

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH AT NEW DELHI
ORIGINAL APPLICATION NO. 229 OF 2025**

IN THE MATTER OF

Ghulam nabi bhat

...Applicant

Versus

National highways authority of india & ors.

....Respondents

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DATED: 01.07.2026

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
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**REPLY ON BEHALF OF THE APPLICANT TO THE ADDITIONAL
AFFIDAVIT DATED 07.03.2026 FILED BY RESPONDENT NOS. 2**

MOST RESPECTFULLY SHOWETH:

1. That the Original Application has been filed before the Hon'ble Tribunal by the Applicant under Sections 15 and 20 of the National Green Tribunal Act, 2010 raising the issue of environmental damage to the Orchards/agricultural field of the Applicant in form of dust pollution and water logging of his high density Apple orchard located at Wathora, Batpora, Tehsil Chadoora, District Budgam, Union territory of J&K which has led to flooding/damaging of approximately 6.5 Kanals (3288 Sq. meters) of the said Orchard/ Agricultural field owned by the Applicant by the acts and omissions committed by Respondent Nos. 1 and 2 who are engaged in constructing the Srinagar Ring Road flyover bridge near to the Orchard/Agricultural field of the Applicant.
2. That the Respondent No.2 has served the Counsel for Applicant with an Additional Affidavit dated on 07.03.2026. The prayer at the end of the said Additional Affidavit says that:
 - I. Dismiss the present Original Application as against Respondent No.2 (NKC Projects Pvt. Ltd.);

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- II. Record that the blockage is caused by illegal encroachment/illegal construction of a tyre puncture shop on JKPWD land;
3. That the Applicant submits that the Additional Affidavit dated 07.03.2026 is not an IA, therefore the prayer mentioned in the same cannot be as such granted.
4. That the Applicant also submits that He denies all the contents of the Additional Affidavit dated 07.03.2026 unless specifically admitted herein.

Reply to the issue raised by the Respondent No.2 that the said drain is *beyond the RoW* of the NHAI/NKC project.

5. That on the issue that the said drain is beyond the RoW of the NHAI/NKC project, it is submitted that the NHAI/NKC were duty bound to get a thorough Environmental Impact Assessment (EIA) done upto 500 meters from RoW in terms of Section 3 (2) (v) of the Environment Protection Act, 1986 read with Rule 5 sub-rule (3) clause (d) of the Environment Protection Rules, 1986.
6. It is submitted that as per the Environmental Impact Assessment Guidance Manual for Highways published by MoEF, Govt. of India the impact of the Project has to be assessed upto 500 meters from ROW. The section on essential map to be provided in Para 2.0 says:-
- **“Area drainage map covering 500 meters on either side of proposed right of way shall be clearly indicated.** In case of any proposed diversion of nallah/canal/river either during the construction phase or operational phase, same shall also be shown in the map”

(Empasis supplied)

7. Para 4.1 of the said Manual clearly specifies to consider 500 meters along both sides of RoW as study area. It says :-

“4.1 Study Area

As a primary requirement of EIA process, the proponent should collect primary baseline data in the right of way as well as the area falling within 500 meters on either side of right of way and secondary data should be collected within 15 km aerial distance as specifically mentioned at para 9(iii) of Form I of EIA Notification 2006. The study area mentioned in this document should be considered for guidance purpose. But the exact study area for different environmental components is to be submitted for review and appraisal by the expert appraisal committee. Map of the project area and study area clearly delineating the location of various monitoring stations (air / water/soil and noise) superimposed with locations of habitation should be shown. Monitoring should be done as per CPCB guidelines.”

(Empasis supplied)

8. That as per para 4.3 of the said manual on the issue of Water Environment it is submitted as follows:-

“4.3 Water Environment

Details of surface water bodies within right of way and within 500mts from the right of way should be documented along with the present usage. The description of these water bodies should be given as in **Table 4.5** Monitoring of surface water and ground water within the study area should be furnished. The samples should be collected and analyzed as per the standard procedures.

The description of the water sampling locations should be given as in **Table 4.6 & 4.7** and the monitoring results should be given as in **Table 4.8 & 4.9**. The flow and other details of the streams crossing the alignment should be furnished.

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The Central Pollution Control Board has stipulated criteria for raw water usages, use based classification of surface water and these are given in **Annexure 5.**"

(Empasis supplied)

Therefore, the issue raised by the Respondent No.2 that the said drain is beyond the RoW of the NHAI/NKC project does not hold any ground as the NHAI/NKC had to assess an area upto 500 meters from RoW as the study and impact area.

Relevant pages of the Environmental Impact Assessment Guidance Manual for Highways published by MoEF, Govt. of India is annexed herewith as **ANNEXURE-A10.**

Reply to the issue raised by the Respondent No.2 that root cause of flooding - Illegal encroachment of the drain by tyre/tyre puncture shop or that the said obstruction is the sole and direct cause of the resulting stagnation and overflow of water.

