Unit: Degree



LEGEND :-

PUP	Exist. Toll Plaza	FOB	6 Lane Project Highways	Naubasta Crossing Ramps	
VUP	Prop. Toll Plaza	Major Bridge	4 Lane Project Highways		

REV	DATE	REVISION/PURPOSE	SCALE :- NTS

CONSULTANT :- C O N S U L T I N G ENGINEERS GROUP LTD.
E–12,Moji Colony,Malviya Nagar Jaipur 301 017
Tel: +91(141) 252 0899, 252 1899, 252 0556
Fax: +91(141) 252 1348, Email: ceg@cegindia.com

OWNER :- NATIONAL HIGHWAYS AUTHORITY OF INDIA
(GOVERNMENT OF INDIA)

PROJECT :- SIX LANING OF ETAWAH - CHAKERI (KANPUR) SECTION OF NH 2 IN UTTAR PRADESH STATE

TITLE :- ALIGNMENT PLAN

DRAWING NO. :NHAI\CEG\ NH-2\ALIGNMENT PLAN
DATE : MAY, 2011

DRAWN	DESIGNED	CHECKED	APPROVED
RS	S.Gupta	H.E.	T.L

\\server\Users\R S Sharma\ALINMENT PLAN OF NH-2\NH 2 KEY PLAN.dwg

TABLE OF CONTENT

CHAPTER 3

ANALYSIS OF ALTERNATIVES

3.1 ANALYSIS OF ALTERNATIVES

The analysis of alternatives is one of the most important exercises that need, to be carried out to find the least cost option with regards to socio-economic and environmental consequences to each alternative, and the cost attributed to it. In fact these options will also enable the consultants to approach people for various aspirations of the local stakeholders.

3.1.1 Environmental alternatives and design considerations

The project offers some environmental alternatives in order to facilitate the decision making process. As usual the analysis of alternative should start with the customary 'with' and 'without' the project scenarios. This is to justify the proposal of a widening alternative to no widening alternative. The *"with"* project scenarios will, however, only occur only if the recommendations provided for the construction stage are followed and all construction activities are carried out according to principles of Environment Friendly Road Construction

3.2 Without Project Scenario

The existing project road is 4 lane highway with width of m. Carrying high traffic volumes of upto 35397 PCU (AADT), the capacity of the present highway is insufficient for handling such volume of traffic and calls in for immediate improvements.

The present highway is continuously dotted with settlements and the traffic flow is seriously affected by severe conflicts between the local traffic and the through traffic. This is further compounded by the various landuse conflicts, in terms of uncontrolled development, along the highway and the encroachments onto the designated highway land (ROW).

The population growth, increase in traffic volumes and the economic development along the corridor would continue to occur and will further add to the already critical situation. The existing unsafe conditions and the adverse environmental consequences, in terms of environmental quality along the highway, would continue to worsen in the absence of proposed improvements. Therefore, no alternative is either a reasonable nor a prudent course of action for the proposed project, as it would amount to failure to initiate any further improvements and impede economic development.

3.3 With Project Scenario

This scenario includes the 6-laning of existing 4-laned national highway sections of NH-2 stretch between Etawah to Chakeri, as envisaged in the project objectives. The "with project scenario", has been assessed to be economically viable and will alleviate the existing conditions. It would therefore, contribute to the development goals envisaged by the Government of India, and enhance the growth potential of the area.

To avoid the large scale acquisition of land and properties, the project envisages the Six-laning of the highway with the minimum ROW, No bypasses and realignments have been proposed.

In spite of the various development benefits likely to accrue due to the project, as is the case of every development project, this project would be accompanied by certain impacts on the natural and social environmental components. The potential impacts on the various environmental components can be avoided through good engineering practices. Wherever warranted and avoidance has not been possible, appropriate mitigation and enhancement actions will be worked out to effectively offset the environmental damages inflicted due to the project. A comparative assessment of the 'With and Without' project scenarios are presented in

Table 3.1 : "With" and "Without" Project Scenarios

Scenario type	Long-Term Scenario *"With"* Project	Long-Term Scenario *"Without"* Project
Topography and Soils	No major change in topography and soils, however, better road will reduce soil erosion and dust	Further deterioration in present conditions
Highway Geometrics	6 lane highway	4 lane highway
Speed	80 kmph in urban sections 100 kmph in rural sections	20-30 kmph in urban sections 50-60 kmph in rural sections
Safety	Along the settlement stretches with significant pedestrian traffic, sidewalks have been provided. Improved road safety since all inadequacies of road will get corrected and overall safety of corridor will be significantly increased.	Pedestrian safety an issue of major concern especially along the settlements and congested sections.

Scenario type	Long-Term Scenario *"With"* Project	Long-Term Scenario *"Without"* Project
Drainage /Water logging	Will be improved due to reconstruction of culverts/bridges with adequate hydraulics.	No changes in present problems associated with inadequate drainage. Possible weakening and damage to existing drainage structures causing further damage to the road.
Flora	About 9449 numbers of trees exists within ROW and need to be felled, however, through compensatory afforestation @ 1:3 will again improve the greenery of the area.	No change in vegetation and number of trees.
Fauna	No endangered wild faunal species have been found in project area. No wildlife sanctuaries have been identified in the Project Influence Area. The grazing animals are an important issue to be considered for the design decision-making as it has got a direct bearing on road safety, traffic management and accidents. The project highway does not pass through any ecologically sensitive area. Underpasses for animals will be provided.	Continued, and possibly increased disturbance to the fauna. Increased disturbance and chances of illegal hunting due to overall traffic growth.
Social and Cultural Environment	Improved business environment for those living along the highway-increased passing trade from generated traffic and reduced transportation costs for imports and exports of the area. Total land acquisition will be 141 ha. Major land use affected will be agricultural. Use of open	Traveling may take 1 to 2 hrs more time, thereby transportation costs will increase. Reductions in comfort and safety due to congestion and deterioration in highway conditions. Business opportunities remain

Scenario type	Long-Term Scenario *"With"* Project	Long-Term Scenario *"Without"* Project
	/ barren land has reduced acquisition in other areas. The proposed project implementation is likely to adversely impact some of cultural properties either directly or indirectly.	largely the same as before. No change in land acquisition and cultural properties.
Environmental Quality	Proposed project will improve environmental quality within the urban areas due to lowered pollution levels and relieving of congestion	Poor due to congestion and high emission levels because of slow movement of traffic. A further deterioration is expected due to increase in traffic volumes and further congestion.
Road side Amenities	Appropriate road side amenities to be provided at various locations along the corridor.	Not adequate
Wayside Facilities	Wayside facilities proposed at several locations, where necessary – like rest areas, with appropriate facilities for recreation, highway public telephones etc.	Not of adequate standard, quality and number.
Financial Implications	Higher capital costs for using Environmental Friendly techniques for road widening and strengthening. Costs will also be incurred for training of PIU officials. Lower vehicle operating costs associated with smoother riding surfaces and shorter travel times.	No capital costs. However, increasing road maintenance and vehicle operating costs as road deteriorates and as travel times increase.

It is found on the basis of analysis that "with out" project scenario will do more harm than the benefits in terms of the biological and socio-economic environment of the

project region as compared to "with" project scenario. Hence the "with" project scenario with minor reversible impacts is an acceptable option for the project section.

3.4 Alignment Alternatives

Improvement of existing alignment has been done in following ways which will have significant beneficial impact in terms of

- Minimizing Displacement
- Reducing resistance to the project
- Minimize the impact on the existing trees/local environment.
- Maximum benefit in terms of road geometry, pavements, shoulders, embankments etc
- Uninterrupted flow of through traffic along the Project stretch
- Avoid future possibility of installation of speed breakers by the local administration/public
- Avoid adverse impacts of the crowded areas along the project stretch
- Provide scope for wayside amenities

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CHAPTER- 4

DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 INTRODUCTION

This chapter assesses the nature and dimensions of the study and presents the baseline data for the existing environment covering physical and biological components. The primary data of the environmental components was generated during environmental survey and project preparation stage in Feb 2011 to April 2011.

4.2 DEFINITION OF THE PROJECT STUDY AREA

The environment impact assessment will be conducted considering likely potential impacts on physical, biological, social/economic and cultural resources in the right of way as well as the area falling within 500 meters on the either side of the right of way. The 500m study area is considered adequate for the assessment of most physical and social effects arising from project development. However it is also recognized that a number of potential (positive and negative) impacts could also have effects beyond this boundary, such as effects on road linkages, employment effects and some community effects. Secondary data will be collected within 15 kms aerial distance as per form-1 of EIA notification 2006.

4.3 ENVIRONMENTAL FEATURES

This section deals with the description of existing environmental settings in study area. The data have been collected from various sources and field visits during months Feb. 2011 to April 2011 to cover the following aspects.

- Land Environment,
- Water Environment,
- Air Environment,
- Noise Environment, and
- Biological and Ecological Environment
- Cultural and Socio-Economical Environment.

The information available has been quantified wherever possible.

4.3.1 Land Environment

4.3.1.1 Physiographic & Land use of area

The proposed project area stretches from Etawah to Chakeri section of NH-2 passes through mainly **agricultural land**. Some barren land, urban areas & structures also exist along the road. The soil of project area is generally clayey having sand at some locations. All project impact districts occupy important place in states for agriculture, which is the most important occupation. The Major agriculture products are Wheat, Barley, Gram, Mandua, Hemp, Urd, & Moong. The cash crops are Sugarcane, Groundnut, Vegetables & fruit, Hemps, Tobacco, Sweet Potato, Condiments, and Spices. The land use of Etawah & Kanpur Districts is given in **Figure 4.1** and **Table 4.1**

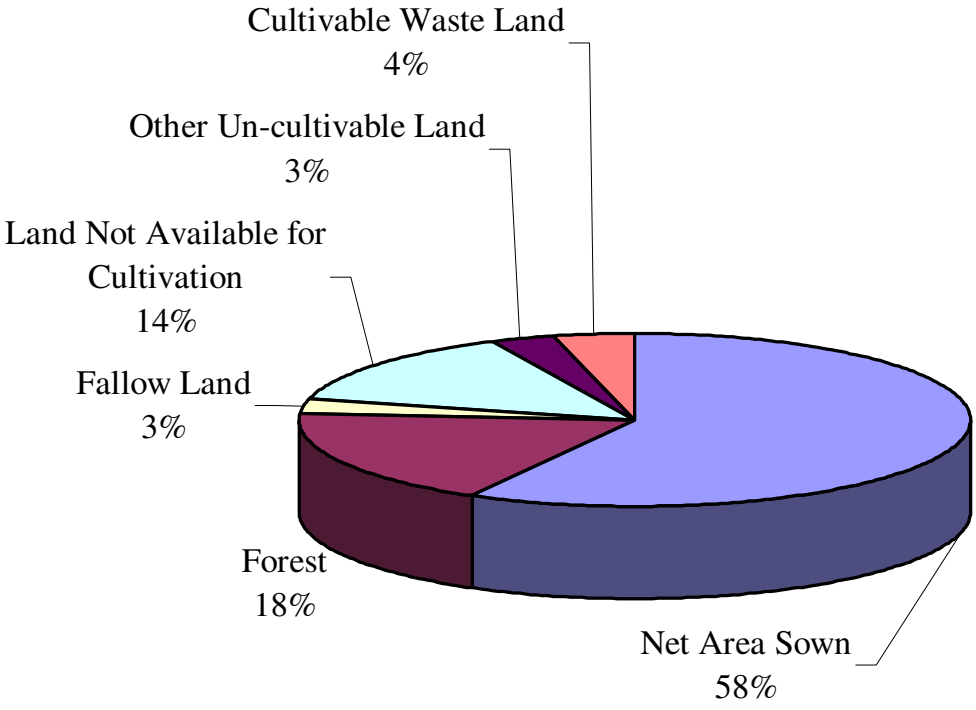


Figure. 4.1(a) : Land use pattern of Etawah

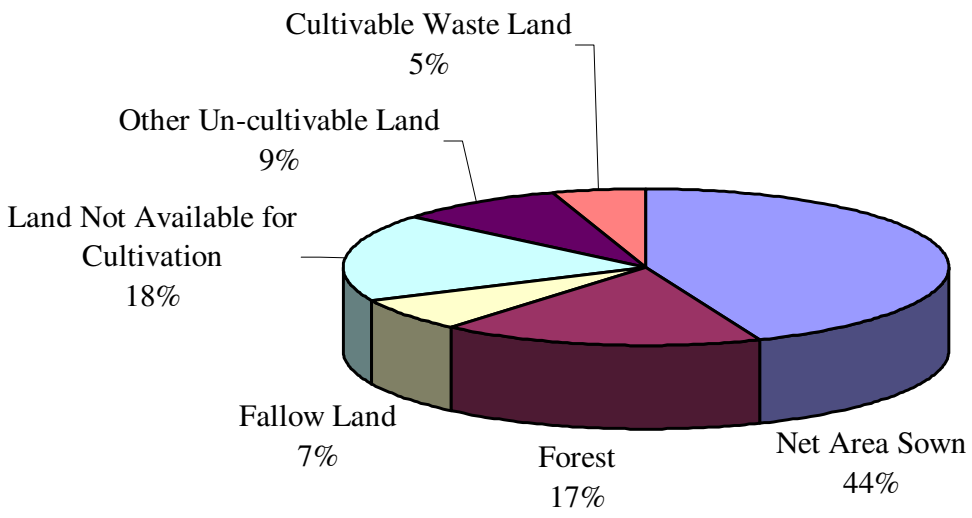


Figure. 4.1(b) : Land use pattern of Kanpur

Source : Land use statistics at a glance 1996-97, Ministry of Agriculture, GOI-2000

4.3.1.2 Geology, Rock and Soil

Geology& Rock

The Project Highway traverses through, Etawah, Auraiya and Kanpur districts. There are 14 Towns along the Project Road. These districts are located in the South western region of Uttar Pradesh. The soil is clayey type. The road is not passing through any hilly and rolling area. Brick earth is available every where. Lime-stone in the shape of kankar is found in the district both in the block and rodular forms, makes a better and smoother road.

Soils

Mostly clay soil is present in these districts. All the Alluvial soil is commonly associated with rivers and streams. Alluvial and white sandy Kacchar soil is occurring on the bank of river Yamuna. Loam soil is occurring in the Northern and south-western part of the Kanpur. Loam soil has great fertility. Clay soil contains high nutrient levels plants grow

well if drainage is adequate. The project region falls within south western plain agro-ecological region. Agro-climate characteristics of project site are given in **Table 4.1**

Table 4- 1: Agro-climatic Characteristic of Project Districts

Districts	Kanpur Shahar	Kanpur Dehat	Etawah
Gullied and/or Ravinous land	109.43	This district is newly formed out of Kanpur (R) district and the statistics included in combined Kanpur (R) district	268.63
Upland with or without Scrub	6.97		2.26
water logged and marshy land	25.81		24.05
Land Affected by Salinity/ Alkalinity	510.96		205.84
Under utilized/Degraded notified Forest Land	12.27		96
Total Waste lands	665.44		596.78
Total geographical area	6176		4326
Percentage of total Geographical Area	10.77		13.8

Government of India Ministry of Rural Development
Department of Land Resources New Delhi, India

The proposed project may cause soil erosion and compaction of soil (due to movement of heavy equipment) during the construction phase. Valuable topsoil may be lost from borrow areas and along the alignment. A management plan to minimize the impact and mitigate the problems will be required. In order to have an idea of the soil quality in and around the project area, samples of topsoil were analyzed from five locations given in **Table 4.2**

Table 4- 2: Locations and Analysis of the Soil Sample

Soil Texture	Location Code	Description of the Monitoring location	Chainage	Distance from Centre-line	Type of Land
Clayey silt with sand	S1	Auraiya	380.600	200 meters	Agricultural land
Clayey silt	S2	Sikandara	396.800	150 meters	Agricultural land
Clayey silt	S3	Akberpur	432.000	250 meters	Agricultural land
Clayey silt	S4	Rania	447.000	250 meters	Agricultural land
Clayey silt with sand	S5	Chakeri	482.500	230 meters	Agricultural land

It has been observed that the soil in the area is clayey silt with sand and clayey silt in texture with pH in alkaline range. Soil pH plays a very important role in the availability of nutrients. The composition of the soil microbial community is also dependent on the soil pH. Electrical conductivity is a measure of the concentration of soluble salts and ionic activity. Salt concentration is directly proportional to the osmotic pressure, which governs the process of osmosis in soil – plant system. The details of physico-chemical properties and fertility status of soils are given in **Table 4.3 and Table 4.4** respectively. The sampling sites are shown in **Fig .4.2**.

Table 4- 3: Physico - Chemical Properties of the Soil Samples

S. No.	Parameter	Concentration				
		S1	S2	S3	S4	S5
1	pH	7.0	7.0	10.1	10.5	10.3
2	Carbonate %	0.018	0.024	0.054	0.024	0.030
3	Cloride %	0.0040	0.0034	0.0047	0.0024	0.0034
4	Nitrate %	0.02771	0.01732	0.01074	0.01219	0.01386
5	Organic carbon%	2.22	2.90	0.83	2.35	2.40
6	Specific gravity %	2.27	2.38	2.57	2.50	2.47
7	Total soluble solids %	0.044	0.040	0.132	0.416	0.092

Table 4- 4: Soil Fertility Status of the Districts

S.No.	Nutrients	Availability of nutrients	District Name
1	N	Low	Etawah
	P	Low	
	K	High	
2	N	Medium	Kanpur
	P	Low	
	K	Medium	

Sources : Chandra Shekhar Azad Agricultural University Kanpur

Fig. 4.2: Site Photograph of Soil Sampling

Soil fertility of Etawah district is rich in terms of NPK ration to compare the Kanpur district. Organic Carbon, Nitrogen and Phosphorus are limiting nutrients, especially Phosphorus. Soil micro–nutrients can also act as limiting factors. Soil micro–nutrient

analysis can be employed as a diagnostic tool for predicting the possibility of deficiency of a nutrient and the profitability of its application.

4.3.2 Climate

Climate & Meteorology

Etawah, Auraiya and Kanpur have a **humid sub-tropical climate**. Like most of north India it has a hot dry summer (April-June) followed by monsoon rains (July-September) and a cool and relatively dry winter. Minimum temperature during winter is 4 to 6 degree Celsius while maximum temperature during summer is 38 to 42 degree Celsius

Rainfall

Uttar Pradesh experiences four seasons. The winter in January and February is followed by summer between March and May, the Monsoon season between June and September and the post- monsoon season from October till December. The Average rainfalls in Etawah ,Auraiya & Kanpur are 792 mm & 940 mm respectively. July& August is the month with heaviest rainfall. During the rainy months, the area receives almost 89% of the total rainfall. Rainfall mainly occurs for three months in the monsoon, from July to September due to the southwest monsoon. The maximum rainfall at Kanpur and Etawah of 1206.11mm (2008) & 1107.00mm (2008) and minimum of 954.85mm (2006) & 938.00 mm (2005) in last six years was recorded respectively.

The average annual rainfall during the year from 2004 to 2009 is given in **Table 4.5**

Table 4- 5: Average Annual Rainfall (In mm)

Districts	2004	2005	2006	2007	2008	2009
Etawah	1071.9	938.00	964.5	993.00	1107.00	975.28
Kanpur	1008.64	980.63	954.8	1068.71	1206.11	972.15

Source: Indian Meteorological Department Kanpur

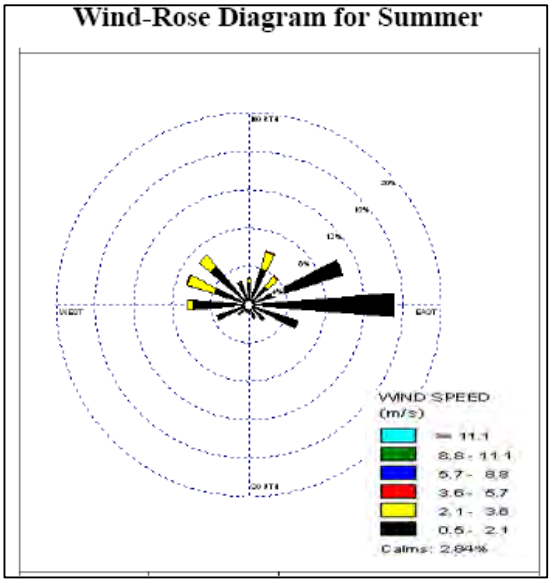
Humidity

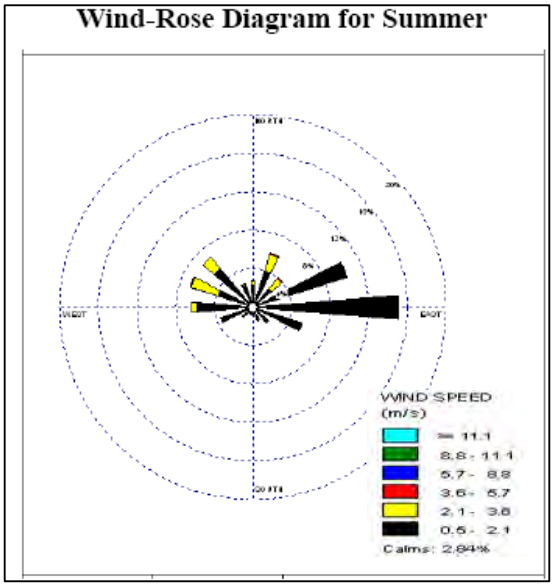
The annual mean relative humidity during morning hours is 60% and 45% during the evening hours. Generally, August is the most 'humid month with a relative humidity of 80 % during morning and 75 % in the evening hours. The driest month of the year is

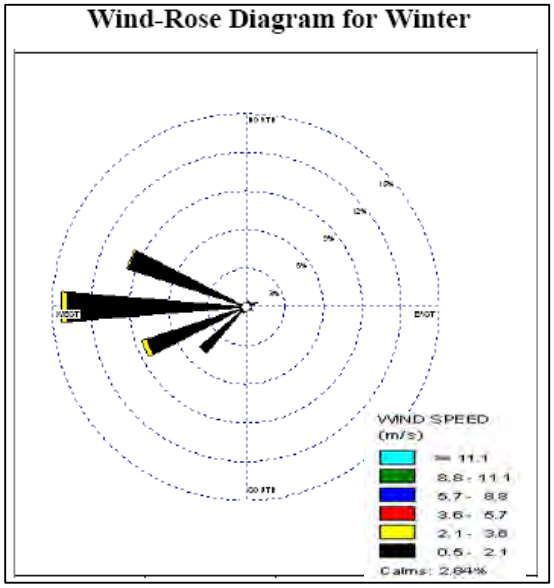
April with relative humidity of less than 30% in the morning hours and 16% in the evening hours.

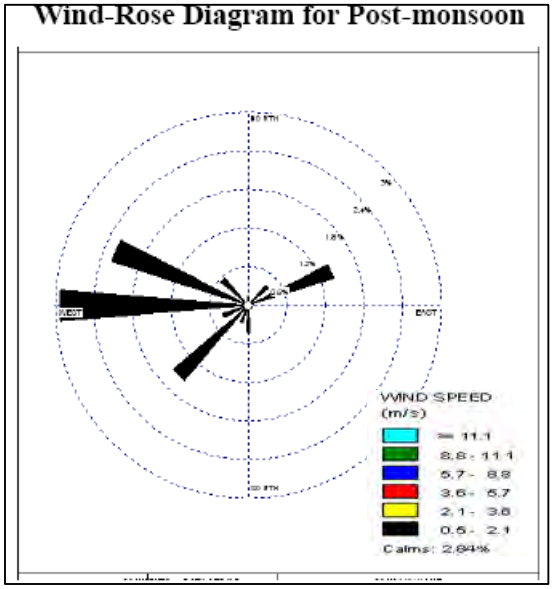
Wind Speed and Direction

Winds are generally light and mostly from directions between North-East & North - West. In May, the south west monsoon season winds on many days' blows also from directions between north east & south east.









Cloudiness

During the monsoon season and for brief spells of a day or two during the cold season when the district is affected by passing western disturbances, skies are generally heavily clouded or overcast. In the rest of the year mostly clear or lightly clouded conditions prevail.

4.3.3 Seismic Profile of the area

The project area does not have any history of severe earthquake damage. As per state wise seismsic zonation, the project road lies within Zone-II of Seismic activity zone of the country (National Informatics Centre). The seismic risk in Zone-II is relatively low according to the seismic zoning map of India (BIS 2000, zones), which is Zone II to Zone V classification in which zone V is the highest risk seismic zone. The required construction including structures (bridges and culverts) will be such designed to withstand the level of seismic activity for Zone-III. **Figure 4.3** shows maps of seismic zones of India and **Figure 4.4** shows map of Seismic zones of Uttar Pradesh.

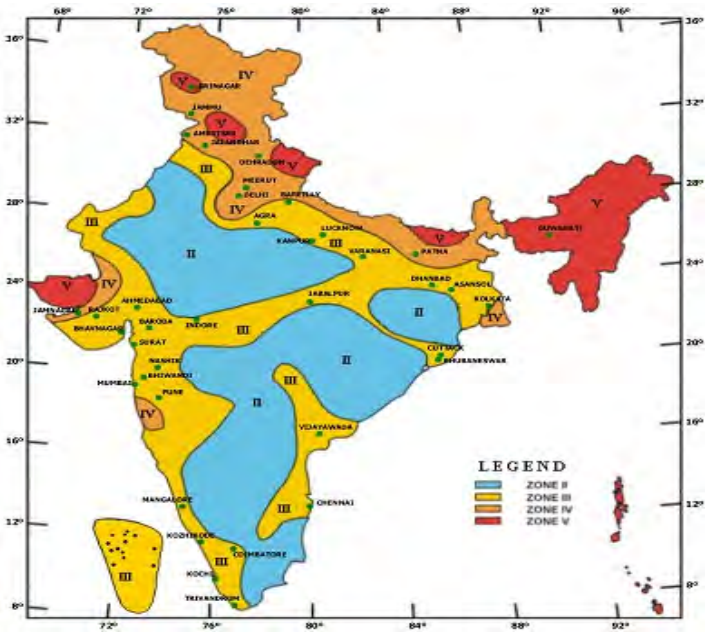


Figure. 4.3: Map of Seismic Zones of India

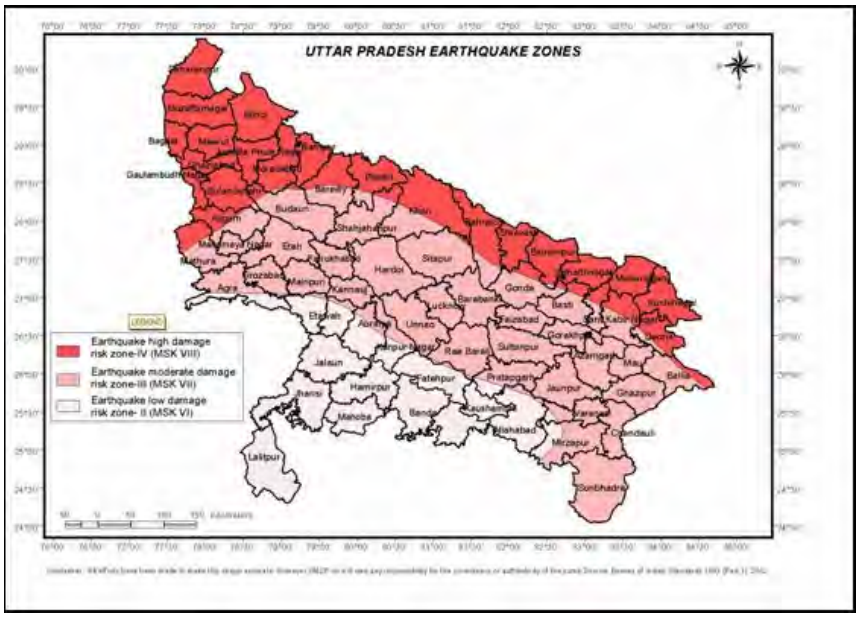


Figure. 4.4: Climatic Zone Map of Uttar Pradesh

4.3.4 Air Environment

Evaluation of the resultant air quality due to the proposed project requires the determination of the existing air quality in terms of PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO. No secondary data of the ambient air (Photo 10.8) quality in the proposed project area was available. Consequently air quality monitoring has been carried out at selected locations. To establish the baseline air quality scenario five (5) representative ambient air quality monitoring stations were selected within the study corridor covering all land use categories as per the CPCB / BIS guidelines. Continuous 24 hours monitoring was done at a frequency of twice a week at more or less uniform intervals during Feb. 2011 to April 2011 were carried out as per the Central Pollution Control Board guidelines on PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO. The locations of the AAQ monitoring stations were based on consideration of meteorological data and present human activity along the proposed project area.

Sampling and analytical procedure

RDS APM-460 BL Respirable dust samplers (RDS-Envirotech, New Delhi) and FPM sampler were used for measuring the concentrations of, PM_{10}, $PM_{2.5,}$ NO_2 and SO_2 in the ambient air. The sampling inlet was placed 1-3 meter above the ground level and 15-30 meter away from earthen shoulder of the existing road, depending upon the site available for the RDS. The RDS APM-460 BL Respirable Dust Sampler has been provided with a

cyclone. The cyclone has been designed to provide separation of PM_{10} particles. Atmospheric air was drawn for ~24 hours in three shifts through the cyclone and 20 X 25 cm glass fiber filter (GF/A) sheet at a flow rate of 0.8 to 1.4 m^3min-1 and finally the average flow rate was calculated.

Gaseous (SO_2 and NO_2) sampling the Impingers were exposed for ~24 hour in four hours slot at an impingement rate of 1 Liter min-1 to get representative sample in a day. SO_2 was analyzed by the West-Gaeke method on Spectronic-21 spectrophotometer at wavelength of 560 nm. NO_2 was analyzed employing the Jacob- Hochheiser modified method on a spectrophotometer at wavelength of 540 nm (Lodge, 1989). During the monitoring period, 24 hourly samples were collected two days a week for PM_{10}, $PM_{2.5,}$ NO_2 and SO_2 were estimated by taking one hour samples. National Ambient Air Quality Standards (NAAQS) are given in Table 4.8 and the instruments, apparatus and method used for the sampling and analysis are given in Table 4.6.

Table 4- 6: National Ambient Air Quality Standards

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and other areas	Ecologically sensitive area(notified by central government)	Methods of measurement
1	Sulphur dioxide (SO2), µg/m3	Annual*	50	20	-Improved West & Gaeke-Ultraviolet fluorescence
		24 hours**	80	80	
2	Nitrogen Dioxide (NO2), µg/m3	Annual*	40	30	-Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
		24 hours**	80	80	
3	Particulate Matter (Size less than 10m) or PM10µg/m3	Annual*	60	60	- Gravimetric - TOEM - Beta attenuation
		24 hours**	100	100	
4	Particulate	Annual*	40	40	- Gravimetric

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and other areas	Ecologically sensitive area(notified by central government)	Methods of measurement
	Matter (Size less than 2.5m) or PM2.5µg/m3	24 hours**	60	60	- TOEM - Beta attenuation
5	Carbon Monoxide (CO) mg/ m3	8 hours**	02	02	-Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
6	Avg. SPM (µg/m3)	Annual*	360 & 140	70	- Gravimetric - TOEM - Beta attenuation
		24 hours**	500&200	100	

Figure 4.5 : RDS APM 460 BL and Fine Particulate Sampler APM 550

Ambient air quality monitoring results are summarized in below mentioned Table 4.7

Table 4- 7: Ambient Air Quality Monitoring Stations & Results

Location	Chainage (km) of NH-2	Area Category	Time of Monitoring	Mean value in µg/m^3				
				$PM_{2.5}$	PM_{10}	SO_2	NO_2	CO (mg/m^3)
Auraiya town	381+000	Commercial	02.02.12	38.2	63.4	9.1	16.4	ND (DL 1.15 mg/m$^{3)}$
			03.02.12	37.0	59.7	8.4	15.1	
			15.03.12	34.8	55.4	9.1	14.1	
			16.03.12	41.2	59.5	7.4	15.4	
			01.04.12	41.8	65.4	7.2	15.2	
			02.04.12	44.7	68.9	8.3	14.3	
Sikandara	399+000	Industrial	04.2.12	53.4	83.4	9.5	16.4	ND (DL 1.15 ND (DL 1.15 mg/m^3
			05.2.12	56.5	89.7	9.4	17.1	
			12.03.12	54.2	85.4	9.3	14.1	
			13.03.12	49.3	79.5	8.4	17.4	
			04.04.12	53.8	85.4	7.2	17.2	
			05.04.12	52.3	78.9	9.5	18.3	
Akbarpur	434+000	Residential	7.2.12	43.8	73.4	8.5	16.9	ND (DL 1.15 mg/m^3
			8.2.12	47.8	79.7	7.4	17.4	
			09.03.12	42.9	71.4	8.3	14.1	
			16.03.12	47.7	79.5	8.4	17.2	
			07.04.12	46.2	75.4	7.2	17.1	
			08.04.12	46.5	78.9	8.5	16.4	
Rania	444+000	Industrial	10.2.12	48.0	77.4	11.5	24.5	ND (DL 1.15 mg/m^3
			11.2.12	49.5	79.7	10.4	22.4	
			06.03.12	51.2	81.4	11.3	19.3	
			07.03.12	50.1	79.5	9.4	25.4	

Location	Chainage (km) of NH-2	Area Category	Time of Monitoring	Mean value in µg/m^3				
				$PM_{2.5}$	PM_{10}	SO_2	NO_2	CO (mg/m^3)
			10.04.12	47.2	75.4	11.2	22.2	
			11.04.12	48.1	78.9	11.5	22.5	
Chakeri	482+500	Industrial/ commercial	13.2.12	59.6	93.4	10.5	21.5	
			14.2.12	59.8	99.7	10.4	22.4	
			03.03.12	54.5	89.4	9.3	19.3	
			04.03.12	54.0	84.5	9.4	21.4	
			13.04.12	46.0	75.4	10.2	22.2	
			14.04.12	56.3	90.9	9.5	20.6	

The ambient air quality result reveals that the seasonal average concentration of PM10 ranges from 55.4 to 99.7, µg/m3, PM 2.5 varies between 34.8 to 59.8 µg/m3, SO_2 range between 7.2 to 11.9 µg/m3 and NOx ranges between 15 to 23 µg/m3 (Table . The values of PM_{10}, PM $_{2.5}$, SO_2, and NO_2 are within the prescribed limits of National Ambient Air Quality Standards for the Industrial and Commercial areas published by Ministry of Environment & Forest Notification 16th November 2009 .Ambient air quality of the area lies within permissible limits as per the discussion with the State Pollution Control Board personnel's owing to the highway passing through industrial area and agricultural land. The Contractor should monitor the air quality in consultation with the, Regional office of the State Pollution Control Board, so that appropriate mitigation measures may be adopted if the air quality exceeds the permissible limits of CPCB to minimize the adverse impacts.

4.3.5 Noise Environment

Road noise quality depends on many factors such as traffic density, type and condition of the vehicles plying on the road, acceleration / deceleration / gear changes/level of congestion and smoothness of road surface.

A total of five representative locations as indicated in **Table 4.11** mostly close to the project road covering industrial, commercial, and residential areas were selected for

measuring the present status of ambient noise level. At each location monitoring was done once in a season. The stations were selected judiciously based on considerations like free exposures of equipment away from temporary noise generating sources to monitor true background levels, accessibility of the location during day & night and security & safety of the instruments. A sound level meter was used for monitoring of background noise level .Monitoring at each location was conducted on a 24-hour basis to evaluate the day and night time Leq. to compare with the standards. The ambient noise monitoring results are presented in **Table 4.8**

Figure 4.6 : SLM 100 (Monitoring of Noise Level) Rania km 447

Table 4- 8: Ambient Noise Level Monitoring Stations and Results

Location	Chainage (km)	Area Category	Average dB(A)	
			Daytime	Night time
Auraiya town	380+600	Commercial	68.9	67.4
Sikandara	396+800	Industrial	73.0	64.8
Akbarpur	432+000	Residential	69.2	64.7
Rania	447+000	Industrial	68.3	61.9
Chakeri	482+500	Industrial/ Commercial	69.1	65.4

Table 4- 9: Ambient Noise Standard
(As per Noise Pollution & Control Rules 2000)

Area Code	Category of Area	Limits in dB (A) Leq.	
		Daytime	Night time
A	Industrial	75	70

B	Commercial	65	55
C	Residential	55	45
D	Silence	50	40

Note-1 Day time is reckoned in between 6 AM to 10 PM

Note-2 Night time is reckoned in between 10 PM to 6 AM

Note-3 Silence zone is defined as areas upto 100 meters around such as premises as hospitals, educational institutions and courts. The silence zones are to be declared by the Competent Authority

Note-4 Mixed categories of areas should be declared as one of the four above mentioned categories, by the Competent Authority and the corresponding standard shall apply.

Noise level at Auraiya town and Sikandara was found within the prescribe limits but in Rania and Chakeri it was found slightly high then limits

Industries

Kanpur is an Industrial / Commercial area and known for cotton and woolen textile and leather industries situated on the southern bank of the Ganga. To cope with the industrial growth Panki thermal power station now produces a total of 284 MW of power. The post independence years changed the face of Kanpur from a town of mill owners and mill workers to that of a city consisting of large middle class population of entrepreneurs and artisans. Kanpur has roughly 5500 industries with 75 medium and large industries such as those of fertilizers, detergents, chemicals and paint industries.

4.3.6 Water Resources

Surface Water

The project highway crosses three rivers in Kanpur district Sengar river, Rhind river & Pandu river. Rhind is a perennial stream, which shrinks considerably in size in the hot weather. The Sengar enters Etawah near the village of Dhanwa in the north of Etawah tehsil. After traversing the district in a south-easterly direction, parallel to Yamuna, it passes into Kanpur district. Along the existing road waste water logging problem is present specially in Ramabai Nagar.

The cross drainage structure at most of the locations have been already built over the water courses during the construction of intermediate lane of state highway so that there

will not be much adverse impacts on water during the further widening to 6-lane with paved shoulders. The major rivers flowing in the Etawah district are the Kuwari (a tributary of the Yamuna River) and the Rhind River(joined by two tributaries known as Ahneya & Puraha) and the Chambal and Yamuna River . Kanpur is surrounded by two main rivers Ganga in north east & Yamuna river in the south. The project National highway NH-2 crossing with Rivers is listed in **Table 4.10**

Table 4- 10.: Rivers in the Project Area

S.No	Location (km) NH-2	Name of river
1	450.587	Rhind
2	421.763	Sengar
3	325.851	Pandu

Drinking Water Sources Along the Project Roads

Construction activities and land acquisition gives a direct Impact on drinking water sources .Most important drinking water sources are the following.

- Public water supply schemes
- Hand pumps or bore wells
- Energized bore well schemes
- Shallow tube wells or Filter point wells

Water Quality along the Road

Water quality monitoring along project road was done form Feb. 2011 to April 2011. Ground water quality along the road is almost good but some chemical industries in Kanpur industrial area and Ramabai nagar gradually decrease the ground water quality. The physico-chemical analysis results of the ground water samples are presented in **Table 4.11**. The ground water analysis results reveal that the water quality is slightly alkaline (pH 7.5-8.1); total hardness varies 108- 372 mg/l as $CaCO_3$; Chlorides at all location was found 10-180 mg/l; and Conductivity was found in the range of 774-2120 µS/cm. The results indicate the ground water quality is good except Total Dissolve Solids & hardness were quite high but under the prescribed potable water standards.

Table 4- 11: Results of Selected Water Sources

Location	Source	pH	Total Hardness (mg/l)	TDS (mg /l)	Cl (mg/ l)	Alkalinity (mg/l)	Ca (mg/l)	Conductivity µS/cm
Auraiya	Hand Pump	7.5	333	547	20	347	100.2	848
Sikandara	Tube-Well	7.6	157	815	41	356	45.2	1265
Akberpur	Hand Pump	7.7	372	675	10	446	119.8	1046
Rania	River	7.9	270	498	10	297	58.9	774
Chakeri	River	8.1	108	1360	180	554	27.5	2120

Value in ppm (mg/l)

Drainage Pattern of Project Corridor

It is provided in **Annexure 4B**.

Water Requirement

The water requirement for widening of the whole Etawah- Chakeri section project road can be estimated to 600 Kl/day. Ground water will be used for domestic purpose and surface water will be used for construction purpose.

4.3.7 Ecological Resources

Plants along the project road

There are many plant species are shown viz. Dhak (*Butea monosperma*), Aonla (*Emblica officinalis*),Aam, Arjun, Ashok (*Polyalthia longifolia*), Asna (*Terminalia alata*), Bahera (*Terminalia bellirica*), Bargad (*Ficus bengalensis*), Barhal (*Artocarpus lakoocha*), Bel (*Aegle marmelos*), Eucalyptus (*Eucalyptus tereticornis*), Gular (*Ficus glomerata*), Gul Mohar (*Delonix regia*), Jamun (*Suzygium cumini*), Kaitha (*Feronia limonia*), Kathal (*Artcarpus heterophyllus*), Mahua (*Madhulka indica*), Litchi (*Naphelim litchi*), Pipal (*Ficus religiosa*), Sagon (*Tectona grandis*), Silver Oak (*Grevilea robusta*), Kala siris (*Albizia lebbek*), Safed Siris (*Albizia lebbek*) and Shisham (*Dalbergia sissoo*). Grasses like Dub (*Cynedon dactylon*), Baib (*Enlaliopis bineta*), Kans (*Saccharum spontaneum*)

There are total **9449 trees** that will be impacted due to widening of the project road. shows the existing roadside plantation along the project road.

FOREST STRETCHES (Etawah –Chakeri section of NH-2)

Sr. No.	Existing Km	Type of Forest
1	380.000 to km 384.500	Protected Forest
2	431.000 to km 432.000	Protected Forest
3	443.000 to km 450.000	Protected Forest
4	460.100 to km 483.627	Protected Forest

The reconnaissance survey carried out along the entire project road. Avifauna was also seen at many places. The common birds like Crows, Eagles, Pigeon, Sparrow and Myna have been spotted during the reconnaissance visit along the project road. No endangered wild faunal species have been noticed. No wildlife sanctuaries have been identified in the Project Influence Area. The grazing animals are an important issue to be considered for the design decision-making as it has got a direct bearing on road safety, traffic management and accidents. The project highway does not pass through any ecologically sensitive area.

4.3.8 Solid Waste Generation

The main sources of solid waste are (a) Excavation of earth and rock from sides of existing pavement for widening to four lanes (b) Demolition of existing pavement, flexible shoulders in case of concentric widening for median construction and (c) Removal of existing PCC, RCC structures & stone/brick masonry, stone pitching for road widening. The solid waste mainly consists of top soil, overburden, rock, broken PCC/RCC material and demolished bituminous material.

4.3.9 Socio-Economic Condition

Socio Economic Environment

Table 4.12 shows the demographic Profile of the districts falling in the project road. Tourism planning is very important in infrastructure projects like roads.

Table 4- 12: Socio Economic Data

Districts on project Road	Total Population 2001	Male	Females	Area in '000 sq Km	Sex Ratio 2001	Population density 2001	Rank as per Sex Ratio
Etawah	1,338,871	721,913	618,122	2,288	856	1,471	51
Auraiya	1,179,496	635,527	543,969	2,051	856	963	57
Kanpur	6,731,335	3,067,521	2,654.005	6,176	937	696	56

Annexure 4A: Forest Diversion Permission Latter

संख्या-855/14-2-2012-800(2)/2012

प्रेषक,

संजय सिंह,
विशेष सचिव,
उत्तर प्रदेश शासन।

सेवा में,

उप वन महानिरीक्षक,
भारत सरकार, पर्यावरण एवं वन मंत्रालय
पर्यावरण भवन,सी0जी0ओ0 काम्पलेक्स
लोदी रोड, नई दिल्ली।

वन अनुभाग-2

लखनऊ दिनांक 17 अप्रैल,2012

विषय :- राष्ट्रीय राजमार्ग एन0एच0-2 पर इटावा-चकेरी खण्ड को 4 से 6 लेन चौड़ीकरण चौड़ीकरण हेतु (1) **जनपद इटावा में** एन0एच0-2 के किमी0 323.475 से 389.00 तक 5.6817हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 439 वृक्षों का पातन (2) **जनपद रमाबाईनगर** एन0एच0-2 के किमी0 389.00 से 450.6 तक 36.9600हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 8799 वृक्षों का पातन (3) **जनपद कानपुर नगर में** एन0एच0-2 के किमी0450.6 से 460.01 तक 5.6460 हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 211 वृक्षों का पातन अर्थात् परियोजना में **कुल 48.2877 हे0** संरक्षित वनभूमि के गैर वानिकी प्रयोग एवं उस पर अवस्थिति **कुल 9449** वृक्षों के पातन की अनुमति के सम्बंध में।

महोदय,

उपर्युक्त विषयक मुख्य वन संरक्षक/नोडल अधिकारी के संलग्न पत्र संख्या-2041/11सी-मेरठ-975, दिनांक 28-03-2012 के सन्दर्भ में मुझे यह कहने का निदेश हुआ है कि राष्ट्रीय राजमार्ग एन0एच0-2 पर इटावा- चकेरी खण्ड को 4 से 6 लेन चौड़ीकरण चौड़ीकरण हेतु (1) **जनपद इटावा में** एन0एच0-2 के किमी0 323.475 से 389.00 तक 5.6817हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 439 वृक्षों का पातन (2) **जनपद रमाबाईनगर** एन0एच0-2 के किमी0 389.00 से 450.6 तक 36.9600हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 8799 वृक्षों का पातन (3) **जनपद कानपुर नगर में** एन0एच0-2 के किमी0450.6 से 460.01 तक 5.6460 हे0 संरक्षित वनभूमि एवं उस पर अवस्थित 211 वृक्षों का पातन अर्थात् परियोजना में **कुल 48.2877 हे0** संरक्षित वनभूमि के गैर वानिकी प्रयोग एवं उस पर अवस्थिति **कुल 9449** वृक्षों के पातन की अनुमति का प्रस्ताव अपने स्तर से परीक्षण करने के उपरान्त शासन को उपलब्ध कराया गया है। प्रस्ताव के अनुसार उक्त प्रयोजन हेतु मांगी गयी वनभूमि न्यूनतम है और इसके अतिरिक्त अन्य कोई वैकल्पिक भूमि उपलब्ध नहीं है। चूँकि प्रश्नगत कार्य जनहित में किया जा रहा है। अतः प्रश्नगत वन भूमि को गैर वानिकी प्रयोग के लिये दिये जाने में विभाग को कोई आपत्ति नहीं है। नोडल अधिकारी द्वारा प्रस्तुत उक्त प्रस्ताव से शासन सहमत है।

2- अतएव उक्त प्रस्ताव मूलरूप में (एक प्रति) संलग्न कर प्रेषित है। कृपया वन (संरक्षण) अधिनियम,1980 के प्राविधानों के तहत स्वीकृति प्रदान करने का कष्ट करें।

संलग्नकः- यथोपरि।

भवदीय,

(संजय सिंह)
विशेष सचिव

संख्या व दिनांक तदैव।

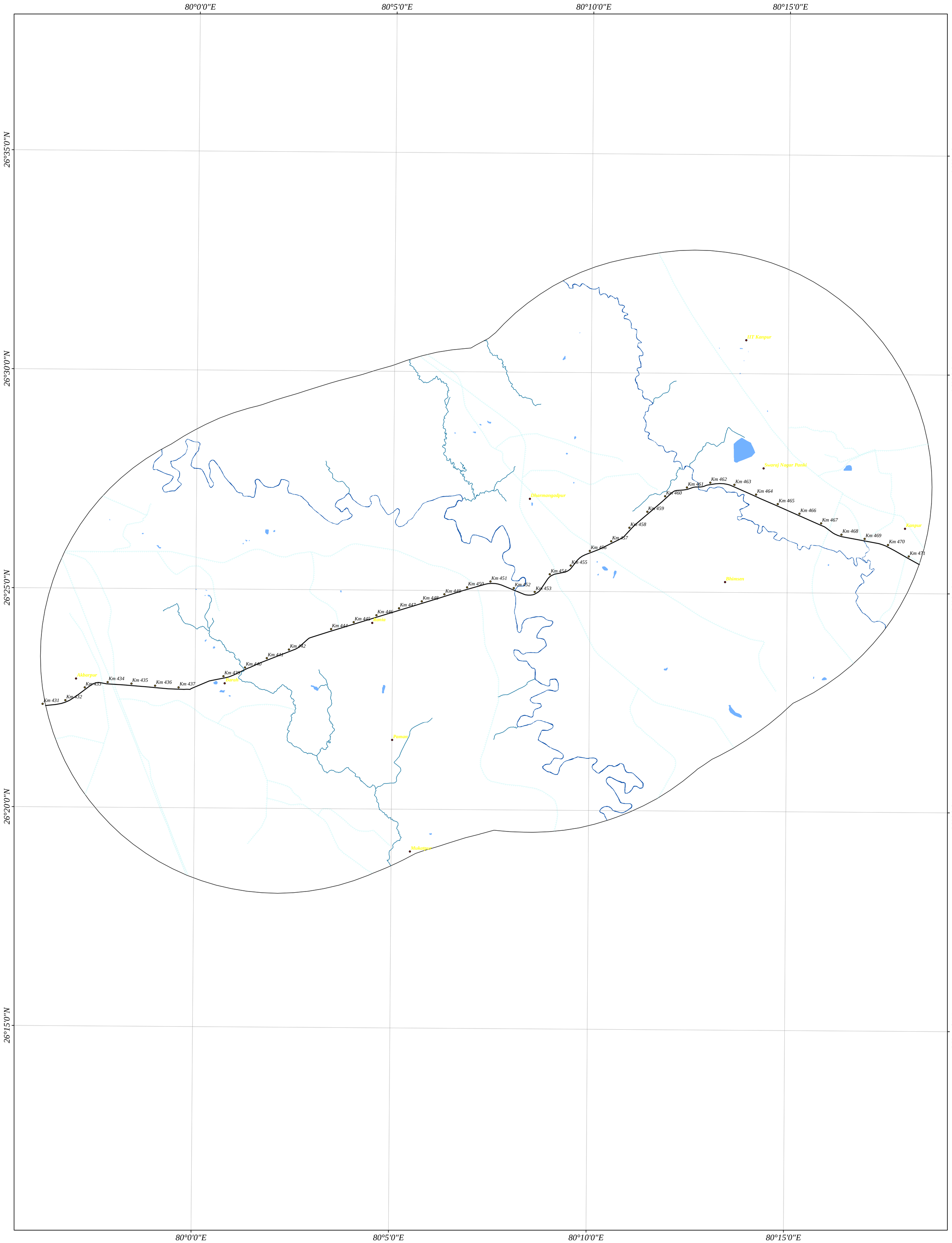
प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषितः-

1- मुख्य वन संरक्षक(केन्द्रीय), भारत सरकार, पर्यावरण एवं वन मंत्रालय (क्षेत्रीय कार्यालय) केन्द्रीय भवन, पंचम तल सेक्टर, एच, अलीगंज विस्तार लखनऊ।
2- मुख्य वन संरक्षक एवं नोडल अधिकारी, उ0प्र0, लखनऊ।
3- मुख्य वन संरक्षक, कानपुर मण्डल,कानपुर।
4- जिलाधिकारी, इटावा, रमाबाईनगर व कानपुर।
5- प्रभागीय वनाधिकारी/निदेशक, इटावा, रमाबाईनगर व कानपुर।
6- परियोजना निदेशक, एन0एच0ए0आई0, 128/68।, के-ब्लाक, किदवईनगर, कानपुर।
7- गार्ड फाइल।

आज्ञा से,

(संजय सिंह)
विशेष सचिव

Drainage Map (10 Kilometer buffer from center line NH-2, From Km. 431 to Km. 471)



Client: *NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highway Government of India)*	Design Consultant:- CONSULTING ENGINEERS GROUP LTD. CEG Tower, B-11 (G), Malviya Industrial Area Jaipur-302017 (Rajasthan) India Tel: +91-141-2751801/802/803/804 Fax: 2751806, E-mail: ceg@cegindia.com	*Project: Rehabilitation and Upgradation of 6 Laning of Etawah-Chakeri, Section of NH-2 (U.P.)*	*Projected Coordinate System: WGS_1984_UTM_Zone_44N Projection: Transverse_Mercator False_Easting: 500000.00000000 False_Northing: 0.00000000 Central_Meridian: 81.00000000 Scale_Factor: 0.99960000 Latitude_Of_Origin: 0.00000000 Linear Unit: Meter*	*Geographic Coordinate System: GCS_WGS_1984 Datum: D_WGS_1984 Prime Meridian: Greenwich Angular Unit: Degree*	*Legend* • *VillageName* • *KilometerKanpurtoRania* — *CenterLineKanpurtoRania* *River* *Canal* *Drainage* *WaterBody* *10kmsbufferRaniatoKanpur*
Title: *Alignment Plan on Satellite Imagery*	Drawing No. 01	Drawn By:	Designed By:	Checked By:	Approved By:
	Date: May, 2012	*Vikas kumar Samaria*	*Vikas Kumar Samaria*	*Vikas Kumar Samaria*	*M K Jain*
Source: IRSP-6, LISS-IV Data		**Scale: *1:50,000***			

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C HAPTER - 5

ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACT & MITIGATION MEASURES

5.1 GENERAL

This chapter describes the assessment of the nature, type and magnitude of the potential impacts of project corridor (NH-2 from Etawah to Chakeri) on physical, biological and cultural environmental components along the project corridor. The basis of the assessment of impacts is the baseline information as discussed in Chapter-4, For each type of potential impact or environmental concern, the analysis should predict the nature and significance of the expected impacts (quantitative as well as qualitative).

A wide variety of direct and indirect negative impacts have been attributed to road and highway construction or improvement projects. Though sharing a common concern over most environmental attributes, depending on their past experience in various projects, different agencies tend to lay varying emphasis on different biophysical and socio-environmental components and issues.

5.2 BASIC APPROACH

Potential significant impacts that need further study were identified on the basis of analytical review of baseline data, review of environmental conditions at site, analytical review of the underlying socio-economic conditions with the project influence area.

Since the project involves strengthening & widening to six-lane highway, the impacts identified are mostly direct and confined to the ROW. Only at critical locations, where the engineering, environmental and social aspects have warranted a shift from the existing alignment, bypasses / realignments have been proposed. To effectively voice the potential environmental issues likely to result due to the project, an in-depth analysis of the status of the existing environment has been carried out to identify the potential impacts - both beneficial as well as adverse.

Overall, it is found that the proposed project road will result in some adverse impacts to the physical, biological and socio-economic environment of the project. It needs to be mitigated by adopting appropriate mitigation measures in the design, construction and operation phase. Net environmental impacts will be insignificant and of short term in nature by observing proposed mitigation measures.

As further discussed below, the long-term impact is mainly beneficial. However, in the short-term, i.e. during the construction phase, there might be arise some negative environmental impacts, that can be kept under check through proper planning and adopting regulatory measures. The impacts on the various environmental components can occur at any of the following stages of the project planning and implementation.

- Planning and design stage;
- Construction stage; and
- Operation stage.

The description and magnitude of impacts for the various environmental components as visualized leads to the following observations:

5.2.1 Positive Environmental Impacts

The existing 4 lane road has to be widened and strengthened into 6 lanes to accommodate the fast growing traffic, avoided traffic congestion, minimize the accident, travel time and fuel consumption & pollution load along the corridor. It will also improve the road safety, noise quality due to smooth movement of vehicle and enhanced the aesthetic values. The drainage along the road will also considerably improve because of additional culverts are being built-up and this is another positive impact.

5.2.2 Negative Environmental Impacts

Quarries, borrow pits and other sources are possible source for construction material. Though the operation of quarries is an independent and regulated activity, however the requirements of stone aggregate for the project will cause resource depletion. Similarly river sand is a scarce commodity in the entire section of project road and thus borrowing of sand from riverbed will also have resource depletion impact. Therefore as an alternative, a possibility for using stone dust has been explored. However, transportation of stone chips from its source to the construction site will have negative impact on the air quality. It is also expected that the proposed project may influence negatively but marginally on the movement of cattle. The speed and density of the transports will be the main factor to disturb the cattle to cross the road and agricultural field after construction.

The impacts due to project location are generally irreversible and could be improved through environmental enhancement measures. The anticipated impacts have been assigned the value between 0 and 1 depending upon magnitude of impact based on its importance. Impact classification is presented in Table 5-1.

Table 5-1: Impact Classification

Category	Description	Impact
A	Irreversible & Unacceptable	0.8-1.0
B	Undesirable & Unacceptable	0.6-0.8
C	Undesirable & can be mitigated	0.2-0.6
D	Insignificant	<0.2

Based on the impacts a checklist of environmental parameters is also prepared in order to assess the significant / non-significant, reversible / irreversible and long term / short term impacts due to planned project activities. Checklist is the list of environmental parameters or impact indicators which the environmentalist is encouraged to consider when identifying the potential impacts. Based on proposed activity magnitude and rating is summarized in Table 5.2.

Table 5-2: Evaluation of Environmental Impacts

Proposed Activity	Potential Impacts	Nature of Potential Impact		Rating of Impact	
		Beneficial or Adverse	Direct or Indirect	Significance of Impact	Magnitude of Impact
Construction of road & Bypasses	Demand/Supply Road Infrastructure Employment	Beneficial Beneficial Beneficial	Direct Indirect Direct	Medium Medium Medium	Medium Medium Low
Raw Material Consumption	Stone	Adverse	Indirect	Medium	Low
Fuel Consumption	National Reserves	Adverse	Direct	High	Medium
Water Consumption	Natural Resources Ground Water	Adverse Adverse	Direct Direct	Medium Low	Low Low
Transportation of materials	Atmospheric Emission Ambient Noise Public Health & Safety	Adverse Adverse Adverse	Direct Direct Indirect	High Low Medium	Low Low Low
Waste water Discharge	Land/Water	Adverse	Direct	Low	Insignificant
Solid Waste Disposal	Ground Water Soil Quality	Adverse Adverse	Indirect Indirect	Medium Low	Insignificant Insignificant
Noise Generation	Ambient Noise	Adverse	Direct	Low	Significant

Proposed Activity	Potential Impacts	Nature of Potential Impact		Rating of Impact	
		Beneficial or Adverse	Direct or Indirect	Significance of Impact	Magnitude of Impact
Storage & Handling of hazardous material	Public health & Safety	Adverse	Indirect	High	Low
Construction spoils disposal	Land Water	Adverse Adverse	Direct Direct	Low Medium	Low Low

Note: (Impact) High-Irreversible; Medium-Mitigated through measures; Low-mitigation required

During the environmental evaluation, those impacts, which are likely to take place due to the project and will have bearing on the environmental impacts and sensitivity, have been considered and assessed. These are discussed in following sections.

5.3 IMPACTS UPON ON ENVIRONMENT

5.3.1 Impacts on Physical and Biological Environment

Project Activity	**Planning and Design Phase**	**Pre-construction Phase**		**Construction Phase**					**Operation**	**Indirect effects of operation or Induced development**
Env. component Affected	Land acquisition	Removal of Structures	Removal of trees and vegetation	Earth works including quarrying	Laying of pavement	Vehicle & Machine operation & maintenance	Concrete & crusher plants	Sanitation & Waste (labour campus)	Project operation	
Air		Dust generation during dismantling	Reduced buffering of air and noise pollution, Hotter, drier microclimate	Dust generation	Asphalt odour	Noise, dust, pollution	Noise, soot, odour, dust, pollution	Odour / smoke	Noise, dust, pollution	other pollution
Land	Loss of productive Land	Generation of debris	Erosion and loss of top soil	Erosion and loss of top soil		Contamination by fuel and lubricants Compaction	Contamination Compaction of soil	Contamination from wastes	Spill from accidents Deposition of lead	Change in cropping pattern
Water	Loss of water sources	Siltation due to loose earth	Siltation due to loose earth	Alteration of drainage Break in continuity of ditches Siltation, Stagnant water pools in quarries.	Reduction of ground water recharge area	Contamination by fuel and lubricants	Contamination by leakage or fuel	Contamination from wastes Overuse	Spill Contamination by fuel, lubricants	Increased contamination of ground water
Noise		Noise Pollution	Noise Pollution due to machinery	Noise Pollution		Noise pollution	Noise Pollution		Noise Pollution	Noise pollution
Flora		Loss of Biomass		Lowered productivity Loss of ground for vegetation		Removal of vegetation	Lower productivity Use as fuel wood	Felling trees for fuel	Impact of pollution on vegetation Lowered productivity Toxicity of vegetation.	
Fauna		Disturbance Habitat loss	Disturbance	Disturbance		Disturbance	Disturbance	Poaching	Collision with traffic	Distorted habitat

5.3.2 Impacts on Cultural and Socioeconomic Environment

Project Activity	**Planning and Design Phase**	**Pre-construction Phase**			**Construction Phase**					**Operation**	**Indirect effects of operation or Induced development**
Env. Component Affected	**Design decisions & Implementation policies**	**Land acquisition**	**Removal of Structures**	**Removal of trees & vegetation**	**Earth works including quarrying**	**Laying of pavement**	**Vehicle & machine operation & maintenance**	**Asphalt and crusher plants**	**Labour Camps**	**Project operation**	-
Agricultural land	-	Change in land prices	Loss of land economic value	Loss of standing crops	Loss of productive land	-	-	Dust on agricultural land reduce n productivity			Conversion of Agricultural Land
Buildings and built structures	-	-	Loss of structures, Debri generation, Noise and Air pollution	-	Noise, vibration may cause damage to structures		Noise, vibration may cause damage to structures	Dust accumulation on building and structure	-	Vibration and noise	Change in building use and characteristics
People and Community	Anxiety and fear among community		Displacement of people Psychological impact on people loss of livelihood	Loss of shade & community trees, Loss of fuel wood and fodder, Loss of income	Noise and Air pollution	Odour and dust	Noise and Air pollution, Collision with pedestrians livestock and vehicles	Air and noise pollution and discomfort	Community clashes with migrant labour	Noise pollution, Risk of accident	Noise pollution, Risk of accident

Project Activity	Planning and Design Phase	Pre-construction Phase			Construction Phase					Operation	Indirect effects of operation or Induced development
Cultural Assets	-	-	Displacement loss of structure from RoW	Loss of sacred trees.	Noise, vibration may cause damage to structure		Damage from vibration & air pollution	Dust accumulation	-	Damage from vibration & air pollution	-
Utilities and Amenities -	-	Interruption in supply					Damage to utility and amenities	Dust accumulation on water bodies	Pressure on existing amenities		
Labour's Health & Safety					Increase of stagnant water and disease	Asphalt odour and dust	Collisions with vehicles, pedestrians & livestock	Impact on health due to inhale of dust	Increase in communicable diseases	Collisions pedestrians & livestock	

5.4 MITIGATION AND ENHANCEMENT MEASURES

The brief description of the mitigation measures opted and designed for the project. This Chapter has been structured as per the impacts those have been identified in Assessment of Environmental Impacts**.**

The chapter also refers to the additional measures to be taken during the execution of the project for the benefit of the road users and the surrounding communities. This does not include several other enhancements that occur inherently because of the nature of the project such as improved drainage, pedestrian facilities, illumination in urban stretches, prevention of existing erosion, overtopping and flooding etc.

Basic Approach

To minimize the adverse impacts of the project, mitigation measures have been formulated and will be implemented during the project implementation. The mitigation measures would be directed towards the restoration of the dynamic balance of nature.

The mitigation of negative impacts involves reduction in magnitude of the adverse impacts during various stages of the project through:

- Alterations during design, site clearance, Construction and Operation phases of the road project to avoid adverse impacts, and
- Additional mitigation measures for unavoidable negative impacts on the environmental components.

The adverse impacts of the project on the surrounding environment are described in the following section.

Quarries and Borrow Areas

The quarry material will be obtained from licensed quarries (given in **Annexure 5A**), which operate with proper environmental clearances, including clearance under the Air Act. If the contractors decide to use quarries other quarries, they would be required to obtain material from licensed quarries only.

If new borrow areas are selected, it will be ensured by the contractor that, there will be no loss of productive soil, and that the requisite environmental considerations are met with.

To avoid any embankment slippages, the borrow areas will not be dug continuously, and the size and shape of borrow pits will be decided by the Supervision Consultants. The borrow pits will be redeveloped, wherever required by creating ponds for fisheries, etc; or by leveling an elevated, raised earth mound. If this is not possible,

then excavation slopes will be smoothed and depression will be filled in such a way that it looks more or less like the original ground surface. Re-plantation of trees in borrows areas will also to be carried out, if required.

Precautionary measures as the covering of vehicles will be taken to avoid spillage during transport of borrow materials. To ensure that the spills likely to 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.

Mitigation for Quarries

The following mitigation measures will be implemented.

- Aggregates will be sourced only from the licensed quarry sites, complying with the environmental and other applicable regulations,
- Occupational Safety procedures/practices for the work force will be adhered in all quarries as per law,
- Quarry and crushing units will have adequate dust suppression measures like sprinkler in work area and along approach road to quarry site,
- Regular monitoring of the quarries by the supervision consultant to ensure compliances of environmental management and monitoring,
- Water tankers with suitable sprinkling system will be deployed along the haulage roads. Water will be sprinkled regularly to suppress the airborne dust due to the dumper/truck movement. Required frequency will be determined by the site condition.
- Trucks deployed for the material transportation will be spillage proof.

Mitigation of Borrow Areas

Impact due to borrowing soil can be significantly mitigated by the following measures:

- Prior approval will be issued from the concerned authorities and all local environmental regulations will be complied,
- Within all identified borrow areas, the actual extent of area zones to be excavated will be demarcated with signboards and the operational area will be access controlled,
- Borrow operation plant and machineries will strictly conform to Central Pollution Control Board (CPCB) noise standards;

- Provision of protective wears like earplugs will be made available to the workforce exposed to noise level beyond the threshold limits. Rotation of personnel will be ensured.
- All operation area will be water sprinkled to control dust levels to the National Ambient Air Quality Standards.

5.5 IMPACT MITIGATION MEASURES

The best way of impact mitigation is to prevent the event occurring. All efforts should be made to locate the developmental activities in an area free of agricultural lands, cyclones earthquakes, ecologically sensitive, erosion, forests, flooding, human settlements, land slides, natural scenic beauty, water logging. In case this is not feasible the next step is to look at the raw materials/technologies/ processes alternatives which produce least impact i.e. adopting or using processes or technologies which are efficient and produce recyclable wastes/minimum waste/wastes that can be easily disposed, without affecting the environment. However if the developmental activity produce the adverse impact action has to be taken to mitigate the same. Following are some of the methods available.

Air

- Attenuation of pollution on pathway or protection of receptor through green belts.
- Particulate removal devices such as: cyclones, setting chambers, scrubbers, electrostatic precipitators, and bag houses
- Gas removal devices using absorption (liquid as a media), adsorption (molecular sieve), and catalytic converters.
- Uses of protected, controlled environment, such as oxygen masks, Houston Astrodome, etc.
- Control of stationary source emission (including evaporation, incineration, absorption, condensation, and material substitution)
- Use of masks
- Dilution of odorants (dilution can change the nature as well as strength of an odour)
- Odour counteraction or neutralise (Certain pairs of odours in appropriate concentrations may neutralise each other)
- Odour masking or blanketing (certain weaker malodours may be suppressed by a considerably stronger good odour).

Noise

Mitigation measure for Noise Environment

The noise levels in the project area during the construction stage will be increased due to many construction activities and construction equipments. Typical noise levels associated with the various construction activities and construction equipments are presented in **Annexure 5B**. Proper Mitigation are given below

- The mitigation measures may include damping, absorption, dissipation, and deflection methods. Common techniques involve constructing sound enclosures, applying mufflers, mounting noise sources on isolators, and/or using materials with damping properties.
- Performance specifications for noise represent a way to insure the procured item is controlled.
- Ear protective devices should be used. When an individual is exposed to steady noise levels above 85-dB (A), in spite of the efforts made to reduce noise level at the source, hearing conservation measures should be initiated.
- Uses of noise barrier at excess noise producing location near salience zone (**Table 4-5**). Proposed noise barriers and their utilization are given in **Annexure 5C.**

Water

- Conjunctive use of ground/surface water, to prevent flooding/water logging/depletion of water resources. Included are land use pattern, land filling, lagoon/reservoir/garland canal construction, and rainwater harvesting and pumping rate.
- Minimise flow variation from the mean flow
- Segregation of different types of wastes
- Storing of oil wastes in lagoons should be minimized in order to avoid possible contamination of the ground water system.
- Surface runoff from oil handling areas should be treated for oil separation before discharge into the environment. If oil wastes are combined with sanitary sewage, oil separation will be necessary at the wastewater treatment facility.
- All effluents containing acid/alkali/organic/toxic wastes should be processed by treatment methods.
- The treatment methods may include biological or chemical processes.

- The impact due to suspended solids may be minimised by controlling discharge of wastes that contain suspended solids; this includes sanitary sewage and industrial wastes.
- Also, all activity that increases erosion or contributes nutrients to water (thus stimulating alga growth) should be minimised.
- For wastes containing high TDS treatment methods include removal of liquid and disposal of residue by controlled land filling to avoid any possible leaching of the fills.
- All surface runoffs around mines or quarries should be collected treated and disposed.
- Cooling towers can be used to convert once-through systems into closed systems. Treated wastewater (such as sewage, industrial wastes, or stored surface runoffs) can be used as cooling water makeup.
- Chromium may be recovered from cooling tower blow down before treatment and disposal of tower blow down. .
- Cooling water can be processed or stored in artificial ponds until the difference in temperature between it and the receiving water is nearly equal
- Waste-containing radioactivity should be treated separately by means of de-watering procedures, and solids or brine should be disposed of with special care.

Land

- The environmental impact of soil erosion can best be mitigated by removing vegetative cover only from the specific site on which construction is to take place and by disturbing the vegetation in adjacent areas as little as possible. Land clearing activities should be kept to the absolute minimum and use crushed stone rather than asphalt or concrete for surfacing parking areas should be attempted.
- Disturbing the existing vegetation and natural contour of the land as little as possible can mitigate increases in surface runoff. Vegetation along watercourses should not be cleared indiscriminately.. Neither should potholes or swamps be drained unless absolutely necessary for successful completion of the activity.
- Construction, land management, or mining activities that result in the soil being laid bare could be scheduled in such a way that some type of vegetative cover appropriate to the site could be established prior to the onset of intense

rain or windstorms. If grass is to be seeded, mulch of straw will help to protect the soil from less extreme erosive forces until vegetative and root development begins.

- Natural drainage patterns can often be maintained by preparing sodden waterways or installing culverts.
- Check dams built near construction sites can reduce the quantity of eroded soil particles reaching free-flowing streams or lakes.
- Use of floating foundations and height restrictions in earthquake zones and increased foundation height, wall strength, and roof support in areas periodically subject to cyclones can reduce the hazards.
- All forms of temporary structures should be avoided from the flood plain, and all permanent structures should be raised to a height above the level which flood waters can be expected to reach once every 100 years (100-year flood).
- Installation of underground drainage structures helps to reduce sediment loads
- Engineering plans can be drawn to reduce the area of earth cuts on fills below what might otherwise be acceptable, provide physical support for exposed soil or rock faces, concentrate or distribute as appropriate the weight loading of foundations to areas or state better able to support that weight,
- use small charges for mining/blasting,
- restricting the number, frequency and area of movement of heavy machinery
- Compatibility between adjacent land uses can best be assured by providing a green belt between the proposed activity and nearby properties where any significant degree of incompatibility is likely to result.

Ecology

- Intruding as little as possible on their habitat can best mitigate the impact of activities on animals. If such animals use the area where the activity will take place, the activity should be concentrated to the maximum extent possible in those parts of the area that they least often frequent.
- During the planning phase of an activity, an attempt should be made to avoid extending into the home range wild animals. If this is not feasible, the activity should be completed, as quickly as possible, and regular and sustained use of the area over time should be minimized.
- Regular or sustained intrusions of men or equipment into nesting areas of birds should be avoided to the maximum possible extent, especially while eggs are

being incubated by the adults and until the young have left the nest. The sanitation cuttings of non-commercial individual trees should destroy no known nests.

- Restricting the input of polluting substances into watercourses, estuaries, and the open sea can mitigate Impacts upon fish and shellfish populations. Additionally, when a part of the activity involves water level control, changes in such levels should be programmed to the extent it is possible to do so in a way that will minimally disturb nesting and feeding habitat.

Socio-economic Aspects

- Including, in the proposed activity funds, a welfare plan that would permit assistance for those people who would be impacted might reduce some adverse impacts. For example, when a number of jobs are to be disbanded, a service could be set up in which those people who would be without jobs could obtain assistance in locating jobs in other areas.
- In problems caused by relocation, effective rehabilitation and resettlement schemes may be drawn.

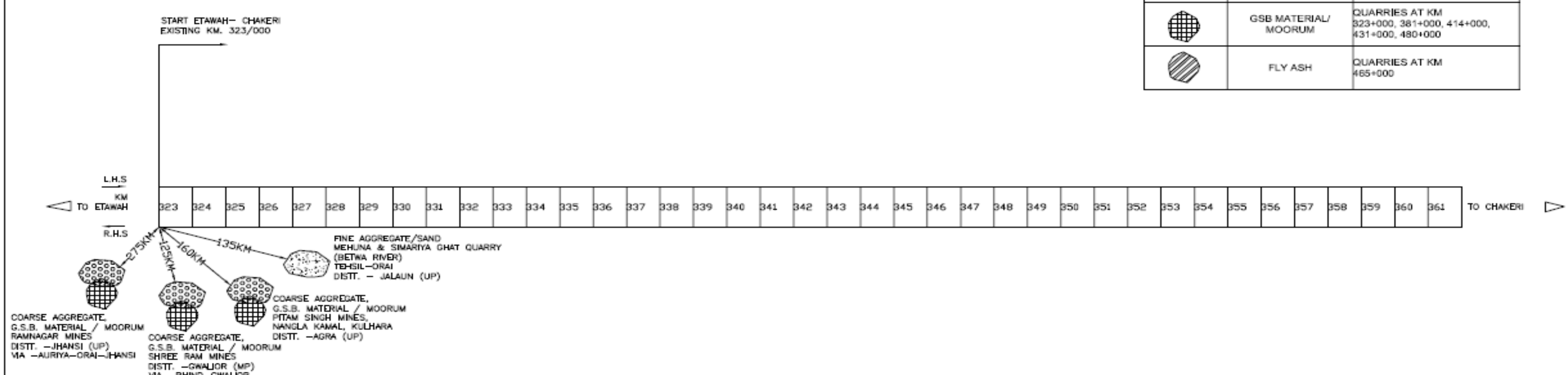
Annexure 5 A:

Sand Quarry Chart

QUARRY/BORROW AREA LEAD CHART

AVAILABILITY OF ROAD MATERIAL ON ETAWAH–CHAKERI
EXISTING KM 323/000 TO EXISTING KM 488/000 ON NH–2 (UP)

SYMBOL	TEST MATERIAL	LOCATION OF QUARRY / MINES
	COARSE AGGREGATE/ STONE	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FINE AGGREGATE/ SAND	QUARRIES AT KM 323+000, 380+000, 381+000, 414+000, 431+000, 480+000, 488+000
	SOIL BORROW AREA	QUARRIES AT KM 380+000, 381+000, 414+000, 422+000, 480+000, 488+000
	GSB MATERIAL/ MOORUM	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FLY ASH	QUARRIES AT KM 465+000



KM	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361
COARSE AGGREGATE/STONE	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163
FINE AGGREGATE /SAND	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
MOORUM/G.S.B. MATERIAL	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163
BORROW AREA SOIL	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
FLY ASH	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105

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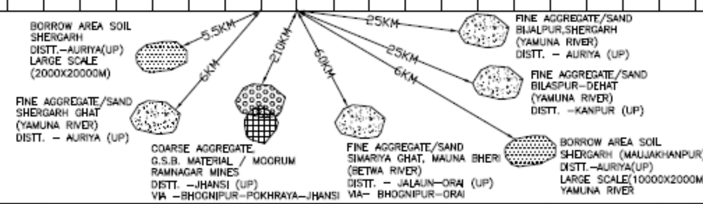
QUARRY/BORROW AREA LEAD CHART

AVAILABILITY OF ROAD MATERIAL ON ETAWAH–CHAKERI
EXISTING KM 323/000 TO EXISTING KM 488/000 ON NH–2 (UP)

SYMBOL	TEST MATERIAL	LOCATION OF QUARRY / MINES
	COARSE AGGREGATE/ STONE	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FINE AGGREGATE/ SAND	QUARRIES AT KM 323+000, 380+000, 381+000, 414+000, 431+000, 480+000, 488+000
	SOIL BORROW AREA	QUARRIES AT KM 380+000, 381+000, 414+000, 422+000, 480+000, 488+000
	GSB MATERIAL/ MOORUM	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FLY ASH	QUARRIES AT KM 465+000

L.H.S → KM ◁ TO ETAWAH … TO CHAKERI ▷ R.H.S



KM	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381
COARSE AGGREGATE/STONE	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183
FINE AGGREGATE /SAND	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	7
MOORUM/G.S.B. MATERIAL	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183
BORROW AREA SOIL	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	6
FLY ASH	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85

KM	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
COARSE AGGREGATE/STONE	182	181	180	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164
FINE AGGREGATE /SAND	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
MOORUM/G.S.B. MATERIAL	182	181	180	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164
BORROW AREA SOIL	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20	19	18	17	16
FLY ASH	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66

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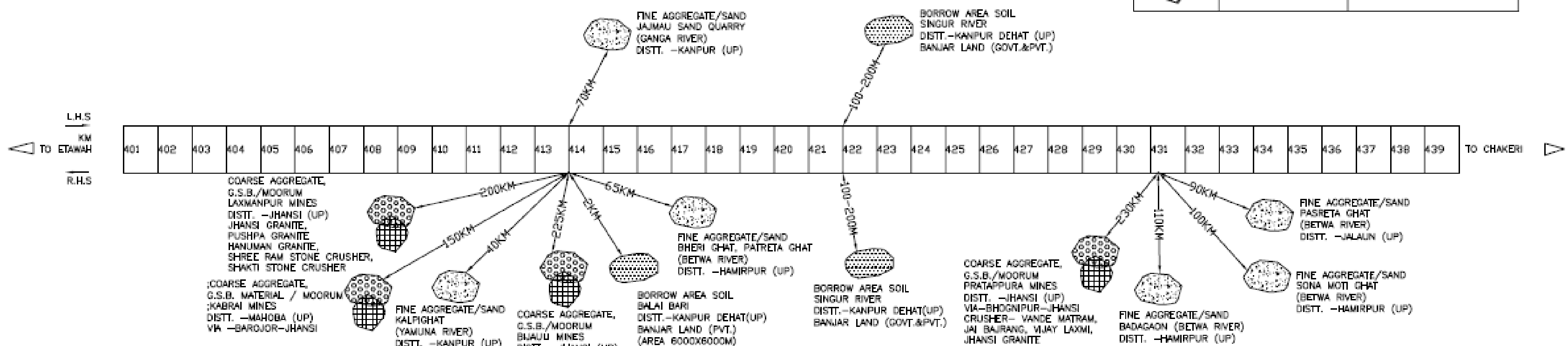
QUARRY/BORROW AREA LEAD CHART

AVAILABILITY OF ROAD MATERIAL ON ETAWAH–CHAKERI
EXISTING KM 323/000 TO EXISTING KM 488/000 ON NH–2 (UP)

SYMBOL	TEST MATERIAL	LOCATION OF QUARRY / MINES
	COARSE AGGREGATE/ STONE	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FINE AGGREGATE/ SAND	QUARRIES AT KM 323+000, 380+000, 381+000, 414+000, 431+000, 480+000, 488+000
	SOIL BORROW AREA	QUARRIES AT KM 380+000, 381+000, 414+000, 422+000, 480+000, 488+000
	GSB MATERIAL/ MOORUM	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FLY ASH	QUARRIES AT KM 465+000



COARSE AGGREGATE/STONE	163	162	161	160	159	158	157	156	155	154	153	152	151	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
FINE AGGREGATE /SAND	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	57	56	55	54	53	52	51
MOORUM/G.S.B. MATERIAL	163	162	161	160	159	158	157	156	155	154	153	152	151	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
BORROW AREA SOIL	15	14	13	12	11	10	9	8	7	6	5	4	3	2	3	4	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FLY ASH	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27

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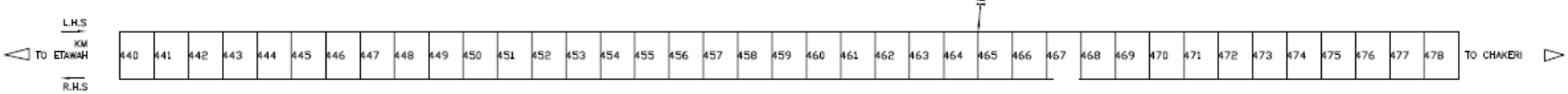
QUARRY/BORROW AREA LEAD CHART

AVAILABILITY OF ROAD MATERIAL ON ETAWAH–CHAKERI

EXISTING KM 323/000 TO EXISTING KM 488/000 ON NH–2 (UP)

SYMBOL	TEST MATERIAL	LOCATION OF QUARRY / MINES
	COARSE AGGREGATE/ STONE	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FINE AGGREGATE/ SAND	QUARRIES AT KM 323+000, 380+000, 381+000, 414+000, 431+000, 480+000, 488+000
	SOIL BORROW AREA	QUARRIES AT KM 380+000, 381+000, 414+000, 422+000, 480+000, 488+000
	GSB MATERIAL/ MOORUM	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FLY ASH	QUARRIES AT KM 465+000

FLY ASH
PANKI THERMAL POWER PLANT
DISTT. –KANPUR (UP)



COARSE AGGREGATE/STONE	176	177	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142
FINE AGGREGATE /SAND	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
MOORUM/G.S.B. MATERIAL	176	177	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142
BORROW AREA SOIL	18	19	20	21	22	23	24	25	26	27	28	29	30	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
FLY ASH	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	10	11	12	13	14

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QUARRY/BORROW AREA LEAD CHART

AVAILABILITY OF ROAD MATERIAL ON ETAWAH–CHAKERI
EXISTING KM 323/000 TO EXISTING KM 488/000 ON NH–2 (UP)

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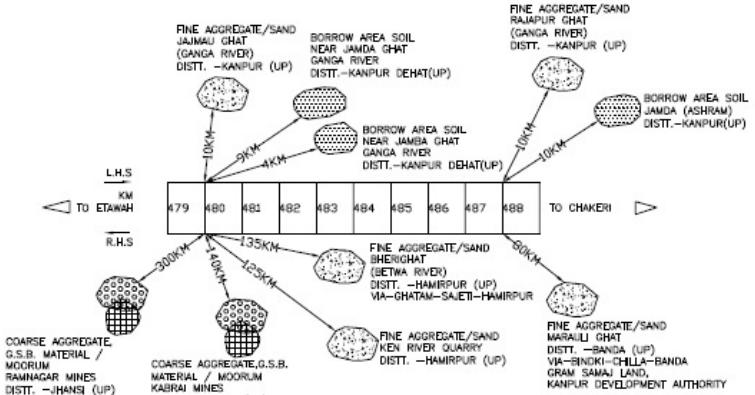
	SOIL BORROW AREA	QUARRIES AT KM 380+000, 381+000, 414+000, 422+000, 480+000, 488+000
	GSB MATERIAL/ MOORUM	QUARRIES AT KM 323+000, 381+000, 414+000, 431+000, 480+000
	FLY ASH	QUARRIES AT KM 465+000



COARSE AGGREGATE/STONE	141	140	141	142	143	144	145	146	147	148
FINE AGGREGATE /SAND	11	10	11	12	13	14	13	12	11	10
MOORUM/G.S.B. MATERIAL	141	140	141	142	143	144	145	146	147	148
BORROW AREA SOIL	5	4	5	6	7	8	9	10	11	10
FLY ASH	15	16	17	18	19	20	21	22	23	24

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Annexure 5B

Typical noise levels of principal construction equipments (Noise Level in db (A) at 50 Feet)

Clearing		**Structure construction**	
Bulldozer	80	Crane	75-77
Front end loader	72-84	Welding generator	71-82
Jack hammer	81-98	Concrete mixer	74-88
Crane with ball	75-87	Concrete pump	81-84
		Concrete vibrator	76
Excavation and Earth Moving		Air compressor	74-87
Bulldozer	80	Pneumatic tools	81-98
Backhoe	72-93	Bulldozer	80
Front end loader	72-84	Cement and dump trucks	83-94
Dump truck	83-94	Front end loader	72-84
Jack hammer	81-98	Dump truck	83-94
Scraper	80-93	Paver	86-88
Grading and Compaction		**Landscaping and clean-up**	
Grader	80-93	Bulldozer	80
Roller	73-75	Backhoe	72-93
		Truck	83-94
Paving		Front and end loader	72-84
Paver	86-88	Dump truck	83-94
Truck	83-94	Paver	86-88
Tamper	74-77	Dump truck	83-94

Source: U.S. Environmental Protection Agency, noise from Construction Equipment and Operations. Building Equipment and Home Appliance (NJID. 300.1. December 31, 1971).

Annexure 5C

Proposed noise barriers

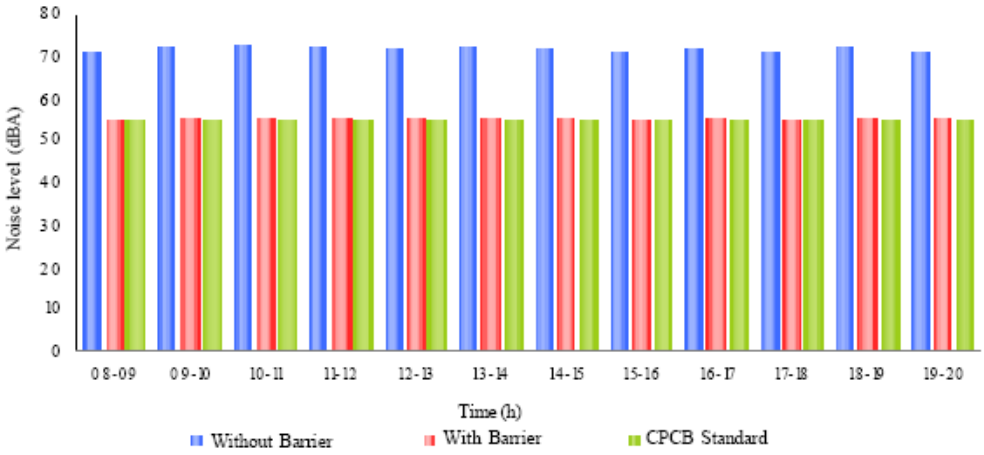
For the mitigation of noise impact near silence zone on the NH-2 (schools, hospital, collage and religious structures) shall be provided on the basis noise level. Noise barriers are normally most effective in reducing noise for areas that are within approximately 61 meters (200 feet) of a highway (usually the first row of homes).

Guidelines for noise barrier

Noise in the corridor generally reflect at 80^0 so minimum 60 meter length of noise barrier should be provided. Multiple reflections of noise between two parallel plane surfaces, such as noise barriers or retaining walls on both sides of a highway, can theoretically reduce the effectiveness of individual barriers. However, studies of this issue have found no problems associated with this type of reflective noise. Any measured increases in noise levels have been less than can be perceived by normal human hearing, that is, less than 3 dB. Studies have suggested that to avoid a reduction in the performance of parallel reflective noise barriers, the width-to-height ratio of the roadway section to the barriers should be at least 10:1. The width is the distance between the barriers, and the height is the average height of the barriers above the roadway. This means that two parallel barriers 3 meters (10 feet) tall should be at least 30 meters (100 feet) apart to avoid any reduction in effectiveness (**Fig.5-1**) . These studies have also shown that any reduction in performance can be eliminated through the use of sound absorptive noise barriers.

Fig. 5-1: Proposed Noise Barrier

Efficiency of noise barrier



Source: *1*R. K. Mishra, 2M. Parida, 3S. Rangnekar,Sep., 2010. Evaluation and analysis of traffic noise along bus rapid transit system corridor. pp-748.*

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CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAM

6.1 GENERAL

The adverse environmental impacts identified during the Environmental Impact Assessment process of the proposed project may increase further during the construction as well as during post-construction phase. Monitoring of environmental factors and constraints will enable agencies to identify the changes in the environmental impacts at particular locations, application of mitigative measures and utilisation of standard design guidelines for finalization of alignment design. Monitoring will also ensure that actions taken are in accordance with the construction contract and specifications. It provides a basis for evaluating the efficiency of mitigation and enhancement measures, and suggests further actions needed to be taken to achieve the desired effect.

To ensure the effective implementation of the EMP, it is essential that an effective monitoring program be designed and carried out.

The monitoring includes:

- Visual observations;
- Selection of environmental parameters at specific locations;
- Sampling and regular testing of these parameters.

6.2 OBJECTIVES

The Objectives of environmental monitoring programme are:

- Evaluation of the efficiency of mitigation and enhancement measures;
- Updating of the actions and impacts of baseline data;
- Adoption of additional mitigation measures if the present measures are insufficient;
- Generating the data, which may be incorporated in environmental management plan in future projects.
- Satisfying the legal and community obligations

The environmental monitoring plan contains:

- Performance indicators

- Environmental monitoring programme
- Reporting system
- Budgetary provisions

6.3 PERFORMANCE INDICATORS

The physical, biological and social components identified to be particularly significant in affecting the environment at critical locations have been suggested as Performance Indicators (PIs). The performance indicators will be evaluated under three heads:

a) Environmental condition indicators to determine efficiency of environmental management measures in control of air, noise, water and soil pollution.

b) Environmental management indicators to determine compliance with the suggested environmental management measures.

c) Operational performance indicators that have been devised to determine efficiency and utility of the proposed mitigation measures.

The Performance Indicators and monitoring plans will be prepared for the project for effective monitoring.

6.4 RESPONSIBILITIES FOR MONITORING

The responsibility for monitoring of implementation of the EMP will rest with the Environmental Management Unit (EMU). Mitigation and enhancement measures adopted in final design will be explicitly identified under the Bill of Quantity (BOQ) so that performance and completion is readily documented. The NHAI will visually assess the progress of Environmental Management Unit and the work of Contractors. If the level of impact is determined to be high, further monitoring will be done by a recognized 'A' category laboratory of the concerned State Pollution Control Board (SPCB) and assessed for verification of the increased or decreased emission level and pollutants along the project road, and if found more appropriate control measures would be exercised.

6.5 PERFORMANCE INDICATORS

In order to evaluate the effectiveness of EMP at project level, certain physical, biological and social components identified. These component needs to be analyzed based on project specific conditions and data generated. The key quality components include Air quality, Water quality, Noise Levels around sensitive locations, Plantation / re-plantation success / survival rate, Erosion indices, Restoration of quarries and borrow areas, Quality of human health, Accident frequency.

6.6 ROUTINE MONITORING

During the construction and post-construction phase, ambient air quality, water quality (surface and ground water), effluent (if any released from construction work site / camp) and noise level will be monitored as and when required depending upon the type, nature and duration of the project using standardized monitoring methodologies and laboratory testing facilities / techniques.

Site Selection

Monitoring stations have been identified based on observation / site conditions such as nature of construction, diversions, congestion, parking places, bus / taxi stands , number and frequency of vehicles, sources of pollutants (industrial / commercial / residential), environmental features and existence of sensitive / critical areas i.e. educational institutions, hospitals, archaeological / cultural sites. The frequency and duration of testing / sampling of air, water, noise levels and effluent quality within the ROW is to be fixed as per allotted time frame of the project and requirements of SPCB / CPCB and MoEF.

Methodology

Monitoring methodology covers the following key aspects:

- Components to be monitored;
- Parameters for monitoring of the above components;
- Monitoring frequency;
- Monitoring standards;
- Responsibilities for monitoring;
- Monitoring costs.

6.7 ENVIRONMENTAL MONITORING PLAN

Monitoring plan for various performance indicators at construction and monitoring stage is summarized in **Table 6.1.**

6.8 REPORTING PROCEDURES

Mitigation and enhancement measures adopted in the final design have been identified in the contract documents and Bill of quantities so that performance and completion is effective. The periodic site visits of the EO of the IC and the EE of the PMT will keep a record of progress as well as the site-specific EMP implementation records. The frequent meeting of the EO of IC with the Contractors will ensure any information and

communication gap with regard to the Construction phase environmental management at construction site; labour and construction camps quarry and borrow areas etc. It is necessary that the EO of IC should visit the sites for evolving a concept for the Environmental Management with regard to the siting of various construction requirements. The various reporting guidelines and arrangements are as follows.

The monthly report should contain separate sections (approx. 1-2 pages per section) for each of the following:

1. Quarries
2. Construction camps
3. Borrow areas
4. Sand mining
5. Spoils and debris disposal
6. Waste
7. Traffic management & road safety
8. Mitigation measures along the project roads
9. Enhancement measures along the project roads
10. Environmental parameter monitoring activities (air, noise and water quality)
11. Other issues along the project roads
12. The monthly report should necessarily contain a section on implementation arrangements. This section should include the environmental engineer's work and timesheet. This should be a simple table that clearly indicates the activities carried out by the environmental engineer during the month. This table should include site visits to construction camps, quarries, borrow areas, active road construction areas, disposal sites and accident prone areas. This section should also cover training / orientation activities that were carried out within the contractor's team and the environmental parameter monitoring done.
13. There should be only one monthly report per contract package.
14. Signed copies of these reports should be submitted by the Contractor to the Supervision Consultants by seventh of every calendar month.
15. Supervision Consultants should verify and countersign these reports. These should be submitted by the Supervision Consultants to the PMT by the 10^{th} day of every month.

16. At least, three copies of these reports should be prepared. One copy should be retained by the Contractor, another with the Supervision Consultants and the third should be for the PMT

6.9 REPORTING BY IC – EMP QUARTERLY PROGRESS REPORTS - NOTES1

1. The quarterly report should be prepared by the Independent Consultants.
2. The quarterly report should summarize and draw the key points from the three monthly progress reports submitted by the contractor during the quarter.
3. The quarterly report should contain an introductory section which gives the basic information on the contract package, a brief description of the implementation progress made till date and, particularly, the progress made during the past month.

The quarterly report should contain separate sections (approx. 1-2 pages per section) for each of the following:

1. Construction camp
2. Quarries
3. Borrow areas
4. Sand mining
5. Spoils and debris disposal
6. Waste
7. Traffic management & road safety
8. Mitigation measures along the project roads
9. Enhancement measures along the project roads
10. Environmental parameter monitoring activities (air, noise and water quality)

The quarterly report should necessarily contain a section on implementation arrangements. This section should include a summary of the Contractor's environmental engineer's work and timesheet, and that of the IC's environmental officer. This should be a simple table that clearly indicates the activities carried out. This table should include site visits to borrow area, active road construction areas, disposal sites, accident prone areas, quarries - at least, twice per month). This section should also cover training / orientation activities that were carried out within the Contractor's team and the environmental parameter monitoring done during the quarter.

Table 6-1: Environmental Monitoring Plan

Env. Component	Project Stage	Monitoring						Institutional Responsibility	
		Parameters	Special Guidance	Standards	Location	Frequency	Duration	Implementation	Supervision
Air	Construction Stage	PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, HC	High volume sampler to be located 50 m from the plant in the downwind direction. Use method specified by CPCB for analysis	Air (P&CP) Act,1981 and its amendment	Hot mix Plant / Batching Plant	Quarterly for three years	Continuous 24 hours or for 1 full working day	Contractor through approved monitoring agency	P I U, NHAI
		PM_{10}, $PM_{2.5}$,	High volume Sampler to be located 40 m from the earthworks site downwind direction. Use method specified by CPCB for analysis	Air (P&CP) Act, 1981 and its amendment.	Stretch of the road where construction is in progress at the site	Quarterly for three years	Continuous 24 hours or for 1 full working day	Contractor through approved monitoring agency	P I U, NHAI
	Operational Stage	PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, HC	High volume sampler to be located 50m from the plant in the downwind direction. Use method specified by CPCB for analysis	Air(P&CP) Act,1981 and its amendment	as specified by the Engineer NHAI / IC	Three times in a year for one year	Continuous 24 hours or for 1 full working day	P I U, NHAI	P I U, NHAI

Env. Component	Project Stage	Monitoring						Institutional Responsibility	
		Parameters	Special Guidance	Standards	Location	Frequency	Duration	Implementation	Supervision
Water Quality	Construction Stage	pH, BOD, COD, TDS, TSS, DO, Oil & Grease and Pb	Grab sample collected from source and analyze as per Standard Methods for Examination of Water and Wastewater	Water quality standards by CPCB	other locations identified by the independent consultant	End of summer before the onset of monsoon every year for 3 years	-	Contractor through approved monitoring agency	P I U, NHAI
	Operation Stage	Flooding and Cleaning of drains/water bodies	Flooding locations to be identified and choked drains, water bodies under going siltation and subject to debris disposal should be monitored under cleaning operations	Water quality standards of CPCB and cleaning shall be to the satisfaction of the engineer NHAI	as specified by the Engineer NHAI / IC	Thrice in monsoon and post-monsoon seasons in a year for 1 year	-	P I U, NHAI	P I U, NHAI
Noise Levels	Construction Stage	Noise levels on dB (A) scale	Free field at 1 m from the equipment whose noise levels are being determined	Noise standards by CPCB	At equipment yards	Once every month (max) for three years, as required by the engineer	Reading to be taken at 15 seconds interval for 15 minutes every hour and then averaged	Contractor through approved monitoring agency	P I U, NHAI

Env. Component	Project Stage	Monitoring						Institutional Responsibility	
		Parameters	**Special Guidance**	**Standards**	**Location**	**Frequency**	**Duration**	**Implementation**	**Supervision**
	Operation Stage	Noise levels on dB (A) scale	Equivalent Noise levels using an integrated noise level meter kept at a distance of 15 m from edge of Pavement	Noise standards by CPCB	As directed by the Engineer (At maximum 4 locations)	Thrice a year for 3 years during the construction period	Readings to be taken at 15 seconds interval for 15 minutes every hour and then averaged.	P I U, NHAI	P I U, NHAI
Soil Erosion	Construction Stage	Turbidity in Storm Water Silt load in ponds, water courses	----	As specified by the engineer NHAI / Water quality standards	As specified by the engineer NHAI / Independent Consultant, all along the project corridor	Pre-monsoon and post-monsoon seasons for 3 years	----	Contractor	P I U, NHAI
	Operational Stage	Turbidity in Storm Water Silt load in ponds, water courses	----	As specified by the engineer NHAI / Water quality standards	As specified by the engineer NHAI / Independent consultant, all along the project corridor	Three times a year for one year	----	P I U, NHAI	P I U, NHAI

Env. Component	Project Stage	Monitoring						Institutional Responsibility	
		Parameters	Special Guidance	Standards	Location	Frequency	Duration	Implementation	Supervision
Plantation of trees	Construction as well as Operational Stage	75% Plant Survival	The success of tree planting. Rate of survival after six months, one year and 18 months in relation to total planted	-	All along the project corridor	Maintenance for three to five years after plantation	-	NGO, and P I U, NHAI	P I U, NHAI
Construction Sites and Construction Camps	Construction Stage	Monitoring of: Storage Area Drainage Arrangements Sanitation in Construction Camps	The parameters as mentioned in chapter-4 but to be checked for adequacy.	To the satisfaction of the NHAI and the Water quality standards given by CPCB	At storage area and construction camps	Quarterly in the construction stage	----	Contractor	P I U, NHAI

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CHAPTER-7

ADDITIONAL STUDIES

7.1 TRAFFIC MANAGEMENT

Objectives of safety & traffic management are:

- To ensure protection of workers on site through strict enforcement of safety plans / standards, proper training to the workers and through deployment of trained & experience workers staff at site.
- To ensure applicable and adequate safety measures at site through proper barricading, safe access to site, lighting etc. and use of Personal Protective Equipments (PPE) & other safety tools and equipments.
- To ensure smooth, safe and uninterrupted traffic flow on the project highway at all times during construction.
- To give adequate information / warning sufficiently in advance about any situation / event / matter affecting the project highway through proper signage, demarcations etc.
- To ensure safety of road users against the hazards due to
  - ✓ Diversion
  - ✓ Road Condition
  - ✓ Low Visibility
  - ✓ Vehicle breakdown on carriageway
  - ✓ Repair work etc. in progress on carriageway or for any other reason resulting in disturbance in free flow of traffic.
- Avoid risk of damage/ disturbance to the properties adjacent to the project highway
- Ensure safety of project assets and public utilities.