9. That it is submitted that on 05.09.2025.the Respondent No.2 has filed it's Reply to the present Original Application and has not taken the issue that "*the root cause of flooding - Illegal encroachment of the drain by tyre/tyre puncture shop or that the said obstruction is the sole and direct cause of the resulting stagnation and overflow of water*". Therefore, the above issue is nothing but an afterthought and impermissible improvement of the stand taken for the first time on 07.03.2026 nearly 6 months after filing the Reply filed by Respondent No.2 to the Original Application.

10. That it is submitted that admittedly, the tyre/tyre puncture shop had been constructed several years ago adjoining the drain and abutting it's entry point (***para 7 of the Additional Affidavit dated 07.03.2026 filed by the Respondent No.2***). When the tyre/tyre puncture shop had existed from several years why no flooding and/or environmental damage had occurred earlier. The Respondent No.2 fails to explain that why the said environmental damage took place only during the construction phase of the Ring Road and not earlier. Secondly, it is submitted that a mere tyre/tyre puncture shop cannot lead to the extent of flooding and environmental damage as has been claimed by the Applicant in his Original Application and corroborated by the independent reports of Govt. regulatory body like the J&K Pollution Control Committee dated 13.09.2025, the Chief Horticulture Officer, Budgam dated 13.09.2025 and the subsequent letter dated 23.04.2026 by the Executive Engineer, PWD (R&B) Division Chadoora to the Superintending Engineer PWD(R&B) Circle Budgam which are self-explanatory as they have categorically admitted that flooding and environmental damage has taken place damaging the fields of the Applicant due to construction of Ring Road by NHAI/NKC. Infact the NHAI has admitted in it's letter/response dated 14.02.2024 that there was choking of the drain due to which water is not passing across the road.
11. That the Applicant has received a reply dated 29.06.2026 under RTI wherein the Executive Engineer, PWD (R&B) Division Chadoora has written a letter dated 23.04.2026 to the Superintending Engineer PWD(R&B) Circle Budgam informing, inter-alia, as follows:-

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“A detailed field report has been furnished by the concerned AEE vide his office letter No. CSD/58 Dt. 21-04-2026.

- The primary cause of water logging in the said orchard is the ongoing construction of the Srinagar Ring Road by the National Highways Authority of India (NHAI). The earth filling carried out for the road embankment has adversely affected the natural drainage system of the area.
- The cross drainage pipes, which were previously laid by this Division for proper water discharge, have been choked and blocked due to construction activities and the dumping of materials associated with the Ring Road project by NHAI.
- It is clarified that no construction activity has been undertaken by the R&B Division Chadoora at the said location during the reported period.

Therefore, as per the ground report, the accumulation of water and subsequent damage to the orchard is entirely attributable to the works being executed by NHAI.”

Copy of the reply dated 29.06.2026 received under RTI wherein the Executive Engineer, PWD (R&B) Division Chadoora has written a letter dated 23.04.2026 to the Superintending Engineer PWD(R&B) Circle Budgam on the issue of water logging and damage to the orchard/agricultural land of Applicant are annexed herewith as **ANNEXURE-A11** **(Colly)**.

12. That it is submitted that the above facts also stand proved by the earlier report of the J&K Pollution Control Committee which says at pages 97-99 as under:-

“5. Regional Director, J&K PCC Kashmir:

Regional Director, J&K PCC, Kashmir submitted his report vide No. PCC/RDK/LS(NGT)/2025/781-782; dated; 18.06.2025 (**Copy enclosed as Annexure 11**). Highlights of the report are briefly summarized as under;

- a) The construction of the semi-circular ring road at Batpora Wathoora resulted in physical division of the land, leading to the accumulation of surface water by obstructing the natural flow of irrigation water that led to persistent water logging in the Orchard of the complainant.
- b) The common drainage point from the complainant was a cross drainage Hume pipes laid previously by Roads and Buildings Department across the Srinagar Wathoora Batpora road that has now got blocked due to construction activity of semi-ring road, resulting in persistent water logging in the Orchard.
- c) The owner of the Orchard was found dewatering the accumulated water from the drain from the side of his Orchard by means of dewatering pump at the time of inspection.

6. Chief Horticulture Officer, Budgam:

The Chief Horticulture Officer Budgam submitted his report vide No.CHO/Bud/Dev/2025-26/2552-53; dated: 30.07.2025 (Copy enclosed as Annexure 12). Highlights of the report are briefly summarized as under:-

- a) The said high density Orchard was established during the year 2018 under the scheme PMDP and is spread over an area of 06 kanals.