7.1.1 Site Safety Rules and Regulations

General Rules

- No drugs, alcohol or alcoholic beverages are permitted on work site.

- All connection for electricity, water supply and other temporary facilities are made by authorized persons only and shall be in accordance with legal and contractual requirements.
- Work shall only be carried out if an authorized person has ordered it.

General Safety Hints to the Workers

- Wear protective clothing or apparel where required to do so.
- Must wear other safety gear where required / indicated.
- Keep work site and work areas tidy.
- Maintain personal hygiene e.g. washing hands before meals.
- Report an unsafe condition to your supervisor and stop unsafe actions immediately.
- Think before you act.
- Don't horseplay or distract others.
- Don't take shortcuts, your safety and that of others is more important.
- Obey all safety rules and signs.

Report all accidents however small, and have them treated immediately.

7.1.2 Pedestrian Safety

For the pedestrian safety, 25 pedestrian underpasses have been proposed at various locations. Many other measures have been suggested for the pedestrian safety viz.

1. Provision of safe walking places in the city with walkable footpaths.
2. Elevated and visible designated areas for crossing of roads at all possible places.
3. Separation of pedestrian movement from heavy moving traffic at all possible places.
4. Design of safer highways with separation of pedestrians and moving vehicles.
5. Speed control by road design, traffic calming and enforcement on highways, in residential areas and near traffic generators like educational institutions, business places, hospitals etc.,
6. Control of drinking and driving among vehicle users.
7. Recognizing heavy pedestrian movement areas and appropriate traffic management schemes.

8. Increasing visibility of people and vehicles on roads.
9. Improving public transportation facilities.
10. Strengthening trauma care facilities in hospitals.
11. Pedestrian education programmes for safe walking, road crossing and to walk facing the traffic at all times.
12. Increasing research inputs to develop pedestrian safety programmes.
13. A hand rail fixed at between 1.0 m and 1.2m above ground level, which should be reasonably smooth and rigid for pedestrians to hold to obtain guidance and some measure of support.
14. A visibility panel at least 150 mm deep which may be integral with the hand rail or if separate will be fixed so that its upper edge is a minimum of 0.9 m above ground level.
15. Kerb ramps or raised footways will be provided to help blind, poorly sighted, elderly and disabled people and for those with prams or wheelchairs.

7.1.4 Traffic Safety Plan

Work on the highway shall be carried out in a manner creating least interference to the flow of traffic. During execution of the work, a passage would be constructed for traffic either along a part of the existing carriageway under improvement or along a temporary diversion constructed close to the highway, as per site requirement. At least 10.5 width of road will remain open to traffic at all the times with suitable traffic diversion measures on granular or suitable surface as applicable/required.

Guiding principles and precautions

The guiding principles for safety in road construction zones are:

- Warn the drivers / road users clearly and well in advance
- Provide safe and clear marked lanes for guiding road users
- Provide safe and clearly marked buffer and work zones
- Provide adequate measures that control driver behavior through construction zones, lane closures or traffic diversions.

The following defined precautions shall be applied to all the work sites:

- All the signs and delineators shall be maintained in a clean and brightly painted condition at all times.
- Adequate lighting arrangements shall be made for proper visibility after sunset in construction zones.
- Adequate arrangements like frequent sprinkling of water shall be made to keep the area dust free.

For high traffic density roads, the following precautions must be taken:

(a) For safety of workmen

a. Workmen would be given safety instruction before work commences.

b. First aid training programs would be given to certain identified workmen and would be given responsibility to provide first aid to all the workmen at site.

c. Workers required on site during night hours must be provided with fluorescent jackets and safety helmet with reflective tapes.

d. Adequate barriers are provided to protect the workforce

e. Adequate temporary lighting is provided wherever it is required.

f. Adequate measures to be taken for the supply, use and storage of bituminous materials.

g. Suitable precautions to be taken for underground / overhead cables.

(b) For Safety of Road User

- The material, equipment and machinery would be stocked / parked in places sufficiently away from the road.
- Machinery would be parked at appropriate places with red flags and red tights on during night.
- Adequate measures are implemented to prevent operatives tools, materials, etc. from falling onto live carriageways.
- Speed limits are set, marked, and enforced.

7.1.5 Traffic safety measures and control

Following traffic safety measures shall be ensured during construction:

- Erection and maintenance of bamboo stack poles, caution signs and markings and flagmen for the information and protection of traffic approaching or passing through the section of the highway under improvement.
- All culverts and bridges would be barricaded by providing two drums at the two ends of culvert. In between drums, bamboo with red and white stripes would be installed with reflective tapes on them for night visibility. The area to be cordoned off with safety barricading tape. Caution boards shall be placed at two ends of the bridge.
- Red lights or warning lights of similar type shall be mounted on the barricades at night and kept it throughout from sunset to sunrise.
- At the points where traffic is to deviate from its normal path as per site requirement, the channel for traffic shall be clearly marked. At high traffic area, caution boards would be installed 60m before the respective diversion area "speed breaker" board. "DIVERSION' board would be installed at both the ends of the diversion road.
- All diversions would be kept free of dust by frequent application of water.
- Flagmen with red and green flag would be deployed at both ends of the respective diversion for the smooth flow of traffic as and when required.
- Deep excavation area would be barricaded by barricading tape.

For guidance of road user, caution boards with regulatory and warning information such as "GO SLOW, MEN AT WORK" & for illiterates, pictorial "GO SLOW, WORK IN PROGRESS" would be installed at 100m intervals.

7.1.6 Traffic Control Devices

Traffic control devices are the devices which perform the crucial task of warning, informing and alerting the driver / road user apart from guiding the vehicle movements so that the driver of the vehicle as well as the workers on site are protected and safe passage to the traffic is possible.

The primary traffic control devices used in work sub-zones are signs, delineators, barricades, cones, pylons, pavement markings, flashing lights etc. They shall be such that they are easily understood without any confusion, are clearly visible during day and night, conform to the prevailing speeds in immediate vicinity, stable against sudden adverse weather conditions and are easy in installation, removal and maintenance.

Safety signs

"Safety sign" is a sign, which uses a pictorial symbol to provide health or safety information or instruction. The sign may also include a written message. The construction and maintenance signs fall into the same three major categories viz. regulatory signs, warning signs and guide signs as other traffic signs do. Warning, cautionary, prohibition and command signs shall be installed and will not be removed or changed till they are required at site. These signs shall be placed on left hand side of the road. ***Figure 7.1*** shows typical positioning of signs. Some of the common types of signs which shall be provided in construction zones are shown in ***Figure 7.2***

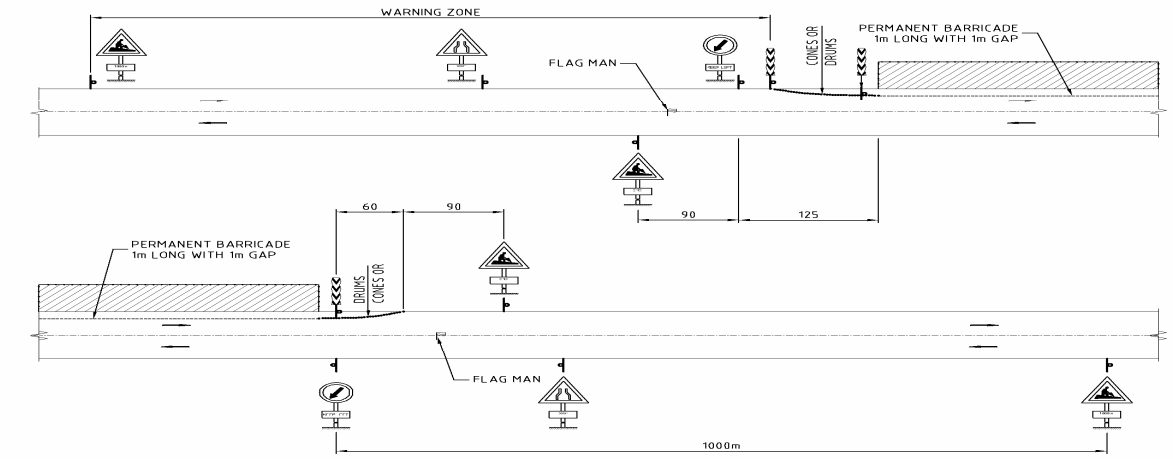

Figure 7-1: Typical Positioning of Signs

Figure 7-2: Safety Signs

Regulatory signs

Regulatory signs, as shown in Fig.7.3, mean legal restrictions on the traffic. The most common types for use in construction zones are "Do not enter", "Road closed", "Speed limit" etc.

Figure 7.3: Regulatory signs

Warning signs

The most common type of warning signs to alert the drivers of the possible dangers ahead in construction zones are "Lane Closed", "Diversion to other Carriageway", "Divided Carriageway Starts", "Divided Carriageway Ends" and "Two Way Traffic" etc. Sometimes it might be advisable to explain these signs with the help of a rectangular plate of size appropriate to the size of warning triangle and placed 0.15m below, from the bottom of the triangle. The typical warning signs used are represented in **Fig.7.4**.

Figure 7.4: Warning Signs

Guide signs

Guide signs in construction zones shall have different background colour than the normal informatory signs. These signs shall have black messages and arrows on yellow background. The commonly used guide signs are: "Diversion", "Road Ahead Closed" and "Sharp (***Figure 7.5***)

Delineators

Delineators are the channelising devices such as cones, traffic cylinders, tapes, drums, which shall be placed in or adjacent to the roadway to guide the drivers along a safe path and to control the flow of traffic. These shall normally be retro-reflectorised for night visibility.

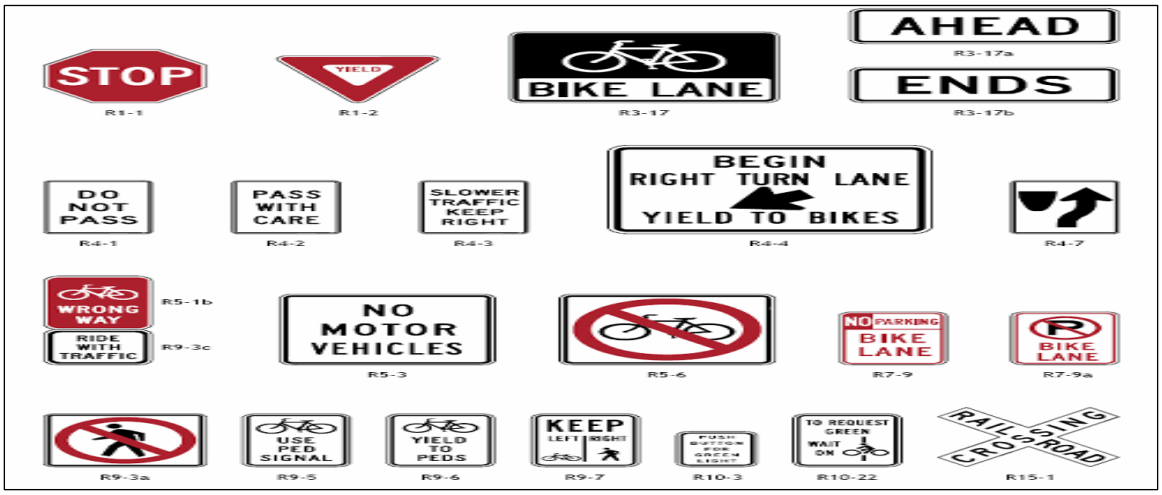

Figure 7.5: Guide signs

Traffic cones and cylinders

Traffic cones as represented in Fig.7.6, are normally 0.5m to 0.75m high and 0.3m to 0.4m in diameter or are in square shape at the base. These are mostly made of plastic or rubber with retro- reflectorised red and white band and have suitable anchoring so that they are not easily blown over or displaced. They shall be placed close enough together to give an impression of the continuity. The spacing shall be 3m (close) to 9m (normal). Larger size cones can be used for high speeds or where more conspicuous guidance is required.

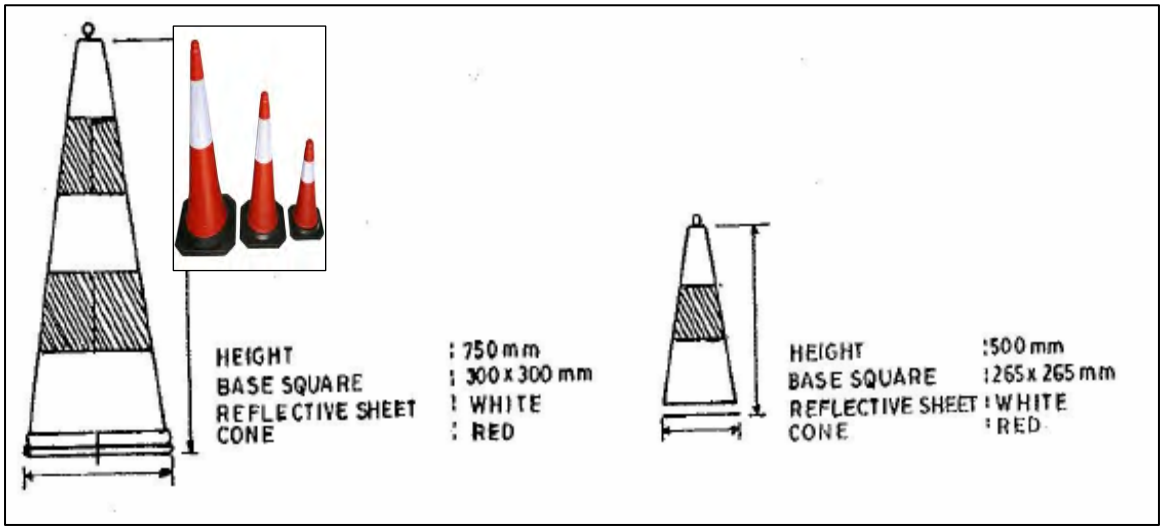

Figure 7.6: Traffic Cones Signs

Barricades

Whenever the traffic has to be restricted from entering the work areas, such as excavations or material storage sites so that protection to workers is provided or there is a need for separating the two way traffic, barricades shall be used. The barricades can be portable or permanent type and can be made of wooden planks, metal or other suitable material. The horizontal component facing the traffic is made of 0.30m wide wooden planks joined together and painted in alternate yellow and white strips of 0.15m width and sloping down at an angle of 45 degree in the direction of the traffic. Fig. 7.7 & 7.8 show three types of barricades. Types I and II are portable type, useful for small works and Type III is permanent type, suitable for major work areas. Suitable support or ballasting shall be provided so that they do not over turn or are not blown away in strong winds. In case of a permanent type barricade, a gate or movable section shall be separately provided to allow the movement of construction/supervision vehicles.

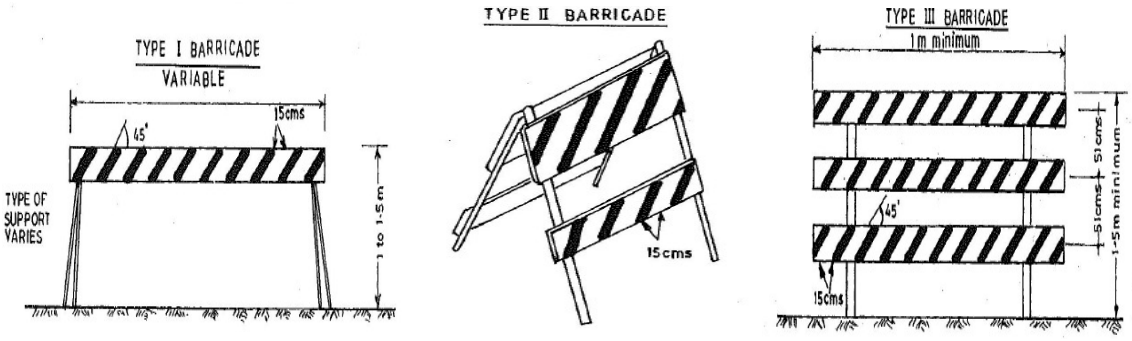

Figure 7.7: Barricade Signs

Flagmen

On large construction sites, flagmen with flags and sign paddles shall be effectively used to guide the safe movements. The flags for signaling shall be 0.60m x 0.60m size, made of a good red cloth and securely fastened to a staff of approximately 1m in length (Fig.7.9)

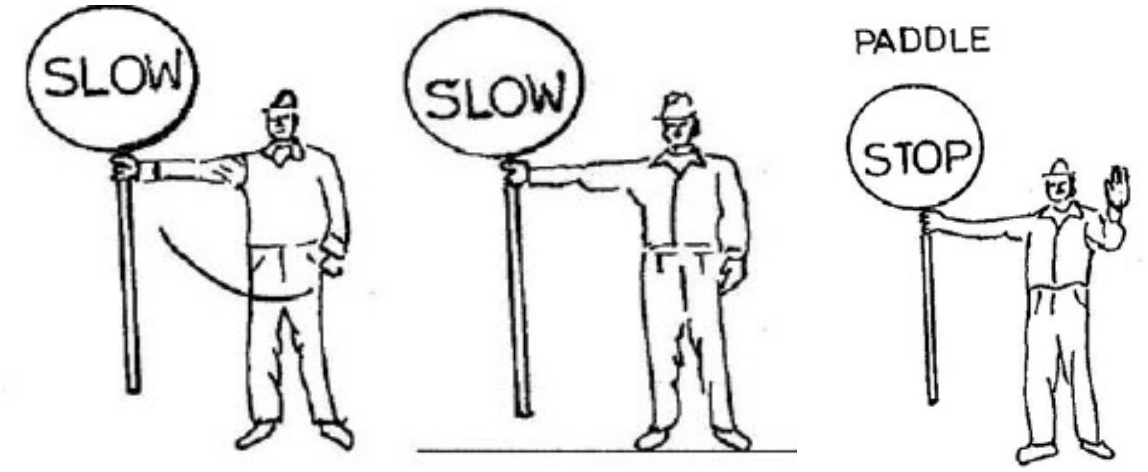

Figure 7.8: Flagmen Sign

7.1.7 Safety and Management Practices

Measures for providing safe movement of traffic in some of the most commonly occurring work zones on highways shall be as follows:

Temporary diversion

In the cases of major repairs or reconstruction of cross drainage structures on a highway section, damaged due to flood etc., the traffic may have to pass on a diversion, moving parallel to the highway.

The warning for the construction ahead shall be provided by the sign "Men at Work" about 1km earlier to the work zone or a supplementary plate indicating "Diversion 1km ahead" and / a sign "Road Closed Ahead" shall be placed. It shall be followed by "Compulsory Turn Right/Left Sign". The "Detour" and "Sharp Deviation" sign shall be used to guide the traffic onto the diversion. Hazard markers shall be placed just where the railings for the cross drainage structures on the diversion starts. Fig.7.10 illustrates a typical arrangement according to the above plan.

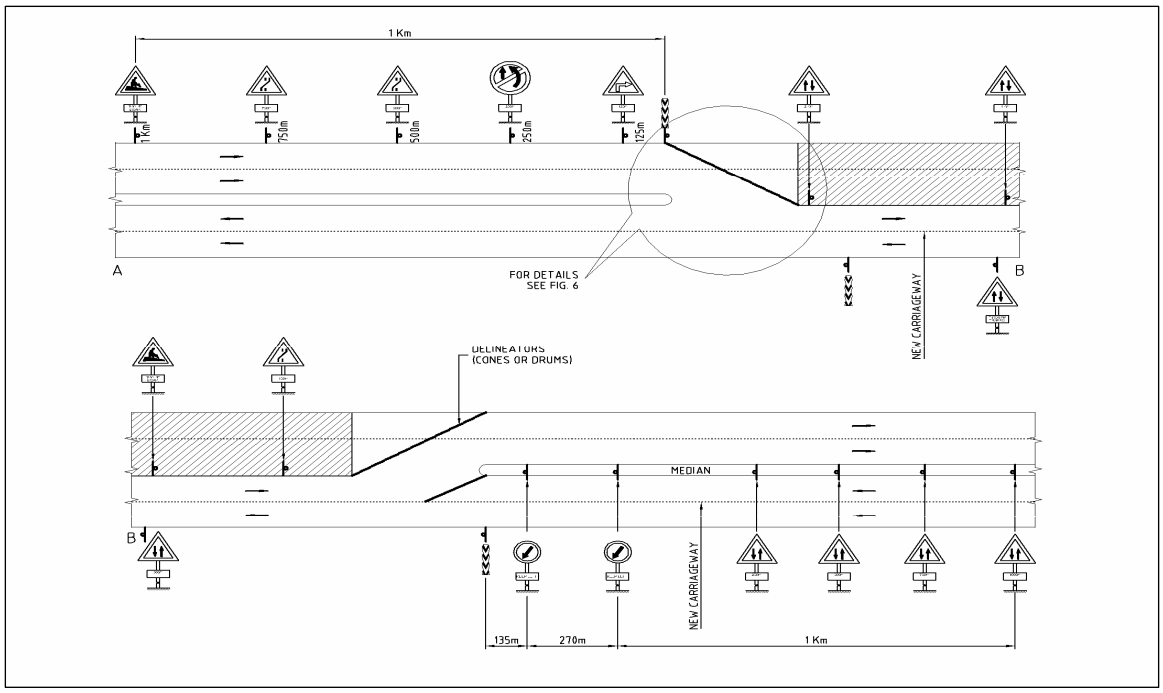

Figure 7.9: Temporary Diversion

7.1.8 Safety measures during concession period

During the concession period, many activities are involved at different stages and at various periods in respect of construction operation and maintenance of the project highway. Safety of the road user and the project workman at site in emergency arising on account of force secure due to natural or administrative reasons, especial safety masseurs are to be used. Width of existing two lane carriageway is envisaged and to be used for passage of two way traffic. Traffic is to be divided from its normal path. The channel of traffic clearly marked with the aid of pavement marking at night, the passage delineated with lamps or other light source regularity / warning sign approved by independent consultant installed for guidance or road users at least two sign put up, one loose to the carriage way begins 120m ahead signs design reflecting type the safety standards specification schedule strictly complied with in the event of the any lane.

7.1.9 Accident Spot

Due to the poor pavement condition, lack of space, accidents are common problems on the existing road especially in rainy season. Recent Accident history of existing four lane road are given in ***Table 7.1.***

Table 7.1: Accident Spots in the Project Area

S.No	Name	Chainage (km)
1	Etawah	323.475-325.375
2	Sarai Jalal	333.475-334.025
3	Sarai Mithe	338.225-338.623
4	Auraiya	379.400- 385.200
5	Bhawpur	386.800- 387.600
6	Mahtauli	389.575- 390.275
7	Rania Industrial Area	442.100-443.210
8	Raipur	445.200- 448.800
9	Bhaunthi	456.275- 458.500
10	Kanpur Town/Bypass	460.473- 483.687

7.2 HIGHWAY TRAFFIC MANAGEMENT SYSTEM (HTMS)

HTMS shall provide facilities to the highway users to make emergency calls through Emergency Call Booths (ECBs) to control center in case of accidents, break down of vehicle and fire and to pre-warn the highway users about unusual conditions on the road. It shall provide information/data to traffic managers on traffic flow, conditions, speed and weather conditions, location of any incident and help required and on incoming calls. Based on these, the traffic managers will be able to exercise control on changing the variable message signs, mobilizing the movements of ambulances, cranes, highway patrol units and fire tenders. HTMS shall also provide on line recording and reviewing of the voice and individual information for record and analysis.

All equipment shall comply and be installed in accordance with IEC 364, with minimum of CENELEC standards EN 50128 software integrity level 2.

The HTMS shall have an overall system mobility of better than 99% and will be considered unavailable if any of the functions cannot be properly executed. The mean time to restore to the normal operation following a failure will be less than four hours all inclusive. The service life of HTMS will be 10 years.

All outdoor equipment for the facility of the users such as Emergency Call Booths (ECB) and Message Signs (MS) will be installed at locations which will be clearly visible to the approach drivers. The ECBs shall have proper sign identifications.

Traffic Safety Measures

1. Highway Patrolling

The concessionaire is required to provide round the clock route patrols to assist motorists. The patrol personnel will be adequately trained to the satisfaction of the Independent Consultant in traffic management, road safety and in primary first Aid. The purpose of these patrol is to:

- Provide the users of the project highway with basic mechanical help for vehicle that break down on the state highway section, and protect other motorists from such vehicles.
- Immediately identify traffic hazards of whatever nature, such as unauthorized parking, public transport vehicles obstructing traffic during passenger loading and unloading, debris, stray animals etc. The concessionaire shall take necessary measures to remove such obstructions.
- Provide emergency management at accident scenes until such time as the appropriate authorities arrive.
- Assist the motorist, for the removal of damaged or mechanically impaired vehicles from the project highway.
- Provide road user information and to further the image of the state highway section in a professional and friendly manner.
- Maintain daily records to assistance provided to motorists.
- Observe, record and report suspect aspects of the highway, hazards and incidental damage caused by vehicles, floods, storms, or other random events, such that the highway maintenance records and data base are continuously improved.

Patrol vehicles

The concessionaire will provide new 4-wheel driven Patrol vehicle as stipulated in the contract. Each vehicle shall accommodate a minimum 3 persons including the driver. The concessionaire will also make arrangements for standby vehicles.

Ambulance

The concessionaire will provide ambulance having all facilities of emergency assistance required like stretcher to carry the patient, emergency medicines, oxygen etc.

Cranes

The concessionaire will provide cranes of 15MT capacity having all requisite arrangements of pulling and lifting of accidental/break down vehicles. Table D-1 presents the serviceability

indicators, required maintenance level that will be followed by concessionaire as part of highway patrolling.

Table D-1: Serviceability Indicators and required maintenance level for Patrolling.

Sl. No.	Serviceability Indicator	Required Maintenance Level	Frequency of Inspections by Engineer to Ensure Required Level of Service
1.	Tow trucks, cranes & ambulance etc.	Within 30 minutes of incidents occurrence	Daily on regular basis followed by weekly & monthly inspection
2.	Frequency highway patrol	Every 4/6 hours on each carriageway for entire stretch (logging system)	Daily on regular basis followed by weekly & monthly inspections

2. Pedestrian Guard Rails and Safety Barriers

Pedestrian guardrail will be provided at the pre-identified locations mentioned in feasibility /drawings. In the absence of such locations, same will be provided at following locations in consultation with IC/PIU-KSHIP. i) At the places where pedestrian activity is high ii) on raised foot path on the side of carriageway iii) at bus stops and bus bays in built-up areas mentioned in Schedule-C, for adequate length for pedestrian safety, not less than 20m on either side. The layout of pedestrian guard-rails at crossing, road intersections will be as per the drawing given in DPR. On kerbed road sections, guard-rails will be at least 15cm away from the edge of carriageway.

Safety barriers will be located at the following locations

- At high embankments which have height > 3m when measured from the top of the pavement to the natural ground.
- At sharp horizontal curves whose radius is less than 230m, by the side of ponds, lakes, open well even when the height of adjoining embankment is less than 3m.
- Typical layout for safety barriers is given in DPR.
- On the approaches of major and minor bridges for a length of at least 20m on both sides even if the embankment height is less than 3m.

3. Traffic Blinker Signal with Liquid Electromagnetic Display (LED)

The road traffic signals, its configuration, size, location and other requirements will be as per IRC:93 – 1985 and IS: 7537 – 1974. Blinker signal will be provided at identified

intersections with SH/MDR/ODR category roads in rural areas with non-conventional energy sources like solar energy. The general specifications mentioned in DPR will be followed for this purpose.

4. Reflective Pavement Markers (Road Studs)

Nineteen degree (19^0) titled one-way reflective road studs with anchor and with 1x43 glass elements etc. complete will be provided at 1m c/c on pedestrian crossing with red reflective panel as per EN 1463 and BS 873 part IV (1987).

Design details, optical performance details and details of fixing and placement will be in-accordance with Ministry's letter No.RW/NH-33023/10/97-DO III dated, the 11th June, 1997 on 'Technical Specifications for Reflective Pavement Markers (Road Studs)'. RPMs are provided in urban areas and intersections and in sharp curves having radius less than 230m.

Highway Signs

The design and location of route marker signs for State Highway will be as per the IRC: 2-1968. The design and placement of highway kilometer stones, the dimensions of stones, size, color, and arrangement of letter will be as per IRC: 26-1967 and IRC: 8-1980. The design, location and materials to be used for road delineators will be as per IRC: 79-1981. The color, configuration, size and location of size of traffic signs will be as per IRC: 67-2001.

For the road signs, the standards set in IRC: 67-2001, Code of Practice for Road Signs will be followed. As regards to the overhead signs, the standard prescribed by MORT&H will be followed. Where these are silent standards prescribed in BIS/British Standards/AASHTO/ASTM or any other international standards in that order shall be adopted in consultation with the Independent Consultant / PIU-KSHIP

All the cautionary/mandatory signs will be provided on shoulder median for each direction of the traffic for clear visibility during overtaking operations.

On kerbed road sections of the road, signs will be at least 60cm away from the edge of the kerb, where as on un-kerbed road sections, the edge of the signs will be at a distance of 2m from the edge of the carriageway.

Pavement Markings

Pavement markings will be designed and provided in accordance with IRC: 35-1997 "Code of Practice for Road Markings" in consultation with the Independent Consultant.

Pickup Bus Stops & Bus Bays

The layout, design and location of the pickup bus stops will be as mentioned in Schedule C and shall follow the Specification of IRC: 80 –1981. Bus stops will be provided on both sides of the road and either direction of traffic. The plinth height of the bus stop shall be 0.3m from the bus bay level and will be 2 risers high. The minimum ceiling height of the structure will be 2.1m. Each bus stop shall have at least one litter bin.

Truck Parking Facility

The parking length at bays for each vehicle shall not be less than 15m and minimum parking width for each vehicle will be 2.75m. The length of the lay-bye will be as per parking requirement subject to a minimum of 100m and the minimum width of the raised separator between the lay-bye and the carriageway will be 1.5m in rural sections. The parking spaces will be parallel to the road. Parking lots will be adequately illuminated and nighttime illumination shall not be less than 10 lux.

Landscaping

Tree will be planted in rows and on either side of the road with staggered pitch as per the IRC: SP:21-1979. A range of 10-15m c/c is recommended for spacing of trees (parallel to the road). Setback distance of trees needed in different situations will be as per the IRC: SP: 21 – 1979 and the IRC: 6 – 1976. The distance between the kerb, if any, and the nearest edge of tree trunk will be at least 2m. Shrubs in medians shall not normally exceed 1-1.5m in height and will be as per IRC: SP 21 – 1979.

Relevant provisions of PWD policy guidelines and respective state government current requirements and guidelines will be followed for landscaping.

The Environment and Social Impact Assessment Report, attached will be followed in respect of plantation. For safe traffic operation vertical clearance between the crown of the carriageway and lowest part of the overhang of the tree available across the roadway shall conform to the standards set down in IRC: SP: 21 – 1979. The pie size, fencing, watering and maturing requirements shall also conform to the above standard. Planting will be such that it does not obstruct the visibility of traffic from any side and shall be pleasing in appearance.

7.3 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

Risk assessment forms an integral part of any plan of expansion of the road. Risk analysis consists of two parts viz. risk identification and risk assessment. Risk identification can be as simple as asking “what if” questions at design review stage itself. Other method in use is preparing a checklist of the normal hazards associated with a particular situation or a piece of equipment. Risk assessment techniques are:

- ❖ Hazard and Operability Study (HZOP)
- ❖ Fault Tree Analysis (FTA)
- ❖ Safety Studies
- ❖ Safety Indices

Risk is associated with disaster and a disaster is the product of a hazard such as earthquake, flood or windstorm, coinciding with a vulnerable situation. There are four basic types of hazardous events, which put societies at risk:

- ❖ Those based in nature like earthquakes, droughts, floods, avalanches etc.
- ❖ Those based in violence like war, armed conflict, physical assault etc.
- ❖ Those based in deterioration liked declining health, education and other social services, environmental degradation etc.
- ❖ Those based in the failings of industrialized society
- ❖ Technical failures, effluent (chemical) discharge, factory explosions, fires, gas leakages, transport collisions

7.3.1 Risk Assessment

On the basis of the field studies and analysis, the following major risks or emergencies are identified and may be associated with the proposed highway project:

Emergencies	Type of Risk	Project Execution Stage	Risk Level
Accidents	Human Related	Construction as well as Operation	Low
Fire	Human Related	Operation	High
Tsunami	Natural	Construction as well as Operation	Low
Cyclone	Natural	Construction as well as Operation	Low

7.3.2 Disaster Management Plan

All disasters, whether flood, earthquake, cyclone, tsunami, drought or extensive fire, inevitably cause upheavals not only in the physical but also in the social and economic

context where they occur. The study and analysis of factors that cause a disaster, the characteristics that shape its evolution, the effects on the population and the natural environment, the instruments that can mitigate their effects, and the various ways of re-establishing the optimal living conditions of the persons and communities involved have led to the creation of the new science of Disastrology, which studies disasters from all points of view and establishes guidelines for their management.

7.3.3 Elements of Disaster Management

Any disaster management plan outlines the function that need to be organized the section designated to perform them. It defines the Standard Operating Procedure (SOP) and consists of following four phases:

1. Mitigation – lessen the severity and impact of potential emergencies
2. Preparation – build organization capacity to manage effects of emergencies
3. Response – control the negative effects of emergency situations
4. Recovery – restore essential services and resume normal operation

Preparedness

The most important step in the preparation against the disaster is the formation/constitution of an Emergency Response Cell under District Collector's chairmanship. After this, district collector shall notify various institutions in setting up the Emergency Response Council (ERC). The notified institutions shall include all of the educational institutions, petrol stations, police stations and hospitals. Selected representative from these organizations will constitute the council. This council will issue guidelines for the Emergency Response Plan (ERP) for the District. Graphically description of ERC is given in ***Figure 7.10A***:

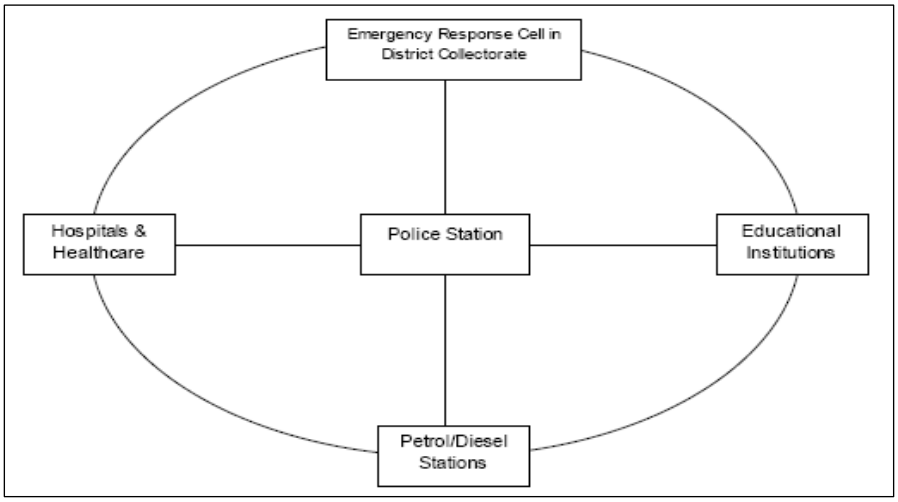

Figure 7.10A: Graphically description of ERC

Most of the time accident message flow will be both ways. This is indicated in the above ***figure10A***.

Another way to reach the goal of "Full Preparedness" is training: Training of the population at large and training of specialist deployed in ERC. The citizen has to be trained to know what to do and when and how to do it. The implementation of these plans must follow well defined programmes of teaching at school, starting from primary school level, through educational civil defense courses, periodic refreshers courses for physicians, nurses, volunteers, Red Cross, Red Cresent, fire brigade, police etc. as well as periodic exercise with simulated disasters, with the involvement of general population and the local rescue services. The list of available medical facilities with full knowledge of their infrastructure and name of doctors is to be with ERC which is to be updated at least once in three months. Evacuation and other mock drills are to be organized at least once in an year to test the preparedness of the system. Besides above, the service roads, points and crossings are to be kept clear to have a free exit from and an access to the National Highway and ever be blocked except for maintenance purpose. Every control room is to be equipped with an adequate First Aid System, including one or two stretches. The communication system once installed is to be properly maintained so that it remains functional round the clock.

Recovery and Response

A rapid evaluation of the extent of a disaster is essential for calculating the size of the rescue forces that need to be involved (teams operating on the spot ,teams brought up to the operative area, local first-aid units, regional/interregional/international units,etc.) from health assistance to the injured. It amounts to the additional responsibility on ERC where technical

inputs if needed, will come from local Project Implementation Unit (PIU) or Corridor Management Unit (CMU) of NHAI.

Role of Doctors

It is the duty of doctors to provide medical treatment to road accident victims instantaneously and thereafter to leave resolution of other crisis needs to law enforcement agencies. There is no legal impediment to doctors in attending such cases immediately. Always remember that every second is precious after an accident has occurred for saving the victim. Large number of lives in accidents can be saved only if medical aid is provided immediately. This is also what the ethics of medical profession asks for.

As per section 134 of the motor vehicles act, it is the duty of every registered medical practitioner or the doctor on duty in the hospital to immediately attend to the injured person and render medical aid or treatment without waiting for any procedural formalities.

Role of Public

Highway users are to give passage of way to the vehicles on emergency duties, such as ambulances, fire brigade or police. They have the first right of passage. The public at large is expected to help in this regard and the policeman on duty is to ensure their immediate passage.

The successful resolution of any emergency situation largely depends on how fast the public react to a given emergency situation. As an example, the sequence after the accident is listed down below.

- Occurrence of an accident at any place on the highway
- Accident victims are taken to any of the notified places like a petrol or diesel station, police station, schools, any educational institution or local PWD office for first aid
- Message reaches to petrol or diesel station or police station or schools or any educational institutions or local PWD office
- Message is sent to District Collector from any or all the above places
- District collector receives a detailed report of the event with in not more than 6 hours by the fastest available communication by fax, phone, telegram or e-mail etc. from the nearest police station
- District Collector's office will evaluate the seriousness of the problem based on the report available. If details are not clear, further clarification will be sought from various notified places

- ❖ Then messages will be forwarded from the District Collector's office to all concerned if urgent necessary action is further required
- ❖ From the District Collector's office again the messages are sent to police station and PWD office to make sure that all relief operations are working smoothly and will be co- ordinate from District Collector's office. PWD office will in turn redirect the message to the local PWD office
- ❖ Depending upon the situation, serious cases will be referred to the hospitals

7.4 Public Consultations

As per the TOR requirement, the Public Consultation meetings are needed to apprise the road user of the widening proposals and seek their suggestions from safety considerations to make their travel safe. The Public Consultations were held at following 3 places, as per the schedule indicated below.

1. Bakewar (Etawah Distt) on 21-10-2010 (F.N)
2. Auraiya (Auraiya Distt) on 21-10-2010 (A.N)
3. Rania (Ramadevi Nagar (Kanpur Dehat) Distt) on 10-11-2010 (F.N)

The meetings were attended by representatives from public, local bodies, farmers etc whose lives are likely to be impacted by the project. The NHAI officials also participated in the meetings. A team from the Consultant made presentation on salient features of the existing road and the new proposals of project to the participants at each location. The widening proposals for 6 laning along with the proposed facilities, particularly from safety and operational requirement of the highway, were discussed in detail.

The meetings were well attended and held in congenial atmosphere. The participants appreciated the features of the widening proposals. Provisions are being made in the design to accommodate the suggestions receiving from public consultation.

a) Meeting at Bakewar –Etawah (Fig. 7.11)

1. There is need for providing adequate number of sign boards to avoid the accidents.
2. Flyover shall be provided at Y- Junction of Bakewar and crossing with road to Barthana.

3. Due compensation for land has not been paid in some previous cases and needed it to be resolved early.
4. Service road shall be provided between Sarai Mitthe and Bijauli.
5. Some land of burial ground has been acquired. It shall be transferred back to Gram Sabha.
6. It must be ensured that underpasses do not pose any drainage problems.

b) Meeting at Auraiya (Fig. 7.12)

1. Flyover shall be provided in the Urban Area.
2. Adequate number of safety/ sign boards are needed at different locations to prewarn the road user to avoid accidents.
3. The service road between Chirauli and Bhavpur shall be 7 m side.
4. There are some culverts/ cattle passes where stagnation of water takes place. Arrangements shall be made for early disposal of water.
5. Underpass shall be provided at km 376.00
6. Bus shelter shall be provided at km 376.00

c) Meeting at Rania -Ramabai Nagar (Fig. 7.13)

1. Vehicular underpass is needed in km 450 at Raipur.
2. Adequate safety boards and road signage are needed for the road.
3. Elevated section at Rania shall be explored for free movement of the cross traffic.
4. The drainage problem at existing POP at Mungisapur needs to tackled.
5. Waste from oil mills at Akbarpur and Rania shall be suitably discharged away from the road.
6. Proper lighting and police help booth shall be established on the Kanpur elevated highway.
7. An additional exit/ entry ramp shall be considered on Kanpur elevated highway.

The list of participants, separately for Bakewar, Auraiya and Rania, is as follow **Fig. 7.11 to 7.13,** show glimpses of the meetings at different places. The suggestions have been duly considered and provided in the report as considered feasible.

Fig. 7.11: Photos of Public Consultation at Bakewar –Etawah

Fig. 7.12: Photos of Auraiya Public Consultations

Fig. 7.13: Photos of Rania Public Consultations

7.5 PUBLIC HEARING

The application in From 1 and draft EIA/EMP report has been submitted to Uttar Pradesh State Pollution Control Board (UP-PCB). The UP-PCB has coordinated and arranged public hearing in Kanpur, Ramabai Nagar, Auriaya and Etawah districts on dated of 31.01.12, 23.03.12, 03.05.12 and 14.03.12. District wise details of public hearing are given below:-

7.5.1 Public Hearing at Kanpur District

Date and Time	: 31.01.12 at 11:30 Am
Place	: District Collector Meeting Hall, Kanpur
Advertisements	: 1) Dainik Jagran on dated -31.12.2011
	2) Hindustan Times on dated -31.12.2011

During public hearing public quarries were based on road crossing problems in urban areas, drainage problem and absence of safety signs. Project proponent representative commitment to resolve these problems as possible as.

विभाग के अधिकारी और कर्मचारी मौके पर पहुंचे। पड़ताल में पता चला कि विभाग से इस संबंध में अनुमति नहीं ली गई धारा नहा बनता है। फिलहाल ठेकेदार को बिना अनुमति के पेड़ काटने से मना किया गया है।" – बीआर अहिरवार, जिला वन अधिकारी।

दैनिक जागरण 30.12.11 कानपुर पेज नं. 6

उ.प्र. प्रदूषण नियंत्रण बोर्ड

पिकप भवन, तृतीय तल, बी-ब्लाक, विभूति खण्ड, गोमती नगर, लखनऊ-226010

पर्यावरण अनापत्ति हेतु लोक सुनवाई के लिए आम सूचना

सर्वसाधारण को सूचित किया जाता है कि उ.प्र. में राष्ट्रीय राजमार्ग-2 (इटावा- चकेरी स्टेशन) के छः लेन अपग्रेडेशन के प्रस्ताव पर लोक सुनवाई हेतु पर्यावरणीय स्वीकृति प्रस्ताव घोषित किया गया है। राज्य बोर्ड द्वारा पर्यावरण (संरक्षण) अधिनियम, 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना सं. एस.ओ. 1533 दिनांक 14.09.06 के प्राविधानों के अन्तर्गत उ. प्र. में राष्ट्रीय राज्यमार्ग-2 को (इटावा-चकेरी स्टेशन) अपग्रेडेशन हेतु अनापत्ति प्रमाण पत्र जारी करने से पूर्व लोक सुनवाई की सूचना जारी किया जाना आवश्यक है एवं इस सूचना के अन्तर्गत क्षेत्रीय आम जनता को किसी भी आपत्ति/सुझाव हेतु 30 दिन का नोटिस दिया जाना आवश्यक है। लोक सुनवाई पैनल की संरचना पर्यावरणीय अधिसूचना सं. 1533 दिनांक 14.09.06 के अनुरूप होगी एवं उक्त प्रस्ताव से सम्बन्धित संक्षिप्त अभिलेख निम्नलिखित कार्यालयों में उपलब्ध है-

1. कार्यालय जिलाधिकारी, कानपुर
2. कार्यालय नगर निगम, कानपुर
3. क्षेत्रीय कार्यालय, मध्य क्षेत्र, पर्यावरण एवं वन मंत्रालय, भारत सरकार पंचम तल, केन्द्रीय भवन सेक्टर-एच, अलीगंज, लखनऊ।
4. परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, रौली हाउस, 128/681, के- ब्लाक, किदवई नगर, कानपुर।
5. उ. प्र. प्रदूषण नियंत्रण बोर्ड, तृतीय तल, पिकप भवन, विभूति खण्ड, गोमती नगर, लखनऊ।
6. क्षेत्रीय कार्यालय, उ. प्र. प्रदूषण नियंत्रण बोर्ड, 5243, सद्भावना नगर, आवास विकास, फेज-3, कल्यानपुर, कानपुर।

अतः समस्त सर्वसाधारण को इस नोटिस के माध्यम से सूचित किया जाता है कि उक्त परियोजना के पर्यावरणीय स्वीकृति सम्बन्धी प्रकरण के विस्तारण के लिए अपर जिलाधिकारी (एल. ए.) कानपुर की अध्यक्षता में कलेक्ट्रेट सभाकक्ष में दिनांक 31.01.12 को प्रातः 11.30 बजे से लोक सुनवाई की कार्यवाही निर्धारित की गयी है, जिसमें उपस्थित होकर अपनी अनापत्तियां प्रस्तुत कर सकते हैं अथवा सुझाव, विचार, टिप्पणियां एवं आपत्ति लिखित रूप से प्रकाशन की तिथि से 30 दिन के अन्दर दे सकते हैं।

सदस्य सचिव

जी-23985

Public Hearing proceeding details and Minutes;

Fig. 7.14: Photos of Kanpur Public Hearing

राष्ट्रीय राजमार्ग संख्या 2 इटावा से चकेरी के उन्नयन तथा पुनर्वास हेतु पर्यावरणीय स्वीकृति के लिए दिनांक 1.01.2012 को कलेक्ट्रेट सभागार, कानपुर नगर आयोजित लोक सुनवाई का कार्यवृत्त :–

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना कियान्वयन इकाई, कानपुर द्वारा राष्ट्रीय राजमार्ग संख्या 2 इटावा से चकेरी के सुधार एंव निर्माण हेतु पर्यावरणीय स्वीकृति हेतु बोर्ड में प्रस्ताव किया गया है।

प्रस्तावित परियोजना एन0 एच0 2 इटावा के किमी0 323.475 से प्रारम्भ होकर चकेरी के किमी0 483.687 पर समाप्त होगी। परियोजना की कुल लम्बाई 160.212 किमी0 है। परियोजना की कुल लागत 1573.00 करोड है। इसमें जनपद कानपुर के अन्तर्गत किमी0 450.600 से किमी0 483.687 तक का भाग सम्मिलित है।

वन एवं पर्यावरण मंत्रालय, भारत सरकार की अधिसूचना संख्या एस0ओ0 1533 दिनांक 14.09. 2006 के अनुपालन में परियोजना के निस्तारण से पूर्व लोक सुनवाई किया जाना अनिवार्य है जिसके अनुपालन में जिलाधिकारी कानपुर महोदय द्वारा अपर जिलाधिकारी (भू0 अ0) को नामित किया गया है।

पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत वन एंव पर्यावरण मंत्रालय भारत सरकार की अधिसूचना के अनुपालन में स्थानीय स्तर पर दैनिक समाचार पत्र **दैनिक जागरण** में दिनांक 30/12/2011 में लोक सुनवाई की तिथि 31/01/2012 समय पूर्वान्हः 11:30 बजे कलेक्ट्रेट सभागार, कानपुर में आयोजित किए जाने हेतु विज्ञप्ति प्रकाशित की गयी। निर्धारित तिथि 31/01/2012 को पूर्वान्हः 11:30 बजे निर्धारित स्थान (कलेक्ट्रेट सभागार) पर श्री ओम प्रकाश सिंह अपर जिलाधिकारी (भू0 अ0) की अध्यक्षता एवं श्रीमती मंजू गुप्ता वैज्ञानिक अधिकारी,उ0प्र0 प्रदूषण नियंत्रण बोर्ड, की उपस्थिति में लोक सुनवाई सम्पन्न हुई। बैठक की उपस्थिति विवरण संलग्न है। लोक सुनवाई का कार्यवृत्त निम्नवत्:–

लोक सुनवाई प्रारम्भ करते हुए क्षेत्रीय कार्यालय उ0प्र0 प्रदूषण नियंत्रण बोर्ड, कानपुर की प्रतिनिधि श्रीमती मंजू गुप्ता, वैज्ञानिक अधिकारी द्वारा गणमान्य व्यक्तियों का स्वागत करते हुए अध्यक्ष महोदय की अनुमति से बैठक प्रारम्भ की गयी। लोक सुनवाई के महत्व पर प्रकाश डालते हुए उपस्थित माननीय जनप्रतिनिधिगण एंव अन्य समस्तजनों से परियोजना के संबंध में अपने प्रश्न/संशय/आपत्तियां/सुझाव मौखिक अथवा लिखित रूप में प्रस्तुत करने का अनुरोध किया गया।

बैठक के प्रारम्भ में राजमार्ग की सलाहकार सस्था मेसर्स सी.ई.जी. लि0 के पर्यावरण अभियन्ता डा0 महेन्द्र कुमार जैन द्वारा राष्ट्रीय राजमार्ग संख्या 2 इटावा से चकेरी की परियोजना से सबधित विस्तृत जानकारी जैसे परियोजना का विवरण,परियोजना की पृष्ठभूमि, परियोजना का मानचित्र,परियोजना की प्रमुख विशेषताएं, परियोजना की आवश्यकता, प्रस्तावित मार्ग पर यातायात की पूर्वानुमानित मांग,प्रस्तावित परियोजना का यातायात सर्वे, टिपिकल कास सेक्सन, प्रस्तावित मार्ग में प्रस्तावित सुधार, भू–अर्जन एंव वृक्षों के पतन का पूर्ण विवरण, सतही जल गुणवत्ता, भूमिगत जल गुणवत्ता, परिवेशीय वायु गुणवत्ता, अध्ययन क्षेत्र की मृदा गुणवत्ता, परिवेशीय ध्वनि के स्तर, तथा इनकी मानिटरिंग के संबंध में विस्तार से विवरण प्रोजेक्टर के माध्यम से प्रस्तुत किया गया। साथ ही साथ पर्यावरण संचालन एंव प्रबंधन लागत, परियोजना प्रभाव एंव न्यूनीकरण उपाय के संबंध में भी चर्चा की गयी। तदपश्चात बैठक में उपस्थित जनप्रतिनिधिगण एंव सामान्यजनों ने अपने प्रश्न/संशय/आपत्तियां/सुझाव प्रस्तुत किए, जिनका विवरण निम्नवत् है :–

क्रम सं0	प्रश्नकर्ता का नाम एवं पता	प्रश्न	उत्तर
1	श्री तनवरी अहमद, निवासी, रामादेवी, कानपुर।	(1) राजमार्ग पर रामादेवी के पास कोई पैदल सुंरग मार्ग नही है तथा 4 लेन के निर्माण के समय भी पैदल मार्ग नही बनाया गया है।	(1) राजमार्ग की सलाहाकार संस्था मै0 सी0ई0जी0लि0 के पर्या0अभि0 डा0 महेन्द्र कुमार जैन द्वारा जानकारी दी गई कि सडक का 6 लेन निर्माण होने पर 23 सुरंग मार्ग की

			संख्या बढ़ाकर 41 हो जायेगी, साथ ही बस स्टाप के लिए 44 स्थलों पर सड़क के दोनो तरफ स्थल की व्यवस्था की जायेगी।
		(2) राजमार्ग पर फ्लाई ओवर को सुरंग में संकेतक (Sign board) नहीं लगाये गये है।	(2) रा0रा0प्रा0 के अधिकारी श्री पी0 शिवशंकर द्वारा बताया गया कि पैदल सुरंग मार्ग चिन्हित किये जा चुके है एवं शीघ्र ही संकेतक लगा दिये जायेगें।
		(3) राजमार्ग के दोनो तरफ पेड नही लगवाये गये है तथा हमीरपुर रोड पर पेडो की संख्या कम है।	(3) श्री महेन्द्र कुमार जैन द्वारा जानकारी दी गयी कि वन विभाग द्वारा अतिरिक्त में 2 से 3 गुना पेड लगाये जायेगे।
2	श्री रामगोपाल, निवासी राजापुरवा, रमाबाई नगर।	श्री रामगोपाल द्वारा बाईपास से हमीरपुर तक की सड़क खराब होने की समस्या रखी गयी।	रा0रा0प्रा0 के अधिकारी द्वारा सड़क की मरम्मत कराने का आश्वासना दिया गया।
3	श्री अजीत आलूवालिया, निवासी चकेरी रोड कानपुर।	श्री अजीत आलूवालिया द्वारा चकेरी रोड पर अतिकमण से यातायात में बाधा एवं दुर्धटना की समस्या रखी गयी।	रा0रा0प्रा0 के अधिकारी श्री पी0 शिवशंकर द्वारा बताया गया कि 6 माह के अन्दर लगाये गये अतिकमण पर कोई मुआवजा देय नही होगा, यदि अतिकमण 3 साल से अधिक है तो उसका मुआवजा देय होगा। इस सम्बन्ध में अपर जिलाधिकारी (भू0अ0) द्वारा अतिकमण को अति शीघ्र हटाने हेतु निर्देश दिये गये, जिससे दुर्धटनाओं की समस्या को कम किया जा सकेगा।
4	श्री [illegible] निवासी रामादेवी, कानपुर	(1) चकेरी से इटावा तक की 4 लेन में रामादेवी से भौती तक पानी निकासी की मुख्य समस्या है।	(1) रा0रा0प्रा0 के अधिकारी द्वारा बताया गया कि राजमार्ग पर पानी निकासी हेतु नालियॉ बनायी गयी है। अपर जिलाधिकारी महोदय (भू0अ0) द्वारा निर्देशित किया गया कि नालियों पर इकट्ठा जमा कूडा हटाने हेतु समय–2 पर सफाई की उचित व्यवस्था कराई जाए।
		(2) राजमार्ग पर स्वास्थ्य सेवायं उपलब्ध नही है।	(2) रा0रा0प्रा0 के अधिकारी द्वारा बताया गया कि राजमार्ग पर जगह–2 हेल्पलाइन फोन नम्बर अंकित होना तथा एक निश्चित दूरी पर एम्बूलेन्स उपलब्ध करायी जायेगी। इसी सम्बन्ध में अपर जिलाधिकारी

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			महोदय (भू0अ0) द्वारा निर्देशित किया गया कि प्रति 40 किमी0 की दूरी पर एक अस्पताल (10 बेड) तथा आपातकालीन प्राथमिक चिकित्सा सेवायें उपलब्ध करायी जाये।

उपरोक्त सभी सुझावों पर रा0रा0 प्रा0 के अधिकारी श्री पी.शिव शंकर ने उचित कार्यवाही करने का आश्वासन दिया।

उपरोक्त के अतिरिक्त लोक सुनवाई के पूर्व श्री मनोज गुप्ता, अध्यक्ष इण्डियन इण्ड0 एसोसिएशन, रनिया द्वारा क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, कानपुर में लिखित रूप में एक आपत्ति दिनांक 12/01/12 को प्रस्तुत की गयी थी, जिसको पढकर लोक सुनवाई के दौरान परियोजना प्रस्तावकों से उनका पक्ष रखने का अनुरोध किया गया। राष्ट्रीय राजमार्ग प्राधिकरण के श्री पी0 शिवशंकर द्वारा अवगत कराया गया कि प्रकरण जनपद रमाबाई नगर का है, अतः इस शिकायत का निराकरण जनपद रमाबाई नगर की लोक सुनवाई के दौरान किया जायेगा।

इसके उपरान्त बोर्ड की वैज्ञानिक अधिकारी द्वारा इस बात पर सन्तोष व्यक्त किया गया कि पर्यावरण लोक सुनवाई जनपद कानपुर में गणमान्य व्यक्तियो द्वारा भाग लिया तथा विषय में रूचि व्यक्त की। उपस्थित गणमान्य व्यक्तियों द्वारा प्रश्नोत्तरकाल में काफी अच्छे प्रश्न एंव सुझाव दिए गये सभी प्रश्नों के भा0रा0रा0प्रा0 के अधिकारियों द्वारा संतोषजनक उत्तर दिये गए। बैठक के अन्त में अपर जिलाधिकारी श्री ओम प्रकाश सिंह, कानपुर द्वारा प्रस्तावित परियोजना को जनपद कानपुर के लिए एक बडी उपलब्धि बताया और कहा कि यह परियोजना जनपद कानपुर के लिए विकास की दिशा में एक महत्वपूर्ण कदम है। इस परियोजना के निर्माण से क्षेत्र में चहुमुखी विकास होगा,क्षेत्र में खुशहाली आयेगी तथा की जाने वाली यात्राओं की समयावधि में कमी होगी एवं यात्रा सुखद एवं सुरक्षित होगी। अपर जिलाधिकारी ने इस बात पर प्रसन्नता व्यक्त की कि लोगों ने पर्यावरण से संबंधित बहुत अच्छे प्रश्न पूछे तथा सुझाव दिए। उन्होंने अनुरोध किया कि इन सभी सुझावों को दिए गये व्यक्तियों के नाम एव पते के साथ संबंधित विभागों को अवश्य भिजवाए जाएं।

बैठक के अन्त में प्रबन्धक (तक0) भा0रा0रा0प्रा0 श्री पी0 शिव शंकर द्वारा बैठक में उपस्थित होने पर अपर जिलाधिकारी, व अन्य उपस्थित अधिकारियों एवं प्रतिनिधियों का आभार व्यक्त किया गया।

उपरोक्त सुझावों विचारों,टिप्पणियों तथा आपत्तियों के अतिरिक्त अन्य कोई मुद्दा लोक सुनवाई के दौरान नहीं उठाया गया। भारतीय राष्ट्रीय राजमार्ग प्राधिकरण द्वारा प्रस्तुत किये गए पर्यावरण प्रभाव मूल्यांकन रिपोर्ट से अभिव्यक्त है कि प्रस्तावित राजमार्ग के निर्माण से किसी प्रकार की पर्यावरणीय क्षति नहीं होगी तथा केन्द्रीय नियंत्रण बोर्ड के मानकों का उल्लंघन नहीं होगा।

उपरोक्त लोक सुनवाई में आए सुझाव एवं उनके निराकरण हेतु किये गये समाधान तथा भा0रा0रा0प्रा0 द्वारा प्रस्तुत पर्यावरण प्रभाव मूल्यांकन रिपोर्ट में समावेशित बिन्दुओं को दृष्टिगत रखते हुए सैद्धान्तिक रूप से पर्यावरणीय दृष्टिकोण एवं जन तथा राष्ट्रहित में उक्त प्रस्ताव के कियान्वयन हेतु लोक सुनवाई समिति द्वारा सर्वसम्मति से प्रस्तावित राजमार्ग सं0– 2 इटावा से चकेरी के चौड़ीकरण/निर्माण हेतु प्रथम दृष्ट्या उपयुक्त होने का अनुमोदन करते हुए अनापत्ति प्रमाणपत्र निर्गत किए जाने की संस्तुति की जाती है।

31/1/12

क्षेत्रीय अधिकारी/वैज्ञा0अधिकारी
उ0प्र0 प्रदूषण नियंत्रण बोर्ड, कानपुर

अपर जिलाधिकारी (भू0अ0)
कानपुर

-3- K-5

Attendance Sheet of Kanpur Public Hearing

राष्ट्रीय राजमार्ग सं0 2 (इटावा से चकेरी) के चौड़ीकरण हेतु पर्यावरणीय स्वीकृति एवं लोक सुनवाई में उपस्थिति

दि : 31.01.2012 स्थान : कलैक्ट्रेट सभागार, कानपुर समय : 11:30 बजे

क्रमांक	नाम	पता	मोबाइल नम्बर	हस्ताक्षर
1.	श्री ओ.पी. सिंह अपर जिलाधिकारी (L.A.)	जिलाधिकारी, कानपुर	—	
2.	श्री पी. शिवशंकर	आर.टी.ओ. प्राङ्गण कानपुर	-	
3.	Dr. Meena Bhadauri	CEG.		
4.	Deepa Khandelwal	CEG.		
5.	Manoj Kr. Mishra	Yashoda Nagar	-	

cont.- 2 —

राष्ट्रीय राजमार्ग सं0 2 (इटावा से चकेरी) के चौड़ीकरण हेतु पर्यावरणीय स्वीकृति एवं लोक सुनवाई में उपस्थिति

दि : 31.01.2012 स्थान : कलैक्ट्रेट सभागार, कानपुर समय : 11:30 बजे

क्रमांक	नाम	पता	मोबाइल नम्बर	हस्ताक्षर
6.	[illegible]	[illegible]	9935756412	
7.	[illegible]	[illegible]		
8.	[illegible]	[illegible]	9336228930	
9.	[illegible]	[illegible]	7499687627	
10.	हिमाँशू पाण्डेय	[illegible]	9889749307	हिमाँशू
11.	[illegible]	[illegible]	[illegible]	
12.	[illegible]	UPPCB Kanpur	—	
13.	[illegible]	U.P.P.C.B. Kanpur	8726061683	
14.	प्रिया पाठक	U.P.P.C.B Kanpur	9415074222	
15.	[illegible]	S.D. UPPCB Kanpur	0512-2510899	
16.	[illegible]	[illegible]	[illegible]	
17.	[illegible]	[illegible]	[illegible]	
18.	[illegible]	[illegible]	—	
19.	[illegible]	[illegible]	[illegible]	
20.	[illegible]	[illegible]	[illegible]	
21.	[illegible]	[illegible]	[illegible]	
22.	Prashant Shukla	[illegible]	9335055494	

cont. 2

- 2 - K-7

राष्ट्रीय राजमार्ग सं0 2 (इटावा से चकेरी) के चौड़ीकरण हेतु पर्यावरणीय स्वीकृति एवं लोक सुनवाई में उपस्थिति

दि : 31.01.2013 स्थान : कलैक्ट्रेट सभागार, कानपुर समय : 11:30 बजे

क्रमांक	नाम	पता	मोबाइल नम्बर	हस्ताक्षर
23.	Harnam Singh Tomar	H.C. O/o ADM (LA) Kanh	9918659002	
24.	[illegible]	[illegible]	8004495001	
25.	रामसिंह ठेकर	ग्राम राजापुरवा रमईपुर		रामसिंह
26.	विनोद राजपूत	ग्राम सिहनपुरवा रमईपुर		विनोद राजपूत
27.	[illegible]	ग्राम राजापुरवा रमईपुर	9794567853	[illegible]
28.	घनीराम राजपूत	ग्राम राजापुरवा रमईपुर		घनीराम
29.	गौरी लाल राजपूत	ग्राम राजापुरवा रमईपुर		गौरी
30.	जुग्गीलाल राजपूत	ग्राम राजापुरवा रमईपुर		जुग्गी लाल
31.	Yogesh Mishra	UPPCB. Rampur		
32.	[illegible]	[illegible]	9473651991	
33.	रामसजीवन	[illegible]	9793078223	
34.	रामसेवक	रमईपुर रामपुर नगर		
35.	[illegible]	[illegible]		
36.	[illegible]	[illegible]	9628280	
37.	Ismail	कानपुर नगर		Ismail
38.	[illegible]	Nagbhatta	-	
39.	R.K. Choudhary	CEG.	-	

--cont 4--

तार : पर्यावरण
Gram : Paryavaran

दूरभाष / Phone : 2510999
फैक्स / Fax : 0512-2510999

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड

क्षेत्रीय कार्यालय :
५२४३, सद्भावना नगर, आवास विकास फेज-३, कल्याणपुर, कानपुर - २०८ ०१७

UTTAR PRADESH POLLUTION CONTROL BOARD

REGIONAL OFFICE :
5243, Sadbhawna Nagar, Awas Vikas Phase-3, Kalyanpur, Kanpur-208 017

संदर्भ 2653/ADC-110/12 दिनांक 01/2/12

सेवा में,

सदस्य सचिव महोदय,
उ0प्र0 प्रदूषण नियंत्रण बोर्ड
लखनऊ।

विषय उत्तर प्रदेश में राष्ट्रीय राजमार्ग–2 के (इटावा–चकेरी स्टेशन) छः लेन अपग्रेडेशन के प्रस्ताव पर कानपुर नगर में दिनॉक 31.01.12 को आयोजित लोक सुनवाई के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक अपने पत्र संख्या एफ 96627/सी–2/एन0ओ0सी /3730/ 2011 दिनॉक 22.12.11 का सन्दर्भ ग्रहण करने का कष्ट करें। उक्त के सम्बन्ध में अवगत कराना है कि प्रस्तावित परियोजना पर दिनॉक 31.01.12 को लोक सुनवाई हेतु आम सूचना दैनिक समाचार पत्र दैनिक जागरण में दिनॉक 30.12.11 को प्रकाशित कराया गया (छायाप्रति संलग्न) है। तदोपरांत निर्धारित तिथि 31.01.12 को जिलाधिकारी द्वारा नामित अधिकारी श्री ओम कुमार सिंह, अपर जिलाधिकारी (भूमि अध्यापति) की अध्यक्षता में लोक सुनवाई की कार्यवाही पूर्वान्हः 11.30 बजे से प्रारम्भ की गयी। लोक सुनवाई के दौरान परियोजना सम्बन्धी प्रोजेक्ट का प्रस्तुतीकरण श्री सदेर आलम, इनवायरमेन्ट स्पेशलिस्ट, द्वारा किया गया।

अतः आम सूचना सम्बन्धी दैनिक समाचार पत्र की कटिंग, लोक सुनवाई सम्बन्धी कार्यवृत्ति लोक सुनवाई की उपस्थिति एवं वीडियो ग्राफी की काम्पैक्ट डिश तथा शिकायत दो प्रतियों में संलग्न कर आपके अवलोकनार्थ एवं सुलभ सन्दर्भ हेतु सादर प्रेषित है।

संलग्नकः– यथोपरि।

भवदीय

(राधेश्याम) 31.01.12
क्षेत्रीय अधिकारी

F03909 C2/N·0·C/3730/12 04-5-12

To,

Director (I.A. - III),
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi.

Subject:- **Public Hearing for National Highway, NH – 2 Six lane upgradation with paved shoulder.**

Dear Sir,

Please refer to above mentioned subject. Public Hearing for the project was conducted on 31.01.2012. Please find enclosed herewith the minutes of public hearing along with the soft copies of the same in the CDs.

Yours faithfully,

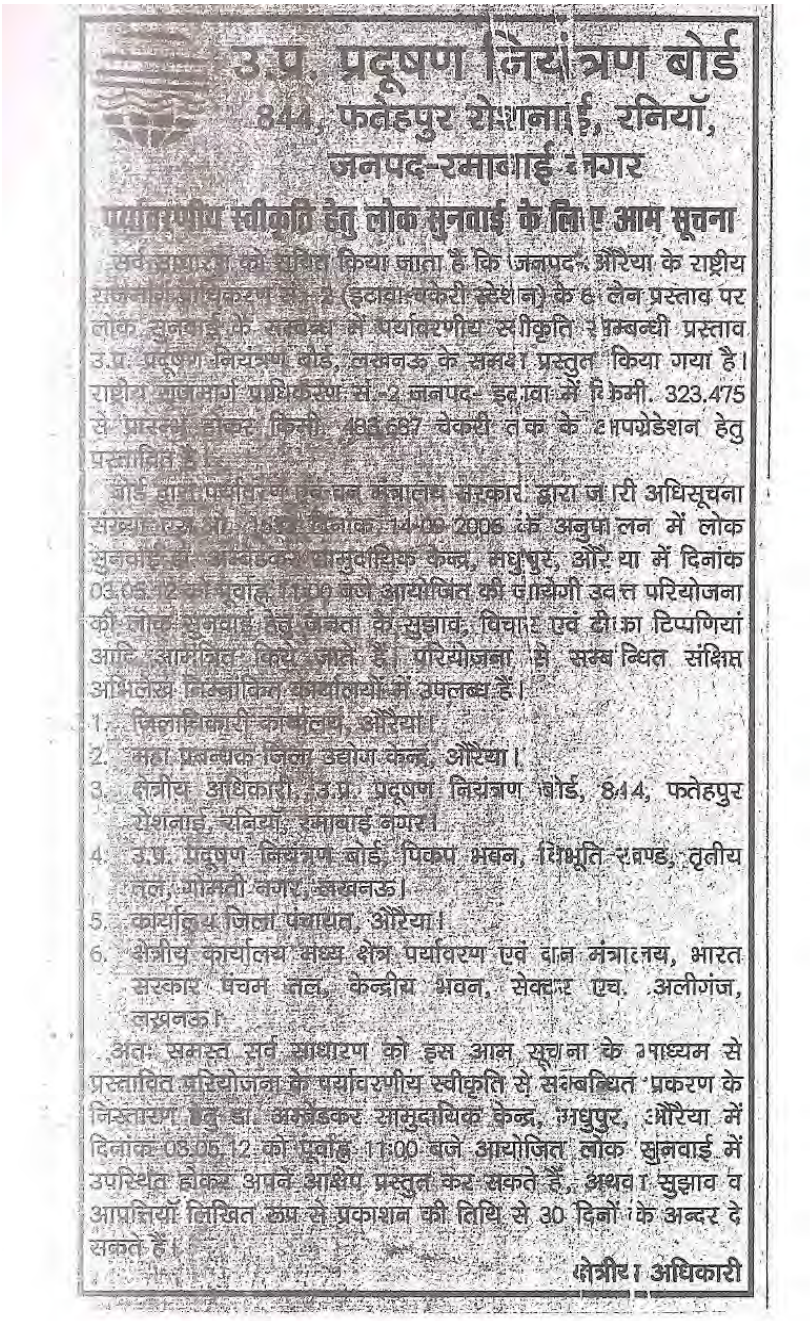
Encl. : As above.

Member Secretary
(Incharge)

E:\C-II\2012\Letter to Other Deptt.doc

7.7.2 Public Hearing at Ramabai Nagar District

Date and Time : 23.03.12 at 11:00 Am
Place : NHAI office Akabarpur
Advertisement NEWS Papers : 1) Dainik Jagran on dated -19.02.2012
2) Hindusthan Times on dated -19.02.2012



उ.प्र. प्रदूषण नियंत्रण बोर्ड
844, फतेहपुर रोशनाई, रनियाँ,
जनपद-रमाबाई नगर

पर्यावरणीय स्वीकृति हेतु लोक सुनवाई के लिए आम सूचना

सर्व साधारण को सूचित किया जाता है कि जनपद- औरैया के राष्ट्रीय राजमार्ग संख्या-2 (इटावा-चकेरी सेक्शन) के 6 लेन प्रस्ताव पर लोक सुनवाई के सम्बन्ध में पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव उ.प्र. प्रदूषण नियंत्रण बोर्ड, लखनऊ के समक्ष प्रस्तुत किया गया है। राष्ट्रीय राजमार्ग प्राधिकरण से-2 जनपद- इटावा में कि.मी. 323.475 से प्रारम्भ होकर कि.मी. 465.687 चेकरी तक के अपग्रेडेशन हेतु प्रस्तावित है।

बोर्ड को पर्यावरण एवं वन मंत्रालय सरकार द्वारा जारी अधिसूचना संख्या एस.ओ. 1533 (ई) दिनांक 14.09.2006 के अनुपालन में लोक सुनवाई डॉ. अम्बेडकर सामुदायिक केन्द्र, मधुपुर, औरैया में दिनांक 03.05.12 को पूर्वाह्न 11.00 बजे आयोजित की जायेगी उक्त परियोजना की लोक सुनवाई हेतु जनता के सुझाव, विचार एवं दी का टिप्पणियां आदि आमंत्रित किये जाते हैं। परियोजना से सम्बन्धित संक्षिप्त अभिलेख निम्नांकित कार्यालयों में उपलब्ध हैं।

1. जिलाधिकारी का कार्यालय, औरैया।
2. महा प्रबन्धक जिला उद्योग केन्द्र, औरैया।
3. क्षेत्रीय अधिकारी, उ.प्र. प्रदूषण नियंत्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, रमाबाई नगर।
4. उ.प्र. प्रदूषण नियंत्रण बोर्ड, पिकप भवन, विभूति खण्ड, तृतीय तल, गोमती नगर, लखनऊ।
5. कार्यालय जिला पंचायत, औरैया।
6. क्षेत्रीय कार्यालय सचिव क्षेत्र पर्यावरण एवं वन मंत्रालय, भारत सरकार पंचम तल, केन्द्रीय भवन, सेक्टर एच, अलीगंज, लखनऊ।

अतः समस्त सर्व साधारण को इस आम सूचना के माध्यम से प्रस्तावित परियोजना के पर्यावरणीय स्वीकृति से सम्बन्धित प्रकरण के निस्तारण हेतु डा. अम्बेडकर सामुदायिक केन्द्र, मधुपुर, औरैया में दिनांक 03.05.12 को पूर्वाह्न 11:00 बजे आयोजित लोक सुनवाई में उपस्थित होकर अपने आक्षेप प्रस्तुत कर सकते हैं, अथवा सुझाव व आपत्तियाँ लिखित रूप से प्रकाशन की तिथि से 30 दिनों के अन्दर दे सकते हैं।

क्षेत्रीय अधिकारी

Public Hearing Proceeding details and Minutes

Fig. 7.15: Photos of Ramabai Public Hearing

राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, जनपद– रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं0 एस0ओ0 1533(अ) दिनॉक 14–09–2006 यथासंशोधित एस0ओ0 3067 (ई) दिनॉक 01–12–2009 के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक 23–03–2012 को पूर्वाह्न 11:00 बजे, राष्ट्रीय राजमार्ग प्राधिकरण, साइट कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में अपर जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में आयोजित करायी गयी लोकसुनवाई के कार्यवृत्त का विवरण।

उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ के पत्र संख्या– एफ 96625/सी–2/एन0ओ0सी0/3730/2011 दिनॉक 22–12–2011 एवं जिलाधिकारी महोदय, जनपद– रमाबाई नगर द्वारा उक्त परियोजना की लोकसनुवाई हेतु स्थल, तिथि एवं समय की सहमति/अनुमति प्रदान करने के उपरान्त उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ द्वारा प्रतिष्ठित समाचार पत्रों (दैनिक जागरण– हिन्दी एवं हिन्दुस्तान टाइम्स– अंग्रेजी) में दिनॉक 19–02–2012 को प्रकाशित प्रेस विज्ञप्ति के उपरान्त दिनॉक **23–03–2012** को **पूर्वाह्न 11:00** बजे भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में अपर जिलाधिकारी, अध्यक्ष लोकसुनवाई की अध्यक्षता में लोकसुनवाई आयोजित की गयी।

उक्त लोकसुनवाई की आम सूचना स्थानीय हिन्दी "दैनिक जागरण" एवं अंग्रेजी "हिन्दुस्तान टाइम्स" समाचार पत्र में दिनॉक 19–02–2012 को प्रकाशित की गयी थी जिसकी छायाप्रतियॉ संलग्न हैं (संलग्नक – 1)।

लोकसुनवाई की अध्यक्षता रामकृष्ण उत्तम, अपर जिलाधिकारी (वित्त एवं राजस्व), जनपद– रमाबाई नगर द्वारा की गयी। लोकसुनवाई के समय उपस्थित अधिकारियों में श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर, डा0 (श्रीमती)शोभा चतुर्वेदी, क्षेत्रीय अधिकारी, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, रमाबाई नगर, श्री पी0 शिवशंकर, प्रबन्धक (तकनीकी), भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर, श्री एस0बी0 सिंह, अधिशाषी अभियंता, उ0प्र0 जल निगम, जनपद–रमाबाई नगर, श्री अशोक कुमार यादव, महाप्रबन्धक, जिला उद्योग केन्द्र रमाबाई नगर, श्री आर0के0 कुशवाहा, कन्सल्टेंट भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर तथा अन्य विभागीय अधिकारियों के अतिरिक्त विभिन्न औद्योगिक संगठनों के प्रतिनिधियों यथा श्री मनोज गुप्ता, श्री रतन गुप्ता तथा श्री सत्येन्द्र गुप्ता, अन्य स्थानीय गणमान्य व्यक्तियों एवं समीपवर्ती ग्राम के निवासी उपस्थित थे। सुलभ संदर्भ हेतु उक्त अवसर पर उपस्थित सदस्यों की सूची की छायाप्रति संलग्न है(संलग्नक– 2)।

लोकसुनवाई प्रारम्भ करते हुए क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, जनपद– रमाबाई नगर के प्रतिनिधि श्री हरीश चन्द्र जोशी, सहा0वैज्ञा0अधि0 द्वारा लोकसुनवाई में उपस्थित सभी अधिकारियों, जनप्रतिनिधियों, विभिन्न औद्योगिक संगठनों एवं स्थानीय गणमान्य व्यक्तियों का स्वागत करते हुए अवगत कराया गया कि भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0– 2, इटावा से चकेरी स्टेशन तक के 6 लेन अपग्रेडेशन का प्रस्ताव उ0प्र0 प्रदूषण नियंत्रण बोर्ड में प्राप्त कराया गया है जिसमें इटावा से चकेरी स्टेशन तक की **कुल दूरी 160.212 किमी0** है।

पर्यावरण एवं वन मंत्रालय, भारत सरकार की अधिसूचना दिनॉक 14–09–2006 की धारा 7 (एफ) के अन्तर्गत 30.0 किमी0 से अधिक लम्बाई के स्टेट हाइवे के निर्माण हेतु मंत्रालय से पर्यावरणीय स्वीकृति लिया जाना आवश्यक है। इसी के अनुपालनार्थ दिनॉक **23–03–2012** को इस लोकसुनवाई का आयोजन किया जा रहा है।

श्री एच0सी0 जोशी, सहा0वैज्ञा0अधि0, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, द्वारा आयोजकों से प्रस्ताव के सम्बन्ध में विस्तृत जानकारी प्रस्तावकों द्वारा प्रस्तुत करने हेतु अनुरोध किया गया। तत्पश्चात् भारतीय राष्ट्रीय राजमार्ग प्राधिकरण के परियोजना निदेशक श्री नवीन मिश्रा एवं पर्यावरण सलाहकार डा0 एम0के0 जैन द्वारा योजना का विवरण प्रस्तुत किया गया।

श्री जैन द्वारा बताया गया कि सन्दर्भित प्रस्तावित राजमार्ग संख्या– 2, इटावा से प्रारम्भ होकर चकेरी औद्योगिक क्षेत्र तक कुल 160.212 किमी0 प्रस्तावित सड़क योजना के अन्तर्गत वर्तमान 4 लेन को 6 लेन में परिवर्तित किया जाएगा। प्रस्तावित सड़क योजना चार जनपदों कमशः इटावा, औरैया, रमाबाई नगर एवं कानपुर नगर से होकर गुजरेगी। प्रस्तावित सड़क योजना हेतु राहचलता मार्ग, आर0ओ डब्ल्यू, उपमार्ग, सन्धि स्थल, आर0ओ0बी0, वाहन सुरंग मार्ग/पैदल/मवेशी सुरंग मार्ग, पैदलपार पुल, दीर्घ एवं लघु पुल, कल्वर्ट, टोल प्लाजा, सर्किल रोड, आदि का निर्माण किया जाना प्रस्तावित है। डा0 जैन के द्वारा पर्यावरण प्रदूषण के नियंत्रण हेतु राष्ट्रीय राजमार्ग सं0– 2 के चौड़ीकरण/अपग्रेडेशन किया जाना प्रस्तावित है। डा0 जैन के द्वारा पर्यावरण प्रदूषण के विभिन्न अधिनियमों का अनुपालन करते हुए राष्ट्रीय राजमार्ग सं0– 2 के चौड़ीकरण के समय उत्सर्जित धूलकणों के नियंत्रण हेतु अवगत कराया कि निर्माण के दौरान धूल कणों को रोकने हेतु खुदाई स्थल पर नियमित पानी का छिड़काव किया जाएगा। निर्माण के समय कम प्रदूषण करने वाली नई तकनीकी पर आधारित मशीनों व वाहनों का प्रयोग किया जाएगा। हॉटमिक्स प्लांट, आबादी एवं संवेदनशील स्थानों से लगभग 01 किमी0 की दूरी पर स्थापित किये जाएगें एवं उनमें वायु प्रदूषण नियंत्रण संयंत्र स्थापित कर प्रदूषण का स्तर निर्धारित बोर्ड मानकों के अनुरूप रखा जाएगा। इसके अतिरिक्त निर्माण के दौरान कटने वाले वृक्षों की क्षतिपूर्ति हेतु वृक्षारोपण वन विभाग से कराया जएगा। इस प्रकार परियोजना के निर्माण के दौरान उत्पन्न समस्याओं का यथोचित निदान किया जाएगा।

डा0 जैन की प्रस्तुति के उपरान्त अध्यक्ष महोदय की अनुमति से सभा में उपस्थित लोगों द्वारा पूछे गये निम्नांकित प्रश्नों के सापेक्ष राष्ट्रीय राजमार्ग प्राधिकरण के परियोजना निदेशक श्री नवीन मिश्रा द्वारा निम्नांकित उत्तर दिये गये।

श्री मनोज गुप्ता– निदेशक, मे0 कानपुर एडिबिल्स लि0, रनियॉ, रमाबाई नगर/ अध्यक्ष रनियॉ इण्डस्ट्रियल एसोसिएशन, रनियॉ द्वारा अवगत कराया गया कि भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा पूर्व में एन0एच0–2 को 4 लेन में निर्माण करते समय रनियॉ, जनपद– रमाबाई नगर के रनियॉ एवं रनियॉ औद्योगिक क्षेत्र में रोड के किनारे कच्चा नाला स्थित था जिससे रनियॉ क्षेत्र का बहिस्राव सुचारू रूप से प्रवाहित हो जाता था तथा क्षेत्र में किसी प्रकार के जल भराव की समस्या नहीं होती थी किन्तु एन0एच0–2 को 4 लेन निर्माण के समय उक्त कच्चा नाला, हाइवे में समायोजित करते हुए सड़क का निर्माण कर दिया गया। यहॉ तक कि नाले का पानी कैनाल के नीचे से निकलने के लिए सिंचाई विभाग द्वारा पूर्व में निर्मित साइफन भी तोड़ दिया गया।

एन0एच0ए0आई0 द्वारा एन0एच0–2 के चौड़ीकरण हेतु पूर्व में 30–07–1999 को आयोजित लोक सुनवाई के समय तत्कालीन जिलाधिकारी जनपद– कानपुर देहात/अध्यक्ष लोक सुनवाई द्वारा प्रस्तावित परियोजना में रनियॉ ड्रेनेज को भी सम्मिलित किये जाने का भी सुझाव दिया गया था जिसके आधार पर उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड, लखनऊ द्वारा रनियॉ में औद्योगिक ड्रेन के निर्माण किये जाने की शर्त के साथ परियोजना निदेशक, एन0एच0ए0आई0, कानपुर के पक्ष में अनापत्ति प्रमाणपत्र सशर्त निर्गत किया गया था। इसी कम में एन0एच0ए0आई0, कानपुर के परियोजना निदेशक ने अपने पत्र दिनॉक 11–08–2003 एवं 22–08–2003 के द्वारा अपर निदेशक, उद्योग कानपुर मण्डल कानपुर को लिखित आश्वासन दिया था कि वर्षा ऋतु समाप्त होते ही दिनॉक 15–09–2003 से कार्यारम्भ कर 31–03–2004 तक रनियॉ ड्रेन का निर्माण पूर्ण कर दिया जाएगा।

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मण्डलायुक्त महोदय, कानपुर मण्डल कानपुर की अध्यक्षता में 28–02–2004 को सम्पन्न मण्डलीय उद्योग बन्धु की बैठक में एन0एच0ए0आई0, कानपुर के प्रतिनिधि द्वारा अवगत कराया गया था कि रनियॉ ड्रेन का निर्माण प्रारम्भ कर दिया गया है, जो 31–12–2004 तक पूर्ण हो जाएगी लेकिन एन0एच0ए0आई0 द्वारा रनियॉ ड्रेन का निर्माण नहीं किया गया। पुनः दिनॉक 22–03–2006 को औद्योगिक विकास आयुक्त एवं प्रमुख सचिव, (उद्योग) उत्तर प्रदेश शासन, लखनऊ की अध्यक्षता में रनियॉ क्षेत्र में स्थापित औद्योगिक इकाइयों से उत्पन्न बहिस्राव की निकासी हेतु नेशनल हाइवे के किनारे नाले के निर्माण के सम्बन्ध में सम्पन्न बैठक, जिसमें श्री पी0के0 शर्मा महाप्रबन्धक, एन0एच0ए0आई0, नई दिल्ली एवं आशुतोष गौतम, परियोजना निदेशक, जनपद– कानपुर भी उपस्थित थे, में निर्णय लिया गया कि रनियॉ ड्रेन एवं सी0ई0टी0पी0 की संयुक्त परियोजना आई0आई0यू0एस0 के अन्तर्गत भारत सरकार को प्रेषित किया जाएगा। यदि किसी कारण से प्रथम विकल्प सफल नहीं हो पाता है, तो एन0एच0ए0आई0 को पूर्व में लिखित आश्वासन व अनापत्ति प्रमाणपत्र की शर्तों के अनुसार नाले का निर्माण अपने व्यय से कराना होगा।

इस सम्बन्ध में आयुक्त एवं निदेशक, उद्योग उत्तर प्रदेश कानपुर के पत्र दिनॉक 26–12–2011 द्वारा जिलाधिकारी महोदय को अवगत कराया गया है कि प्रस्ताव भारत सरकार द्वारा अस्वीकृत कर दिया गया है। जिलाधिकारी महोदय ने अपने पत्र दिनॉक 17–01–12 के माध्यम से परियोजना निदेशक, एन0एच0ए0आई0 किदवई नगर, जनपद– कानपुर को विकास आयुक्त, उ0प्र0 शासन की अध्यक्षता में दिनॉक 22–03–2006 को आहूत बैठक में लिए गये निर्णय के अनुपालनार्थ एन0एच0–2 के 6 लेन चौड़ीकरण प्रस्ताव में रनियॉ ड्रेन निर्माण के प्रस्ताव को भी सम्मिलित करने हेतु पत्र प्रेषित किया गया है जिससे कि रनियॉ औद्यागिक क्षेत्र एवं रनियॉ, जनपद– रमाबाई नगर से उत्पन्न बहिस्राव की निकासी की समस्या से निजात मिल सके एवं रनियॉ का विकास हो सके।

उपरोक्त सारे प्रयासों के उपरान्त भी अभी तक रनियॉ औद्योगिक ड्रेन का निर्माण एन0एच0ए0आई0 द्वारा न तो किया गया है और न ही राष्ट्रीय राजमार्ग सं0– 2 के चौड़ीकरण के प्रस्ताव में रनियॉ औद्योगिक एवं क्षेत्रीय, रिहायशी, घरेलू बहिस्राव के निस्तारण हेतु ड्रेन का प्राविधान किया गया है। रनियॉ औद्योग क्षेत्र एवं रिहायशी क्षेत्र से उत्पन्न बहिस्राव की निकासी न होने के कारण क्षेत्र में जलभराव की गम्भीर समस्या है। उक्त समस्या के सम्बन्ध में उद्योगों एवं क्षेत्रवासियों की अपील है कि एन0एच0ए0आई0 द्वारा 4 लेन से 6 लेन हाइवे निर्माण के समय हाइवे के दोनों ओर औद्योगिक एवं स्थानीय घरेलू बहिस्राव की निकासी हेतु ड्रेन का निर्माण किया जाए। प्रश्नकर्ता द्वारा सभा में प्रस्तुत सम्बन्धित प्रपत्रों की छायाप्रति सुलभ संदर्भ हेतु संलग्न हैं। संलग्नक–3।

उत्तरः श्री नवीन मिश्रा, परियोजना निदेशक द्वारा अवगत कराया गया कि पूर्व में 4 लेन सड़क निर्माण कार्य शुरू करते समय रनियॉ ड्रेन निर्माण कार्य हेतु आश्वासन दिया गया था। कतिपय कारणों से ड्रेन का निर्माण राष्ट्रीय राजमार्ग निर्माण के साथ नहीं किया जा सका। इसके उपरान्त इस सम्बन्ध में उच्च स्तरीय बैठक आहूत की गई थी। बैठक में तय हुआ कि रनियॉ ड्रेन सी0ई0टी0पी0 का एक भाग होगा और इस परियोजना के अनुमोदन हेतु एन0एच0ए0आई0 प्रयास करेगा। उस समय इस परियोजना की लागत रू0 10 करोड़ से रू0 12 करोड़ थी जिसका 10 प्रतिशत एन0एच0ए0आई को देना था जो लगभग रू0 1.0 से रू0 1.5 करोड़ के मध्य था। राष्ट्रीय राजमार्ग के 06 लेन प्रस्ताव के शुरू होते समय जिलाधिकारी रमाबाई नगर के साथ एक बैठक हुई थी जिसमें रनियॉ ड्रेन न होने के कारण क्षेत्र में जलभराव की समस्या की बात की गयी। बैठक में बताया गया था कि ट्रीटमेंट प्लान्ट का प्रस्ताव अनुमोदित नहीं हो पाया है अतः ड्रेन का निर्माण किया जाना आवश्यक है। बैठक में जिलाधिकारी महोदय द्वारा निर्देशित किया गया था कि एन0एच0ए0आई0 स्थल निरीक्षण कर समस्या का निदान करे तथा इस सम्बन्ध में रनियॉ इण्डस्ट्रियल एसोसिएशन, रनियॉ जनपद– रमाबाई नगर को औद्योगिक उत्प्रवाह की मात्रा देने हेतु निर्देशित किया गया था किन्तु अभी तक उक्त सन्दर्भ में औद्योगिक उत्प्रवाह की मात्रा उनके कार्यालय को प्राप्त नहीं हुई है।

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जनपद– रमाबाई नगर में रनियॉ एवं उसके आस–पास स्थित उद्योगों से उत्पन्न बहिस्राव एवं घरेलू बहिस्राव उक्त प्रस्तावित ड्रेन में नहीं आ सकता है। इसके लिए सड़क के दोनों ओर भूमिगत पाइप डालकर ड्रेन का निर्माण किया जाना सम्भव होगा। यह दूरी करीब 7.0 से 8.0 किमी0 है एवं इसकी लगभग 7 से 8 मी0 गहराई में पाइप लाइन बिछानी होगी। चूँकि इस प्रकार के कार्य हेतु जल निगम के पास निपुणता है, अतएवं जल निगम इस प्रस्ताव को जिलाधिकारी के माध्यम से एन0एच0ए0आई0 के कार्यालय को प्रेषित करे जिसे उनके द्वारा संस्तुति सहित इस प्रस्ताव को अग्रसारित कर दिया जाएगा। रनियॉ ड्रेन के निर्माण हेतु अतिरिक्त अवशेष धनराशि, रनियॉ औद्योगिक संगठन, रनियॉ, जपद– रमाबाई नगर को देना होगा।

श्री एस0बी0 सिंह, अधिशासी अभियन्ता, उ0प्र0 जल निगम, रमाबाई नगर द्वारा अवगत कराया गया कि पूर्व में जिलाधिकारी महोदय की बैठकों में एन0एच0ए0आई0 के प्रतिनिधि द्वारा ड्रेन निर्माण हेतु आश्वासन दिया गया था कि रनियॉ ड्रेन का निर्माण उनके व्यय पर किया जाएगा परन्तु उक्त का निर्माण एन0एच0ए0आई0 द्वारा नहीं किया गया।

श्री अशोक कुमार सिंह यादव, मह प्रबन्धक जिला उद्योग केन्द्र, रनियॉ, रमाबाई नगर द्वारा अवगत कराया गया कि रनियॉ, औद्योगिक क्षेत्र द्वारा उद्योगों से जनित औद्योगिक उत्प्रवाह की मात्रा जिलाधिकारी महोदय के माध्यम से एन0एच0ए0आई0 को प्रेषित कर दी गयी है। दिनॉक 05–12–2011 को एन0एच0ए0आई0 के प्रतिनिधि द्वारा पूर्व में जिलाधिकारी महोदय के समक्ष यह आश्वासन दिया गया था कि रनियॉ ड्रेन से सम्बन्धित प्रस्ताव को केन्द्र को भेजा जाएगा जिसमें एन0एच0ए0आई0 अपना सपोर्ट करेगा। इसके अतिरिक्त उक्त प्रस्ताव केन्द्र द्वारा वापस कर दिया जाता है तो एन0एच0ए0आई0 रनियॉ ड्रेन निर्माण अपने व्यय पर पूरा करेगा। उक्त प्रस्ताव केन्द्र द्वारा वापस कर दिया गया है अतः रनियॉ ड्रेन का निर्माण एन0एच0ए0आई0 द्वारा अपने व्यय से करना चाहिए। क्षेत्र में जल निकासी न होने के कारण कई अरब के प्रस्ताव पूर्ण नहीं हो पा रहे हैं जिसके अभाव में क्षेत्र का विकास नहीं हो पा रहा है तथा राजस्व की हानि हो रही है।

श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर द्वारा अवगत कराया गया कि एन0एच0ए0आई0 के स्तर से निर्णय लेने हेतु सक्षम अधिकारी नहीं हैं। रनियॉ ड्रेन के निर्माण के सम्बन्ध में प्राप्त सुझावों को वह संस्तुति सहित उच्च अधिकारियों को अग्रसारित कर देंगे। उस पर जो भी निर्णय होगा उसका उनके द्वारा पालन करना सुनिश्चित किया जाएगा।

श्री हरजेन्द्र सिंह, अध्यक्ष, आई0आई0ए0, रमाबाई नगर ने सुझाव दिया कि रोड क्रास करने हेतु जो कट्स बनाए जाते हैं। इस पर विशेष ध्यान रखा जाए कि रोड क्रास करने में कोई असुविधा न हो।

श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर द्वारा अवगत कराया गया कि राष्ट्रीय राजमार्ग पर कोई मार्ग विभाजन नहीं दिया जाएगा। अण्डरपास बनाए जायेंगे। सड़क पार करने हेतु वाहनों को अण्डरपास तक आना होगा। दो भूमिगत मार्गों के मध्य की दूरी 2.5 से 3.0 किमी0 रखी जाती है।

श्री हरजेन्द्र सिंह, अध्यक्ष, आई0आई0ए0, रमाबाई नगर द्वारा जनकारी चाही गयी कि पूर्व में 4 लेन चौड़ीकरण से टेलीफोन लाइन क्षतिग्रस्त हो गई थी जो अभी तक ठीक नहीं हो पाई है जिसके कारण रनियॉ में अधिकांश टेलीफोन कनेक्शन बंद हैं। इसके अतिरिक्त रनियॉ क्षेत्र में सम्भावित सी0एन0जी0 पाइप लाइन के सम्बन्ध में एन0एच0ए0आई0 द्वारा क्या कार्यवाही की जाएगी।

श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर द्वारा अवगत कराया गया कि सम्बन्धित विभाग अपनी यूटिलिटी को अपने खर्चे पर हटाएंगे उनको एन0एच0ए0आई0 द्वारा इस बात पर

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एन0ओ0सी0 दी गई कि जब हमें आवश्यकता होगी वे अपने खर्चे पर अपनी यूटिलिटी को हटाएंगे। एन0एच0ए0आई0 द्वारा यूटिलिटी सड़क पार करने हेतु बनाई जाती है।

श्री हरजेन्द्र सिंह, अध्यक्ष, आई0आई0ए0, रमाबाई नगर द्वारा जानकारी चाही गयी कि गैस लाइन, वाटर लाइन, टेलीफोन लाइन इलेक्ट्रिक लाइन की व्यवस्था हेतु क्या प्राविधान किया जाता है?

श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर द्वारा अवगत कराया गया कि सम्बन्धित सारे विभागों के शिफ्टिंग की इस्टीमेट देने हेतु पत्र लिखा जाता है। टेलीफोन शिफ्टिंग हेतु एन0एच0ए0आई0 द्वारा कोई इस्टीमेट प्राप्त नहीं किया जाता है।

श्री रोहित कुमार, सदस्य, रनियॉ औद्योगिक आस्थान समिति द्वारा अवगत कराया गया कि मण्डलीय उद्योग बन्धु की पूर्व बैठकों में एन0एच0ए0आई0 के प्रतिनिधियों द्वारा लिखित रूप से आश्वासन एवं समयबद्ध कार्यक्रम दिया गया था परन्तु अभी तक इस सम्बन्ध में कोई कार्यवाही नहीं हुई। अतः इस लोक सुनवाई में इस सम्बन्ध में स्पष्ट निर्णय चाहिए।

श्री नवीन मिश्रा, परियोजना निदेशक, भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, कानपुर द्वारा अवगत कराया गया कि एन0एच0ए0आई0 के स्तर से निर्णय लेने हेतु सक्षम अधिकारी नहीं हैं। रनियॉ ड्रेन के निर्माण के सम्बन्ध में प्राप्त सुझावों को वह संस्तुति सहित उच्च अधिकारियों को अग्रसारित कर देंगे। उस पर जो भी निर्णय होगा उसका उनके द्वारा पालन करना सुनिश्चित किया जाएगा।

श्री अशोक कुमार सिंह यादव, महाप्रबन्धक जिला उद्योग केन्द्र, रनियॉ, रमाबाई नगर द्वारा अपेक्षा की गयी कि लोक सुनवाई की कार्यवाही जिलाधिकारी महोदय की अध्यक्षता में जन प्रतिनिधियों एवं संभ्रांत नागरिकों की उपस्थिति में होती है। अतः यहॉ उच्च अधिकारी को आना चाहिए जो यहॉ पर उठी आपत्तियों पर निर्णय लेकर कार्यवाही सुनिश्चित करा सके।

अध्यक्ष महोदय द्वारा अभिमत व्यक्त किया गया एन0एच0ए0आई0 इस बात से सहमत है एवं उसके संज्ञान में है कि पूर्व में जल निकासी हेतु ड्रेन थी जिसे 4 लेन रोड निर्माण से समाप्त हो गई है तो एन0एच0ए0आई0 की विधिक जिम्मेदारी होगी कि वह अपने खर्चे पर ड्रेन का निर्माण करे।

सभी पक्षों नें इस पर अपनी सहमति जताई एवं अध्यक्ष महोदय ने प्रस्ताव को स्वीकार करते हुए सभा समापन की घोषणा की।

उपरोक्त विचारों, सुझावों, टिप्पणियों एवं आपत्तियों के अतिरिक्त कोई मुद्दा लोकसुनवाई के दौरान नहीं उठाया गया। उक्त सुनवाई के समय उपस्थित जन समुदाय ने रनियॉ ड्रेन निर्माण के साथ इस परियोजना के निर्माण हेतु अपनी सहमति व्यक्त की। उपरोक्त मन्तव्य के साथ पर्यावरणीय दृष्टिकोण से राष्ट्रीय राजमार्ग प्राधिकरण द्वारा सड़क परियोजना के विस्तारीकरण हेतु स्थानीय लोकसुनवाई का कार्यवृत्त आवश्यक कार्यवाही हेतु निर्गत किया जाता है।

Received.
23/03/12.