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- b) The entire area where the Orchard has been established is low-lying. However, at the time of establishment of Orchard complete drainage of the water was ensured by the Department to prevent any damage due to water stagnation. Accordingly, the said Orchardist has developed the drainage channels and the threat of water stagnation was effectively addressed.
- c) The Orchard exhibited normal growth and fruit production until 2023, when the drainage system was disrupted due to the construction of a road/flyover by the NHAI, located about 30 feet from the Orchard.
- d) The filling and compaction associated with road construction led to blockage of the Orchard's drainage channels, resulting in complete water stagnation in the Orchard.
- e) Prolonged stagnation of water led to the emergence of root-rot problem, affecting around 300 plants. The remaining Plants are showing stunted growth and are at risk of further damage unless the drainage system is promptly reconstructed or improved.
- f) That due to the construction of the road/flyover approximately 30ft from the Orchard has blocked the drainage channels and compacted soil pores. This has resulted in severe water stagnation, which in turn has damaged the fruit plants in the Orchard.
- g) Further, as regards the extent of damages caused to the Orchard, it has been reported that the Orchard in question is spread over an area of 6 kanals with 955 apple fruit plants of various strains viz. Gala, Red Delicious, Fuji, and Golden and 300 apple plants have completely dried or damaged, corresponding to 30% of the total plantation and out of the remaining 695 plants, the majority show yellowing of leaves and stunted growth due to water stagnation during precipitation, accounting for about 20-25% loss to the plants.

The Divisional Officer, J&K PCC, Budgam has further verified the reply submitted by Chief Horticulture

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Officer, Budgam and have largely endorsed the report of the Chief Horticulture Officer, Budgam vide No. PCC/DO/Bud/2025/331; dated: 09.09.2025. (copy enclosed as Annex-13)

Prayer:

In the premises, it is therefore respectfully prayed that the report may kindly be taken on record before the Hon'ble National Green Tribunal for consideration.

Sd/- 13.9.25
(Ghansham Singh)
Member Secretary
J&K PCC
13-9-25"

That it is submitted that the report of J&K Pollution Control Committee dated 13.09.2025, Chief Horticulture Officer, Budgam dated 13.09.2025 and the subsequent letter dated 23.04.2026 of the Executive Engineer, PWD (R&B) Division Chadoora to the Superintending Engineer PWD(R&B) Circle Budgam are self-explanatory as they have categorically admitted that flooding has taken place in the fields of the Applicant due to construction of Ring Road by NHAI/NKC. It is stated that about 50% of the Orchard of the Applicant got adversely affected/damaged due to the acts/omissions and non-implementation of Key Environmental Impacts and Management Measures with respect to drainage in the EIA, which have not been met. This damage has not only incurred financial losses but has also affected the livelihood of the Applicant who is dependent on the orchard, due to the grave negligence of Respondent Nos. 1 and 2. The construction

activities have generated excessive dust, which settles on crops, hindering and adversely affecting their growth and yield. Despite the acquisition of a substantial portion of land for the project, the remaining land near the highway sides which comprises of the Orchards/agricultural fields is now facing severe environmental consequences, faced by the Applicant at Wathora, Batpora, District Budgam, Union territory of J&K.

Therefore, the Applicant relies upon the report of the J&K PCC, Horticulture Department and the subsequent letter dated 23.04.2026 written by the Executive Engineer, PWD (R&B) Division Chadoora to the Superintending Engineer PWD(R&B) Circle Budgam which give a categorical finding that due to construction done by the Respondent Nos 1 and 2 there has been environmental damage in form of water logging which has led to flooding of the Orchards of the Applicant.

Therefore, the issue raised by the Respondent No.2 that root cause of flooding - Illegal encroachment of the drain by tyre/tyre puncture shop or that the said obstruction is the sole and direct cause of the resulting stagnation and overflow of water does not hold any ground and needs to be rejected.

In Reply to the Report of Rodic Consultants Pvt. Ltd.

13. That it is submitted that the report of J&K Pollution Control Committee/ Chief Horticulture Officer, Budgam dated 13.09.2025 and the subsequent letter dated 23.04.2026 the Executive Engineer, PWD (R&B) Division Chadoora to the Superintending Engineer PWD(R&B) Circle Budgam are self-explanatory as they have categorically admitted that flooding and environmental damage has taken place in the fields of the Applicant due to construction of Ring Road by NHAI/NKC. The

above departments like J&K Pollution Control Committee, Chief Horticulture Officer, Budgam and PWD (R&B) Division Chadoora are independent and infact J&K Pollution Control Committee is a regulatory body of the Government. All these Departments have categorically proved the case of the Applicant with respect to flooding and environmental damage which has taken place in the fields of the Applicant due to construction of Ring Road by NHAI/NKC. Infact the NHAI has admitted in it's letter/response dated 14.02.2025 that there was choking of the drain due to which water is not passing across the road.

14. That on the other hand, the Respondent No.2 is relying upon the letter/report dated 25.02.2026 of a private consultant company which is a part and parcel of the Respondent No.1 and 2 which is clear from the following Report/letter dated 25.02.2026 annexed as Annexure R-2/1 with the Additional Affidavit dated 07.03.2026 of the Respondent No.2 which says:-

1. In the subject the letter talks about **Consultancy Services for Authority's Engineer** for supervision of construction of four-lane Ring Road/bypass around Srinagar city....