(डा0(श्रीमती शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी
उ0प्र0 प्रदूषण नियंत्रण बोर्ड,

23/3/12

(रामकृष्ण उत्तम)
अपर जिलाधिकारी (वित्त राजस्व)
अध्यक्ष, लोकसुनवाई

R-ST

Attendance Sheet

उ0प्र0 में राष्ट्रीय राजमार्ग प्राधिकरण सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियॉ, रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं0 एस0ओ0 1533(अ) दिनॉक 14–09–2006 यथासंशोधित एस0ओ0 3067 (ई) दिनॉक 01–12–2009 के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक 23–04–2012 को प्रातः 11:00 बजे राष्ट्रीय राजमार्ग प्राधिकरण, साइट कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में जिलाधिकारी/अध्यक्ष लोकसनुवाई की अध्यक्षता में सम्पन्न लोकसुनवाई के कार्यवृत्त का विवरण।

क0सं0	नाम	पता	दूरभाष/मो0संख्या	हस्ताक्षर
1	[illegible] उनमें	A.D.M. P/R Ramabai Nagar	9454617624	
2	नवीन मिश्रा	PD, Kanpus, NHAI	7860563333	
3.	शशि भार चतुर्वेदी	Regional officer U.P. Pollution Control Board. Ramabai Nagar	9415045189	
4.	P. SIVASANKAR	Manager(T), NHAI, Kanpur	9793886666	
5.	एस० वी० सिंह	[illegible]	9415129449	
6.	अशोक कुमार यादव	सहायक अभियन्ता जिला उद्योग केन्द्र रमाबाई नगर	9839163990	
7	Manoj Gupta	Rania Ramabai nagar (Rania Industrial Association)	9889100222	
8	Ratan Gupta	Rania Ind. Association		
9.	Satyendra Gupta	Rania Ind. Asso.	9415128602	
10	R.K. Tiwari	Rania Mill Asso		
11	[illegible]	[illegible]	9455509243	
12.	Yogesh Sabharwal	Orissa Para.	9690012111	
13-	[illegible]	Akbarpur	9651657485	
14-	Rohit Brijpuria IIA Vice Chairman.	17 Audhyogik Asthan Ramabai Nagar	9335070168	
20.	Hardeep Singh	B-11 Site II Rania	9336213421	
	I.I.A Chairman	Industrial area		

उ0प्र0 में राष्ट्रीय राजमार्ग प्राधिकरण सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियॉ, रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं0 एस0ओ0 1533(अ) दिनॉक 14–09–2006 यथासंशोधित एस0ओ0 3067 (ई) दिनॉक 01–12–2009 के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक 23–04–2012 को प्रातः 11:00 बजे राष्ट्रीय राजमार्ग प्राधिकरण, साइट कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में जिलाधिकारी/अध्यक्ष लोकसनुवाई की अध्यक्षता में सम्पन्न लोकसुनवाई के कार्यवृत्त का विवरण।

क0सं0	नाम	पता	दूरभाष/मो0संख्या	हस्ताक्षर
21	G.P. Pandey	O S E E.L.P Kanpur		
22	R.K. Kushwaha	NHAI Kanpur	9506982172	
23	[illegible]	[illegible]	—	
24	M.K. MISRA	AKBRPUR		
25	[illegible]	[illegible]		
26	[illegible]			
27	[illegible]	[illegible]	[illegible]	
28	[illegible]	[illegible]	[illegible]	
29	[illegible]	[illegible]	8933868[illegible]	
30	[illegible]	[illegible]	9369465871	
31	[illegible]	[illegible]	9839135267	
32	[illegible]	[illegible]	9889714307	
33	Anand Pandey	O.S.E Kanpur(Admn)	8127663888	
34	[illegible]	[illegible]	9198272182	
35	[illegible]	[illegible]		
36	[illegible]	[illegible]	9889088436	
37	[illegible]	[illegible]	09493697704	
38	[illegible]	[illegible]	9455406384	
39	[illegible]	[illegible]	[illegible]	
40	[illegible]	[illegible]		

उ0प्र0 में राष्ट्रीय राजमार्ग प्राधिकरण सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियॉ, रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं0 एस0ओ0 1533(अ) दिनॉक 14–09–2006 यथासंशोधित एस0ओ0 3067 (ई) दिनॉक 01–12–2009 के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक 23–04–2012 को प्रातः 11:00 बजे राष्ट्रीय राजमार्ग प्राधिकरण, साइट कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में जिलाधिकारी/अध्यक्ष लोकसनुवाई की अध्यक्षता में सम्पन्न लोकसुनवाई के कार्यवृत्त का विवरण।

क0सं0	नाम	पता	दूरभाष/मो0संख्या	हस्ताक्षर
41-	श्री रामआसरे	ग्राम- गसोपा, पोस्ट- करौंसा	9793631879	रामआसरे
42-	" शिव सिंह	"	8756830277C	
43-	" राजकुमार सिंह चौहान	ग्राम- बंगला, पोस्ट- गसोपा	9794605822	राजकुमार
44-	" राधेश्याम	ग्राम- बलभद्रा पुर, पोस्ट- भुगनिगापुर	9936618699	राधेश्याम
45	बनवारीलाल	ग्राम बलभद्रापुर	7398040682	बनवारीलाल
46-	रतनकुमार	ग्राम बलभद्रा पुर	9651739717	रतन कुमार
47	जगलाधिह	ग्रा० बलभद्रापुर	9793158816	जगलाधिह
48-	रामदयाराम	ग्रा० बलभद्रा पुर	9629367310	रामदयाराम
49	श्रीमती कला	"	7398040672	
50	कौशल सिंह	ग्रा० सिंदपुर कायस्थ	9760229768	कौशल सिंह
51	अमित संगर	[illegible]	9559342262	Amit
52	गंगा	अकबरपुर	7398627160	गंगा
53	अरविंद कुमार	गसोपा	9655522098	अरविंद
54	दीप	गसोपा	7398823160	दीप
55	नारायण	बेला	9522967[illegible]	नारायण
56	सुनील	अनबोला	9125764817	सुनील
57	Lalit Kumar	Vill. Bhagirathpur Post Sujauli Khurd Rambipur	9450902288	Lalit
58	Sandeepkuma	करौंसा	9598915307	Sandeep
59.	जाहर सिंह	करौंसा, पो० करौंसा	9052744287	जाहर सिंह
60-	श्री राम नाथ	अकबरपुर, रमाबाई नगर		रामनाथ

क्रमसं०	नाम	पता	दूरभाष / मो०संख्या	हस्ताक्षर
61.	G.D Goyal.	Gour Pigment (P) Ltd Ranir	9936074111	
62.	Deepak Kapoor	Sudesh Sharan Doad	9235260603	
63.	Manish Sharma	Shishas colored chemicals	9506870461	
64.	Ajeet Kr. Suman	UPPCB Rania	9415480579	
65.	Prakhar Kumar	UPPCB Ramabai Nagar	9454[illegible]43	
66.	J.C. Joshi Asst	UPPCB Ranibai Nagar	8268434747	
67.	Satendra Singh	UPPCB Kanpur	7500420011	
68.	Abhishek Verma	UPPCB, Ramabai Nagar	9389114696	
69.	Dr. M. K Jain	CEG GD Jaipur	9414071334	
70.	Dr Mahaveer			
71.				
72.				
73.				
74.				
75.				
76.				

1740/NOC/R-21/12

29/03/12

सेवा में,

मुख्य पर्यावरण अधिकारी(वृत्त–2),
उ0प्र0 प्रदूषण नियंत्रण बोर्ड,
लखनऊ।

विषयः ***राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, जनपद– रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरणीय स्वीकृति हेतु दिनॉक 23–03–2012 को पूर्वाह्न 11:00 बजे, राष्ट्रीय राजमार्ग प्राधिकरण, साइट कार्यालय, निकट राजकीय महाविद्यालय, अकबरपुर, जनपद– रमाबाई नगर में अपर जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में आयोजित करायी गयी लोकसुनवाई के कार्यवृत्त का विवरण।***

महोदय,

कृपया उपरोक्त विषयक जनपद– रमाबाई नगर में राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु प्राप्त प्रस्ताव पर दिनॉक 23–03–2012 को अपर जिलाधिकारी महोदय, जनपद– रमाबाई नगर की अध्यक्षता में पर्यावरणीय क्लीयरेन्स हेतु लोक सुनवाई आयोजित की गयी। लोक सुनवाई का कार्यवृत्त एवं अन्य प्रपत्र इस पत्र के साथ संलग्न कर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित किये जा रहे हैं।

संलग्नकः

1– लोक सुनवाई का कार्यवृत्त।
2– उपस्थित सदस्यों की सूची।
3– विज्ञप्ति की प्रति।
4– लोक सुनवाई की सी0डी0।

भवदीया,

Chaturvedi.

(डा0(श्रीमती)शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी

पृ0सं0: तद्दिनॉकः

प्रतिलिपिः सदस्य सचिव महोदय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ को सूचनार्थ सादर प्रेषित।

Chaturvedi.

क्षेत्रीय अधिकारी

AEE

F 0391D C-2/NOC/3736/2012- 24-5-12

To,

Director (I.A. - III),
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi.

Subject:- **Public Hearing for National Highway, NH – 2 Six lane upgradation with paved shoulder.**

Dear Sir,

Please refer to above mentioned subject. Public Hearing for the project was conducted on 23.3.2012 in Ramabai Nagar. Please find enclosed herewith the minutes of public hearing along with the soft copies of the same in the CDs.

Yours faithfully,

Encl. : As above.

Member Secretary
(Incharge)

E:\C-II\2012\Letter to Other Deptt.doc

7.7.3 Public Hearing at Auraiya District

As per EIA notification 14 Sep. 2006 and UP-PCB regional office at **Ramabai Nagar** published public notice in local news papers (Danik Jagran) on 30 March 2012 to conduct public hearing at Dr. Ambedkar Community Hall , Auriaya.

कानपुर 30 मार्च 2012 दैनिक जागरण 9

उ.प्र. प्रदूषण नियंत्रण बोर्ड
844, फतेहपुर रोशनाई, रनियाँ, जनपद-रमाबाई नगर

पर्यावरणीय स्वीकृति हेतु लोक सुनवाई के लिए आम सूचना

सर्व साधारण को सूचित किया जाता है कि जनपद औरैया के राष्ट्रीय राजमार्ग संख्या-2 (इटावा-चकेरी सेक्शन) के 6 लेन प्रस्ताव पर लोक सुनवाई के सम्बन्ध में पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव उ.प्र. प्रदूषण नियंत्रण बोर्ड, लखनऊ के समक्ष प्रस्तुत किया गया है। राष्ट्रीय राजमार्ग संख्या-2 जनपद इटावा में कि.मी. 323.475 से प्रारम्भ होकर किमी. 484.287 चेकरी तक के उन्नयन हेतु प्रस्तावित है।

बोर्ड आदेशपर्यावरण एवं वन मंत्रालय सरकार द्वारा जारी अधिसूचना संख्या एस.ओ. 1533 दिनांक 14-09-2006 के अनुपालन में लोक सुनवाई का आयोजन डा. अम्बेडकर सामुदायिक केन्द्र, मधुपुर, औरैया में दिनांक 03.05.12 को प्रातः 11.00 बजे आयोजित की जायेगी उक्त परियोजना की लोक सुनवाई हेतु जनता के सुझाव, विचार एवं टीका टिप्पणियां आदि आमंत्रित किये जाते हैं। परियोजना से सम्बन्धित संक्षिप्त अभिलेख निम्नांकित कार्यालयों में उपलब्ध हैं।

1. जिलाधिकारी कार्यालय, औरैया।
2. महा प्रबन्धक जिला उद्योग केन्द्र, औरैया।
3. क्षेत्रीय अधिकारी, उ.प्र. प्रदूषण नियंत्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, रमाबाई नगर।
4. उ.प्र. प्रदूषण नियंत्रण बोर्ड, पिकप भवन, विभूति खण्ड, तृतीय तल, गोमती नगर, लखनऊ।
5. कार्यालय जिला पंचायत, औरैया।
6. क्षेत्रीय कार्यालय मध्य क्षेत्र पर्यावरण एवं वन मंत्रालय, भारत सरकार पंचम तल, केन्द्रीय भवन, सेक्टर एच, अलीगंज, लखनऊ।

अतः समस्त सर्व साधारण को इस आम सूचना के माध्यम से प्रस्तावित परियोजना के पर्यावरणीय स्वीकृति से सम्बन्धित प्रकरण के निस्तारण हेतु डा. अम्बेडकर सामुदायिक केन्द्र, मधुपुर, औरैया में दिनांक 03.05.12 को प्रातः 11.00 बजे आयोजित लोक सुनवाई में उपस्थित होकर अपने आक्षेप प्रस्तुत कर सकते हैं, अथवा सुझाव व आपत्तियाँ लिखित रूप से प्रकाशन की तिथि से 30 दिनों के अन्दर दे सकते हैं।

क्षेत्रीय अधिकारी

Public Hearing proceeding details and minutes

उ०प्र० में जनपद– औरैया में राष्ट्रीय राजमार्ग प्राधिकरण, सं०–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ०प्र० प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, जनपद– रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम 1986 के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं० एस०ओ० 1533(अ) दिनॉक 14–09–2006 यथासंशोधित एस०ओ० 3067 (ई) दिनॉक 01–12–2009 के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक 03–05–2012 को पूर्वाह्न 11:00 बजे, डा० अम्बेडकर सामुदायिक केन्द्र, मधुपुर, जनपद– औरैया में जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में आयोजित लोकसुनवाई के कार्यवृत्त का विवरण ।

उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ के पत्र संख्या– एफ 96626/सी–2/एन0ओ0सी0/3730/2011 दिनॉक 22–12–2011 एवं जिलाधिकारी महोदय, जनपद– औरैया द्वारा उक्त परियोजना की लोकसुनवाई हेतु स्थल, तिथि एवं समय की सहमति/अनुमति प्रदान करने के उपरान्त उ0प्र0 प्रदूषण नियंत्रण बोर्ड, द्वारा प्रतिष्ठित समाचार पत्रों (दैनिक जागरण– हिन्दी एवं हिन्दुस्तान टाइम्स– अंग्रेजी) में दिनॉक 30–03–2012 को प्रकाशित प्रेस विज्ञप्ति के उपरान्त दिनॉक 03–05–2012 को पूर्वाह्न 11:00 बजे डा0 अम्बेडकर सामुदायिक केन्द्र, मधुपुर, जनपद– औरैया में जिलाधिकारी, अध्यक्ष लोकसुनवाई की अध्यक्षता में लोकसुनवाई आयोजित की गयी।

उक्त लोकसुनवाई की आम सूचना स्थानीय हिन्दी "दैनिक जागरण" एवं अंग्रेजी "हिन्दुस्तान टाइम्स" समाचार पत्र में दिनॉक 30–03–2012 को प्रकाशित की गयी थी जिसकी छायाप्रतियॉ संलग्न हैं। (संलग्नक – 1)।

लोकसुनवाई की अध्यक्षता जिलाधिकारी, जनपद– औरैया द्वारा की गयी। लोकसुनवाई के समय उपस्थित अधिकारियों में श्री पी0शिवशंकर, मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर, डा0 (श्रीमती)शोभा चतुर्वेदी, क्षेत्रीय अधिकारी, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, रमाबाई नगर, स्थानीय जनप्रतिनिधि एवं क्षेत्रीय ग्रामवासी उपस्थित थे। सुलभ संदर्भ हेतु उक्त अवसर पर उपस्थित संदस्यों की सूची की छायाप्रति संलग्न है(संलग्नक– 2)।

लोकसुनवाई प्रारम्भ करते हुए क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियॉ, जनपद– रमाबाई नगर के प्रतिनिधि श्री हरीश चन्द्र जोशी, सहा0वैज्ञा0अधि0 द्वारा लोकसुनवाई में उपस्थित सभी अधिकारियों, स्थानीय जनप्रतिनिधियों, एवं स्थानीय गणमान्य व्यक्तियों का स्वागत करते हुए अवगत कराया गया कि भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0– 2, इटावा से चकेरी स्टेशन तक 4 लेन से 6 लेन तक के अपग्रेडेशन का प्रस्ताव उ0प्र0 प्रदूषण नियंत्रण बोर्ड में प्राप्त कराया गया है। पर्यावरण एवं वन मंत्रालय, भारत सरकार की अधिसूचना दिनॉक 14–09–2006 की धारा 7 (एफ) के अन्तर्गत 30.0 किमी0 से अधिक लम्बाई के स्टेट हाइवे के निर्माण हेतु मंत्रालय से पर्यावरणीय स्वीकृति लिया जाना आवश्यक है। इसी के अनुपालनार्थ दिनॉक 03–05–2012 को इस लोकसुनवाई का आयोजन किया जा रहा है।

इनके द्वारा यह भी बताया गया कि यद्यपि भारतीय राष्ट्रीय राजमार्ग से प्राप्त प्रस्ताव से सम्बन्धित ई0आई0ए0 रिपोर्ट एवं संक्षिप्त परियोजना रिपोर्ट हिन्दी एवं अंग्रेजी में कार्यालय जिलाधिकारी, जनपद– औरैया, अपर अधिकारी, नगर पंचायत एवं उ0प्र0 प्रदूषण नियंत्रण बोर्ड, जनपद– रमाबाई नगर में सर्वजन के अध्ययन के उपरान्त सुझाव, शिकायत एवं टिप्पणी हेतु रखा गया था। आज पुनः सभा में उपस्थित जनसमुदाय के समक्ष परियोजना रिपोर्ट एवं पर्यावरण प्रभाव मूल्यांकन के बारे में विस्तृत चर्चा आयोजकों के द्वारा की जाएगी। परियोजना के सम्बन्ध में विस्तृत चर्चा हेतु आयोजकों से निवेदन किया गया।

कमश.....

(डा० शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी
उ0प्र0प्रदूषण नियंत्रण बोर्ड
रमाबाई नगर

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आयोजकों की ओर से कन्सल्टिंग इंजीनियर्स ग्रुप के प्रतिनिधि के द्वारा प्रस्तावित परियोजना के बारे म अवगत कराया गया कि वर्तमान परियोजना 160.212 किमी0 के एन0एच02 के इटावा चकेरी को 6 लेन बनाने का प्रस्ताव है। परियोजना का परिवहन मार्ग 4 जिलों कमशः इटावा, औरैया, रमाबाई नगर और कानपुर नगर से होकर गुजरता है। जनपद– औरैया में राष्ट्रीय राजमार्ग सं0– 2, किमी0 350.800 से प्रारम्भ होकर किमी0 389.3 पर समाप्त होता है। इस प्रकार जनपद औरैया में राजमार्ग की कुल लम्बाई 38.35 किमी0 होगी जिसमें 10.5 मी0 चौड़ा 1.5 मी0 पक्की पट्टिका एवं 2.0 मी0 चौड़ी कच्ची पट्टिका राहचलता मार्ग होगा, 7 दीर्घ सन्धि स्थल, 39 लघु सन्धि स्थल एवं 34 लघु सन्धि स्थल दाये तरफ होंगे। 2 स्थान ट्रक खड़े करने के लिए, 10 बस खण्ड खड़े होने के लिए 12 स्थान बांयी तरफ एवं 12 स्थान दांयी तरफ, एक पैदलयात्री पारपुल एवं 6 पैदल यात्री/ मवेशी सुरंग मार्ग तथा 7 वाहन सुरंग, 83 कल्वर्ट, 4 लघु पुल आदि प्रस्तावित हैं। इस परियोजना के कियान्वयन हेतु औरैया जनपद में कुल भूमि अधिग्रहण 44.883 हेक्टेयर है। प्रस्तावित परियोजना के अन्तर्गत जनपद में लगभग 402 पेड़ काटने पड़ेंगे उनके स्थान लगभग 3 गुना नये पेड़ लगाये जाएंगे।

अध्यक्ष महोदय की अनुमति से सभा में उपस्थित लोगों द्वारा पूछे गये निम्नांकित प्रश्नों के सापेक्ष श्री पी0शिवशंकर, मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर, द्वारा निम्नांकित उत्तर दिये गये।

प्रश्नः मधुपुर ग्राम की जमीन का मुआवजा बहुत कम दिया जाता है। यह आवासीय भूमि है। आवासीय भूमि के मूल्यांकन के आधार पर इसका मुआवजा दिया जाना चाहिए। (क0सं0 46/क्षेत्रपाल सिंह, ग्राम– धीरजपुर)

उत्तरः जमीन का मुआवजा माननीय उच्च न्यायालय के आदेशानुसार नियमानुसार दिया जाएगा।

प्रश्नः 2003 में अधिकृत की गयी जमीन का मुआवजा अभी तक नहीं दिया गया है। ऐसे लगभग 8 लोग हैं जिन्हें मुआवजा नहीं दिया गया है।

उत्तरः श्री पी0शिवशंकर, मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर द्वारा अवगत कराया गया कि अधिकृत जमीन का मुआवजा एकमुश्त सक्षम अधिकारी/अपर जिलाधिकारी एवं परियोजना निदेशक के संयुक्त खाते में अवमुक्त कर दिया जाता है। इस पर अध्यक्ष/जिलाधिकारी महोदय द्वारा एन0एच0ए0आई0 प्रतिनिधि श्री पी0शिवशंकर, मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर को निर्देशित किया गया कि इस प्रकार के मामलों से सम्बन्धित समस्त प्रपत्र उपलब्ध करायें एवं सम्बन्धित कार्यवाही सुनिश्चित करवायें।

प्रश्नः ग्राम पंचायत, भगौती पुर में, जहाँ से एन0एच0– 2 गुजरता है, बंजर भूमि है और पानी का निकास नहीं है। वहाँ पर वृक्षारोपण कराने की कृपा करें एवं किमी0 388 के पास कट बनाया जाए जिससे गाड़ी पास हो सके। (हरि योगेश मिश्रा/क0सं0– 3)

उत्तरः इस सम्बन्ध में अलग से एस0डी0एम0 औरैया एवं ग्रामवासियों के साथ बैठक कर जमीन एवं लेन एप्रूवल के सम्बन्ध में निर्णय लिया जाएगा।

प्रश्नः राष्ट्रीय राजमार्ग पर छोटे–छोटे पौधे लगे थे जो अभी तक विकसित नहीं हो पाये अधिकांश पौधे मृत हो चुके हैं एवं पानी का छिड़काव नही किया जाता है। (शीलव्रत पाण्डेय, क0सं0– 45)

उत्तरः इन स्थानों पर ब्लैक स्पॉट होने के कारण पौधे नहीं चल पाए हैं लगभग 4 माह के उपरान्त यहाँ पर इस मिट्टी को खाली करके पुनः नयी मिट्टी भरकर वृक्षारोपण किया जाएगा। वृक्षारोपण वन विभाग द्वारा वन विभाग के नियमों के अनुसार किया जायेगा जो कि 3.0 मी0 के अन्तराल पर होगा।

कमश.....

(डा0 शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी
उ0प्र0प्रदूषण नियंत्रण बोर्ड

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प्रश्नः राष्ट्रीय राजमार्ग में क्रासिंग हेतु पुलिया की चौड़ाई अधिक होनी चाहिए। (शीलव्रत पाण्डेय/क0सं0– 45)

उत्तरः जिलाधिकारी (अध्यक्ष लोक सुनवाई) महोदय द्वारा सलाह दी गयी कि राष्ट्रीय राजमार्ग 6 लेन में अण्डरग्राउण्ड पासेज़ की चौड़ाई ज्यादा नहीं हो सकती है। अतः सड़क के दोनों ओर मिरर लगाने एवं स्पीड ब्रेकर बनाने हेतु निर्देशित किया गया।

प्रश्नः ओवरब्रिज बनना चाहिए दुर्घटनाए अधिक होती हैं। (हरि योगेश मिश्रा, क0सं0– 3)

उत्तरः छः लेन सड़क पर ओवरब्रिज नही बनता। चौराहे पर अण्डरपासेज़ बनते हैं।

इसके उपरान्त जिलाधिकारी/अध्यक्ष महोदय द्वारा अजीतमल और मधुपुरा के मध्य एक डिस्पेन्सरी का निर्माण करने एवं एक मोबाइल एम्बुलेन्स उपलब्ध कराये जाने हेतु निर्देशित किया गया।

सभी पक्षों नें इस पर अपनी सहमति जताई एवं अध्यक्ष महोदय ने प्रस्ताव को स्वीकार करते हुए सभा समापन की घोषणा की।

उपरोक्त विचारों, सुझावों, टिप्पणियों एवं आपत्तियों के यथासम्भव निराकरण के उपरान्त उपस्थित जन समुदाय ने इस परियोजना के निर्माण हेतु अपनी सहमति व्यक्त की। उपरोक्त मन्तव्य के साथ पर्यावरणीय दृष्टिकोण से राष्ट्रीय राजमार्ग प्राधिकरण द्वारा सड़क परियोजना के विस्तारीकरण हेतु स्थानीय लोकसुनवाई का कार्यवृत्त आवश्यक कार्यवाही हेतु निर्गत किया जाता है।

Shobha Chaturvedi
(डा0(श्रीमती शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी
उ0प्र0 प्रदूषण नियंत्रण बोर्ड,
जनपद– रमाबाई नगर।
03/05/12

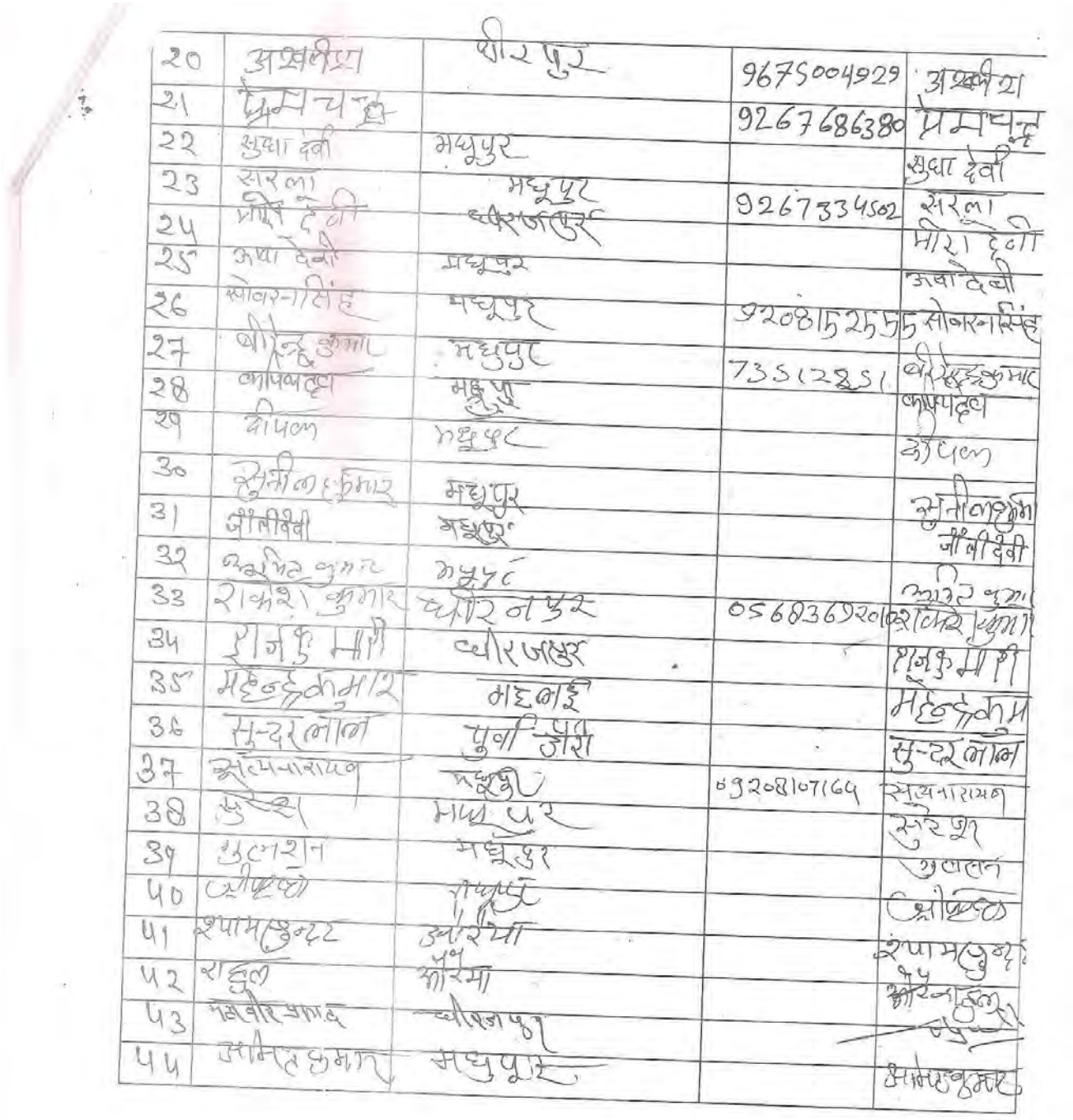
( )
जिलाधिकारी
अध्यक्ष, लोकसुनवाई
जनपद– औरैया।

उ०प्र० में जनपद- औरैया के राष्ट्रीय राजमार्ग प्राधिकरण सं०-२ (इटावा-चकेरी स्टेषन) के ६ लेन अपग्रेडेषन के लिए पर्यावरणीय स्वीकृति हेतु उ०प्र० प्रदूशण नियन्त्रण बोर्ड, ८४४, फतेहपुर रोषनाई, रनियाँ, रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम १९८६ के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं० एस०ओ० १५३३(अ) दिनाँक १४-०९-२००६ यथासंषोधित एस०ओ० ३०६७ (ई) दिनाँक ०१-१२-२००९ के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनाँक ०३-०५-२०१२ को प्रातः ११:०० बजे, डा० अम्बेडकर सामुदायिक केन्द्र, मधुपुर, जनपद- औरैया में जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में सम्पन्न लोकसुनवाई में उपस्थित सदस्यों का विवरण।

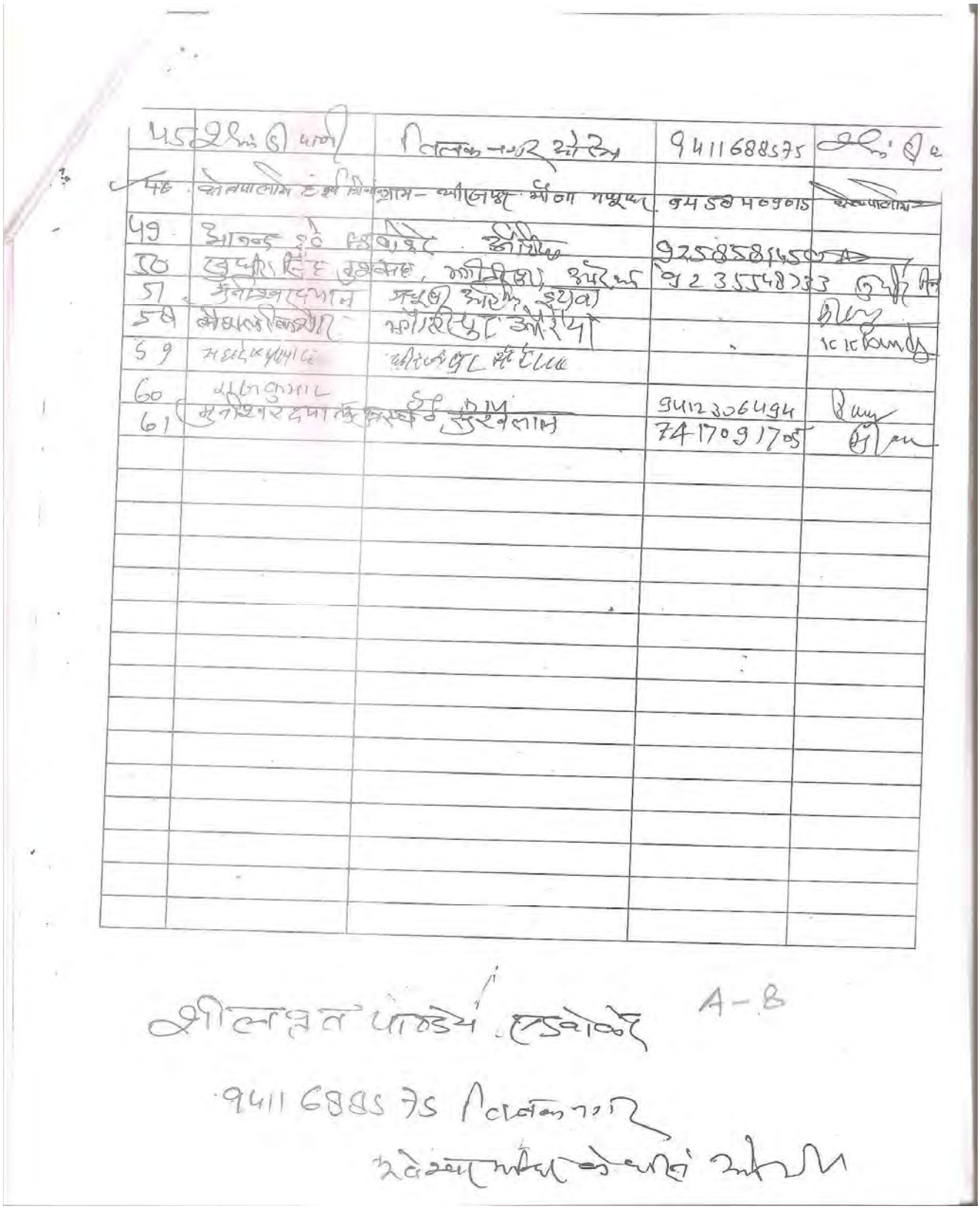
क्र०सं०	नाम	पता	दूरभाश/मो०संख्या	हस्ताक्षर
1-	A.S. Narendra [illegible]	जिलाधिकारी [illegible] औरैया	9454417850	[illegible]
2.	डा० [illegible] चतुर्वेदी	क्षेत्रीय अधिकारी उ०प्र० प्रदूषण नियन्त्रण बोर्ड रमाबाईनगर	9415045189	[illegible]
3.	P. Siva Sankar	Manager(T) NHAI, Kanpur	9793885666	[illegible]
4, 5.	Er. V.K. Mishra	U.P. Pollution Control Board R.O. - Ramabai Nagar	9721500027	Mishra 3/5/12
6.	हरीश चन्द्र [illegible]	सहायक वैज्ञानिक उ०प्र०प्र०नि०बोर्ड रमाबाई नगर	8765434747	[illegible] 03/05/12
क्र०सं०	नाम	पता	दूरभाश/मो०संख्या	हस्ताक्षर

उ०प्र० में जनपद- औरैया के राष्ट्रीय राजमार्ग प्राधिकरण सं०-२ (इटावा-चकेरी स्टेपन) के ६ लेन अपग्रेडेषन के लिए पर्यावरणीय स्वीकृति हेतु उ०प्र० प्रदूशण नियन्त्रण बोर्ड, ८४४, फतेहपुर रोपनाई, रनियाँ, रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरण संरक्षण अधिनियम १९८६ के अन्तर्गत पर्यावरण एवं वन मंत्रालय भारत सरकार द्वारा जारी अधिसूचना सं० एस०ओ० १५३३(अ) दिनॉक १४-०९-२००६ यथासंशोधित एस०ओ० ३०६७ (ई) दिनॉक ०१-१२-२००९ के प्राविधानों के अनुपालनार्थ पर्यावरणीय स्वीकृति हेतु दिनॉक ०३-०५-२०१२ को प्रातः ११:०० बजे, डा० अम्बेडकर सामुदायिक केन्द्र, मधुपुर, जनपद- औरैया में जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में सम्पन्न लोकसुनवाई में उपस्थित सदस्यों का विवरण।

क्र०सं०	नाम	पता	दूरभाश/मो०संख्या	हस्ताक्षर
1	सुधीर कुमार मिश्र	122 ब्रह्मनगर औरैया	9412185596	
2.	Satyendra kumar	19 Brahm Nagar Auraiya	9997990597	
3.	Hari yogesh mishra	Bhagatipm Shamper Auraiya	09415737172	
4.	Sudhir Singh Kalwar	75, Tilak Nagar, Auraiya	09412284024	
5.	नीरज मिश्रा	पधान, मधुपुर.	09415737172	नीरज मिश्रा
6	विमल कुमार	चौरजपुर		विमल कुमार
7	रामधर	चौरजपुर		रामधर
8	श्री द्रुमान	गौहना		श्री द्रुमान
9.	लालता प्रसाद	मधुपुर	9897746291	लालता प्रसाद
10	उमेदी रा	चौरजपुर		उमेदी रा
11.	Dr. Mahaneer Pd. Jain	CEG Ltd. Jaipur	9509555249	
12	मेवाराम	मधुपुर	9267334502	मेवाराम
13	सुखपाल गारी	चौरजपुर	8650358777	
14	हरीनारायण	मधुपुर		हरीनारायण
15	हीरालाल	मधुपुर		हीरालाल
16.	Bhavnath Chaly	CEG Ltd.	9309373929	
17	बाबूराम	मधुपुर		बाबूराम
18	अवनिका सिंह	चौरजपुर	9412862213	अवनिका सिंह
19	सुधारसिंह चौहान	मधुपुर		सुधारसिंह चौहान
~~क्र०सं०~~	~~नाम~~	~~पता~~	~~दूरभाश/मो०संख्या~~	~~हस्ताक्षर~~



20	अखलेश	वीरपुर	9675004929	अखलेश
21	प्रेमचन्द		9267686380	प्रेमचन्द
22	सुधा देवी	मधुपुर		सुधा देवी
23	सरला	मधुपुर	9267334502	सरला
24	मीरा देवी	चकरनगर		मीरा देवी
25	अधा देवी	मधुपुर		अधा देवी
26	सोवरन सिंह	मधुपुर	9208152555	सोवरन सिंह
27	वीरेन्द्र कुमार	मधुपुर	7351228511	वीरेन्द्र कुमार
28	कापवदत्त	मधुपुर		कापवदत्त
29	दीपक	मधुपुर		दीपक
30	सुनील कुमार	मधुपुर		सुनील कुमार
31	जौली देवी	मधुपुर		जौली देवी
32	अभिषेक कुमार	मधुपुर		अभिषेक कुमार
33	राकेश कुमार	चकरनगर	05688369201	राकेश कुमार
34	रामकुमारी	चकरनगर		रामकुमारी
35	महेन्द्र कुमार	महलाई		महेन्द्र कुमार
36	सुन्दर लाल	पुरानी जेल		सुन्दर लाल
37	सूरजनारायण	मधुपुर	09208107164	सूरजनारायण
38	सुरेश	मधुपुर		सुरेश
39	सुलतान	मधुपुर		सुलतान
40	शैलेश	मधुपुर		शैलेश
41	श्यामसुन्दर	अरैया		श्यामसुन्दर
42	राहुल	शर्मा		राहुल
43	महावीरप्रसाद	चकरनगर		
44	अमित कुमार	मधुपुर		अमित कुमार



45	[illegible] पाण्डे	तिलक नगर औरैया	9411688575	[illegible]
48	[illegible]	[illegible]	[illegible]	[illegible]
49	आनन्द [illegible]	[illegible]	9258581450	
50	[illegible]	[illegible]	9235548733	
57	[illegible]	[illegible]		
58	[illegible]	[illegible]		
59	[illegible]	[illegible]		
60	[illegible]	[illegible]	9412306494	
61	[illegible]	[illegible]	7417091705	

शीलवत पाण्डेय एडवोकेट A-8

9411688575 Tilak nagar

[illegible]

पर्यावरण
Gram : Paryavaran

सत्यमेव जयते

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड

844, फतेहपुर रोशनाई, रनियाँ, रमाबाई नगर

UTTAR PRADESH POLLUTION CONTROL BOARD

844, Fatehpur Roshanai, Rania, Ramabai Nagar

संदर्भ 1873/NOC/R-20/12 दिनांक 10/05/12

सेवा में,

मुख्य पर्यावरण अधिकारी(वृत्त–2),
उ0प्र0 प्रदूषण नियंत्रण बोर्ड,
लखनऊ।

विषयः *राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, 844, फतेहपुर रोशनाई, रनियाँ, जनपद– रमाबाई नगर में प्राप्त प्रस्ताव पर पर्यावरणीय स्वीकृति हेतु दिनाँक 03–05–2012 को पूर्वाह्न 11:00 बजे, डा0 अम्बेडकर सामुदायिक केन्द्र, मधुपुर, जनपद– औरैया में जिलाधिकारी/अध्यक्ष लोकसुनवाई की अध्यक्षता में आयोजित करायी गयी लोकसुनवाई के कार्यवृत्त का विवरण।*

महोदय,

कृपया उपरोक्त विषयक जनपद– औरैया में राष्ट्रीय राजमार्ग प्राधिकरण, भारत सरकार द्वारा उ0प्र0 में राष्ट्रीय राजमार्ग सं0–2 (इटावा–चकेरी स्टेशन) के 6 लेन अपग्रेडेशन के लिए पर्यावरणीय स्वीकृति हेतु प्राप्त प्रस्ताव पर दिनाँक 03–05–2012 को जिलाधिकारी महोदय, जनपद– औरैया की अध्यक्षता में पर्यावरणीय क्लीयरेन्स हेतु लोक सुनवाई आयोजित की गयी। लोक सुनवाई का कार्यवृत्त एवं अन्य प्रपत्र इस पत्र के साथ संलग्न कर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित किये जा रहे हैं।

संलग्नकः

1– लोक सुनवाई का कार्यवृत्त।
2– उपस्थित सदस्यों की सूची।
3– विज्ञप्ति की प्रति।
4– लोक सुनवाई की सी0डी0।

भवदीया,

Shashi Ved

(डा0(श्रीमती)शोभा चतुर्वेदी)
क्षेत्रीय अधिकारी

पृ0सं0: तद्दिनाँकः

प्रतिलिपिः सदस्य सचिव महोदय, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ को सूचनार्थ सादर प्रेषित।

क्षेत्रीय अधिकारी

To,

Director (I.A. - III),
Ministry of Environment & Forests,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi.

Subject:- **Public Hearing for National Highway, NH-2 six lane upgradation with paved shoulder.**

Dear Sir,

Please refer to above mentioned subject. Public Hearing for the project was conducted on 03.5.2012 in Auraiya. Please find enclosed herewith the minutes of public hearing along with the soft copies of the same in the CDs.

Yours faithfully,

Encl. : As above.

Member Secretary
(Incharge)

E:\IC-8\2012\Letter to Other Dept.doc

Public Hearing at Etawah District

Date and Time : 14.03.12 at 11:00 Am
Place : Collector Meeting Hall Etawah
Advertisement in NEWS Papers: 1) Hindusthan Times -09.02.12
:2) Dainik Jagran, -09.02.2012

हिन्दुस्तान टाइम्स
09/02/2012

उ. प्र. प्रदूषण नियन्त्रण बोर्ड
विकप भवन, तृतीय तल, बी-ब्लाक,
विभूति खण्ड,गोमती नगर, लखनऊ।

पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना दिनांक 14.09.2006 (यथा संशोधित) के अन्तर्गत लोक सुनवाई हेतु आम सूचना

1. सर्व साधारण को सूचित किया जाता है कि भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27- कैलाश बिहार, निर्मय नगर, आगरा 282007 द्वारा आगरा-इटावा सैक्शन के राष्ट्रीय राजमार्ग-2 को छः लेन चौड़ीकरण उन्नीकरण/सुदृढीकरण एवं फिरोजाबाद बाईपास के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग-2 के कि.मी. 292,000 से कि.मी. 323,473 तक तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई , तैली, हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर-208011 द्वारा चकेरी (कानपुर) के राष्ट्रीय राजमार्ग -2 को छः लेन में चौड़ीकरण उन्नीकरण/सुदृढीकरण के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग-2 के कि.मी. 323.475 से कि.मी. 350.800 तक के कार्य हेतु लोक सुनवाई पर्यावरण (संरक्षण) अधिनियम, 1986 के अधीन भारत सरकार के पर्यावरण एवं वन मंत्रालय द्वारा निर्गत अधिसूचना सं. एस.ओ. 1533 दिनांक 14.09.06 के प्रावधानों के तहत पर्यावरणीय स्वीकृति प्राप्त करने हेतु आवेदन किया गया है । अधिसूचना में उल्लिखित प्रक्रिया के अनुसार जिलाधिकारी इटावा की सहमति से जनपद इटावा में लोक सुनवाई दिनांक 14.03.12 समय दोपहर 12.00 बजे एवं स्थान कन्फेन्ट्रेट सभागार कक्ष, इटावा में जिलाधिकारी, इटावा की अध्यक्षता में सम्पन्न कराये जाने हेतु नियत की गई है ।

2. चूंकि राज्य बोर्ड को भारत सरकार के वन एवं पर्यावरण मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना दिनांक 14.09.2006 के अनुसार लोक सुनवाई हेतु इस आशय की सूचना जारी किया जाना आवश्यक है तथा इस हेतु उस सूचना के अन्तर्गत 30 दिवस का नोटिस दिया जाना आवश्यक हैं । सम्बन्धित संक्षिप्त,अभिलेख निम्नलिखित कार्यालयों में उपलब्ध हैं ।

अ. कार्यालय, जिलाधिकारी, इटावा।
ब. कार्यालय, महाप्रबन्धक, जिला उद्योग केन्द्र, इटावा।
स. निदेशक (आई0सी0) क्षेत्रीय कार्यालय, पर्यावरण एवं वन मंत्रालय, भारत सरकार, पंचम तल केन्द्रीय भवन, सेक्टर-एच, अलीगंज, लखनऊ।
द. कार्यालय, नगर पालिका परिषद, इटावा ।
य. क्षेत्रीय कार्यालय, उ.प्र. प्रदूषण नियंत्रण बोर्ड, भवन सं. 3/5 बी सेक्टर- 3, सुहाग नगर, फिरोजाबाद।
र. उ.प्र. प्रदूषण नियंत्रण बोर्ड, विकप भवन, विभूति खण्ड, गोमती नगर, लखनऊ।

अतः सर्व साधारण को इस नोटिस के माध्यम से सूचित किया जाता है कि वे उक्त परियोजना को पर्यावरणीय स्वीकृति से सम्बन्धित प्रकरण के निपटाने के लिए लोक सुनवाई हेतु दिनांक 14.03.2012 समय दोपहर 12.00 बजे एवं स्थान कन्फेन्ट्रेट सभागार कक्ष, इटावा में जिलाधिकारी की अध्यक्षता में उपस्थित होकर अपना पक्ष प्रस्तुत कर सकते हैं, इसके अलावा इस सम्बन्ध में यदि किसी को कोई आपत्ति सुझाव टीका-टिप्पणी आदि है तो लिखित रूप में भी उपरोक्त कार्यालय में किसी भी कार्य दिवस को प्रकाशन की तिथि से 30 दिन के अन्दर तक आपत्ति दाखिल कर सकते है ।

सदस्य सचिव

दैनिक जागरण

09/2/2012

उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड,
पिकप भवन, तृतीय तल, बी–ब्लाक,
विभूति खण्ड, गोमती नगर, लखनऊ।

पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना दिनांक 14.09.06 (यथा संशोधित) के अंतर्गत लोक सुनवाई हेतु आम सूचना

1. सर्व साधारण को सूचित किया जाता है कि भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27– कैलाश बिहार, निर्भय नगर, आगरा– 282007 द्वारा आगरा–इटावा सैक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण एवं फीरोजाबाद बाईपास के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग–2 के कि0मी0 292,000 से कि0मी0 323,473 तक तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर कानपुर–208011 द्वारा इटावा चकेरी (कानपुर) के राष्ट्रीय राजमार्ग–2 को छह लेन में चौड़ीकरण,उच्चीकरण/ सुदृढ़ीकरण के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग–2 के कि0मी0 323,475 से कि0मी0 350,800 तक के कार्य हेतु लोक सुनवाई पर्यावरण (संरक्षण) अधिनियम, 1986 के अधीन भारत सरकार के पर्यावरण एवं वन मंत्रालय द्वारा निर्गत अधिसूचना सं0 एस0ओ0, 1533 दिनांक 14.09.06 के प्राविधानों के तहत पर्यावरणीय स्वीकृति प्राप्त करने हेतु आवेदन किया गया है। अधिसूचना में उल्लिखित प्रक्रिया के अनुसार जिलाधिकारी, इटावा की सहमति से जनपद इटावा में लोक सुनवाई दिनांक 14.03.12 समय दोपहर 12.00 बजे एवं स्थान कलेक्ट्रेट सभागार कक्ष, इटावा में जिलाधिकारी, इटावा की अध्यक्षता में सम्पन्न कराए जाने हेतु नियत की गयी है।

2. चूंकि राज्य बोर्ड को भारत सरकार के वन एवं पर्यावरण मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना दिनांक 14.09.2006 के अनुसार लोक सुनवाई हेतु इस आशय की सूचना जारी किया जाना आवश्यक है तथा इस हेतु उस सूचना के अंतर्गत 30 दिवस का नोटिस दिया जाना आवश्यक है। सम्बन्धित संक्षिप्त, अभिलेख निम्नलिखित कार्यालयों में उपलब्ध है:–

अ कार्यालय, जिलाधिकारी, इटावा।
ब कार्यालय, महाप्रबंधक जिला उद्योग केन्द्र, इटावा।
स निदेशक (आई0सी0) क्षेत्रीय कार्यालय, पर्यावरण एवं वन मंत्रालय, भारत सरकार, पंचम तल, केन्द्रीय भवन, सेक्टर–एच, अलीगंज लखनऊ।
द कार्यालय नगर पालिका परिषद, इटावा।
य क्षेत्रीय कार्यालय, उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, भवन सं0 3/5 बी सेक्टर 3, सुहाग नगर, फिरोजाबाद।
र उ0प्र0 प्रदूषण नियन्त्रण बोर्ड, पिकप भवन, विभूति खण्ड, गोमती नगर, लखनऊ।

अतः सर्व साधारण को इस नोटिस के माध्यम से सूचित किया जाता है कि वे उक्त परियोजना की पर्यावरणीय स्वीकृति से संबंधित प्रकरण के निपटाने के लिये लोक सुनवाई हेतु दिनांक 14.03.2012 समय दोपहर 12.00 बजे एवं स्थान कलेक्ट्रेट सभागार कक्ष, इटावा में जिलाधिकारी की अध्यक्षता में उपस्थित होकर अपना पक्ष प्रस्तुत कर सकते हैं, इसके अलावा, इस संबंध में यदि किसी को कोई आपत्ति, सुझाव, टीका–टिप्पणी आदि है तो लिखित रूप में भी उपरोक्त कार्यालयों में किसी भी कार्य दिवस में प्रकाशन की तिथि से 30 दिन के अंदर तक आपत्ति दाखिल कर सकते हैं।

संदर्भ संख्याः 1968/एनओसी–319/2012 दिनांक 07.02.12

सदस्य सचिव

Public Hearing proceeding and minutes ;

Fig. 7.17: Photos of Etawah Public Hearing

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा– 282007 द्वारा आगरा– इटावा सैक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण/उच्चीकरण/ सुदृढ़ीकरण एवं फिरोजाबाद वाईपास के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 292.000 से कि0मी0 323.525 तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर– 208011 द्वारा इटावा – चकेरी (कानपुर) सेक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन में चौड़ी करण /उच्चीकरण /सुदृढ़ीकरण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 323.475 से कि0मी0 350.800 हेतु पर्यावरणीय स्वीकृति प्राप्त करने हेतु राज्य प्रदूषण नियन्त्रण बोर्ड को प्रस्तुत प्रस्ताव के सम्बन्ध में पर्यावरण एवं वन मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 14 सितम्बर, 2006 के अनुपालन में जिलाधिकारी महोदय, इटावा की अध्यक्षता में दिनांक 14.03.12 को कलेक्ट्रेट सभागार कक्ष, इटावा में सम्पन्न हुयी लोक सुनवाई का कार्यवृत्त।

आगरा– इटावा सेक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण एवं फिरोजाबाद वाईपास के निर्माण कार्य के अर्न्तगत भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा द्वारा जनपद– इटावा के राष्ट्रीय राजमार्ग–2 के कि0मी0 292.000 से कि0मी0 323.525 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण तथा इटावा – चकेरी (कानपुर) सेक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण कार्य के अर्न्तगत भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर द्वारा जनपद– इटावा के राष्ट्रीय राजमार्ग–2 के कि0मी0 323.475 से कि0मी0 350.800 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण हेतु पर्यावरणीय स्वीकृति प्राप्त करने के लिए राज्य प्रदूषण नियन्त्रण बोर्ड के समक्ष प्रस्ताव प्रस्तुत किया गया है। भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा एवं भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर द्वारा प्रेषित प्रस्ताव के सम्बन्ध में पर्यावरण एवं वन मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना सं0 एस0ओ0 1533 दिनांक 14 सितम्बर, 2006 (यथा संशोधित) में वर्णित प्राविधानों के तहत लोक सुनवाई जिलाधिकारी महोदय, इटावा की अध्यक्षता में कलेक्ट्रेट सभागार कक्ष, इटावा में दिनांक 14.03.12 को दोपहर 12 बजे प्रारम्भ हुयी। लोक सुनवाई की कार्यवाही अध्यक्ष महोदय की अनुमति से प्रारम्भ की गयी।

1. सर्वप्रथम क्षेत्रीय अधिकारी, उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड, फिरोजाबाद द्वारा लोक सुनवाई पर संक्षिप्त प्रकाश डालते हुए अवगत कराया गया कि पर्यावरण एवं वन मत्रांलय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना सख्या एस0ओ0 1533 दिनांक 14 सितम्बर, 2006 के अनुसार राष्ट्रीय राजमार्ग के उच्चीकरण/ सुदृढ़ीकरण/ विस्तारीकरण किये जाने सम्बन्धी प्रस्ताव लोक सुनवाई प्रकिया के अर्न्तगत आच्छादित है।
2. पर्यावरण एवं वन मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना सख्या एस0ओ0 1533 दिनांक 14 सितम्बर, 2006 के अनुसार लोक सुनवाई के सम्बन्ध में विज्ञप्ति उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड द्वारा दिनांक 09.02.2012 को दैनिक समाचर पत्रों दैनिक जागरण एवं हिन्दुस्तान टाइम्स में प्रकाशित की गयी थी तथा आक्षेप/ सुझाव / आपत्ति विज्ञप्ति प्रकाशन की तिथि से 30 दिन के भीतर आमंत्रित किए गये थे। उक्त निर्धारित अवधि में कोई आक्षेप/ सुझाव / आपत्ति प्राप्त नहीं हुयी है।
3. लोक सुनवाई की कार्यवाही को आगे बढाते हुए भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा एवं भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर के सलाहाकार प्रतिनिधियों श्री विनोद कुमार गौतम, एनवायरमेन्टल इन्जीनियर एवं श्री महावीर सैनी, इनवायरलमेन्टल आफीसर द्वारा राष्ट्रीय राजमार्ग– 2 के छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण सम्बन्धी प्रस्ताव के विभिन्न पहलुओं पर प्रकाश ड़ाला गया। उनके द्वारा अवगत कराया गया कि आगरा– इटावा सैक्शन एवं इटावा – चकेरी (कानपुर) सेक्शन के राष्ट्रीय राजमार्ग–2 के अर्न्तगत जनपद– इटावा के कि0मी0 292.000 से कि0मी0 350.800 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण करने सम्बन्धी निर्माण कार्य किये जाने का प्रस्ताव है। जनपद इटावा से गुजरने वाले राष्ट्रीय राजमार्ग– 2 के कि0मी0 292.000 से

क्रमशः .....2...

Public hearing reg 6 Lane NH-2 ETAWAH

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कि0मी0 350.800 की लम्बाई 31.525 कि0मी0 + 27.325 कि0मी0 = कुल लम्बाई 58.850 कि0मी0 तक राष्ट्रिय राजमार्ग–2 का छः लेन सड़क चौड़ी करण किया जाना प्रस्तावित है।

राष्ट्रीय राजमार्ग–2 के कि0मी0 292.000 से कि0मी0 323.525 सेक्सन के अर्न्तगत 57कलवर्ट, 03 अण्डर पास, 02 पैदल/पशुपार पथ (अण्डर पास) 2 मुख्य मिलान स्थल (जक्शंन), 31 छोटे मिलान स्थल (जक्शंन), 3 बस वे एवं 4 स्थानों पर 07.2 कि0मी0 लम्बाई का सर्विस रोड आदि का निर्माण प्रस्तावित है। उक्त सेक्सन की प्रस्तावित परियोजना की कुल अनुमानित लागत रू0 953.3 करोड़ है जबकि इटावा जिले के अन्तर्गत निर्माण कार्य (सिविल) पर अनुमानित लागत रू0 242.35 करोड़ है। उक्त के अतिरिक्त पर्यावरण प्रबन्धन हेतु कुल परियोजना पर रू0 6.6 करोड़ के बजट का प्राविधान है जिसमें फिरोजाबाद जिले के लिए रू0 1.9 करोड़ के बजट का प्राविधान है। जनपद फिरोजाबाद के अर्न्तगत कुल 24.6033 हेक्टेयर भूमि अधिग्रहण किया जाना प्रस्तावित है। अधिग्रहित भूमि के लिए उपयुक्त मुआवजा नियमानुसार दिया जाना प्रस्तावित है।

राष्ट्रीय राजमार्ग–2 के कि0मी0 323.475 से कि0मी0 350.800 सेक्सन के अर्न्तगत राह चलता मार्ग, आर0ओ0डब्ल्यू0, 6 दीर्घ सन्धि स्थल, 22 वांयी तरफ एवं 18 दांयी तरफ लघु सन्धि स्थल, वांयी एवं दायी तरफ 8 बस वे, सर्विस रोड, 1 पैदल पार पुलिया, 5 पैदल यात्री / मवेशी सुरंग मार्ग, 4 वाहन सुरगं मार्ग, लघु पुल, 10 कलवर्ट, आदि का निर्माण प्रस्तावित है। उक्त सेक्सन की प्रस्तावित परियोजना की कुल अनुमानित लागत रू0 1573.0 करोड़ है जबकि इटावा जिले के अन्तर्गत निर्माण कार्य (सिविल) पर अनुमानित लागत रू0 268.28 करोड़ है। उक्त के अतिरिक्त पर्यावरण प्रबन्धन हेतु कुल परियोजना पर रू0 5.39 करोड़ के बजट का प्राविधान है जिसमें इटावा जिले के लिए रू0 0.60 करोड़ के बजट का प्राविधान है। जनपद इटावा के अर्न्तगत कुल 32.977 हेक्टेयर भूमि अधिग्रहण किया जाना प्रस्तावित है। अधिग्रहित भूमि के लिए उपयुक्त मुआवजा नियमानुसार दिया जाना प्रस्तावित है।

4. भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा एवं भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर के प्रतिनिधियों द्वारा यह भी अवगत कराया गया कि राष्ट्रीय राजमार्ग – 2 के छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण के लिए जनपद इटावा में 98 वृक्ष + 37 वृक्ष = लगभग 135 वृक्ष प्रभावित होना अवगत कराया गया जिसके अर्न्तगत नीम, नीलगिरी, बबूल आदि है। यह भी अवगत कराया गया कि कम से कम वृक्षों को काटा जाना प्रावधानित है। आवश्यकतानुसार काटे गये वृक्षों के सापेक्ष सड़क के दोनों ओर वृक्षारोपण किया जाऐगा। सड़को के किनारे सुन्दर बनाने, तिराहो–चौराहो एवं पार्किंग क्षेत्रों में सुधार करने, बॉरो एरिया में वृक्षारोपण करने समस्त सम्बन्धित विभागों से अनुमतियॉ प्राप्त करने को प्रावधानित किया गया है।

5. भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, के प्रतिनिधियों द्वारा अवगत कराया गया कि राष्ट्रीय राजमार्ग – 2 के छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण के दौरान सुरक्षा उपायों, संकेतकों आदि का प्राविधान है। उक्त परियोजना के निर्माण कार्य के दौरान निम्नलिखित प्रकार की समस्यायें आने एवं उनके निराकरण सम्बन्धी निम्नलिखित प्राविधान किये गये है।

क. <u>जल पर्यावरण एवं प्रदूषण</u> :– प्रस्तावित परियोजना को जल श्रोत के क्रम में बहावर, तराई, मैदानी क्षेत्र, एल्यूवियम, समतल, पैनीसुला क्षेत्र में वर्गीकृत किया गया है। जल के प्रमुख श्रोत तालाब एवं हैण्ड पम्प है। राजकीय राजमार्ग के उच्चीकरण /सुदृढ़ीकरण के दौरान जल की आवश्यकता होगी। परियोजना निर्माण के दौरान पुल, सेतुबन्ध आदि का काम पानी के सीधे बहाव में नहीं किया जाना प्रस्तावित है। जल प्रयोग से जिस जगह पर भू जल प्रभावित हो रहा है वहॉ के निवासियों के लिए वैकल्पिक पानी की व्यवस्था किया जाना प्रस्तावित है। उक्त प्रस्ताव के कारण सरफेस जल एवं भूमिगत जल पर किसी भी प्रकार का प्रभाव पड़ना सम्भावित नहीं है।

ख.<u>वायु पर्यावरण एवं प्रदूषण</u> :– परियोजना के निर्माण प्रकिया के दौरान उपकरण व वाहनों के आवागमन, निर्माण के दौरान धूल की उत्पत्ति ही वायु प्रदूषण के श्रोत है। उपरोक्त वायु प्रदूषण श्रोतो से उत्पन्न धूल की रोकथाम हेतु निर्माण कार्यक्षेत्र को यथा सम्भव नम रखे जाने, पानी का छिड़काव किये जाने, निर्माण सामग्री को ले जाते समय ट्रक, टारपोलिन या अन्य किसी उपयुक्त सामग्री से कवर किए जाने, पी0यू0सी0 सर्टिफिकेट वाले वाहनों का प्रयोग किए जाने तथा हाट मिक्स एवं जनरेटर की स्थापना राज्य प्रदूषण नियन्त्रण बोर्ड से अनापत्ति प्रमाण पत्र प्राप्त कर ही स्थापित करने का प्राविधान है। उक्त के अतिरिक्त यथा सम्भव परिवेशीय वायु गुणता को नियन्त्रित करने हेतु परियोजना के आस–पास वृक्षारोपण

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करने, वाहनों का संचालन मानकों के अनुरूप कराने एवं अन्य उपायों को किये जाने का प्राविधान है। अतः उक्त परियोजना से प्रदूषण नगण्य होगा।

ग. मृदा प्रदूषण :– परियोजना के निर्माण प्रक्रिया के दौरान मृदा प्रदूषण की सम्भावना नगण्य होगा।

घ. ध्वनि प्रदूषण :– वाहनों के आवागमन, निर्माण मशीनरी, कान्क्रीट एवं डावर प्लाण्ट एवं जनरेटर आदि उपकरणों के संचालन से ध्वनि प्रदूषण होना सम्भावित है। ध्वनि प्रदूषण की रोकथाम हेतु डी0जी0 सैट को एकास्टिक के साथ लगाया जाना प्रस्तावित है तथा अन्य उपकरणों का संचालन एवं वाहनों का रख रखाव इस प्रकार से किया जाना प्रस्तावित है कि ध्वनि स्तर मानकों के अनुरूप रहेगा। निर्माण कार्य में लगे वाहनों एवं उपकरणों में एक्जास्ट साइलेन्सर लगाना, आबादी क्षेत्र में निर्माण कार्य रात 10 से सुबह 6 बजे तक बन्द रखना, कार्यरत कार्मिकों को ईयर प्लग उपलब्ध कराना, चुनिन्दा स्थानों पर ध्वनि बैरियर लगाना, संवेदनशील स्थानों पर सिग्नल लगाना, शान्त क्षेत्रों में हार्न का प्रयोग प्रतिबन्धित किए जाने आदि का प्राविधान है। अतः ध्वनि प्रदूषण नगण्य होगा।

ड़ सामाजिक एवं आर्थिक पर्यावरण :– परियोजना के निर्माण प्रकिया के दौरान जनपद इटावा में राष्ट्रीय राजमार्ग–2 के कि0मी0 323.475 से कि0मी0 350.800 सेक्सन के अर्न्तगत 24.6033 हेक्टेयर एवं राष्ट्रीय राजमार्ग–2 के कि0मी0 323.475 से कि0मी0 350.800 सेक्सन के अर्न्तगत 32.977 हेक्टेयर भूमि अधिग्रहण किया जाना प्रस्तावित है। जनपद इटावा के अर्न्तगत प्रभावित होने वाले 287 + 153 = 440 निजी संरचना / परिवार प्रभावित हो सकते है। अधिग्रहित भूमि के लिए उपयुक्त मुआवजा नियमानुसार दिया जाना प्रस्तावित है। उपजाऊ मिट्टी एवं कृषि क्षेत्र का प्रयोग, कैम्प, स्टाक, यार्ड एवं गोदाम आदि बनाने हेतु नहीं किया जाएगा। भू क्षरण रोकने हेतु मिट्टी का ढाल के रूप रखना, एम्बैकमेण्ट स्लोप में टर्फिंग करना, बॉरो एरिया का उपयोग वृक्षारोपण करने का प्राविधान, वर्कशाप, ईधन / लुब्रीकण्ट भण्डारण, लेबर कैम्प को आबादी क्षेत्र से बाहर रखने आदि का प्राविधान रखा गया है। सड़क निर्माण में खोदी गयी चट्टान व अन्य सालिड वेस्ट के रूप में प्राप्त सामग्री का इस्तेमाल निचली सतह भरने आदि में प्रयोग किया जाना प्रावधानित है। पर्यावरण प्रबन्धन के सम्बन्ध में मानकों के अनुरूप समय – समय पर कार्यवाही किया जाना प्रस्तावित है। उपरोक्त परियोजना से बेहतर परिचालन समस्त क्षेत्रों में पहुँच के साथ–साथ आस पास के क्षेत्र के समग्र विकास में सहायक होगी।

उक्त के अतिरिक्त निर्माण कार्य के दौरान आस–पास प्रस्तावित परियोजना में पारिस्थितिकी पर्यावरण के बचाव हेतु चारों तरफ हरित पट्टिका का विकास किया जाएगा। जिससे प्रस्तावित परियोजना से पर्यावरण पर न्यूनतम प्रतिकूल प्रभाव पड़े। उपरोक्त परियोजना से बेहतर परिचालन समस्त क्षेत्रों में पहुँच के साथ–साथ आस पास के क्षेत्र के समग्र विकास में सहायक होगी।

अन्त में भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्भय नगर, आगरा के प्रतिनिधियों द्वारा लोक सुनवाई में प्रतिभाग कर रहे जन समुदाय द्वारा उक्त परियोजना की स्थापना से आस–पास के विभिन्न पर्यावरणीय घटकों के ऊपर पड़ने वाले अधि प्रभावों के सम्बन्ध में उठाये गये प्रश्नों / समस्याओं के निराकरण हेतु परियोजना में प्रस्तावित व्यवस्थाओं इत्यादि के बारे में उत्तर दिया गया जिसका विवरण निम्नवत् है:–

प्र0 1 श्री किशोरी सिंह, अवर अभियन्ता, नगर पालिका परिषद, इटावा द्वारा जानकारी चाही गयी कि नालों का निर्माण जनपद इटावा के अर्न्तगत प्रस्तावित सड़क चौड़ीकरण के दौरान नालों का निर्माण शहरी आबादी को ध्यान में रख कर किया जाए एवं नालों को बाई पास हेतु उचित निकासी की व्यवस्था की जाए।

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि हाई वे के किनारे के आबादी क्षेत्र के आधार पर कलवर्ट की व्यवस्था उचित जल निकासी हेतु किये जाने का प्राविधान परियोजना में किया गया हैं। जहॉ पर कलवर्ट की व्यवस्था की जानी है का प्रस्ताव नगर पालिका परिषद द्वारा जिलाधिकारी, इटावा के माध्यम से एन0एच0ए0आई0 आगरा / कानपुर को प्रेषित करा दिया जाए। उक्त कार्य को संज्ञान में लेते हुये हाई वे निर्माण हेतु प्रस्तावित डी0पी0आर0 में सम्मलित किया जाएगा।

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प्र0 2 श्री राजीव कुमार, जसवन्तनगर, इटावा द्वारा जानकारी चाही गयी कि रोड़ के किनारे सर्विस रोड़ की चौड़ाई कम होने के कारण सर्विस रोड़ पर एक वाहन के खड़े होने के कारण दूसरा वाहन निकल नहीं पाता है। सर्विस रोड़ की चौड़ाई कम है। अतः सर्विस रोड़ को चौड़ा बनाया जाए।

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वार अवगत कराया गया कि वर्तमान में सर्विस रोड़ की चौड़ाई 5.5 मीटर है। हाई वे के चौढीकरण के दौरान सर्विस रोड़ की चौड़ाई 7 मीटर किये जाने का प्राविधान है जिससे उक्त समस्या का निराकरण हो जाएगा।

प्र0 3 श्री अश्वनी कुमार, जसवन्त नगर, इटावा द्वारा जानकारी चाही गयी कि एन0एच0ए0आई0 द्वारा पूर्व में जनपद इटावा के 4 लेन सड़क निर्माण के समय निर्धारित मुआवजे का भुगतान नहीं किया गया है।

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वार अवगत कराया गया कि मुआवजे के भुंगतान हेतु नियमानुसार अपील करते हुए मुआवजा प्राप्त करने की कार्यवाही की जा सकती है।

प्र0 4 श्री विजय यादव, कुरसैना इटावा द्वारा अवगत कराया गया कि कुरसैना में आबादी के बाद भी सर्विस रोड नहीं है, जिससे दुर्घटना आदि की सम्भावना बनी रहती है। उक्त के सम्बन्ध में क्या कार्यवाही की जाएगी ?

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि वर्तमान में उक्त का ध्यान रखते हुए सर्विस रोड़ निर्माण किये जाने का प्राविधान है।

प्र0 5 श्री जयवीर सिंह तौमर, इटावा द्वारा अवगत कराया गया कि एक्सीडेन्ट जोन बकेवर चौराहा के लिए क्या प्राविधान किया गया है ? कृषि भूमि पर निर्माण के समय कन्स्ट्रक्सन कैम्प नहीं बनाने का प्राविधानित है किन्तु सामान्यतयाः उक्त का निर्माण कृषि भूमि पर ही किया जाता है जिसे रोकनेकी क्या व्यवस्था है ?

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त का ध्यान रखते हुए एक्सीडेन्ट जोन एरिया में अण्डर पास का निर्माण किये जाने का प्राविधान है। कृषि भूमि पर निर्माण के समय कन्स्ट्रक्सन कैम्प नहीं बनाने का प्राविधानित है उक्त के अनुपालन हेतु कन्स्ट्रक्सन कम्पनीयों को टेण्डर के समय सशर्त प्रतिबन्धित किये जाने का प्राविधान है तथा सुपरवीजन कन्सलटेन्टस उक्त को सुपरवाइज भी करेगें।

प्र0 6 श्री शिवराज सिंह, ग्राम अन्तराम, इटावा द्वारा अवगत कराया गया कि हाई वे निर्माण के समय खेतों से मिटटी ढुलाई के समय प्रयोग किये जाने ट्रक एवं डम्पर से रोड टूट जाती है जिसका निर्माण नहीं कराया जाता है। उक्त के लिए क्या व्यवस्था की जाएगी ?

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि हाई वे निर्माण के समय खेतों से मिटटी ढुलाई के समय प्रयोग किये जाने ट्रक एवं डम्पर से जो रोड टूट जाती है उसे हाई वे निर्माण के पश्चात निर्माण / रीहेविलिटेड किया जाएगा। जिस स्थल से मिट्टी लायी जा रही है उक्त स्थल का चिन्हीकरण कर हाई वे से जोडने वाली सड़क का निर्माण / रीहेविलिटेसन किये जाने सम्बन्धी कार्य को हाई वे निर्माण हेतु प्रस्तावित डी0पी0आर0 में सम्मलित किया जाएगा।

प्र0 7 श्री सुरेन्द्र सिंह, जसवन्त नगर, इटावा द्वारा अवगत कराया गया कि हाई वे के किनारे सेन्ट पीटर स्कूल है जिसमें लगभग 2500 बच्चे पढ़ते है। बच्चों के सड़क पार करने से एक्सीडेन्ट की सम्भावना रहती है। अतः उक्त स्थल पर अण्डर पास बनाया जाए।

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त स्कूल के समीप सर्विस रोड़ एवं लगभग 1 कि0मी0 की दूरी पर अण्डर पास भी बना हुआ है। स्कूल एवं बच्चों को ध्यान में रखते हुए उक्त स्थल पर पैदल पुल का निर्माण कराया जाएगा।

कमशः .....5...

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प्र0 8 श्री सुरेन्द्र सिंह, जसवन्त नगर, इटावा द्वारा अवगत कराया गया कि हाई वे के किनारे मण्डी रोड होने के कारण वाहन आवागमन से भीड़ रहती है तथा हाई वे ऊँचाई पर होने के कारण ट्रैफिक मुडने में समस्या रहती है। उक्त समस्या का निराकरण कराया जाए।

उ0 एन0 एच0 ए0 आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त स्थल पर हाई वे जंक्शन के एक्सटेन्सन किये जाने का प्राविधान किया जाएगा।

अन्त में जिलाधिकारी महोदय, इटावा द्वारा उपस्थित जन समूह के प्रति आभार ज्ञापित करते हुए लोक सुनवाई के समापन की घोषणा की गयी।

14.3.12

(राजेन्द्र प्रसाद)
क्षेत्रीय अधिकारी

(पी0 गुरू प्रसाद)
जिलाधिकारी, इटावा

E-6

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भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27, कैलाश बिहार, निर्मय नगर, आगरा– 282007 द्वारा आगरा– इटावा सैक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण/उच्चीकरण/ सुदृढ़ीकरण एवं फिरोजाबाद वाईपास के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के कम में जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 292.000 से कि0मी0 323.473 तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर– 208011 द्वारा इटावा – चकेरी (कानपुर) सेक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन में चौड़ी करण /उच्चीकरण /सुदृढ़ीकरण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के कम में जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 323.475 से कि0मी0 350.800 हेतु पर्यावरणीय स्वीकृति प्राप्त करने हेतु राज्य प्रदूषण नियन्त्रण बोर्ड को प्रस्तुत प्रस्ताव के सम्बन्ध में पर्यावरण एवं वन मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 14 सितम्बर, 2006 के अनुपालन में जिलाधिकारी महोदय, इटावा की अध्यक्षता में दिनांक 14.03.12 को कलेक्ट्रेट सभागार कक्ष, इटावा में सम्पन्न हुयी लोक सुनवाई की उपस्थिति।

क0सं0	नाम एवं पद	पता	हस्ताक्षर
1	पी० गुरु प्रसाद जिलाधिकारी महेन्द्र सिंह अपर जिलाधिकारी	इटावा इटावा	
2	राजेन्द्र प्रसाद, क्षे०अधि०	उ०प्र० प्रदूषण नियंत्रण बोर्ड, इटावा	
3	अब्दुल वाकित	परियोजना निदेशक, NHAI	
4	एस० के० मिश्र	प्रबंधक (तकनीकी), NHAI	
5	P. SIVA SANKAR	Manager(T), NHAI, Kanpur	
6	Shivnath Chakra	Env. Engineer, CEG, Jaipur	
7	राकेश कुमार	जसवन्त नगर, इटावा	राकेश कुमार
8	शौकत हुसैन	कुरथैना	शौकत हुसैन
9	लाल सिंह	जसवन्त नगर	लाल सिंह
10	विनोद कुमार	भरथना-इटावा	विनोद कुमार
11	अल्ताफ खान	जसवन्त नगर	अल्ताफ खान
12	नरेन्द्र सिंह	जसवन्त नगर	नरेन्द्र सिंह
13	[illegible]	जसवन्त नगर	[illegible]
14	[illegible]	जसवन्त नगर	[illegible]
15	[illegible]	[illegible]	[illegible]
16	भारत सिंह	[illegible]	भारत सिंह
17	[illegible]	[illegible]	[illegible]
18	रामप्रसाद	[illegible]	रामप्रसाद
19	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]

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22	वेदपाल सिंह	जसवन्तनगर	वेदपाल सिंह
23	ओमराहुल	[illegible]	[illegible]
24	[illegible]	केस्त	[illegible]
25	साहब सिंह	केस्त	साहब सिंह
26	सुरेश सिंह	जसवन्तनगर	सुरेश
27	बाबू राम	[illegible]	बाबू राम
28	[illegible] सिंह	[illegible]	[illegible] सिंह
29.	Dr. M.P. Saini	CEG Ltd Jaipur	[illegible]
30	[illegible] सिंह तोमर	C-7 A आवास विकास	[illegible]
	9412283095	कॉलोनी इटावा	
31.	Er. Jaiveer Singh tomar	"	[illegible]
32	Yogesh Yadav	[illegible]	[illegible]
33.	Rangesh Sharma	N.H.A.I Agra	[illegible]
34	Sachin Jadaun	L.B.G.	[illegible]
35.	Vimal Arya	N.H.A.I Agra	[illegible]
36.	R.K. Kushwaha	CEG	[illegible]
37	Ranjan Prakash	Louis Berger, Gurgaon	RPrakash
38	Harendra Kumar	— do —	[illegible]
39	Dinesh Kumar	[illegible]	[illegible]
40	[illegible]	[illegible]	[illegible]
41	राम [illegible] दुबे	[illegible]	[illegible]
42	[illegible] सिंह	[illegible]	[illegible]
43	Sagar Sven	GIB C B-3-6 Sec 32 [illegible]	[illegible]
44	[illegible] दुबे	[illegible]	[illegible]
45	[illegible]	फूलपुर पो० फूलपुर [illegible]	
46	[illegible]	[illegible]	
47	[illegible]	फूलपुर पो० फूलपुर	
48	राहुल सिंह	[illegible] इटावा	
49	[illegible] कुमार	[illegible]	[illegible]
50	राजेश दुबे	[illegible]	[illegible] दुबे
51	सन्तोष तिवारी	[illegible]	सन्तोष तिवारी
52	[illegible] कुमार [illegible]		
53	[illegible] कुमार	[illegible]	
54	[illegible]	[illegible] सिंह	

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55			
56		Rakesh	
57		J.E.	
58	G.P Pandey	O.S E E.C.P	
59	Satish Upadhyay	O.S.E E.C.P	
60	V.S Rathod	O.S.E E.C.P	
61	S.K. Yadav	O.S.E E.C.P	
62	R. R. Pandey	G.M. DIC Etawah	
63	Radhey Shyam yadav	Goverdhan Entt. Udyog. Etawah	

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दूरभाष संख्या (05612) 230836

क्षेत्रीय कार्यालय

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड

भवन संख्या 3/5 बी, सेक्टर–3, सुहाग नगर,

फिरोजाबाद।

संदर्भ संख्या 2113 /एनओसी–319/2012 दिनांक 15/03/12.

सेवा में,

सदस्य सचिव महोदय,
उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड,
लखनऊ।

विषयः **भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27– कैलाश बिहार, निर्भय नगर, आगरा– 282007 द्वारा आगरा– इटावा सैक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण उच्चीकरण / सुदृढ़ीकरण तथा फिरोजाबाद बाईपास के निर्माण हेतु लोक सुनवाई के सम्बंध में।**

महोदय,

कृपया उपरोक्त विषयक अपने पत्र संख्या एफ 96557/सी–4/ एन0ओ0सी0–652/2011, दिनांक 20.12.11 तथा पत्र संख्या एफ 96757/सी–4/ एन0ओ0सी0 –654/2011, दिनांक 26.12.11 का सन्दर्भ ग्रहण करने का कष्ट करें, जो कि क्रमशः भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, 27– कैलाश बिहार, निर्भय नगर, आगरा– 282007 आगरा– इटावा सैक्शन के राष्ट्रीय राजमार्ग–2 को छः लेन चौड़ीकरण उच्चीकरण/ सुदृढ़ीकरण एवं फिरोजाबाद वाईपास के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में **जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 292.000 से कि0मी0 323.473 तक** तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस 128/681 ए ब्लाक किदवई नगर, कानपुर– 208011 द्वारा इटावा चकेरी (कानपुर) के राष्ट्रीय राजमार्ग–2 को छः लेन में चौड़ी करण उच्चीकरण /सुदृढ़ीकरण के निर्माण हेतु प्रस्तुत लोक पर्यावरणीय स्वीकृति सम्बन्धी प्रस्ताव के क्रम में **जनपद इटावा के राष्ट्रीय राजमार्ग– 2 के कि0मी0 323.475 से कि0मी0 350.800 तक** के कार्य हेतु पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा जारी अधिसूचना दिनांक 14.09.06 के अर्न्तगत लोक सुनवाई के सम्बंध में हैं।

अवगत कराना है कि इस सम्बन्ध में नियत दिनांक 14.03.2012 समय दोपहर 12.00 बजे एवं स्थान कलेक्ट्रेट सभागार कक्ष, फिरोजाबाद में लोक सुनवाई जिलाधिकारी, इटावा की अध्यक्षता में सम्पन्न हुयी। लोक सुनवाई का कार्यवृत्त, फोटोग्राफ – 05 नग, एवं सी0डी0–2 सलंग्न कर आपके अवलोकनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु प्रेषित है।

सलंग्नकः– उपरोक्तानुसार।

भवदीय

15/3/12

(राजेन्द्र प्रसाद)
क्षेत्रीय अधिकारी

प्रतिलिपिः– निम्नलिखित को सूचनार्थ एवं अग्रिम आवश्यक कार्यवाही हेतु प्रेषित।

1. जिलाधिकारी महोदय, इटावा।
2. मुख्य पर्यावरण अधिकारी, उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड, लखनऊ।

क्षेत्रीय अधिकारी

F01530 23-3-12

पत्रांक - /सी- 4/NOC - 652/12 दि.

पंजीकृत

सेवा में,

निदेशक,
पर्यावरण प्रभाव मूल्यांकन,
पर्यावरण एवम् वन मंत्रालय, भारत सरकार,
सी०जी०ओ० काम्पलेक्स, लोधी रोड,
नई दिल्ली

विषय : भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई–२७, कैलाश बिहार, निर्भय नगर, आगरा–२८२००७ द्वारा (आगरा–इटावा) सैक्शन के राष्ट्रीय राजमार्ग–२ को छः लेन चौड़ीकरण उच्चीकरण/सुदृढ़ीकरण तथा फिरोजाबाद बाईपास के निमार्ण हेतु सम्पन्न लोक सुनवाई के कार्यवृत्त के प्रेषण के संबंध में ।

महोदय,

कृपया उपरोक्त विषयक भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई–२७, कैलाश बिहार, निर्भय नगर, आगरा–२८२००७ द्वारा (आगरा–इटावा) सैक्शन के राष्ट्रीय राजमार्ग–२ लम्बाई २६२.००० से ३२३.४७३ तक तथा भारतीय राष्ट्रीय राजमार्ग प्राधिकरण परियोजना कार्यान्वयन इकाई, रौली हाउस १२८/६८१ ए ब्लाक, किदवई नगर, कानुपर–२०८०११ द्वारा इटावा चकेरी (कानपुर) के राष्ट्रीय राजमार्ग–२ को छः लेन चौड़ीकरण उच्चीकरण/सुदृढ़ीकरण लम्बाई ३२३.४७५ से ३५०.८०० कि०मी० तक के निमार्ण कार्य हेतु जिलाधिकारी फिरोजाबाद की अध्यक्षता में दिनाँक–१४.०३.२०१२ को मध्यान्ह १२:०० बजे कलैक्ट्रेट सभागार, फिरोजाबाद में लोक सुनवाई सम्पन्न हुयी। उक्त बैठक के संबंध में क्षेत्रीय कार्यालय, फिरोजाबाद से प्राप्त कार्यवृत्त की प्रति, सी०डी० तथा फोटोग्राफ मूल रूप में संलग्न कर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित किये जा रहे हैं।

भवदीय,

संलग्नक : उपरोक्तानुसार ।

(डा० सी० एस० भट्ट)
सदस्य सचिव

..२

7.6 R & R Action Plans

The available ROW along the project corridor is inadequate along certain stretches, and triggers need for additional land acquisition. To address the land acquisition and resettlement impacts, RAP shall be prepared.

Involuntary resettlement (IR) often disrupts the lives and livelihoods of DPs by dismantling existing production systems, asset and resource bases, social networks, and cultural activities. DPs experience acute social, economic, and psychological alienation and marginalization, often leading to their impoverishment and sometimes an increase in morbidity and mortality. Traditionally, rehabilitation has been limited to payment of compensation and some skill training to support income-generating activities, which are usually unsustainable. But there has been an increasing realization that this is inadequate and, therefore, R&R activities must also take up income restoration activities aimed at improving or at least bringing the income of project DPs to pre-project levels. While land acquisition may not always displace people, it certainly has an effect on their living standards. NHAI LA 1956 Act, World Bank and BLARRP 2007 policies emphasize avoidance of such disturbance and displacement and where such disturbance is unavoidable; the project authority should minimize adverse effects. Resettlement planning is designed to ensure that people who are physically or economically displaced end up no worse off and preferably better off than they were in the pre-project scenario. Resettlement planning should be conceived as an opportunity for improving the livelihoods of DPs. DPs should be consulted to ensure that mitigation of adverse effects, as well as benefits of resettlement, is appropriate and sustainable.

Screening Process

Social screening was carried out during the initial design stage. The exercise helped to identify the social sensitive issues and location with respects to the project. The outcome of the study was used in finalization of alignment and design options. The screening has been carried out for direct impact zones and indirect impact zones. Direct impact zone varies between 6.5 m and 7.5 m from centerline on either side of the project road. Indirect impact

zone for the study was assessed for a distance up to 10 km from the corridor. A sensitivity analysis was carried out for the following parameters:

- Extent of existing ROW available
- Extent of built up area with residential and commercial properties.
- Cultural properties like temple, Shrine, mosque, Church, graveyards, and burial grounds,
- Community Assets,
- Natural ressources, ponds, Rivers, Forest etc,
- Protected monuments
- Alternative Alignment Options

Alternative Options and Minimization of impacts

To minimize land acquisition and its impacts on assets and livelihood of people, different cross sections have been adopted and accordingly Row options were prepared for rural and urban areas. The numbers of structures affected have been reduced. The existing ROW has been utilized to the full extent by adopting concentric widening.

No bypass and realignment are proposed. Generally, center line has not been shifted along the corridor to minimize land acquisition and resettlement impacts.

Magnitude of Impacts

The impacts involve loss of assets, including land and house; loss of livelihood and income opportunities; collective impacts on groups, such as common property resources. The total extent of land to be acquired for NH 2 is 141Hectares as per the approved alignment .Due to land acquisition and clearing of existing ROW from encroachments, 1444 structures are impacted, The impacted structures and the loss of assets and livelihood and the details shall be assessed and estimated for preparation of resettlement action plan.

RAP implementation mechanisms

To address the resettlement impacts, an action plan to implement the various provisions shall be worked out and includes the following: institutional mechanisms, grievance redress mechanisms, procedures for disbursements of entitlements and livelihood restoration

mechanisms, involvement of NGOs in implementation, monitoring of effectiveness of RAP implementation etc, costs towards these have been worked out and are included in the project costs. Total cost for R & R Plan is 124.95 crores

Institutional arrangement

Timely establishment & involvement of appropriate R&R institutions would significantly facilitate achievement of objectives of the R&R program.

The R&R institutions would include:

- MoRTH / State PWD (Nodal officer)
- Environment & Social Manager
- Land Acquisition officer
- Field officers
- Local Administration
- Line departments
- NGO
- DLC/GRC
- Training Institutions-M&E Agency

This strategy has the aim of improving the personal, technical and organizational capabilities of the institution so that it better performs what is already being attempted. In the road sector in particular, this strategy has become common and it is the one mostly considered as capacity building approach. Activities included are such as:

- Technical assistance in terms of personnel,
- Technical training of local personnel locally,
- Improvement of management systems e.g. better financial and management systems and,
- Improved working conditions.

General Mitigation Plan for Negative Social Impacts

Wherever damage, or dislocation, or disruption of the community can not be avoided,

mitigation measures will be proposed as follows:

i) If land acquisition is inevitable then only minimum amount of land shall be acquired to provide for geometric improvements, service road, underpasses, footpath, etc, in congested areas.

ii) The Legal Occupants are concerned with the compensation package Adequate and timely compensation for those who have legal properties.

iii) Assistance to the affected people who were illegal occupants of the Govt. land but are vulnerable and doing business on ROW. They should be given some assistance to restore their livelihood.

iv) Provision of service roads in the market areas and in the area where sizeable no. of populations are living on either side of the road.

v) Shifting of existing school, shrines and religious structures, if required, after community consensus

vi) Underpasses at schools/other important pubic properties and at different location for pedestrians, vehicles and animal crossings

vii) Provision of safety measures specially for women and school going children

viii) Planning of proper junctions wherever required.

ix) Truck lay byes at required locations.

x) Transparent and people friendly Resettlement and Rehabilitation plan.

xi) As far as possible the widening proposal should be limited to available ROW, causing minimum damage to the existing structure on both side of the project road.

Annexure 7A

SOCIAL IMPACT ASSESSMENT

7A.1 Social Impact Assessment

7A.1.1 General

The Etawah Chakeri section of National Highway No.2 falls in the Delhi kolkatta arm of the Golden Quadrilateral. This section is at present 4 lane and also proposed for 6- laning project under NHDP phase V. The project Highway starts at km 323.475 at the end of Etawah bypass and ends near Chakeri at km 483.687 on the Agra- Etawah-kanpur-Allahabad section of NH-2. Total length of this section is 160 km approximately.

Some of the features of the Project Highway are shown in **Photo 7A.1** to **Photo7A.6**.

Photo 7A.1: End Chainage at Chakeri

Photo 7A.2 : Encroachment at Rania in Service road

Photo 7A.3 : Road-side Built-up Area

Photo 7A.4 : Road-side Built-up Area

Photo 7A.5 : Road-side Built-up Area

Photo 7A.6: Vulnerable Users

The project traverses with the districts of Etawah, Auraiya, kanpur city and Kanpur Dehat. Kanpur district was divided in 1977 into two districts namely kanpur- Nagar and Kanpur- Dehat. The important towns on this road are given in **Table 7A.1.**

Table 7A 1: Settlements on Etawah-Chakeri Road NH-2

SI No	Name	Chainage (km)
1	Ekdil	329
2	Bijauli	337
3	Anantram	352
4	Babarpur	357
5	Auraiya	381
6	Mahtauli	391
7	Sikandra	395
8	Rajdan	404
9	Mungisapur	414

10	Akbarpur	431-433
11	Rania Industrial Area	444-449
12	Raipur	451
13	Bhaunthi	455

7A.1.2 Scope and Objectives

The overall objective of conducting social screening is to provide input of social concerns to be dove-tailed in highway design and to avoid or minimize the adverse social impacts with the best possible engineering solutions at the most optimal cost with complete co-ordination between engineering, environmental and social teams during the entire design process. Roads are bringing people and people bring development, roads are agents of change, which can bring both benefits and damage to the existing balance between the people and their environment. When we see our past history of transportation the bullock carts have been traditionally used for transport, especially in rural areas. They still are seen in many of the cities and villages. In the recent years some of the cities have banned the movement of bullock carts and other slow moving vehicles on the main roads during daytime.

The principle objectives of this exercise are to identify the potential social impacts and examine the different types of socially sensitive receptors in this study area. The social Assessment process generally begins with screening at the time of project identification, where steps are taken from the beginning and plans\designs\alignments are finalized in such a way that to the extent possible adverse impacts are avoided at the entire designing stage itself and make these roads people friendly. These steps are;

- Avoiding the adverse social impacts at the designing stage especially while finalizing the alignments.
- Mitigating the adverse social impacts at designing stage and construction\ operation phase
- Compensating the affected people \ common properties and rehabilitation and resettlement measures.

The overall objective of conducting social screening is to provide input of social concerns to be dove-tailed in highway design and to avoid or minimize the adverse social impacts with

the best possible engineering solutions at the most optimal cost with complete co-ordination between engineering, environmental and social teams during the entire design process.

- To highlight the need for a road project;
- To describe the proposed road project and alternatives;
- To evaluate the potential impacts of road project options on the valued ecosystem components within the project study area;
- To consult the local people, officials and experts on options and impacts in order to establish institutional capacity;
- To encourage the public participation during consultation;
- To select the preferred project option and suggest mitigation plan.

7A.1.3 Methodology

Social impact assessment needs clear definition of the corridor of impact (COI) and the right of way (ROW) for establishing the extent of social impact. The social screening exercise of this project is informed by a critical gaze at the different problematic social aspects that may be encountered during the construction and operation phases. To achieve the target which needs comprehensive data involves the following methodology:

- Establishing the width that may include carriageway, shoulder, safety zone, borrowed areas, etc. determining the COI at the initial stage is important for undertaking social assessment surveys within the defined area.
- 100% census, and 25% socio-economic survey
- Collection of data from different agencies and sources which is already existing and documented by them.

Thus, both primary and secondary data are required for establishing the extent of impact, which need to be collected by administering the questionnaire for collecting information on structures, properties, land and type of ownership and social groups etc. with the help of enumerators\investigators and by collecting secondary data from different Govt, and non govt. sources. However, here the data has been collected on the basis of rapid social survey and public consultation as this study is restricted to only feasibility stage for which social

screening survey, applying rapid survey methods, has been conducted. The census and other related survey in details is done only when the study require information of DPR level.

7A.1.4 The Project Influence Area

The total length of the existing project road under consideration is 160.212 km with start point at km 323.475 (the end of Etawah bypass) and end point at km 483.687 (Kanpur) on the Agra- Etawah-Kanpur- Allahabad section of NH-2. The project road passes through districts viz. Etawah, Auraiya, Kanpur City and Kanpur Dehat in the State of Uttar Pradesh. The latitude and longitude districts head quarters are given in **Table 7A.2**

Table 7A.2: Project Influence Areas

State/ Districts	Latitude	Longtitude
Etawah	26° 46` 08.31″ N	79° 02` 10.3 ″E
Kanpur Dehaat	26° 27' 29″ N,	80° 13' 7.39″ E

7A.1.5 State Profile

Uttar-Pradesh is India's fifth largest and the first most populous state. The state is located in the north- western part of the country. It spreads over a large area, and the plains of the state are quite distinctly different to the high mountains in the north . Uttar Pradesh is bounded by Nepal on the north, Uttarakhand on the north-east , Himachal Pradesh on the north –west, Haryana on the Weast, Rajasthan on the South –West, MP on the South and south west,and Bihar,on the east.

Agriculture is the mainstay of the State economy. UP is the second largest Economy in India after the Maharashtra. The state is famous for Leather and Cotton cloths.

Roads play a vital role in the economic development of any country or state.

The concept of District Governance has been in plummeted and District planning Committees have been empowered to plan execute development works. A system of Village level governance, Gram Swaraj, has been put in place, from Jan 28th, 2001, under which Gram Saba have been bestowed with considerable powers for developments of villages and its welfare activities. Uttar Pradesh is the First most populated Indian state with population statistics of 166,052,859 and Fifth large Indian State in size with an area of 243,290 sq.km. and Density of population, total number of villages, literacy and male female ratio for the state are shown below in

Table 7A.3. The state divided into 70 districts and 140 Tehsils and 98153 villages. Etawah, Auraiya, Kanpur city and Kanpur Dehaat are four administrative Districts of Uttar Pradesh. The road passes through the four important District of the State of Uttar Pradesh Etawah, Auraiya, kanpur city and Kanpur Dehaat.

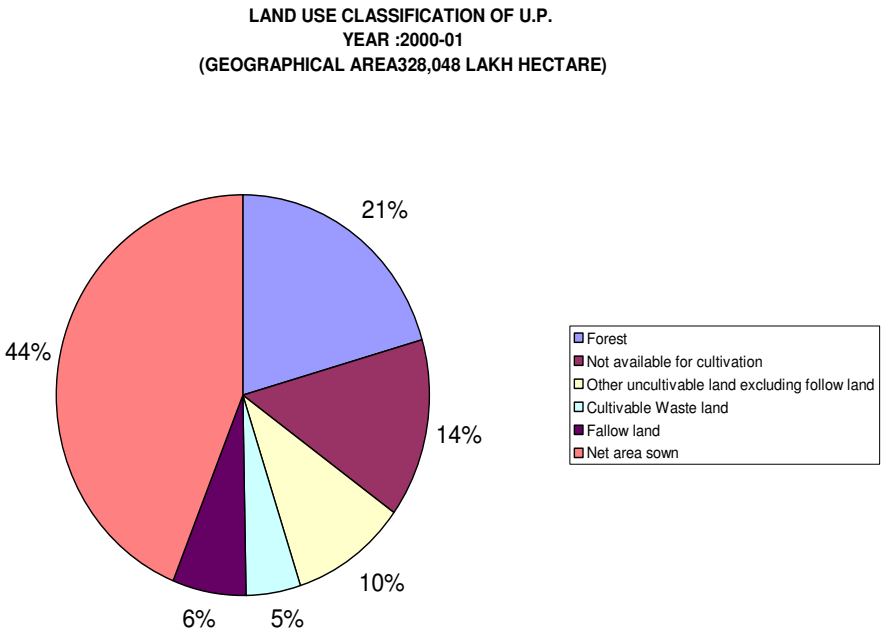
Table 7A.3: General Statistics of Uttar Pradesh

Population (census 2001)	166,052,859
Male	87,466,301
Female	78,586,585
Area (in sq.Km)	243,290
Density of Population	683 per sq .Km
Districts	70
Tehsils	140
Total Villages	98153
Literacy Rate	57.36 Percent
Male Literacy Rate	70.23 Percent
Female Literacy Rate	42.98 Percent
Male-Female Ratio	898 Per thousand

The present configuration of the road is 4 lane wide. Existing right of way ROW as per details obtained from state PWD, is generally about 40-60 m Right of Way of 60 m is required for 6 lane highway considering the present and future requirement service roads. Additional ROW will be required at Toll Plazas. The project road traverses through plain terrain in the entire length. There are a number of villages along the project road. In this stretch there are Encroachment in built up area all available ROW is in adequate.