(Emphasis supplied)

2. During the inspection it was observed that the referred location falls at Km 11-025 LHS of **our project alignment.**

(Emphasis supplied)

15. Therefore, the Report/letter dated 25.02.2026 of Rodic Consultants Pvt. Ltd. creates a Conflict of Interest situation as

the said Report/letter is being relied upon/presented by Respondent No.2 in it's favour, against whom there are serious allegations of causing flooding and environmental damage to the fields of the Applicant. Moreover, Rodic Consultants Pvt. Ltd. is not an independent body as it is a private consultant company which is a part and parcel of the Respondent No.1 and 2. Hence, it is prayed by the Applicant that the Report/letter dated 25.02.2026 of Rodic Consultants Pvt. Ltd. and the Additional Affidavit dated 07.03.2026 need to be rejected on this ground alone.

In Reply to the issue that PWD (R & B) Department is a necessary party which needs to be impleaded

16. That the Respondent No.2 in his Additional Affidavit dated 07.03.2026 has contended that PWD (R & B) Department is a necessary party which needs to be impleaded. It is submitted that the issue in hand relates to the environmental damage to the Orchards/agricultural field of the Applicant in form of dust pollution and water logging of his high density Apple orchard located at Wathora, Batpora, Tehsil Chadoora, District Budgam, Union territory of J&K owned by the Applicant, by the acts and omissions committed by Respondent Nos. 1 and 2 who are engaged in constructing the Srinagar Ring Road flyover bridge near to the Orchard/Agricultural field of the Applicant.
17. That it is submitted that the report of J&K Pollution Control Committee dated 13.09.2025, Chief Horticulture Officer, Budgam dated 13.09.2025 and the subsequent letter dated 23.04.2026 the Executive Engineer, PWD (R&B) Division

Chadoora to the Superintending Engineer PWD(R&B) Circle Budgam are self-explanatory as they have categorically admit that flooding has taken place in the fields of the Applicant due to construction of Ring Road by NHAI/NKC.

18. Infact the NHAI has admitted in it's letter/response dated 14.02.2025 that there was choking of the drain due to which water is not passing across the road.
19. According to the Applicant, the issue of water logging and environmental damage to the fields/orchards of the Applicant is squarely proved from the stand/reports of the J&K PCC, Horticulture Department and the PWD itself (whose stand is categorically mentioned in letter 23.04.2026 which is annexed as Annexure-A11). Therefore, from the material on record the issue of water logging and environmental damage as mentioned in the Original Application is squarely proved from the replies/stand/reports of these Govt. Authorities. However, still incase, this Hon'ble Tribunal decides to make PWD (R&B) Division as a Respondent, the Applicant has no objection to the same.
20. It is re-iterated that the NHAI was duty bound to get a thorough Environmental Impact Assessment (EIA) done in terms of Section 3 (2) (v) of the Environment Protection Act, 1986 read with Rule 5 sub-rule (3) clause (d) of the Environment Protection Rules, 1986. The EIA Report got done by the NHAI through it's consultant Louis Berger Consulting Pvt. Ltd. in

2015 mentions in Table 0.4: Key Environmental Impacts and Management Measures and with respect to drainage.

21. That the EIA & EMP got done by the NHAI through its consultant Louis Berger Consulting Pvt. Ltd. in 2015 is deficient in taking care of the actual impact on the Environment and Management Measures as provided for in Key Environmental Impacts and Management Measures and with respect to drainage in the EIA have not been met.
22. That it is submitted that had the Respondent No.2 has failed to get the Environmental Impact Assessment done in terms of the guidelines given in the Environmental Impact Assessment Guidance Manual for Highways published by MoEF, Govt. of India which mandates that a thorough Environmental Impact Assessment (EIA) was required to be done upto 500 meters from RoW. The contention of the Respondent No.2 that the said drain is beyond the RoW of the NHAI/NKC project is therefore, contrary to the Environmental Impact Assessment Guidance Manual for Highways published by MoEF, Govt. of India and needs to be rejected.
23. It is therefore submitted that the prayer of the Applicant in the Original Application be allowed forthwith in view of the above facts, circumstances and material on record.

24. Any other or further relief may also be granted in favour of the Applicant.

GHULAM NABI BHAT

APPLICANT

THROUGH

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AFFIDAVIT

I, Ghulam Nabi Bhat, aged about 67 years, son of Shri Abdul Satar Bhat, resident of Wathora, Batepora, Tehsil Chadoora, District Budgam, Union Territory of Jammu & Kashmir, do hereby solemnly affirm and declare as under:-

1. That I am the Applicant in the abovementioned Original Application and therefore competent to swear the present Affidavit.
2. That the abovementioned Reply has been drafted by my counsel on my instructions and the contents of the same are true and correct to my knowledge.

Ghulam Nabi Bhat
DEPONENT

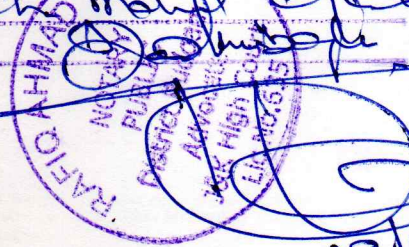
VERIFICATION: Verified today on this 29-06-2026 at Srinagar, Union Territory of J&K do hereby verify and declare that the facts mentioned above are true and correct nothing material has been concealed therefrom and no part of it is false.