7A.1.6 Land Use classification of Uttar Pradesh State

The pattern of land use of a country or state at any particular time is determined by the physical, economic & institutional framework taken together. In other words, the existing land –use pattern in different regions in India has been evolved as a result of action & interaction of various factors, such as the physical characteristics of land, the institutional frame work, the structure of other aspects of economic development, e.g. those relating to transport as well as to industry & trade. The present pattern can, therefore, be considered to be in some sort of static harmony & adjustment with the other main characteristics of the economy of the region. In the dynamic context, keeping in view the natural endowments & the recent advances in technology, the overall interests of a country may dictate a certain modification of or a change in the existing land use pattern of a region. The land use classification of Uttar Pradesh for the year 2000-01 is given in **Figure 7A.1**. A close study of the present land use patterns & the trends during recent years will help to suggest the scope for planned shifts in the patterns.



Source: Director of census operation, Uttar Pradesh 2001.

Figure 7A.1: Land Use Classification of Uttar Pradesh (Year: 2000-01)

7A.1.7 Land Acquisition

Additional land acquired will be as per the design requirement.

a) The National Highways Act 1956:

For land acquisition, the act defines the various steps in the process as follows: (i) section 3A- power to acquire land; (ii) 3B- power to enter for surveys; (iii) 3C – hearing of objections; (iv) 3D- declaration of acquisition (v) 3E- power to take possession; (vi) 3F- power to enter into the land where land has vested in the central government; (vii) 3G- determination of amount payable as compensation; and (viii) 3f- deposit and payment of amount. The act requires that the processes must be completed within a year from 3A to 3D. The acquisition process is faster due to central government coordination and provision for arbitration or power of civil court for trying any LA-related dispute. Although NHAI act significantly reduces the time frame for acquisition, the rules and principles of compensation are derived from the LA act of 1894 amended from time to time. The act covers only legal title holders and

provides for: (i) market value of the land; (ii) a solarium of 30% on the market value for compulsory acquisition; (iii) additional amount for trees, crops, houses or other immovable properties; (iv) damage due to severing of land, residence, place of business; (v) compensation to sharecroppers for loss of earning; and (vi) an interest of 12% on the market value from the date of notification of award.

7A.1.8 The Socio Background and Demographic Profile

Demographic profile has an important bearing on the development process. According to 2001 census, the total population of Uttar-Pradesh is 166,052,859, and population of Districts Kanpur and Etawah are 4,167,999 and 13,38,871 respectively.

(i) Kanpur District profile

In 1803 Kanpur became a District. Kanpur City is situated between the parallels of 25°26' and 26°58' north latitude and 79°31' and 80°34'east longitude. It is situated on the main Delhi-Howrah railway trunk line. It is situated on bank of holy river Ganga and is about 126 meter above the sea level. Kanpur is a metropolitan city, sprawling over an area of 260 sq km. Kanpur is connected by road with all the major cities of the country. It is situated on National Highway No. 2 on the Delhi-Agra-Allahabad-Calcutta route and on National Highway No. 25 on the Lucknow-Jhansi-Shivpuri route.

It is located at the distance of 79 km from Lucknow, 193 km from Allahabad,
329 km from Varanasi, 398 km. Khajuraho, 269 km Agra and 222 km from
Jhansi. It is administratively divided into 6 zones and 110 wards with an average ward population range of 19000 to 26000.

Index Map of Kanpur District is given in **Figure 7A.2**.

Figure 7A.2: Index Map of Kanpur District

(ii) Etawah District Profile

Etawah lies in the south western portion of Uttar Pradesh 26° 47" north latitude and 72° 20" east longitude and forms a part of the **Kanpur** Division In shape it is a parallelogram with a length from north to south 70 Km. and East to west 66 Km. on one side and 24 Km. on the other side. It is bounded on the north by the districts of **Farrukhabad** and **Mainpuri**, while the small extent of western border adjoins tahsil Bah of the Agra district. The eastern frontier marches with the district of Auraiya, and along the south lie Jalaun and the district of **Gwalior**, the division line being, except for a short distance, the **Chambal** and **Yamuna** rivers.

The Index Map of Etawah District is given in **Figure 7A.3**.

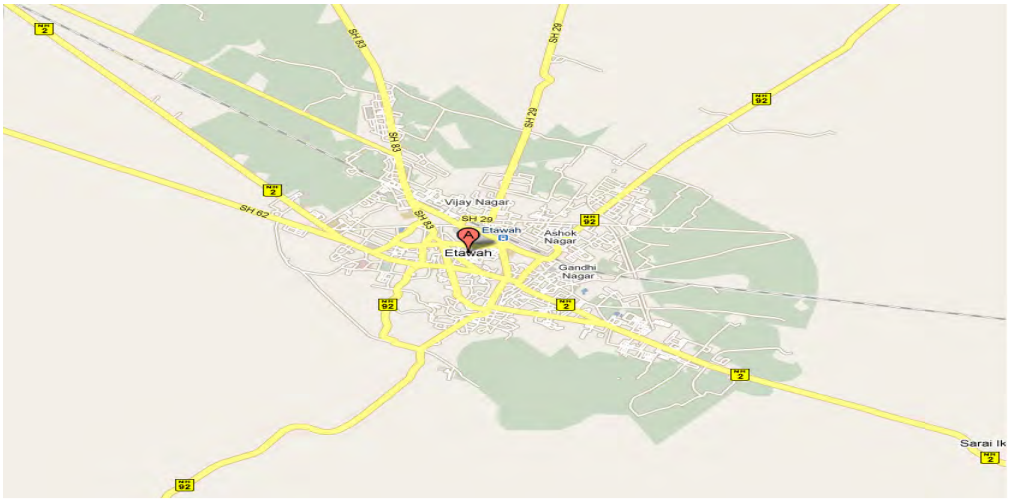


Figure 7A.3: Index Map of Etawah District

As per Census of 2001 the population of Etawah District is 13, 38,871. Male population is 7, 20,749 and Female Population is 6, 18,122. The area of the district is 2434 sq.km. Districts Density of the population is 586 /sqkm and there are 856 females for every 1000 males. Sex ratio is 856.

Total villages in Etawah District are 681 and 4 Tehsils. The average rainfall of the District is 792 mm. District's Literacy Rate is 67% but the literacy of males is higher than females. Male literacy Rate is 72% and Female literacy Rate is 61 %. Etawah district's economy is predominantly an agrarian. Etawah is well connected by road & Rail network. Delhi-Calcutta broad gauge railway line & National Highway No.2 passes through this district. Etawah district comes under south Western Plain. Sugarcane, Oilseeds, vegetables, fruit, wheat, barley and gram crop zone from the point of view of agriculture climate. Geographical area is 1007.8 thousand hectare. Out of which 416.7 thousand hectare land is under cultivation. The district consists of nearly 1.76 lakh agricultural families out of which 46% belong to SC\ST category.

7A.1.9 Physical Status along Project Road

The Consultants' study team which included Social Expert undertook a site appreciation exercise, along the project road, in order to assess the extent of likely impacts on land and property, individuals and groups, common property resources, sources of livelihood, sensitive locations and structures etc. It was observed in this process that the predominant land use pattern is agriculture in nature, excepting at urban reaches.

Widening of the project road may adversely affected livelihood of roadside temporary shopkeepers. Adequate social safeguards may be planned in order to minimize social unrest and tension as far as practicable. Additional land may be required for providing service road in built up locations for junction improvement toll plaza and truck lay bay. .The design process has suitably accommodated social, environmental, engineering and cost issues. The project includes junction treatment, pedestrian /cattle underpasses, vehicular underpasses and service roads. Subsequent to the public consultation process, if any charge is required would be carried out.

7A.1.10 Social Issues

Generally, an attempt is made to contain the 6-lanning with paved shoulder proposal within the existing ROW to the extent possible. However, at certain locations, like Geometric/Junction improvement some land would be acquired, for which compensation would be necessary.

7A.1.11 General Mitigation Plan for Negative Social Impacts

Wherever damage, or dislocation, or disruption of the community can not be avoided, mitigation measures will be proposed as follows:

xii) If land acquisition is inevitable then only minimum amount of land shall be acquired to provide for geometric improvements, service road, underpasses, footpath, etc, in congested areas.

xiii) The Legal Occupants are concerned with the compensation package Adequate and timely compensation for those who have legal properties.

xiv) Assistance to the affected people who were illegal occupants of the Govt. land but are vulnerable and doing business on ROW. They should be given some assistance to restore their livelihood.

xv) Provision of service roads in the market areas and in the area where sizeable no. of populations are living on either side of the road.

xvi) Shifting of existing school, shrines and religious structures, if required, after community consensus

xvii) Underpasses at schools/other important pubic properties and at different location for pedestrians, vehicles and animal crossings

xviii) Provision of safety measures specially for women and school going children

xix) Planning of proper junctions wherever required.

xx) Truck laybyes at required locations.

xxi) Transparent and people friendly Resettlement and Rehabilitation plan.

xxii) As far as possible the widening proposal should be limited to available ROW, causing minimum damage to the existing structure on both side of the project road.

जिला इटावा

क्रम सं.	आवेदक का नाम	आपत्ति/सुझाव	निराकरण
1.	श्री किशोरी सिंह, इटावा।	श्री किशोरी सिंह द्वारा जानकारी चाही गयी कि नालों का निर्माण जनपद इटावा के अर्न्तगत प्रस्तावित सडक चौडीकरण के दौरान नालों का निर्माण शहरी आबादी को ध्यान में रख कर किया जाए एंव नालों को बाईपास हेतु उचित निकासी की व्यवस्था की जाए।	इस आपत्ति के उत्तर में एन0एच0ए0आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि हाई वे के किनारे के आबादी क्षेत्र के आधार पर कलवर्ट की व्यवस्था उचित जल निकासी हेतु किये जाने का प्रविधान परियोजना में किया गया है। जहॉ पर कलर्वट की व्यवस्था की जानी है का प्रस्ताव नगर पालिका परिषद द्वारा जिलाधिकारी, इटावा के माध्यम से एन0एच0ए0आई0 आगरा/कानपुर को प्रेषित करा दिया जाए। उक्त कार्य कों संज्ञान में लेते हुये हाई वे निर्माण हेतु प्रस्तावित डी0पी0आर0 में सम्मलित किया जाएगा।
2.	श्री राजीव कुमार, जसवंत नगर, इटावा।	श्री राजीव कुमार, जसवंत नगर, इटावा द्वारा जानकारी चाही गयी कि रोड के किनारे सर्विस रोड की चौडाई कम होने के कारण सर्विस रोड पर एक वाहन के खडे होने के कारण दूसरा वाहन निकल नहीं पाता है। सर्विस रोड की चौडाई कम है। अतः सर्विस रोड को चौडा बनाया जाए।	इस आपत्ति के उत्तर में एन0एव0ए0आई के प्रतिनिधि द्वारा अवगत कराया गया कि वर्तमान में सर्विस रोड की चौडाई 5.5 मीटर है। हाई वे के चौडीकरण के दौरान सर्विस रोड की चौडाई 7 मीटर किये जाने का प्रविधान है जिससे उक्त समस्या का निराकरण हो जाएगा।
3.	श्री अश्वनी कुमार, जस्वन्त नगर, इटावा।	श्री अश्वनी कुमार, जस्वन्त नगर, इटावा द्वारा जानकारी चाही गयी कि एन0एच0ए0आई द्वारा पूर्व में जनपद इटावा के 4 लेन सडक निर्माण के समय निर्धारित मुआवजे का भुगतान नहीं किया गया है।	इस आपत्ति के उत्तर में एन0एच0ए0आई के प्रतिनिधि द्वारा अवगत कराया गया कि मुआवजे के भुगतान हेतु नियमानुसार अपील करते हुए मुआवजा प्राप्त करने की कार्यवाही की जा सकती है।
4.	श्री विजय यादव, कुरसैना, इटावा।	श्री विजय यादव, कुरसैना, इटावा द्वारा अवगत कराया गया कि कुरसैना में आबादी के बाद भी सर्विस रोड नहीं है, जिससे दुर्घटना आदि की सम्भावना बनी रहती है। उक्त के सम्बन्ध में क्या कार्यवाही की जाएगी।	इस आपत्ति के उत्तर में एन0एच0ए0आई के प्रतिनिधि द्वारा अवगत कराया गया कि वर्तमान में उक्त का ध्यान रखते हुए सर्विस रोड निर्माण किये जाने का प्रविधान है।
5.	श्री जयवीर सिंह तौमर, इटावा।	श्री जयवीर सिंह तौमर, इटावा द्वारा अवगत कराया गया कि एक्सीडेन्ट जोन वकेवर चौराहा के लिए क्या प्रविधान किया गया है कृषि भूमि पर निर्माण के समय कनस्ट्रक्शन कैम्प नहीं बनाने का प्रविधानित है किन्तु सामान्यतयाः उक्त का निर्माण कृषि भूमि पर ही किया जाता है जिसे रोकने की क्या व्यवस्था है।	इस आपत्ति के उत्तर में एन0एच0ए0आई के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त का ध्यान रखते हुए एक्सीडेन्ट जोन एरिया में अण्डर पास का निर्माण किये जाने का प्राविधान है। कृषि भूमि पर निर्माण के समय कन्स्ट्रक्सन कैम्प नहीं बनाने का प्रविधानित है उक्त के अनुपालन हेतु कन्स्ट्रक्सन कम्पनीयों को टेण्डर के

			समय सशर्त प्रतिबन्धित किये जाने का प्रविधान है ताकि सुपरवीजन कन्सलटेन्टस उक्त को सुपरवाइज भी करेंगे।
6.	श्री शिवराज सिंह, ग्राम अन्तराम, इटावा।	श्री शिवराज सिंह, ग्राम अन्तराम, इटावा द्वारा अवगत कराया गया कि हाई वे निर्माण के समय खेतों से मिटटी ढुलाई के समय प्रयोग किये जाने ट्रम एंव डमपर से रोड टूट जोती है जिसका निर्माण नहीं कराया जाता है। उक्त के लिए क्या व्यवस्था की जाएगी।	इस आपत्ति के उत्तर में एन0एच0ए0आई के प्रतिनिधि द्वारा अवगत कराया गया कि हाई वे निर्माण के समय खेतों से मिटटी ढुलाई के समय प्रयोग किये जाने ट्रक एंव डमपर से जो रोड टूट जाती है उसे हाई वे निर्माण पश्चात निर्माण/रीहेविलिटेड किया जाएगा। जिस स्थल से मिट्टी लायी जा रही है उक्त स्थल का चिन्हीकरण कर हाई वे से जोडने वाली सडक का निर्माण/ रिहेविलिटेसन किये जोन सम्बन्धी कार्य को हाई वे निमार्ण हेतु प्रस्तावित डी0पी0आर0 में सम्मलित किया जाएगा।
7.	श्री सुरेन्द्र सिंह, जसवन्त नगर, इटावा।	(1) श्री सुरेन्द्र सिंह, जसवन्त नगर, इटावा द्वारा अवगत कराया गया कि हाई वे किनारे सेन्ट पीटर स्कूल है जिसमें लगभग 2500 बच्चे पढते है। बच्चों के सडक पार करने से एक्सीडेन्ट की सम्भावना रहती है। अतः उक्त सील पर अण्डर पास बनाया जाए। (2) श्री सुरेन्द्र सिंह, जसवन्त नगर, इटावा द्वारा अवगत कराया गया कि हाई वे के किनारे मण्डी रोड होने के कारण वाहन आवागमन से भीड रहती है तथा हाई वे उॅचाई पर होने के कारण ट्रैफिक मुडने में समस्या रहती है। उक्त समस्या का निराकरण कराया जाए।	(1) इस आपत्ति के उत्तर में एन0एच0ए0आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त स्कूल के समीप सर्विस रोड एंव लगभग 1 कि0मी0 की दूरी पर अण्डर पास भी बना हुआ है। स्कूल एंव बच्चो को ध्याम में रखते हुए उक्त स्थल पर पैदल पुल का निर्माण कराया जाएगा। (2) इस आपत्ति के उत्तर में एन0एच0ए0आई0 के प्रतिनिधि द्वारा अवगत कराया गया कि उक्त स्थल पर हाई वे जंक्शन के एक्सटेन्सन किये जोन का प्रविधान किया जाएगा।

जिला कानपुर

क्रम सं.	आवेदक का नाम	आपत्ति/सुझाव	निराकरण
1.	श्री तनवरी अहमद, निवासी, रामादेवी, कानपुर।	(1) राजमार्ग पर रामादेवी के पास कोई पैदल सुरंग मार्ग नहीं है तथा 4 लेन के निर्माण के समय भी पैदल मार्ग नही बनाया गया है। (2) राजमार्ग पर पलाई ओवर को सुरंग में संकेतक (Sign board) नहीं लगाये गये है। (3) राजमार्ग के दोनो तरफ पेड नहीं लगवाये गये है तथा हमीरपुर रोड पर पेडो की संख्या कम है।	इस आपत्ति के उत्तर में मै0 सी0ई0जी0लि0 के पर्या0अमि0 डॉ0 महेन्द्र कुमार जैन द्वारा जानकारी दी गई कि सडक का 5 लेन निर्माण होने पर 23 सुरग मार्ग की संख्या बढाकर 41 हो जायेगी, साथ ही बस स्टाप के लिए 44 स्थलो पर सडक के दोनो तरफ स्थल की व्यवस्था की जायेगी। (2) इस आपत्ति के उत्तर में रा0जा0प्रा0 के अधिकारी श्री पी0 शिवशंकर द्वारा बताया गया कि पैदल सुरंग मार्ग चिन्हित किये जा चुके है एंव शीघ्र ही संकेतक लगा दिये जायेगें। (3) इस आपत्ति के उत्तर में श्री महेन्द्र कुमार जैन द्वारा जानकारी दी गयी कि वन विभाग द्वारा भविष्य में 2 से 3 गुना पेड लगाये जायेंगे।
2.	श्री रामगोपाल, निवासी राजापुरवा, रमाबाई नगर।	श्री रामगोपाल द्वारा बाईपास से हमीरपुर तक की सडक खराब होने की समस्या रखी गयी।	श्रा0रा0प्रा0 के अधिकारी द्वारा सडक की मरम्मत करने का आश्वासन दिया गया।
3.	श्री अजीत आलूवालिया, निवासी चकेरी रोड कानपुर।	श्री अजीत आलूवालिया द्वारा चकेरी रोड पर अतिक्रमण से यातायात में बाधा एंव दुर्घटना की समस्या रखी गयी।	रा0रा0प्रा0 के अधिकारी श्री पी0 शिवशंकर द्वारा बताया गया कि 6 माह के अन्दर लगाये गये अतिक्रमण पर कोई मुआवजा देय नही होगा, यदि अतिक्रमण 3 साल से अधिक है तो उसका मुआवजा देय होगा। इस सम्बन्ध में अपर जिलाधिकारी (भू0अ0) द्वारा अतिक्रमण को अति शीघ्र हटाने हेतु निर्देश दिये गये, जिससे दुर्घटनाओ की समस्या को कम किया जा सकेगा।
4.	श्री तनवीर अहमद निवासी रामादेवी कानपुर।	(1) चकेरी से इटावा तक की 4 लेन में रामादेवी से भौती	(1) रा0रा0प्रा0 के अधिकारी द्वारा बताया गया कि राजमार्ग पर पानी

		तक पानी निकासी की मुख्य समस्या है। (2) राजमार्ग पर स्वास्थ्य सेवायें उपलब्ध नही है।	निकासी हेतु नालियॉ बनायी गयी है। अपर जिलाधिकारी महोदय (भू0अ0) द्वारा निर्देशित किया गया कि नालियों पर इकटठा जमा कूडा हटाने हेतु समय समय पर सफाई की अचित व्यवस्था कराई जाएगी। (2) रा0रा0प्रा0 के अधिकारी द्वारा बताया गया कि राजमार्ग पर जगह जगह हेल्पलाइन फोन नम्बर अंकित होना तथा एक निश्चित दूरी पर एम्बूलेन्स उपलब्ध करायी जायेगी। इसी सम्बन्ध में अपर जिलाधिकारी महोदय (भू0अ0) द्वारा निर्देशित किया गया कि प्रति 40 किमी0 की दूरी पर एक अस्पताल (10 बेड) तथा आपातकालीन प्राथमिक चिकित्सा सेवायें उपलब्ध करायी जायें।

जिला रामाबाई नगर

क्रम सं.	आवेदक का नाम	आपत्ति/सुझाव	निराकरण
1.	श्री एस0बी0सिंह अधिशासी अभियन्ता उ0प्रा0 जल निगम, रामाबाई नगर।	श्री एस0बी0सिंह अधिशासी अभियन्ता उ0प्रा0 जल निगम, रामाबाई नगर द्वारा अवगत कराया गया कि पूर्व में जिलाधिकारी महोदय की बेठकों में एन0एच0ए0आई के प्रतिनिधि द्वारा ड्रेन निर्माण हेतु आश्वासन दिया गया था कि रनियॉ ड्रेन का निर्माण उनके व्यंग पर किया जाएगा परन्तु उक्त का निर्माण एन0एच0ए0आई द्वारा नहीं किया गया।	श्री अशोक कुमार सिंह यादव, महाप्रबन्धक जिला उद्योग केन्द्र, रनियॉ, रमाबाई नगर द्वारा अवगत कराया गया कि रनियॉ, औद्योगिक क्षेत्र द्वारा अद्योगों से जनित औद्योगिक उत्प्रवाह की मात्रा जिलाधिकारी महोदय के माध्यम से एन0एच0ए0आई0 को प्रेषित कर दी गयी है। दिनॉक 05.12.11 को एन0एच0ए0आई के प्रतिनिधि द्वारा पूर्व में जिलाधिकारी महोदय के समक्ष यह आश्वासन दिया गया था कि रनियॉ ड्रेन से सम्बन्धित प्रस्ताव को केन्द्र को भेजा जाएगा जिसमें एन0एच0ए0आई अपना सपोर्ट करेगा। इसके अतिरिक्त उक्त प्रस्ताव केन्द्र द्वारा वापस कर दिया जाता है तो एन0एच0ए0आई रनियॉ ड्रेन निर्माण अपने व्यय पर पूरा करेगा। उक्त प्रस्ताव केन्द्र द्वारा वापस कर दिया गया है अतः रनियॉ ड्रेन का निर्माण एन0एच0ए0आई द्वारा अपने व्यय से करना चाहिए। क्षेत्र में जल निकासी न होने के कारण कई अरब के प्रस्ताव पूर्ण नहीं हो पा रहे हैं जिसके अभाव में क्षेत्र का निकास नहीं हो पा रहा है तथा राजस्व की हानि हो रही है।

जिला औरैया

क्रम सं.	आवेदक का नाम	आपत्ति/सुझाव	निराकरण
1.	श्री क्षेत्रपाल सिंह ग्राम धीरजपुर।	(1) मधुपुर ग्राम की जमीन का मुआवजा बहुत कम दिया जाता है। यह आवासीय भूमि है। आवासीय भूमि के मूल्यांकन के आधार पर इसका मुआवजा दिया जाना चाहिए। (2) 2003 में अधिकृत की गयी जमीन का मुआवजा अभी तक नहीं दिया गया है। ऐसे लगभग 8 लोग है जिनहें मुआवजा नहीं दिया गया है।	(1) इस आपत्ति के उत्तर में श्री पी0 शिवशंकर मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर द्वारा अवगत कराया गया कि जमीन का मुआवजा माननीय उच्च न्यायालय के आदेशानुसार नियमानुसार दिया जाएगा। (2) इस आपत्ति के उत्तर में श्री पी0 शिवशंकर मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर द्वारा अवगत कराया गया कि अधिकृत जमीन का मुआवजा एकमुश्त समक्ष अधिकारी/अपर जिलाधिकारी एंव परियोजना निदेशक के संयुक्त खाते में अवमुक्त कर दिया जाता है। इस पर अध्यक्ष/जिलाधिकारी महोदय द्वारा एन0एव0ए0आई0 प्रतिनिधि श्री पी0 शिवशंकर, मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर को निर्देशित किया गया कि इस प्रकार के मामलों से सम्बन्धित समस्त प्रपत्र उपलब्ध करायें एंव सम्बन्धित कार्यवाही सुनिश्चित करवायें।
2.	हरि योगेश मिश्रा/क0सं0–3	(1) ग्राम पंचायत, भगौतीपुर में जहॉ से एन0एच0–2 गुजरात है, बंजर भूमि है और पानी का निकास नहीं है। वहॉ पर वृक्षारोपण कराने की कृपा करें, एंव किमी0 388 के पास कट बनाया जाए जिससे गाडी पास हो सके। (2) ओवरब्रिज बनाना चाहिए दुर्घटनाए अधिक होती है।	(1) इस सम्बन्ध में अलग से एस0डी0एम0 औरैया एंव ग्रामवासियों के साथ बेठक कर जमीन एंव लेन एप्रूवल के सम्बन्ध में निर्णय लिया जाएगा। (2) इस आपत्ति के उत्तर में श्री पी0 शिवशंकर मैनेजर टेक्निकल, एन0एच0ए0आई0, कानपुर द्वारा अवगत कराया गया कि छः लेन सडक पर ओवरब्रिज नहीं बनता। चौराहे पर अण्डरपासेज बनते है।
3.	शीलव्रत पाण्डेय, क0सं0–45	(1) राष्ट्रीय राजमार्ग पर छोटे छोटे पौधे लगे थे जो अभी	(1)इस आपत्ति के उत्तर में श्री पी0 शिवशंकर मैनेजर टेक्निकल,

		तक विकसित नहीं हो पाये अधिकांश पौधे मृत हो चुके हैं एंव पानी का छिडकाव नहीं किया जाता है। (2) राष्ट्रीय राजमार्ग में क्रासिंग हेतु पुलिया की चौडाई अधिक होनी चाहिए।	एन0एच0ए0आई0, कानपुर द्वारा अवगत कराया गया कि इन स्थानों पर ब्लैक स्पॉट होने के कारण पौधे नहीं चल पाए हैं लगभग 4 माह के उपरान्त यहॉ पर इस मिट्टी को खाली करके पुनः नयी मिट्टी भरकर वृक्षारोपण किया जाएगा। (2) वृक्षारोपण वन विभाग द्वारा वन विभाग के नियमों के अनुसार किया जायेगा जो कि 3.0 मी0 के अन्तराल पर होगा। जिलाधिकारी (अध्यक्ष लोक सुनवाई) महोदय द्वारा सलाह दी गयी कि राष्ट्रीय राजमार्ग 6 लेन में अण्डरग्राउण्ड पासेज की चौडाई ज्यादा नहीं हो सकती है। अतः समड के दोनो ओर मिरर लगाने एंव स्पीड ब्रेकर बनाने हेतु निर्देशित किया गया।

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CHAPTER – 8

PROJECT BENEFITS

8.1 GENERAL

Highways projects generally promote access to markets, materials and opportunities by facilitating movement of persons and goods and improve earning and thereby level of living. This in turn enhances the demand for transport. This two-way interactions works through a host of inter-sectoral forward and backward linkages effects and dynamic externalities, tends to relocate industries, services and labour thus help the shape the economic geography of the region.

The ultimate aim of the developmental activities, such as NH-2 is to promote societal welfare of the Etawah- Chakeri section of UP. The developments of above widening project play a significant role in changing the socio-economic condition of the living of people of a region through dynamic externalities that such development often generates.

The benefit of proposed widening of NH –2 may also be seen from a different angle, viz., the local benefit and the wider regional or national level benefit. The entire regional and national economy lying beyond this neighborhood should also be benefit from the development such effect may be called the regional or national level benefits. Further the benefit may be direct or indirect in nature.

All these should have a bearing on the level of well being of the households, although some of them may not themselves necessarily use more of the highway facility created. These would in turn lead to changes in the level of well-being and human development, through their benefit on consumption level, educational attainment, health status etc.

8.2 TOURISM DEVELOPMENT

India is a multi-destination country with a variety of tourist attractions and facilities. All in all, India has in abundance what a tourist desires. The tourist places are accessed and reached also serves the comfort travel benefits to the people. Uttar Pradesh is an important tourist destination in India and the proposed widening of the road will provide a better connectivity.

Economic Development

Highways Development program can contribute to economic development by encouraging the attraction of businesses to sites equipped with good access

And by improving the travel efficiencies of existing businesses and to start new avenues. They also help for:

- The development of new project sites,
- The development of industrial parks,
- Infrastructure projects and
- Development of IT parks.

8.3 EMPLOYMENT OPPORTUNITY

Highway development project serves as an important employment generator and provide employment opportunity during construction period. In the operation stage it provides employment to local people.

8.4 REDUCTIONS IN ACCIDENTS, MORBIDITY AND MORTALITY

Development of highway projects, especially 6 lanes divided carriageway NH-2 project reduce the number of accidents through the following developments .Improved crossing and alternatives access routes by use of signage, junctions, & alternate arrangement for local traffic circulation has been provided.

Installation of proper road safety system through signage, barricades, crash barriers, edge posts / parapets will add to be safety of the vehicular traffic on the stretch of the road. Sharp turns and curves of the roads have been realigned to improve public safety in operational stage. Proper lighting/ illumination will be provided in tunnels in order to avoid accidents during night as well as adverse climatologically conditions. Reduces loss of life by avoiding head to head direct collision and also reduces damages to vehicles etc.

8.5 REDUCTIONS IN OPERATION COST

Vehicle Operating Cost (VOC) will be reduced when a road is improved. Fuel consumption, wear and tear of tyres, suspension will be benefited when a geometric design is improved and the road surface is made more even. The savings are perceived by the road user in the form of lower expenditure, VOC consist of the following components:

- Fuel Consumption;
- Lubricating oil consumption;
- Spare part consumption;
- Type consumption and
- Vehicle depreciation

8.6 ENVIRONMENTAL BENEFITS

Reductions in adverse environmental impacts of transportations – Reduced emissions, noise and other impacts are also the direct benefits of highways projects. However, these benefits are difficult to quantify and value them; as a result, they are less often included in benefit cost analysis of transportation investment.

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CHAPTER 9

ENVIRONMENT MANAGEMENT PLAN

Environmental Management Plan is the key to ensure that the environmental quality of the zone under impact does not deteriorate beyond the expected level due to the construction and operation of the project. The EMP comprises a set of measures to be taken in different stages like the design, construction and operation to eliminate, offset or reduce adverse environmental impacts to acceptable levels aspects of the construction and operation phases related to environment. Eliminate/prevention is possible only by not taking or reducing the impact by relocation of the action particular action. This can also be achieved by reducing the scale of action. Remediation is repairing or restoration particular features of the environment adversely affected by the activity.

The EMP is prepared to facilitate the Contractor, NHAI, Consultants and their personnel to incorporate the necessary environmental input during construction and operational phases of the project. This document will assist the Contractor to appreciate the environmental impacts and the necessary mitigation measures required to minimize those impacts as well as to enhance the positive factors with suitable environment enhancement measures.

The Environmental Management Plan needs to be implemented right from the conception and should continue till the end. The plan can be divided into three phases: (i) design phase (ii) construction phase and (iii) Operational phases.

9.1 Component of Environment Management Plan

9.1.1 Design Phase

Design phase considerations relate to both environmental and social parameters. Environmental parameters include water resources, vegetation, drainage, soil erosion, air/noise quality whereas social parameters relate to land acquisition, dislocation of people and properties, loss of productive soil, loss of resources and road safety etc.

Table 9- 1: Design Phase Measures General

Impacts	Mitigation Measures
141 ha of land have to be acquired for the proposed widening	In design stage utmost care has been taken to keep the land acquisition at minimal. The probable impact on road-side business and trees within ROW has been reduced and avoided through design. Proposed Row has been kept minimum along the existing road.
Removal of Tree	Alignment design consideration reducing the number of trees to be impacted through adoption of appropriate widening options. Approximate 9449 trees will be impacted by the project.
Impact on Cultural sites	Widening along the existing alignment has been finalized considering minimum damage to religious structures of different communities
Borrow Pits	Locations selected considering minimum loss of productive land and feasibility of restoration to productive use.
Air and Noise Quality	Sensitive receptors will be provided with noise barriers in the form of green belt or walls
Drainage	Line drains and adequate number of cross-drainage structures proposed on the existing alignment to prevent water logging and flooding.

9.1.2. Construction Phase

- **Land Environment**

The impact of road construction starts with land environment. General mitigation measures are suggested below in Table 9.2.

Table 9- 2: Mitigation measures for land Environment

Impacts	Mitigation Measures
Soil erosion	Proper planning for slop stabilization, topsoil storage, plantation and turfing on slops.
Loss of productive soil	Arable lands will be avoided for earth borrowing. If needed, topsoil will be separated and stockpiled after excavation for reuse in restoration of borrows pits.
Borrowing of fill materials	Excavation from pre-selected location. After excavation, the borrow pits will be dressed to match with surround. In specific cases borrow pits can be excavated in construction with local people to use those pits as water harvesting points or surface storage as pond.
Disposal of construction waste	Controlled and organized dumping of construction waste. Only pre-selected locations conforming to local environmental regulation will be used.
Disposal of human waste by construction workers	Specific landfill sites will be identified to manage solid waste generated from habitation of construction workers

- **Air quality and Noise**

Construction activities at different phases can generate significant air quality problems. So air quality and noise will be one of the major environmental issues. Mitigation measures would be taken to reduce the impact as presented below in Table 9.3

Table 9- 3: General measures for air & noise pollution control

Impacts	Measures
Generation of dust	Water will be sprayed during construction phase, in earth handling sites, asphalt mixing sites and other excavation areas for suppression of dust. Dust emission from piles of excavated material should also be controlled by spraying water on the piles. Dust emission is a high-risk problem in the stone crushing activities. Workers are exposed to high level of dust pollution. It will be responsibility of the project proponent to ensure that stone crusher supplying material for this project implement air pollution control and workers are provided with masks.
Gaseous pollution	Vehicles and machineries will be regularly maintained to confirm to the emission standards stipulated under Environment (Protection), Rules 1986. Asphalt mixing sites should be located at least 500 m away from residential areas.
Noise	Noise levels of machineries used shall confirm to relevant standards prescribed in Environment (Protection) Rules, 1986. workers shall not be exposed to noise level more than permitted for industrial premises, i.e. 90 dB(A) for 8-hours Noise attenuation measures e.g. planting of trees, noise attenuation structures to be erected as required.

- **Water resources**

The project work will have some impact on water environment along the roadside and also the requirement of water for construction activities may have some impact on local water resources. Mitigation measures would be taken to reduce the impact as presented below in Table 9.4.

Table 9- 4: **General measures of protection of water resources**

Impacts	Mitigation Measures
Siltation into water bodies	Steep and erodible slops will be provided with vegetation to prevent erosion that causes Siltation. No solid waste will be dumped near the water bodies or rivers.
Flooding due to silatation of drainage channel	Excavated earth and other construction materials should be stored at safe distance to prevent washing out of such materials.
Water use for construction	Water sources would be selected so that local availability is not affected. Local water bodies, tube wells, wells will not be used. Boreholes by contractors will be done with permission from State Ground Water Board. River water also will be used for construction purpose.
Contaminants from wastes	Vehicle maintenance will be carried out in a confined area, away from water sources, and it will be ensured that used oil or lubricants are not disposed to watercourses.
Sanitation and water use in construction camps	Construction camps will be organized in a planned manner. Workers shall be provided proper sanitation facilities including toilets. Camps will have water supply facilities like tube wells or from other sources so that local water sources are not affected.

- **Flora**

Nearly 9449 tree will be affected due to widening. The tree species comprises of Mango- *Mangifera indica*, Amlakhi- *Phylanthus ambilica*, Banyan- *Ficus indicus*, Indian Jujube- Zizyphus *mauritiana*, Sagwan, Ghoranim-*Melia azedarach*, Mahua, Satiana- *Alstnia scolaris*, Krishnasura - *Delonix regia*, Kikar or Babul- *Acacia nilotica.* Most of the trees

are immature and thin with lesser girth size. Major mitigation measures to be taken up are given in Table 9.5.

Table 9- 5: **Mitigation measures for tree loss**

Impacts	Mitigation measures
Loss of trees	Trees will be removed only in phases depending on the requirement of the construction. Compensatory plantation will be carried out as per the State Government Norms. Plantation will be raised in the form of strip and blocks plantations depending on the availability of lands within the project corridor. The compensatory plantation plan shall be drawn up in consultation with the State Forest Department. Species of such plantation are given below.

Plant Species for Avenue Plantation

Species Recommended Near Settlements

(within 1 km of last dwelling)

Scientific name	Common Name	Best Propagation
Anthocephalus cadamba	Kadamba	Seeds
Artocarpus heterophyllus	Jackfruit,	Seeds
Azadirachta indica	Neem	Seeds
Bauhinia varigata, Bauhinia purpurea, Bauhinia racemosa	Kachnar	Seeds
Emblica officinalis	Amalaka	Seeds, cutting, budding, inarching
Ficus bengalensis	Banyan	Seeds, cutting
Ficus religiosa	Peepal, Ashwatha	Seeds, cutting
Magnifera indica	Mango	Seeds, transplanting, grafting, budding, and root cutting
Spondias pinnata	Ambate	Seeds
Tamarindus indica	Tamarind	Seeds

Species recommended for landscaping in areas further away from settlements		
Scientific Name	**Common Name**	**Best propagation**
Acacia auriculiformis	Australian Wattle, Accacia	Seeds.
Albizia procera	Tellachinduga	Seeds / polypots
Anthocephalus cadamba	Kadamba	Seeds
Azadirachta indica	Neem tree, Veepachettu	Seeds
Bauhinia purpurea, B. racemosa, B. Variegata	Kachnar, Devakanchanamu, Kaanchanamu	Seeds
Butea monosperma	Flame of the forest, Mooduga, Palaasamu.	Seeds
Cassia fistula	Indian laburnum, Reelachettu, Vkoolaponna	Seeds, suckers
Dalbergia sisoo	Sissoo, Errasissoo	Seeds, root and Stem cuttings.
Delonix regia	Gulmohar, Seemasantkesula.	Seeds, cutting
Emblica officinalis	Amla,Amalakama, Raatausirika	Seeds, cutting, budding, inarching
Ficus bengalensis	Banyan, Peddamarri	Seeds, cutting
Ficus glomerata	Atti, Medichettu	Seeds, cutting
Ficus infectoria	Pakur, jatijuvi, Badijuvvi	Seeds, cutting
Ficus religiosa	Peepal, Ashwatha	Seeds, cutting
Ficus semicordata	Bommamarri	Seeds / polypots
Jacaranda mimosaefolia	Nil – Gulmohur, Jacaranda	Seeds
Magnifera indica	Mango, Maamidichettu, Maavi	Seeds, transplanting, grafting, budding, and root cutting

Species recommended for landscaping in areas further away from settlements		
Scientific Name	**Common Name**	**Best propagation**
Mimusops hexandra	Pala	Seeds
Polyalthia longifolia	Asokamu, Debdaru	Seeds (fresh).
Psidium guayava	Guava, Goyya	Seeds, cutting, budding and grafting
Putranjiva roxburghii	Kadrojuvi, Kudrajini, Putrajivika	Seeds and vegetative method
Saraca asoka	Ashok, Asokamu	Seeds
Spathodea campanulata	Indian Tulip Tree	Seeds, cutting.
Syzygium cumini	Jaman, Neereedu	Seeds, cutting, budding and grafting
Tamarindus indica	Tamarind, Chintachettu	Seeds
Terminalia arjuna	Arjun, Yerramaddi	Seeds, cutting and air layering
Terminilia chebula	Haritaki, Karakkaaya	Seeds
Thespesia populnea	Indian Tulip tree, Gangaraavichettu	Seeds or cuttings
Species recommended for median plantation		
Scientific name	**Local Name**	**Best Propagation**
Bauhinia acuminata	Kanchan	Seeds
Bouganvillea sp.	Bouganvillea	Cutting
Hibiscus rosa sinesis	Chinese Hibiscus, Dasanamu	Cutting
Lawsonig inermis	Henna, Gorinta	Seeds and cutting
Nerium indicum	Pink oleander, Karaviram	Cutting

Species recommended for landscaping in areas further away from settlements		
Scientific Name	**Common Name**	**Best propagation**
Thevetia nerifolia	Pila Kaneer, Yellow oleander, Pachaganneru	Seeds, cutting

- **Fauna**

The local terrestrial and aquatic fauna are likely to be impacted due to construction activities. Mitigation measures for birds will be planting of more fruit and flowering trees, which will improve the roadside habitat. The primary productivity may impact locally during the construction stage. Such impacts will be short term and reversible. Table 9.6 shows the mitigation measures to be adopted during construction.

Table 9- 6: **Mitigation measures of fauna**

Impacts	Mitigation measures
Loss of habitat	Compensatory plantation will be taken up. Species will provide for flowering and fruit trees. Sediment flow will be kept at minimum level through a mix of management measures during construction near water bodies or construction of bridges in water environment
Impact on Wildlife	The construction camps have to be located away from this site and awareness development camps will be organized with the local stockholders to ensure that there is no illegal hunting of wetland birds or unauthorized fishing in water bodies.

- **Safety**

Safety at different stages of construction is an important issue both for local people as well as for the construction workers in presented Table 9.7

Table 9- 7: Safety Measures

Impacts	Mitigation measures
Information to	Signs will be posted on road before commencement of construction informing public and travelers about the work program and safety

Public	provision.
Restriction to access	Safe and convenient passage for vehicles, pedestrians and livestock to and from the side road and property across the road will be arranged during construction work through a proper traffic management plan for section where work will be in progress.
Occupational safety for construction workers	Contractor will arrange all safety measures for workers as per Factory Act.
Explosive use, if any	The contractor shall at all times organize dissemination of information in advance and obtain such permission as is required from all Government Authorities, public bodies as necessary under the regulatory framework in force.

- **Worker's Camp**

In accordance with Environment (Protection) Act, for any environmental pollution from the workers camp, the responsibility would lie with the project authority and they may be proceeded against for imposition of penalty. Following mitigation measures are suggested in Table 9.8.

Table 9- 8: **Mitigation measures for Workers Camp**

Issues	Measures
Location	Workers' camp will be located away from water bodies, schools, and residential areas
Construction	Camp will be constructed with proper accommodation facilities, should look aesthetically good, and as this will be roadside features should look aesthetically good, as this will be roadside features during construction period.
	Contactor will arrange for portable water supply for the

Water	workers so that local water sources are not disturbed.
Sanitation	Workers' camp will be provided with proper sanitation facilities, toilets with septic tanks and soak pits.

9.1.3. Operation Phase

Environmental issues change during operation phase and its mitigation plan also has to be spread over a longer period of time. Operation phase environmental aspects relate to vehicular emission in particular. The mitigation measures for different environment aspects are mention below in Table 9.9.

Table 9- 9: Operation phase mitigation measures

Impacts	Mitigation measures
Dust	Bad maintenance of road gives rise to dust pollution. Road maintenance standard shall be prescribed try keep dust dislocation and dispersion at acceptable level
Gaseous pollution	All vehicles should be checked for "PUC" certificates and occasional spot testing of emission from vehicle will be carried out with the assistance of the local administration.
Noise	Noise level for different automobiles has been prescribed in Environment (Protection) Rules, 1986. Signs will be posted to restrict blowing of horns in front of sensitive locations. With the establishment of strip plantation along the project corridor the noise level will get attenuated
Surface runoff	Surface runoff from the road will not be disposed directly in the water bodies used by people for bathing etc.
Flora	Tree plantation will be monitored for a period of three years after planting. All casualties in the first year of creation will require to be beaten up during the next year.
Safety	Safety signs should be kept always clean and updated. Safety signposts, edge markers installed will require proper upkeep.

10.1 Environment Management Plan Matrix

The Environment Management Plan is meant for mitigation/management/avoidance of the negative impacts and the enhancement of the various environment components along the project road. For each mitigation measures to be taken its location, timeframe, implementation and supervising responsibilities are listed in the EMP matrix. The measures adopted during the different stages of the project have been detailed in tabulated in below.

Figure. 9.1: Schematic Diagram of Oil Interception Chamber

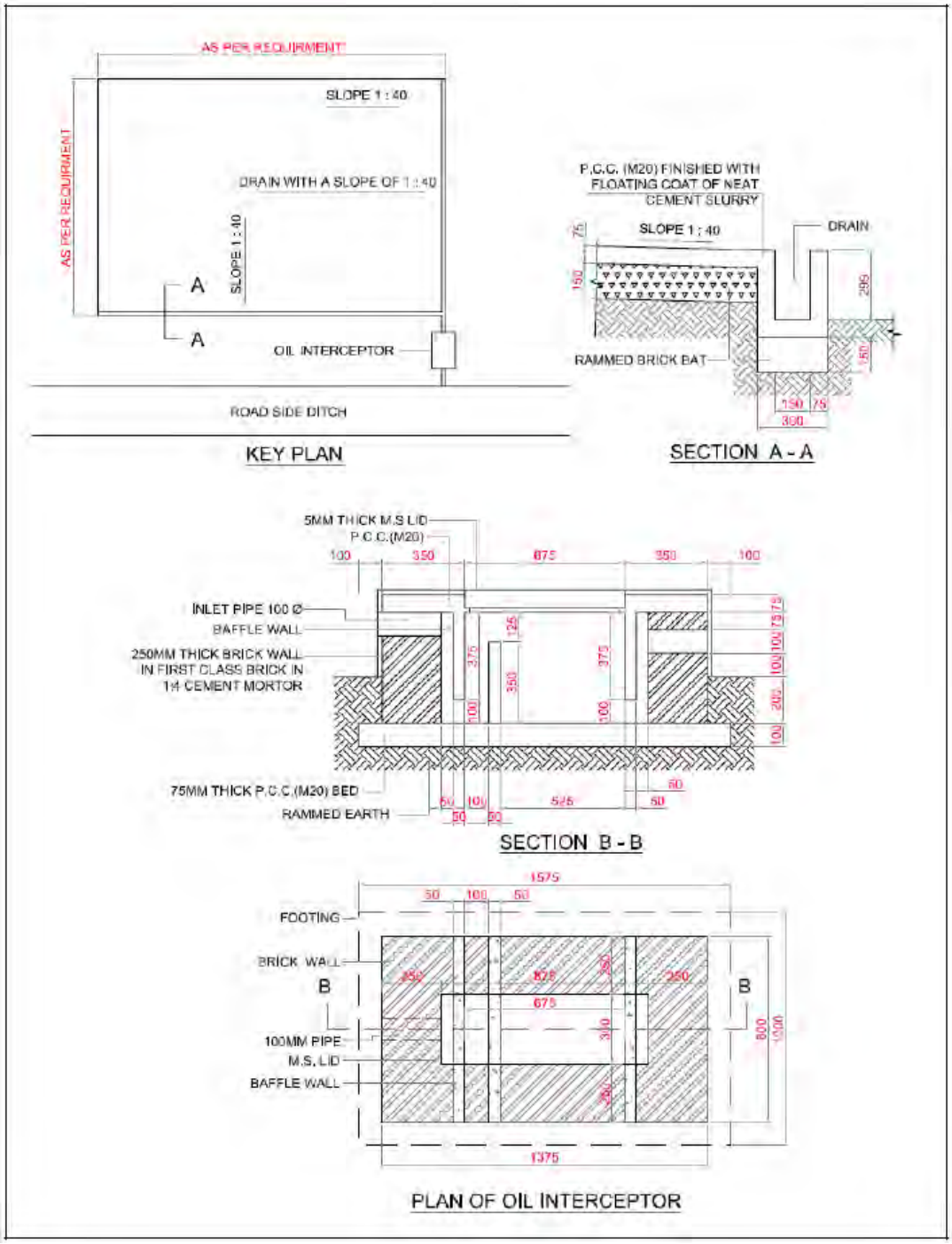
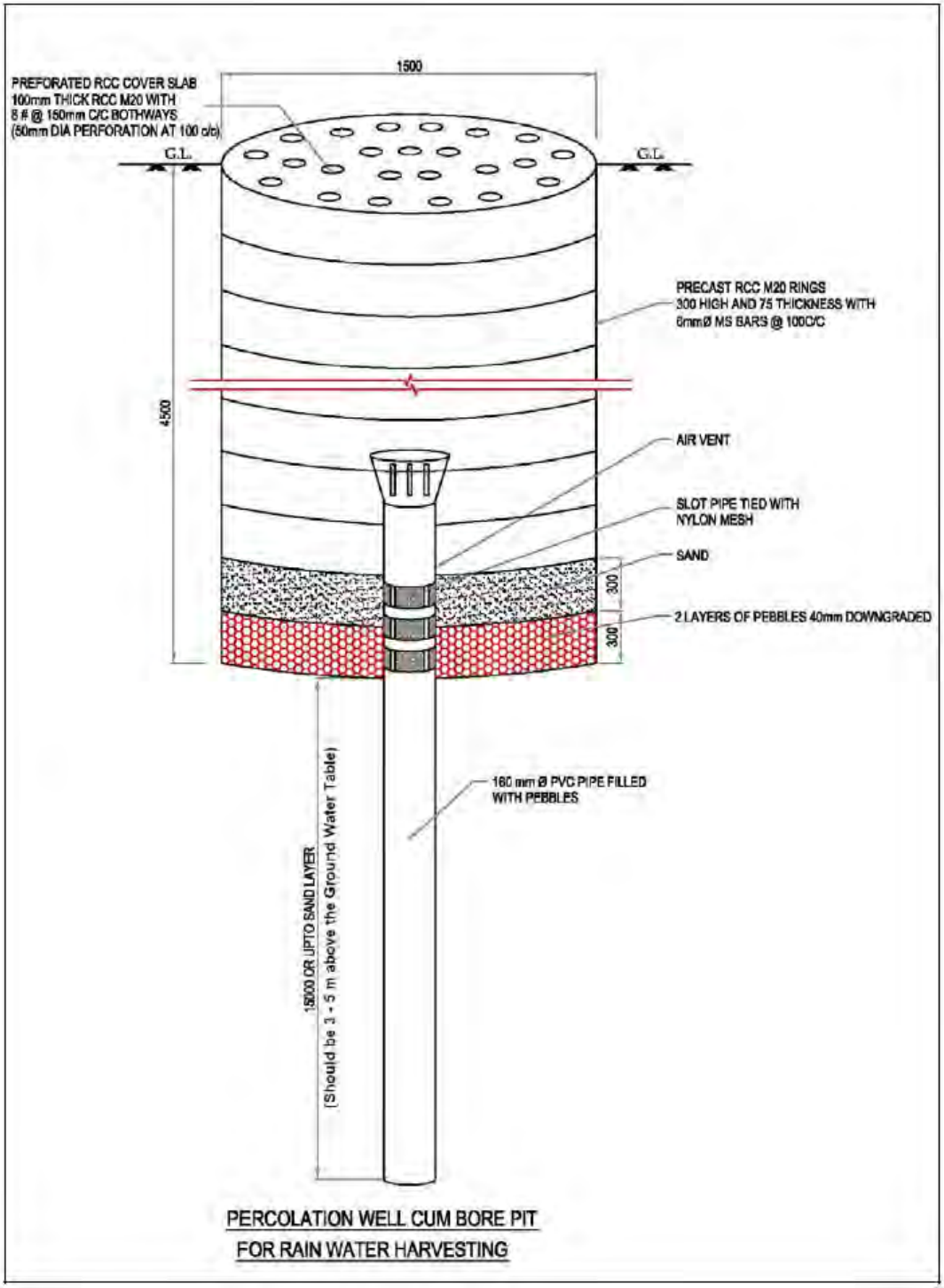


Fig. 9.2: Schematic Diagram of Oil Interception Chamber



GENERIC ENVIRONMENT MANAGEMENT PLAN

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
PRE-CONSTRUCTION STAGE					
Pre-construction activities by PIU					
P.1	Alignment, Width of the road and religious structures	The proposed alignment was selected by shifting / adjusting the centerline of the road, adopting of suitable cross-sections and adjustment of the median width to minimize land acquisition, loss of settlements and to avoid environmentally sensitive features like religious structures etc. compatible with project activities.	Design Report, LA Act 1894 and its amendments NHAI Act 1956	PIU, Revenue Dept., NGOs, Collaborating Agencies	EO-IC (Independent Consultant)
P.2	Land Acquisition	Information dissemination and community consultation. The acquisition of land and private properties will be carried out in accordance with the RAP and entitlement framework for the project. It will be ensured that all R & R activities including implementation of Environment Management Plan are completed before the start of work. Affected person must vacate the land area before construction starts. ROW to be acquired has already been identified. PIU has to ascertain that any additional environmental impacts resulting from acquisition of land are addressed and integrated into the EMP and other relevant documents.	LA Act 1894 and its amendments NHAI Act 1956	PIU, Revenue Dept., NGOs, Collaborating Agencies	EO-IC
P.3	Preservation of Trees	All efforts will be made to preserve trees including evaluation of minor design adjustments/ alternatives to save trees. Specific attention will be given for protecting giant trees, and locally important trees (religiously important etc.). Tree cutting is to proceed only after all the legal requirements including attaining of In-principle and Formal Clearances from	Clause No. 201.2 MORT&H Specifications for Road and Bridge works	PIU, Forest Department, Contractor	EO-IC

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		the Forest Dept./ DoEF/ MoEF are completed and subsequently a written order is issued to the Contractor. Particular species declared as 'protected' by the State's Forest Dept. in the private land will be felled only after due clearance from the Forest Dept./ concerned agencies is obtained. In the event of design changes, additional assessments including the possibility to save trees shall be made. Stacking, transport and storage of the wood will be done as per the relevant norms. Systematic corridor level documentation for the trees cut and those saved will be maintained with "EO-IC".			
P.4	Relocation of Community Utilities and Common Property Resources	All community utilities and properties i.e., water supply lines, sewer lines, hand pumps will be relocated before construction starts, on any section of the project corridor. The PIU will relocate these properties in consultation and written agreement with the agency/ owner/community. Environmental considerations with suitable/required actions including health and hygiene aspects will be kept in mind while relocating all community utilities and resources.	As in RAP	PIU, Concerned Agencies, Contractor	EO-IC
P.5	Orientation of Implementing Agency and Contractors	The PIU shall organize orientation sessions and regular training sessions during all stages of the project. This shall include on-site training (general as well as in the specific context of a sub-project). These sessions shall involve all staff of Independent Consultants, field level implementation staff of PIU and Contractor, Environmental Experts. The contractor will ensure that his staff including engineers, supervisors and operators attend the training sessions.	Project Requirements	Contractor	EO-IC

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
	Clearances, Approvals and Permits	• Obtain all necessary clearances and approvals including Environmental Clearance, Forest Clearance and consent to Fell Trees prior to commencing any road works. • Only licensed quarries shall be used. Obtain permits for borrow pits and quarries from the concerned person or authority. No quarry or borrow area shall be developed within sensitive areas like R.F. & Wildlife Sanctuary. Prepare quarry & borrow area management plan. • Obtain Consent to Establish & Operate for the Crusher, Batch Mix and Hot Mix Plants. • Provide a copy of all necessary clearances to the IC • Adhere to all clearances terms and conditions • Obtain written permission from private landholders to conduct activities on their land prior to commencing.		PIU, Concerned Agencies, Contractor	PIU-NHAI
P.6.1	Joint Field Verification	The Environmental Expert of IC and the Contractor will carry out joint field verification to ascertain any additional possibility to saving trees, environmental and community resources. The verification exercise should assess the need for additional protection measures or changes in design/ scale/ nature of protection measures including the efficacy of enhancement measures suggested in the EMP. Proper documentation and justifications/reasons shall be maintained in all such cases where deviation from the original EMP is proposed.	Project Requirements	Contractor/ Environmental Expert of IC	PIU, NHAI
P.6.2	Assessment of Impacts due to Changes/Revisions/Additions	The Environmental Expert of IC will assess impacts and revise/ modify the EMP and other required sections of the project documents in the event of changes/ revisions (including addition or deletion) in the project's scope of work.	Project Requirements	Contractor/ Environmental Expert of IC	PIU, NHAI

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
	in the Project Work				
P.6.3	Crushers, hot-mix plants and Batching Plants Location	Hot mix plants and batching plants will be sited sufficiently away from settlements and agricultural operations or any commercial establishments. Such plants will be located at least 1000 m away from the nearest village/ settlement preferably in the downwind direction. The Contractor shall submit a detailed layout plan for all such sites and approval of Environmental Expert of IC shall be necessary prior to their establishment. Arrangements to control dust pollution through provision of windscreens, sprinklers, and dust encapsulation will have to be provided at all such sites. Specifications of crushers, hot mix plants and batching plants will comply with the requirements of the relevant current emission control legislations and Consent/NOC for all such plants shall be submitted to the "PIU through Independent Consultant. The Contractor shall not initiate plant/s operation till the required legal clearances are obtained and submitted. The engineer will ensure that the regulatory and legal requirements are being complied with.	Clause No 111.1 MoRT&H Air (P&CP) Act 1981,	Contractor	Engineer, EO-IC
P.6.4	Other Construction Vehicles, Equipment and Machinery	All vehicles, equipment and machinery to be procured for construction will confirm to the relevant Indian Standard (IS) norms. The discharge standards promulgated under the Environment Protection Act, 1986 will be strictly adhered to. Noise limits for construction equipments to be procured such as compactors, rollers, front loaders concrete mixers, cranes	Project Requirement,	Contractor	Engineer, EO-IC I

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		(moveable), vibrators and saws will not exceed 75 dB (A), measured at one meter from the edge of the equipment in free field, as specified in the Environment (Protection) Rules, 1986. The Contractor shall maintain a record of PUC for all vehicles and machinery used during the contract period, which shall be produced for EO - IC and NHAI verification whenever required. Mobile equipment shall be placed at least 100metres away from the nearest dwelling.			
P.7					
7.1	Borrow Areas	Finalizing borrows areas for borrowing earth and all logistic arrangements as well as compliance to environmental requirements, as applicable, will be the sole responsibility of the contractor. The Contractor will not start borrowing earth from select borrow area until the formal agreement is signed between landowner and contractor and a copy is submitted to the "EO-IC/PIU through the Engineer. Locations finalized by the contractor shall be reported to the Environmental Expert of IC and who will in turn report to PIU. Planning of haul roads for accessing borrows materials will be undertaken during this stage. The haul roads shall be routed to avoid agricultural areas as far as possible (in case such a land is disturbed, the Contractor will rehabilitate it as per Borrow Area Rehabilitation Guidelines) and will use the existing village roads wherever available. In addition to testing for the quality of borrow materials by the IC, the environmental personnel of the IC will be required to inspect every borrow area location prior to approval	Clause No. 111.2 & 305.2.2 MORT&H Specifications for Road and Bridge works	Contractor	EO-IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		The IC will make sure that each such site is in line with IRC and other Project Guidelines.			
P.7.2	Quarry	Contractor will finalize the quarry for procurement of construction materials after assessment of the availability of sufficient materials, quality and other logistic arrangements. In case the contractor decides to use quarries other than recommended by Feasibility consultants, then it will be selected based on the suitability of the materials and as per established law. The contractor will procure necessary permission for procurement of materials from Mining Department, District Administration and State Pollution Control Board and shall submit a copy of the approval and the rehabilitation plan to the "PIU through Engineer. Contractor will also work out haul road network and report to Environmental Expert of IC and IC will inspect and in turn report to PIU before approval.	Clause No. 111.3 & MORT&H Specifications for Road and Bridge works	Contractor	EO-IC, PIU
P.7.3	Arrangement for Construction Water	The contractor will use ground water as a source of water for the construction and can set up the own bore well facility for construction work. Contractor can use the ponds with written agreement of owner, but in this case since ponds are not present along the road hence not applicable. To avoid disruption/disturbance to other water users, the contractor will extract water from fixed locations and consult the Environmental Expert of IC before finalizing the locations.	Clause No. 1010 MORT&H Specifications for Road and Bridge works EP Act 1986	Contractor	EO-IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		The Contractor will provide a list of locations and type of sources from where water for construction will be used. The contractor will seek approval from the EO-IC prior to the finalization of these locations The contractor will not be allowed to pump from any irrigation canal and surface water bodies used by community. The contractor will need to comply with the requirements of the State Ground Water Department and seek their approval for doing so and submit copies of the permission to IC and PIU prior to initiation of any construction work.			
P.7.4	Labor Requirements	The contractor preferably will use unskilled labor drawn from local communities to give the maximum benefit to the local community.	Special Conditions of Contract	Contractor	EO-IC, PIU
P.7.5	Construction Camp Locations – Selection, Design and Lay-out	Siting of the construction camps will be selected by the contractor as per the guidelines. Construction camps will not be proposed within 500 m from the nearest settlements to avoid conflicts and stress over the infrastructure facilities with the local community applies only in case where a construction camp doesn't house plant sites. Location for stockyards for construction materials will be identified at least 1000 m from watercourses. The waste disposal and sewage system for the camp will be designed, built and operated such that no odor is generated.		Contractor	EO- IC, PIU
P.7.6	Arrangements for Temporary Land Requirement	The contractor as per prevalent rules will carry out negotiations with the landowners for obtaining their consent for temporary use of lands for construction sites/hot mix plants/traffic detours/borrow areas etc. The Contractor will submit a copy of agreement to the	Project Requirements	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		Environment Expert of Independent Consultant. The Environmental Expert of IC will be required to ensure that the clearing up of the site prior to handing over to the owner (after construction or completion of the activity) is included in the contract.			
P.7.7	Implementation - Information Meetings	The contractor will organize at least 2 implementation information meetings in the vicinity of Project Site (minimum one in each section) for general public to consult and inform people about his plans covering overall construction schedule, safety, use of local resources (such as earth, water), traffic safety and management plans of debris disposal, drainage protection, canal training work during construction, pollution abetment and other plans, measures to minimize disruption, damage and in convenience to roadside users and people along the road. The first Implementation information meeting be conducted within four weeks of mobilization. The people should be informed about the date, time and venue atleast 7 days prior to meetings. Public shall be informed about the meeting through display of posters at prominent public places (panchayat offices, offices of Market committees, Notice board of religious places etc.) and distribution of pamphlets along roadside communities or in any manner deemed fit. The contractor will maintain a channel of communication with the communities through his designated Environment and Safety Officer to address any concern or grievances. Periodic meetings will also be conducted during the construction period to take feedback from communities or their representatives to ensure minimum disturbance.	Project Requirements	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		The mechanism and contents for disclosure shall be approved by PIU prior to the meetings.			
CONSTRUCTION STAGE					
C.1					
C.1.1	Clearing and Grubbing	Vegetation will be removed from the construction zone before commencement of construction. All works will be carried out such that the damage or disruption to flora is minimum other than those identified for cutting. Only ground cover/shrubs that impinge directly on the permanent works or necessary temporary works will be removed with prior approval from the Environmental Expert of IC. The Contractor under any circumstances will not cut trees other than those identified for cutting and for which he has written instructions from the PIU. The PIU will issue these instructions only after receiving all stages of clearances from the Forest Department/ MoEF. Vegetation only with girth of over 30 cm will be considered as trees and shall be compensated, in the event of PIU's instruction to undertake tree cutting. The sub grade of the existing pavement shall be used as embankment fill material. The existing base and sub-base material shall be recycled as sub-base of the haul road or access roads. • The existing bitumen surface may be utilized for the paving of cross roads, access roads and paving works in construction sites and campus, temporary traffic diversions, haulage routes etc.	Clause No. 201 MORT&H Specifications for Road and Bridge works	Contractor	EO-IC, PIU
C.1.2	Disposal of debris	The contractor shall identify disposal sites. The identified	Clause No. 201.4	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
	from dismantling structures and road surface	locations will be reported to the Environmental Expert of IC. These locations will be checked on site and accordingly approved by Environmental Expert of IC prior to any disposal of waste materials. All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, will be considered incidental to the work and will be planned and implemented by the contractor as approved and directed by the Environmental Expert of IC. The pre-designed disposal locations will be a part of Comprehensive Solid Waste Management Plan to be prepared by Contractor in consultation and with approval of Environmental Expert of IC. Debris generated from pile driving or other construction activities shall be disposed such that it does not flow into the surface water bodies or form mud puddles in the area.	MORT&H Specifications for Road and Bridge works		
C.1.3	Other Construction Wastes Disposal	The pre-identified disposal locations will be a part of Comprehensive Waste Disposal Management Plan to be prepared by the Contractor in consultation and with approval of Environmental Expert of IC. Location of disposal sites will be finalized prior to initiation of works on any particular section of the road. The Environmental Expert of IC will approve these disposal sites after conducting a joint inspection on the site with the Contractor. Contractor will ensure that any spoils of material unsuitable for embankment fill will not be disposed off near any water course, agricultural land, and natural habitat like grass lands or pastures.	Clause No. 301.3.2 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		Such spoils from excavation can be used to reclaim borrow pits and low-lying areas located in barren lands along the project corridors (if so desired by the owner/community and approved by the Environment Expert IC). Non-bituminous wastes other than fly ash may be dumped in borrow pits (preferably located in barren lands) covered with a layer of the soil. No new disposal site shall be created as part of the project, except with prior approval of the Environmental Expert of IC. All waste materials will be completely disposed and the site will be fully cleaned and certified by Environmental Expert of IC before handing over. The contractor at its cost shall resolve any claim, arising out of waste disposal or any non-compliance that may arise on account of lack of action on his part.			
C.1.4	Stripping, stocking and preservation of top soil	The topsoil from all areas of cutting and all areas to be permanently covered will be stripped to a specified depth of 150 mm and stored in stockpiles. A portion of the temporarily acquired area and/or Right of Way will be earmarked for storing topsoil. The locations for stock piling will be pre-identified in consultation and with approval of Environmental Expert of IC. The following precautionary measures will be taken to preserve them till they are used: (a) Stockpile will be designed such that the slope does not exceed 1:2 (vertical to horizontal), and height of the pile is restricted to 2 m. To retain soil and to allow percolation of water, silt fencing will protect the edges of the pile. (b) Stockpiles will not be surcharged or otherwise loaded and	Clause No. 301.2.2 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		multiple handling will be kept to a minimum to ensure that no compaction will occur. The stockpiles shall be covered with gunny bags or vegetation. (c) It will be ensured by the contractor that the topsoil will not be unnecessarily trafficked either before stripping or when in stockpiles. Such stockpiled topsoil will be utilized for - • covering all disturbed areas including borrow areas only in case where these are to be rehabilitated as farm lands (not those in barren areas) • top dressing of the road embankment and fill slopes • filling up of tree pits, in the median and • in the agricultural fields of farmers, acquired temporarily. Residual topsoil, if there is any will be utilized for the plantation at median and side of the main carriageway.			
C.1.5	Accessibility	The contractor will provide safe and convenient passage for vehicles, pedestrians and livestock to and from roadsides and property accesses connecting the project road, providing temporary connecting road. The Contractor will take care that Schools and religious places are accessible to Public. The contractor will also ensure that the work on / at existing accesses will not be undertaken without providing adequate provisions and to the prior satisfaction of Environmental Expert of IC. The contractor will take care that the cross roads are constructed in such a sequence that construction work over the adjacent cross roads are taken up one after one so that traffic movement	As per detailed guidelines provided in EIA/EMP report	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		in any given area not get affected much.			
C.1.6	Planning for Traffic Diversions and Detours	Detailed Traffic Control Plans will be prepared and submitted to the Resident Engineer for approval, seven days prior to commencement of works on any section of road. The traffic control plans shall contain details diversions; traffic safety arrangement during construction; safety measures for night – time traffic and precautions for transportation of hazardous materials. Traffic control plans shall be prepared in line with requirements of IRC's SP- 55 document and The Contractor will ensure that the diversion/detour is always maintained in running condition, particularly during the monsoon to avoid disruption to traffic flow. The contractor will also inform local community of changes to traffic routes, conditions and pedestrian access arrangements with assistance from IC and PIU. The temporary traffic detours will be kept free of dust by sprinkling of water three times a day.	Clause No. 112 MORT&H Specifications for Road and Bridge works IRC; SP 55	Contractor	EO- IC, PIU
C.2					
C.2.1	Earth from Borrow Areas for Construction	No borrow area will be opened without permission of the Environmental Expert of IC. The location, shape and size of the designated borrow areas will be as approved by the Environmental Expert of IC and in accordance to the IRC recommended practice for borrow pits for road embankments (IRC 10: 1961). The location and quantity of Aggregate, soil and other earth material are given in **Annexure 5A.** The unpaved surfaces used for the haulage of borrow materials, if passing through the settlement areas or habitations; will be maintained dust free by the contractor. Sprinkling of water will	Clause No. 305.2.2 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		be carried out twice a day to control dust along such roads during their period of use. During dry seasons (winter and summer) frequency of water sprinkling will be increased in the settlement areas. Contractor will rehabilitate the borrow areas as soon as borrowing is over from a particular borrow area in accordance with the Guidelines for Redevelopment of Borrow Areas or as suggested by Environmental Expert of IC. The final rehabilitation plans will be approved by the EO from the IC.			
C.2.2	Quarry Operations	The contractor shall obtain materials from quarries only after the consent of the Department of Mining / SPCB (both the states) / District Administration or will use existing approved sources of such materials. Copies of consent/ approval/ rehabilitation plan for opening a new quarry or use of an existing quarry source will be submitted to Environment Expert IC and the Resident Engineer. The contractor will develop a Comprehensive Quarry Redevelopment plan, as per the Mining Rules of the state and submit a copy to PIU and IC prior to opening of the quarry site. The quarry operations will be undertaken within the rules and regulations in force in the state.	Clause No. 111.3 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU
C.2.3	Transporting Construction Materials and	Contractor will maintain all roads (existing or built for the project), which are used for transporting construction materials, equipment and machineries as précised. All vehicles delivering	Project Requirement	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
	Haul Road Management	fine materials to the site will be covered to avoid spillage of materials. Contractor will arrange for regular water sprinkling as necessary for dust suppression of all such roads and surfaces with specific attention to the settlement areas. The unloading of materials at construction sites/close to settlements will be restricted to daytime only.			
C.2.4	Construction Water	Contractor will arrange adequate supply and storage of water for the whole construction period at his own costs. The Contractor will submit a list of source/s from where water will be used for the project to 'PIU' through the Engineer. The contractor will source the requirement of water preferentially from ground water but with prior permission from the Ground Water Board. A copy of the permission will be submitted to 'PIU' through the Engineer prior to initiation of construction. The contractor will take all precaution to minimize the wastage of water in the construction process/ operation.	Clause No. 1010 EP Act 1986 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU
C.3					
C.3.1	Disruption to Other Users of Water	While working across or close to any perennial water bodies, contractor will not obstruct/ prevent the flow of water. Construction over and close to the non-perennial streams shall be undertaken in the dry season. If construction work is expected to disrupt users of community water bodies, notice shall be served well in advance to the affected community by the contractor. The contractor will take prior approval of the River Authority or Irrigation Department for any such activity. The PIU and the Engineer will ensure that contractor has served the notice to the	Guidelines provided in DPR	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		downstream users of water well in advance.			
C.3.2	Drainage	Contractor will ensure that no construction materials like earth, stone, ash or appendage is disposed off in a manner that blocks the flow of water of any water course and cross drainage channels. Contractor will take all-necessary measures to prevent any blockage to water flow. In addition to the design requirements, the contractor will take all required measures as directed by the 'EO-IC' and the 'Resident Engineer' to prevent temporary or permanent flooding of the site or any adjacent area. **(Refer Annexure 4B)**	Clause No. 501.8.6 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU
C.3.3	Siltation of Water Bodies and Degradation of Water Quality	The Contractor will not excavate beds of any stream/canals/ any other water body for borrowing earth for embankment construction. Contractor will construct silt fencing at the base of the embankment construction for the entire perimeter of any water body (including wells) adjacent to the ROW and around the stockpiles at the construction sites close to water bodies. The contractor will also put up sedimentation cum grease traps at the outer mouth of the drains located in truck lay byes and bus bays which are ultimately entering into any surface water bodies / water channels with a fall exceeding 1.5 m. in present case three Sedimentation Cum Grease Trap are proposed, However the item has been kept in case need arises during construction. Contractor will ensure that construction materials containing fine particles are stored in an enclosure such that sediment-laden water does not drain into nearby watercourse.	Clause No. 501.8.6 MORT&H Specifications for Road and Bridge works Water (P & CP) Act 1981	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
C.3.4	Slope Protection and Control of Soil Erosion	The contractor will take slope protection measures as per design, or as directed by the Environmental Expert of IC to control soil erosion and sedimentation. All temporary sedimentation, pollution control works and maintenance thereof will be deemed as incidental to the earth work or other items of work and as such as no separate payment will be made for them. **Contractor will ensure the following aspects:** • During construction activities on road embankment, the side slopes of all cut and fill areas will be graded and covered with stone pitching, grass and shrub as per design specifications. • Turfing works will be taken up as soon as possible provided the season is favorable for the establishment of grass sods. Other measures of slope stabilization will include mulching netting and seeding of batters and drains immediately on completion of earthworks. • In borrow pits, the depth shall be so regulated that the sides of the excavation will have a slope not steeper than 1 vertical to 2 horizontal, from the edge of the final section of the bank. • Along sections abutting water bodies, stone pitching as per design specification will protect slopes.	Clause No. 306 & 305.2.2 MORT&H Specifications for Road and Bridge works	Contractor	EO- IC, PIU
C.4					
C.4.1					
C.4.1.1	Water Pollution from Construction Wastes	The Contractor will take all precautionary measures to prevent the wastewater generated during construction from entering into streams, water bodies or the irrigation system. Contractor will	Clause No. 501.8.6 MORT&H Specifications for	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		avoid construction works close to the streams or water bodies during monsoon. All waste arising from the project is to be disposed off in the manner that is acceptable and as per norms of the State Pollution Control Board.	Road and Bridge works Water (P & CP) Act 1974		
C.4.1.2	Water Pollution from Fuel and Lubricants	The contractor will ensure that all construction vehicle parking location, fuel/lubricants storage sites, vehicle, machinery and equipment maintenance and refueling sites will be located at least 500 m from rivers and irrigation canal/ponds. All location and layout plans of such sites will be submitted by the Contractor prior to their establishment and will be approved by the 'EO-IC, PIU/ NHAI'. Contractor will ensure that all vehicle/machinery and equipment operation, maintenance and refueling will be carried out in such a fashion that spillage of fuels and lubricants does not contaminate the ground. Oil interceptors will be provided for vehicle parking, wash down and refueling areas as per the design provided. Details have been provided in **Fig.9.1 and Fig.9.2**. Contractor will arrange for collection, storing and disposal of oily wastes to the pre-identified disposal sites (list to be submitted to IC and PIU) and approved by the Environmental Expert of IC. All spills and collected petroleum products will be disposed off in accordance with MoEF and state PCB guidelines. 'EO-IC and Resident Engineer' will certify that all arrangements comply with the guidelines of PCB/ MoEF or any other relevant laws.	Clause No. 501.8.6 MORT&H Specifications for Road and Bridge works Water (P & CP) Act 1974	Contractor	EO- IC, PIU
C.4.1.3	Chemical Attack	To limit the potential chemical attack the concrete foundation should contain minimum cement concrete of 330 kg/cc	Project Requirements	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		For Under water concrete 10% extra cement is used. Clear Concrete cover of minimum 75mm shall be provided to under water structures.			
C.4.2					
C.4.2.1	Dust Pollution	All the plants will be sited at least 1 km in the downwind direction from the nearest human settlement. The contractor will provide necessary certificates to confirm that all crushers used in construction conform to relevant dust emission control legislation. The suspended particulate matter value at a distance of 40m from a unit located in a cluster should be less than 500 g/m3. The pollution monitoring is to be conducted as per the monitoring plan. Alternatively, only crushers licensed by the SPCB shall be used. Required certificates and consents shall be submitted by the Contractor in such a case to the 'EO-PIU' through the 'Engineer'. Dust screening vegetation will be planted on the edge of the RoW for all existing roadside crushers. Hot mix plant will be fitted with dust extraction units.	Clause No. 111 & 501.8.6 MORT&H Specifications for Road and Bridge works Air (P & CP) Act 1981	Contractor	EO- IC, PIU
C.4.2.2	Emission from Construction Vehicles, Equipment and Machineries	Contractor will ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that pollution emission levels comply with the relevant requirements of SPCB. The Contractor will submit PUC certificates for all vehicles/ equipment/machinery used for the project. Monitoring results	Clause No. 501.8.6 MORT&H Specifications for Road and Bridge works Air (P & CP)Act 1981	Contractor	EO- IC, PIU,

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		will also be submitted to 'PIU' through the 'Engineer'.	Central Motor & Vehicle Act 1988		
C.4.3					
C.4.3.1	Noise Pollution: Noise from Vehicles, Plants and Equipments	The Contractor will confirm the following: • All plants and equipment used in construction shall strictly conform to the MoEF/CPCB noise standards. • All vehicles and equipment used in construction will be fitted with exhaust silencers. • Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced. • Limits for construction equipment used in the project such as compactors, rollers, front loaders, concrete mixers, cranes (moveable), vibrators and saws shall not exceed 75 dB (A) (measured at one meter from the edge of equipment in the free field), as specified in the Environment (Protection) rules, 1986. • Maintenance of vehicles, equipment and machinery shall be regular to keep noise levels at the minimum. No construction activities will be permitted around educational institutes/health centers (silence zones) up to a distance of 100 m from the sensitive receptors i.e., school, health centers and hospitals between 9.00 am to 6.0 pm. Monitoring shall be carried out at the construction sites as per the monitoring schedule and results will be submitted to 'EO PIU' through the 'Engineer'.	Clause No. 501.8.6 MORT&H Specifications for Road and Bridge works EP Act 1986 Noise Rules 2002	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
C.5					
C.5.1	Personal Safety Measures for Labour	Contractor will provide: • Protective footwear and protective goggles to all workers employed on mixing asphalt materials, cement, lime mortars, concrete etc. • Welder's protective eye-shields to workers who are engaged in welding works • Protective goggles and clothing to workers engaged in stone breaking activities and workers will be seated at sufficiently safe intervals • Earplugs to workers exposed to loud noise, and workers working in crushing, compaction, or concrete mixing operation. • Adequate safety measures for workers during handling of materials. • The contractor will comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress. The contractor will comply with all the precautions as required for ensuring the safety of the workmen as per the International Labor Organization (ILO) Convention No. 62 as far as those are applicable to this contract. The contractor will make sure that during the construction work all relevant provisions of the Factories Act, 1948 and the Building and other Construction Workers (regulation of Employment and Conditions of Services) Act, 1996 are adhered to.	The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and cess Act of 1996 Factories Act 1948	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		The contractor will not employ any person below the age of 14 years for any work and no woman will be employed on the work of painting with products containing lead in any form. The contractor will also ensure that no paint containing lead or lead products is used except in the form of paste or readymade paint. Contractor will provide facemasks for use to the workers when paint is applied in the form of spray or a surface having lead paint dry is rubbed and scrapped. The Contractor will mark 'hard hat' and 'no smoking' and other 'high risk' areas and enforce non-compliance of use of PPE with zero tolerance. These will be reflected in the Construction Safety Plan to be prepared by the Contractor during mobilization and will be approved by 'IC' and 'PIU'.			
C.5.2	Traffic and Safety	The contractor will take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and flagmen as proposed in the Traffic Control Plan/Drawings and as required by the 'EO-IC' and 'Resident Engineer' for the information and protection of traffic approaching or passing through the section of any existing cross roads. The contractor will ensure that all signs, barricades, pavement markings are provided as per the MOSRT&H specifications. Before taking up of construction on any section of the existing lanes of the highway, a Traffic Control Plan will be devised and implemented to the satisfaction of 'EO-IC' and 'Resident	IRC: SP: 55	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		Engineer'			
C.5.3	Risk from Electrical Equipment(s)	The Contractor will take all required precautions to prevent danger from electrical equipment and ensure that - • No material will be so stacked or placed as to cause danger or inconvenience to any person or the public. • All necessary fencing and lights will be provided to protect the public in construction zones. All machines to be used in the construction will conform to the relevant Indian Standards (IS) codes, will be free from patent defect, will be kept in good working order, will be regularly inspected and properly maintained as per IS provision and to the satisfaction of the 'Resident Engineer'.	The Building and other construction workers (Regulation of Employment and Conditions of Service) Act 1996 and Cess Act of 1996 Factories Act 1948	Contractor	EO- IC, PIU
C.5.4	Risk Force Measure	The contractor will take all reasonable precautions to prevent danger to the workers and public from fire, flood etc. resulting due to construction activities. The contractor will make required arrangements so that in case of any mishap all necessary steps can be taken for prompt first aid treatment. Construction Safety Plan prepared by the Contractor will identify necessary actions in the event of an emergency.	The Building and other construction workers (Regulation of Employment and Conditions of Service) Act 1996 and Cess Act of 1996 Factories Act 1948	Contractor	EO- IC, PIU
C.5.5	First Aid	The contractor will arrange for - • a readily available first aid unit including an adequate supply of sterilized dressing materials and appliances as per the Factories Rules in every work zone • availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital • Equipment and trained nursing staff at construction camp.	The Building and other construction workers (Regulation of Employment and Conditions of Service) Act 1996 and Cess Act of 1996 Factories Act 1948	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
C.5.6	Informatory Signs and Hoardings	The contractor will provide, erect and maintain informatory/safety signs, hoardings written in English and local language, wherever required as per IRC and MoSRT&H specifications.	IRC:SP:55	Contractor	EO- IC, PIU
C.6					
C.6.1	Road side Plantation Strategy	The contractor will do the plantation at median and/or turfing at embankment slopes as per the tree plantation strategy prepared for the project. Minimum 80 percent survival rate of the saplings will be acceptable otherwise the contractor will replace dead plants at his own cost. The contractor will maintain the plantation till they handover the project site to NHAI. The Environmental Expert of IC will inspect regularly the survival rate of the plants and compliance of tree plantation guidelines.	Forest Conservation Act 1980	Contractor	EO- IC, PIU
C.6.2	Flora and Chance found Fauna	The contractor will take reasonable precaution to prevent his workmen or any other persons from removing and damaging any flora (plant/vegetation) and fauna (animal) including fishing in any water body and hunting of any animal. If any wild animal is found near the construction site at any point of time, the contractor will immediately upon discovery thereof acquaint the Environmental Expert of IC and carry out the IC's instructions for dealing with the same. The Environmental Expert of IC will report to the near by forest office (range office or divisional office) and will take appropriate steps/ measures, if required in consultation with the forest officials.	Forest Conservation Act 1980 Wild Life Act 1972	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
C.6.3	Chance Found Archaeological Property	All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on the site shall be the property of the Government and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precautions to prevent his workmen or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal acquaint the Environmental Expert of IC of such discovery and carry out the IC's instructions for dealing with the same, waiting which all work shall be stopped. The IC will seek direction from the Archaeological Survey of India (ASI) before instructing the Contractor to recommence the work in the site.	The Ancient Monument and Archaeological Site Remains Act 1958	Contractor	EO- IC, PIU
C.7					
C.7.1	Accommodation	Contractor will follow all relevant provisions of the Factories Act, 1948 and the Building and the other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 for construction and maintenance of labor camp. The location, layout and basic facility provision of each labor camp will be submitted to IC and 'EO-PIU' prior to their construction. The construction will commence only upon the written approval of the Environmental Expert of IC. The contractor will maintain necessary living accommodation and ancillary facilities in functional and hygienic manner and as approved by the IC.	The Building and other construction workers (Regulation of Employment and Conditions of Service) Act 1996 and Cess Act of 1996 Factories Act 1948	Contractor	EO- IC, PIU
C.7.2	Potable Water	The Contractor will construct and maintain all labour	The Building and	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		accommodation in such a fashion that uncontaminated water is available for drinking, cooking and washing. The Contractor will also provide potable water facilities within the precincts of every workplace in an accessible place, as per standards set by the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. **<u>The contractor will also guarantee the following:</u>** a) Supply of sufficient quantity of potable water (as per IS) in every workplace/labor campsite at suitable and easily accessible places and regular maintenance of such facilities. b) If any water storage tank is provided that will be kept such that the bottom of the tank at least 1mt. from the surrounding ground level. c) If water is drawn from any existing well, which is within 30mt. proximity of any toilet, drain or other source of pollution, the well will be disinfected before water is used for drinking. d) All such wells will be entirely covered and provided with a trap door, which will be dust proof and waterproof. e) A reliable pump will be fitted to each covered well. The trap door will be kept locked and opened only for cleaning or inspection, which will be done at least once in a month. Testing of water will be done as per parameters prescribed in IS 10500:1991.	other construction workers (Regulation of Employment and Conditions of Service) Act 1996 and Cess Act of 1996 Factories Act 1948		
C.7.3	Sanitation and	The contractor will ensure that -	Project Specific	Contractor	EO- IC, PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
	Sewage System	• the sewage system for the camp are designed, built and operated in such a fashion that no health hazards occurs and no pollution to the air, ground water or adjacent water courses take place • separate toilets/bathrooms, wherever required, screened from those from men (marked in vernacular) are to be provided for women • adequate water supply is to be provided in all toilets and urinals All toilets in workplaces are with dry-earth system (receptacles) which are to be cleaned and kept in a strict sanitary condition.	Requirement		
C.7.4	Waste Disposal	The contractor will provide garbage bins in the camps and ensure that these are regularly emptied and disposed off in a hygienic manner as per the Comprehensive Solid Waste Management Plan approved by the Environmental Expert of IC. Unless otherwise arranged by local sanitary authority, arrangements for disposal of night soils (human excreta) suitably approved by the local medical health or municipal authorities or as directed by Environmental Expert of IC will have to be provided by the contractor.		Contractor	EO- IC, PIU
C.8					
C.8.1		The 'EO-IC' will contact the responsible people with the enhancement drawing of the site for which enhancement has been proposed and take their consent before the start of work. Accesses to Different Schools along the road will be developed to the satisfaction of 'PIU'.		Contractor	EO- IC, PIU
C.9					

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
C.9.1	Clean-up Operations, Restoration and Rehabilitation	Contractor will prepare site restoration plans, which will be approved by the Environmental Expert of IC. The clean-up and restoration operations are to be implemented by the contractor prior to demobilization. The contractor will clear all temporary structures; dispose all garbage, night soils and POL waste as per Comprehensive Waste Management Plan and as approved by IC. All disposal pits or trenches will be filled in and effectively sealed off. Residual topsoil, if any will be distributed in pre identified approved areas or in places suggested by the 'EO - IC' areas in a layer of thickness of 75 mm-l50 mm. All construction zones including river-beds, culverts, road-side areas, camps, hot mix plant sites, crushers, batching plant sites and any other area used/affected by the project will be left clean and tidy, at the contractor's expense, to the entire satisfaction to the Environmental Expert of IC.and PIU/ NHAI will certify in this regard.		Contractor	EO- IC, PIU
OPERATION STAGE					
Activities to be Carried Out by the PIU					
O.1	Monitoring Operation Performance	The PIU will monitor the operational performance of the various mitigation/ enhancement measures carried out as a part of the project. The indicators selected for monitoring include the survival rate of trees; utility of enhancement provision, status of rehabilitation of borrow areas and disposal sites,	-	PIU	PIU
O.2	Maintenance of Drainage	PIU will ensure that all drains (side drains, median drain and all cross drainages) are periodically cleared especially before monsoon season to facilitate the quick passage of rainwater and	Guidelines provided in DPR.	PIU	PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
		avoid flooding. PIU will ensure that all the sediment and oil and grease traps set up at the water bodies are cleared once in every three months.			
O.3	Pollution Monitoring	The periodic monitoring of the ambient air quality, noise level, water (both ground and surface water) quality, soil pollution/ contamination in the selected locations as suggested in pollution monitoring plan (Refer Chapter 4 for Monitoring Locations of air, water and noise) will be responsibility of PIU. PIU will either appoint PCB or its approved pollution-monitoring agency for the purpose.		PIU through Pollution Monitoring Agency	PIU
O.3.1	Atmospheric Pollution	Ambient air concentrations of various pollutants shall be monitored as envisaged in the pollution-monitoring plan	Air (P & CP) Act 1981	PIU through Pollution Monitoring Agency	PIU
O.3.2	Noise Pollution	Noise pollution will be monitored as per monitoring plan at sensitive locations. Noise control programs are to be enforced strictly. Monitoring the effectiveness of the pollution attenuation barriers Hospital Boundary wall will be taken up thrice in the operation period.	Noise Rules 2002	PIU through Pollution Monitoring Agency	PIU
O.3.3	Water Pollution	Water Quality will be monitored as per monitoring plan	Water (P & CP) Act 1974	PIU through Pollution Monitoring Agency	PIU
O.4.	Soil Erosion and Monitoring of Borrow Areas	Visual monitoring and inspection of soil erosion at borrow areas, quarries (if closed and rehabilitated), embankment > 2m. and other places expected to be affected, will be carried out once in every three months as suggested in monitoring plan.		PIU	PIU

Sl. No.	Environmental Issue	Management Measures	Reference	Responsibility	
				Planning and Execution	Supervision/ Monitoring
O.5	Road Safety	Road Safety will be monitored during operation especially at location where traffic-calming measures have been proposed.		PIU	PIU

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CHAPTER 10

ENVIRONMENTAL BUDGET

10.1 GENERAL

The environmental budget for the various environmental management measures proposed in the EMP and environmental monitoring plan are presented in **Table 10.1.** There are several other environmental issues that have been addressed as part of good engineering practices, the costs for which have been accounted for in the Engineering Cost. Various environmental aspects covered under engineering costs are listed below:

- Turfing and Pitching of slopes
- Construction of slope protection works as retaining walls, crash barriers etc.
- Cleaning of culverts
- Safety signage
- Junction development etc.

10.2 Construction Related Environmental Mitigation Costs

This includes the mitigation costs for the following items as indicated in **Table 10.1**

Dust Suppression / Management - The contractor shall take an all out effort to reduce the level of dust during construction. As a good practice, the contractor shall use the "vehicle mounted vacuum cleaner brooms' instead through manual labour and brooms, which creates lot of dust during road cleaning operation. The cost for this is a part of good engineering practices, while cost incurred for additional water sprinkling along the construction surface to suppress excessive dust will be completely met from the environmental mitigation costs.

Prevention of Water and Soil Pollution - In order that water and soil does not get polluted from discharge of oil and grease from construction vehicle area, vehicle parking area, and workshops, etc., an oil interceptor shall be provided at such locations.

Borrow Area Rehabilitation - The borrow areas shall be rehabilitated as per the Contractor's Environmental Management Plan.

Compensatory Afforestation and its Maintenance – Due to proposed widening activity about 9449 trees will be affected and have to be removed. Afforestation work @ 1:3 that

is 25962 saplings shall be planted to enhance the environmental quality as well as aesthetics.

Environmental Enhancement Measures – In general environmental enhancement measures such as landscaping, selective tree planting, improvement of the natural resources for the local population (provision of fodder, fuel wood, etc. by careful selection of species to be planted within the ROW) etc. shall be carried out to improve the aesthetics in the project area. Environmental enhancement measures pertaining to Bus Shelter / Bus Bay, Truck terminals, and Junction improvement should be provided as per engineering designs.

Waste Disposal – Disposal of waste shall be carried out as per the Contractor's Environmental Management Plan and waste disposal guideline.

Site Restoration – Restoration of construction sites such as diversions, workers camps (with respect to drainage arrangements, sanitation and storage area), and at construction yards shall be taken up once the works at such locations have been completed as per the Contractor's Site Restoration Plan and Environmental Management Plan.

10.3 Construction / Operation Related Monitoring Costs

This includes the mitigation costs for the following items as indicated in **Table 10.1**

Air Quality – Air quality parameters such asPM_{10}, $PM_{2.5}$, SO_2, NO_X, CO shall be monitored at hot-mix plant / batching plant locations at stretches of the project road where construction is in progress. During operational stage the same parameters shall be measured at locations as given in **chapter- 4.**

Water Quality – Water quality parameters such as pH, BOD, COD, TDS, TSS, DO, Oil and grease etc. shall be monitored as indicated in chapter-4 and at other locations as advised by the EO Independent Consultant (IC).

Noise Levels – Noise quality parameters during construction stage will be monitored at equipment yards and at other locations as indicated in Chapter-4 or as directed by the EO of the IC.

Soil Erosion – During construction, parameters such as turbidity in storm water, silt load in pond and Canals as listed in **chapter-4** and at culverts as listed in **chapter -4** shall be monitored as directed in the monitoring plan. Similarly during operational stage the same parameters shall be monitored.

Table 10- 1: Environmental Budget for various Environmental Management Measures

NH-02 Etawah-Chakeri EMP Budget						
COMPONENT	**STAGE**	**ITEM**	**UNIT**	**UNIT COST (Rs.)**	**QUANTITY**	**TOTAL COST (INR)**
Flora	**Pre construction**	**Afforestation**	**No.**	**1500**	**28200**	**42300000**
	Construction	**Irrigation for 36 months**	**Km**	**5000**	**160**	**28800000**
						71100000
(A) Mitigation cost						
Air	Construction	Dust Management with sprinkling of water, covers for vehicles transporting construction material	Km	75,000	160	12000000
Water	Construction	Oil Interceptor at parking of construction vehicle	LS	-	-	1000000
		Silt Fencing				
Safety	Constructions	Demarcating borrow areas clearly using fencing if needed	-	-	-	Covered in Engineering cost.
		Miscellaneous informatory signs and others	-	-	-	Covered in Engineering cost.

					(A) Mitigation cost	**13000000**
(B) Monitoring costs						
Air Quality	Construction	Monitoring along the road by contractor	No. of Samples	3,000	At 5 locations, thrice in a year for a period of 3 years and for 24 hours in 3 shifts (Total 5x3x3x3 = 135 Samples)	405000
		Monitoring at Hot mix plant and batch plant (ambient air quality)	No. of Samples	3,000	At 4 locations thrice in a year for 3 years, for 24 hours in 3 shifts (Total 4x3x3x3 =108 Samples)	324,000.00
		Monitoring at Hot mix plant and batch plant (Stack Monitoring)	No. of Samples	4,000	At 4 locations thrice in a year for 3 years (Total 4x3x3 =36 Samples)	144000
	Operation	Monitoring along the road at locations where monitoring was done during constructions	No. of Samples	3,000	At 5 locations, thrice in a year for a period of one years (Total 5x3x3x1= 45 samples)	135,000.00
Water Quality	Construction	Drinking water quality monitoring of labour camps/ works site	No. of Samples	4,000	At 5 location, Thrice in a year for 3 years(Total 5x3x3 = 45 samples)	180,000.00
	Operation	Monitoring along the road at locations where monitoring was done during constructions	-do-	4,000	At 5locations thrice in a year for 1 year (Total 5x3x1 = 15 samples)	60000

Noise Quality	Construction	Monitoring along the Hot mix plant and Batch plant	No. of Samples	1,000	At 10 location, Thrice in a year for 3 years for 24 hours in day time & night time (Total 10x3x3 =90 Samples)	90000
	Operation	Monitoring along the road at locations where monitoring was done during constructions	No, of Samples	1,000	At 5 locations, Thrice in a year for 1 years (Total 5x3x1 =15 Samples)	15000
Soil Quality	Construction	Monitoring along hot mix plant and batch plant	No of Samples	2,000	At 9 locations, thrice in a year for 3 years (Total 9x3x3 = 81 samples)	162000
	Operation	Monitoring at hot mix plant and batch plant	No. of Samples	2,000	At 5 locations thrice in a year for 1years (Total 5x3x1 = 15 samples)	30000
					Sub-Total B- Monitoring Costs	1545000
Sub–Total C-Training & Other costs						
Training & Mobilization costs	Construction and operation	As per modules developed			L.S.	1000000
Enhancement	Construction and operation	As per Engineering Design				1000000
					Sub-Total C: Training & Mobilization costs	**2000000**
					SUMMARY	
					Sub Total A: Mitigation	**13000000**
					Sub Total B: Monitoring Cost	**1545000**
					Sub Total C: Training & Mobilization Costs	**2000000**

TOTAL	**87645000**
Contingency @ 5%	**4382250**
TOTAL BUDGETED COSTS	**9,20,27,250**

CHAPTER-11

DISCLOSURE OF CONSULTANTS ENGAGED

The EIA consultants have accreditation with Quality Control of India (QCI)/National Accreditation Board of Education and Training (NABET) as per office memorandum dated 2nd December 2009 of MoEF. List of Disclosure of Consultant Engaged is given below Table: 11.1

Table 11- 1: List of Disclosure of Consultant Engaged

Nature of consultancy	Name and address of the Consultant/expert	Approvals, if any from (NABL/DGMS/IBM/NRB PT/ MOEF/ PCB/others etc)*, give reference
EIA/ EMP Organization	Consulting Engineers Group Ltd. B-11 (G), Malviya Industrial Area , Jaipur-17	**M/s. Consulting Engineers Group Ltd. has been listed at Sl. 31 of provisional list dated 24-3-2011 published in QCI website. Copy enclosed.** The Associated Co. CEG Test House & Research Center (In house Testing Laboratory) is NABL accredited.
Env. Coordinators	Dr. Renu Jain, Associate Coordinator K.C. Sharma Associate Coordinator Dr. M. K. Jain Associted Coordinator Dr. Mahaveer P. Saini Associted Coordinator Dr. Shivnath Chalka	
FAE-LU	Dr. Anil Dixit Associate FAE Vikas Kumar Sawanria	
FAE-AP	Dr. M.K. Jain, Associate FAE Dr. Shivnath Chalka Associate FAE Dr. Mahaveer Prasad Saini Associate FAE Dr. Meena Bhaduri Associate FAE Ms Pooja Arya	
FAE-AQ	Dr. Renu Jain, Associate FAE Dr. Shivnath Chalka , Associate FAE Dr. Meena Bhaduri Associate FAE Mr. Ghanshyam Das Associate FAE Mr. Nimish Mathur	
FAE-WP	Dr. Mahaveer Prasad Saini Associate FAE Dr. Renu Jain Associate FAE Ms Pooja Arya	
FAE-EB	Pradeep Kumar Chedalavada Associate FAE Mr. S. S. Sharma Associate FAE Dr. Mahaveer Prasad Saini,	
FAE-NV	Dr. M. K. Jain Associate FAE Dr. Anil Dixit Associate FAE Mr. Nimish Mathur	
FAE-SE	Mrs Asha Mathur Associate FAE Dr. Meena Bhaduri	
FAE-HG	Dr. Sanjay Raj	

Nature of consultancy	Name and address of the Consultant/expert	Approvals, if any from (NABL/DGMS/IBM/NRB PT/ MOEF/ PCB/others etc)*, give reference
	Associate FAE K.C. Sharma, Associate FAE Dr. Meena Bhaduri	
FAE-GEOL	Mr. R K Agarwal	
FAE-RH	Associate FAE Dr. Shivnath Chalka	
Soil Conservation	Dr. Sanjay Raj Associate FAE Dr. Anil Dixit Associate FAE Sri R.K. Agsrwal Associate FAE Dr. Mahaveer Prasad Saini	
FAE-SW	Dr. M.K. Jain Associate FAE Dr. Renu Jain Associate FAE Ms Pooja Arya Associate FAE Mr. Ghanshyam Das	
Environmental Monitoring & analysis	Dr. Sanjay Raj Dr.Mahipat Singh Dr. Mahaveer Prasad Saini	
Rainwater Harvesting	Dr. A.K. Bhargava Dr. Sanjay Raj	

(Signature of the Consultants)
Consulting Engineers group Ltd

(Signature of Project Proponent)