Certified that the contents of this affidavit have been solemnly affirmed and declared on oath before me on 29-06-2026 by Ghulam Nabi Bhat S/o, W/o, D/o Abdul Satar Bhat R/o Wathora Batepora Identified by Batal Singh S/o Chomail Chane

[Signature]

[Signature]
DEPONENT

[Signature]
29/6/26





जहाँ है हरियाली ।
वहाँ है खुशहाली ॥

Ministry of Environment & Forests
GOVERNMENT OF INDIA, NEW DELHI

Environmental Impact Assessment Guidance Manual
for
HIGHWAYS



Prepared by



Administrative Staff College of India
Bellavista, Khairatabad, Hyderabad

February 2010

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**Environmental
Impact Assessment Guidance Manual
for**
Highways



Foreword

The EIA Notification 2006 not only reengineered the entire EC process specified under the EIA Notification 1994 but also highlighted the need to introduce specific sectors/categories under the sectors such as Industry and Infrastructure and also introduced new sectors such as Construction to be brought in the ambit of the EC process based on their extent of impacts on environment. The EIA Notification 2006 has notified 39 developmental sectors, which require prior environmental clearance. Based on the capacity, the Projects have been categorised into Category A or B which has been further categorised as B1 or B2. The Ministry of Environment and Forests (MOEF) has so far constituted 25 State level Environmental Impact Assessment Authorities (SEIAs) and State Expert Appraisal Committees (SEACs) to appraise B category projects.

The need for Sector specific manuals and guidelines for appraisal of projects under the EIA Notification 2006 has been felt for some time with a view to bringing clarity in the EC process consists of Screening, Scoping, Public Consultation and Appraisal for the purpose of granting and expediting environmental clearance. This need was further reinforced after the constitution of various SEIAs and SEACs in the various States, who were assigned this task for the first time. It was also felt that Manuals on each Sector would help in standardisation of the quality of appraisal and in reducing inconsistencies between SEACs/SEIAAs in granting ECs for similar projects in different States.

The MOEF at the first instance decided to bring out EIA Sector Specific Manuals for 37 developmental projects and the preparation of EIA Manuals of ten of these Sectors was assigned to Administrative Staff College of India (ASCI), Hyderabad.

1. Mining
2. Mineral Beneficiation
3. Ports & Harbours
4. Airports
5. (A) Building Construction
5. (B) Townships
6. Asbestors
7. Highways
8. Coal Washery
9. Aerial Ropeways
10. Nuclear Power Plants, Nuclear Fuel Processing Plants and Nuclear Waste Management Plants

The Manual for the sectors contain Model TOR of that Sector, technological options and processes for a cleaner production and waste minimisation, wherever applicable, monitoring of environmental quality, related regulations, and procedure of obtaining EC if linked to other clearances for eg., CRZ, etc.

The draft Manuals were uploaded on the MOEF website and comments/responses received were considered and finalised. Since the environmental clearance process itself is a dynamic one dependent on developmental needs, technologies available and standards for cleaner environment for a sustainable development, these manuals would require regular updation in the future. I hope the Manuals in their present form are of use and we would appreciate receiving responses from various stakeholders for further improvements that could be taken up in the future.

I congratulate the entire team in the Administrative Staff College of India, Hyderabad, experts of the sectors who were involved in the preparation of the Manuals, members of the Core and Peer Committees of various sectors and various Resource persons whose inputs were indeed valuable in the preparation and finalisation of the Manuals.



(JAIRAM RAMESH)

MINISTER OF STATE FOR ENVIROMENT & FORESTS

5th May 2010



Siripurapu K. Rao

M.A. (Cantab), Ph.D. (Cantab)
 DIRECTOR GENERAL



Acknowledgements

Environmental Impact Assessment (EIA) is a planning tool generally accepted as an integral component of sound decision-making. EIA is to give the environment its due place in the decision-making process by clearly evaluating the environmental consequences of the proposed activity before action is taken. Early identification and characterization of critical environmental impacts allow the public and the government to form a view about the environmental acceptability of a proposed developmental project and what conditions should apply to mitigate or reduce those risks and impacts.

Environmental Clearance (EC) for certain developmental projects has been made mandatory by the Ministry of Environment & Forests through its Notification issued on 27.01.1994 under the provisions of Environment (Protection) Act, 1986. Keeping in view a decade of experience in the Environmental Clearance process and the demands from various stakeholders, the Ministry of Environment and Forests (MoEF) issued revised Notification on EC process in September 2006 and amended it in December 2009. It was considered necessary by MoEF to make available EIA guidance manuals for each of the development sector.

Accordingly, at the instance of the MoEF, the Administrative Staff College of India, with the assistance of experts, undertook the preparation of sector specific Terms of Reference (TOR) and specific guidance manual for **Highways**. I wish to thank **Mr. J. M. Mauskar**, IAS, Additional Secretary, Govt. of India MoEF for his continuing support during the preparation of the manuals. I wish to place on record also my sincere thanks to **Dr. B. Sengupta**, former Member Secretary, Central Pollution Control Board and Chairman of the Core Committee for his help in the preparation of the manuals. His suggestions helped us a great deal in improving the technical quality of the manuals. **Mr. M. Parabrahmam**, Former advisor MoEF and Chairman of the Peer Committee for this project, has given constant guidance to the ASCI project team. His vast experience has been immensely helpful in preparing these manuals. I would like to thank the officials of the Ministry, **Dr. Nalini Bhat** and **Dr. T. Chandini**, for coordinating the project from the Ministry side and for providing guidance whenever needed. My thanks are also due to **Dr. Bharat Bhushan** and **Dr. A. Senthil Vel** of MoEF for the valuable inputs they had given during our interactions with the officials at Delhi and Hyderabad.

I thank **Mr. G. K. Anand**, Professional Consultant and **Mr. G. Bala Subramanyam**, Advisor, Environment Area, ASCI, who, drawing on their vast experience in the sector, prepared the EIA guidance manual for the **Highways**. The efforts put by them are commendable.

I would like to thank all the Peer and Core Committee members for having given a valuable feed back in the preparation of the manual. I hope the manuals would prove to be useful to the community at large and to the experts working in this area in particular.

26 February, 2010


S.K. Rao

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ABBREVIATIONS

| | |
|---------|---|
| AAQ | Ambient Air Quality |
| ASCI | Administrative Staff College of India |
| BOD | Biological Oxygen Demand |
| CRZ | Coastal Regulation Zone |
| CPCB | Central Pollution Control Board |
| CZM | Coastal Management Zone |
| CO | Carbon Monoxide |
| DMP | Disaster Management Plan |
| dB | Decibels |
| DC | District Collector |
| Dy. Com | Deputy Commissioner |
| DM | District Magistrate |
| EIA | Environmental Impact Assessment |
| EAC | Expert Appraisal Committee |
| EC | Environmental Clearance |
| EMP | Environmental Management Plan |
| GoI | Government of India |
| GC | General Conditions |
| HTL | High Tide Line |
| IRC | Indian Road Congress |
| ISO | International Organization for Standardization |
| IFC | International Finance Corporation |
| IMD | Indian Meteorological Department |
| Kl | Kiloliters |
| Leq | Equivalent Continuous Sound Level |
| LTL | Low Tide Level |
| MoEF | Ministry of Environment and Forests |
| MoSRTTH | Ministry of Shipping, Road Transport & Highways |
| MSL | Mean Sea Level |
| NAAQS | National Ambient Air Quality Standards |
| NCHRP | National Cooperative Highway Research Program |
| pH | Hydrogen Ion Concentration |
| PM | Particulate Matter |
| R&R | Rehabilitation & Resettlement |
| SEIAA | State Level Environmental Assessment Authority |
| SEAC | State Level Expert Appraisal Committee |
| SPCB | State Pollution Control Board |
| TOR | Terms of Reference |
| UTPCC | Union Tertiary Pollution Control Committee |
| ZSI | Zoological Survey of India |

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ABOUT THE MANUAL

Environmental Impact Notification S.O.1533 (E), of 14th September 2006 as amended in 2009 has made it mandatory to obtain environmental clearance for scheduled development projects. The notification has classified these projects as Category A & B. Category A projects (including expansion and modernization of existing projects) require clearance from Ministry of Environment and Forests (MoEF), Govt. of India (GoI) and for category B, from State Environmental Impact Assessment Authority (SEIAA), constituted by the Govt. of India

The existing Environmental Impact Assessment Manual of MoEF is common for all the sectors requiring prior environmental clearance. Considering the diversity in all the sectors related to infrastructure and industrial development, MoEF launched a programme for development of sector specific EIA guidance manuals. The EIA guidance manual will help the project proponent and consultant in the preparation of EIA report. It also helps the regulatory authority while reviewing the report and the public as well to be aware of the related environmental issues. This EIA guidance manual accordingly addresses their related environmental concerns for the specific sector, that is, Asbestos-based industries. The sector specific manual consists of twelve chapters, corresponding to the generic structure as per the EIA Notification.

Chapter 1: Introduction

This chapter contains the general information on highway projects, environmental clearance process, and identification of the project proponent

Chapter 2: Project Description

This chapter should cover the description of the project, such as, the type of project, need for the project, project location, highway alignment, utilities, implementation schedule and the estimated cost of the project.

Chapter 3: Analysis of Alternatives (Technologies)

This chapter should cover the details of various alternatives in respect of both location of site and technologies to be deployed, in case the initial scoping exercise consider such a need.

Chapter 4: Description of Environment

This chapter should cover baseline data in the project area and study area.

Chapter 5: Anticipated Environmental Impact and Mitigation Measures

This chapter should cover the anticipated impact on the environment and mitigation measures. The method of assessment of impact including studies carried out, modeling techniques adopted to assess the impact where pertinent shall be elaborated in this chapter. It should give the details of the impact on the baseline parameters, both during the construction and operational phases and mitigation measures to be implemented by the proponent.

Chapter 6: Environmental Monitoring Programme

This chapter should cover the planned Environmental Monitoring Program. It should include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter 7: Additional Studies

This chapter should cover the details of the additional studies, if any, required in addition to those specified in the TOR and which are necessary to cater to more specific issues applicable to the particular project. These studies may be suggested either by the proponent itself or the regulatory authority.

Chapter 8: Project Benefits

This chapter should cover the benefits accruing to the locality, neighbourhood, region and nation as a whole. It should bring out details of benefits by way of improvement in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: Environmental Cost Benefit Analysis

This chapter should cover the Environmental Cost Benefit Analysis of the project, if recommended by the Expert Appraisal Committee at the scoping stage.

Chapter 10: Environmental Management Plan

This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational Phases.

Chapter 11: Summary & Conclusions

This chapter forms the summary of the full EIA report condensed to a maximum of ten A-4 size pages. It should provide the overall justification for implementation of the project and should explain how the adverse effects are proposed to be mitigated

Chapter 12: Disclosure of Consultants Engaged

This chapter should include the names of the consultants engaged along with a brief resume and nature of consultancy rendered

The contents of the manual are to be considered as version 1.0 (2010). An updating/ revision of the manual will be taken up by the ministry as per requirements. In case of interpretation of any question related to law, the provisions of the original law and the rules made thereunder with various government directions/ resolutions will have to be read and followed. In case of amendment to the original Act/ Rules/ Notifications made thereunder, the provisions as amended from time to time shall be applicable.

INTRODUCTION

1.0 Preamble

Environment plays a vital role in overall development of the country. Recognizing the importance of environmental protection and sustainable development, the Ministry of Environment and Forest (MoEF), Government of India had formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and promote integration of environmental concern in developmental projects.

The Ministry of Environment & Forest has made prior environmental clearance (EC) for certain developmental projects mandatory through its notification issued on 14th September 2006 and as amended on 1st December 2009.

1.1 General Information on Highway Projects

Development of highway projects is generally intended to improve the economic and social welfare of the people. At the same time it may also create adverse impact on the surrounding environment. People and properties may be in the direct path of road works are affected. The environmental impact of highway projects include damage to sensitive eco-systems, soil erosion, changes to drainage pattern and thereby ground water, interference with wild life movement, loss of productive agricultural lands, resettlement of people, disruption of local economic activities, demographic changes and accelerated urbanization. Highway development and operation should, therefore, be planned with careful consideration of the environmental impact. To minimize these adverse effects that may be created by the highway development projects, the techniques of Environmental Impact Assessment (EIA) become necessary. Identification and assessment of potential environmental impact should be an integral part of the project cycle. It should commence early in the planning process to enable a full consideration of alternatives, and to avoid later delays and complications. Highway authorities should have a clearly designated staff member with overall responsibility for environmental matters and knowledge of environmental laws and regulations.

1.2 Environmental Clearance Process

As per the EIA notification of 14th September 2006 and its amendment dated 1st December 2009, highway projects are divided into two categories as mentioned below :

| Project Activity | A Category | B Category | General Condition |
|-------------------------------------|--|--|--|
| Highways (Includes express ways) | New National Highways & Expansion of National Highways greater than 30 km, involving additional right of way greater | All state highway projects State highway expansion projects in hilly terrain (above 1,000 m AMSL) and or ecologically sensitive areas | Any project or activity specified in category B will be treated as category A, if located in whole or in part within 10 km from the boundary of: (i) Protected areas notified |

| | | | |
|--|--|--|---|
| | <p>than 20m involving land acquisition and passing through more than one State</p> | | <p>under the Wildlife (Protection) Act, 1972; (ii) Critically polluted areas as identified by the Central Pollution Control Board from time to time; (iii) Eco-sensitive areas as notified under section 3 of the Environment (Protection) Act, 1986, such as, Mahabaleswar, Panchgani, Matheran, Pachmarhi, Dahanu, Doon Valley and (iv) inter-state boundaries and international boundaries</p> <p>Provided that the requirement regarding distance of 10km of the inter-state boundaries can be reduced or completely done away with by an agreement between the respective states or U.Ts sharing the common boundary in the case the activity does not fall within 10 kilometers of the areas mentioned at item (i), (ii) and (iii) above</p> |
|--|--|--|---|

The environmental clearance process for all projects will comprise a maximum of four stages. These four stages in sequential order are:

Stage (1)-Screening

In case of category 'B' projects or activities, this stage will entail the scrutiny of an application seeking prior environmental clearance made in Form 1* by the concerned SEAC for determining whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending upon the nature and location specificity of the project. The projects requiring an Environmental Impact Assessment report shall be termed Category 'B1' and remaining projects shall be termed category 'B2' and will not require an Environmental Impact Assessment report.

Stage (2)- Scoping

'Scoping' refers to the process by which the EAC in the case of Category 'A' projects or activities, and SEAC in the case of Category 'B1' projects or activities, including applications for expansion and/ or modernization and/ or change in product mix of existing projects or activities, determine detailed and comprehensive TOR addressing all relevant environmental concerns for the preparation of an EIA report in respect of the project or activity for which prior environmental clearance is sought. The EAC or SEAC concerned shall determine the TOR on the basis of information furnished in the prescribed application Form 1 including TOR proposed by the applicant, a site visit by a sub-group of EAC or SEAC concerned only if considered necessary by the EAC or SEAC concerned and other information that may be available with the EAC or SEAC concerned.

Stage (3)- Public consultation

“Public consultation” refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impact of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category ‘A’ and Category ‘B1’ projects or activities shall undertake Public consultation, except the following:

- Expansion of Roads and Highways which do not involve any further acquisition of land
- All projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government

After completion of the public consultation, the applicant shall address all the material environmental concerns expressed during this process, and make appropriate changes in the draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant to the concerned regulatory authority for appraisal. The applicant may alternatively submit a supplementary report to draft EIA and EMP addressing all the concerns expressed during the public consultation

Stage (4)- Appraisal

Detailed scrutiny by the EAC or SEAC of the application and other document like the Final EIA report, outcome of the public consultations including public hearing proceedings, submitted by the applicant to the regulatory authority concerned for grant of EC

Flow-charts depicting these stages to obtain the prior environmental clearance for Highways projects are presented in **Figure 1.1 & Figure 1.2**

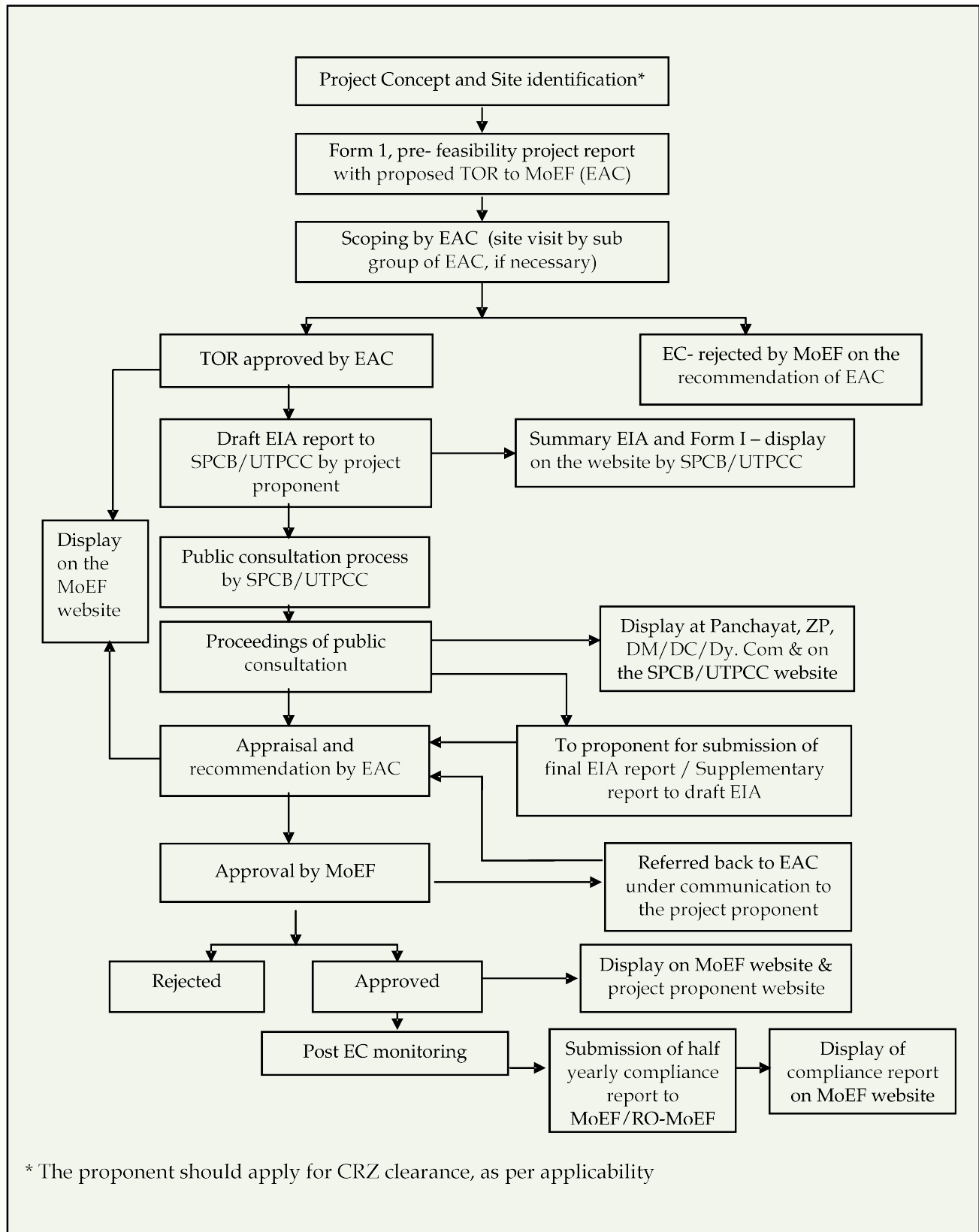


Figure 1.1 : Prior Environmental Clearance Process for Category A Projects

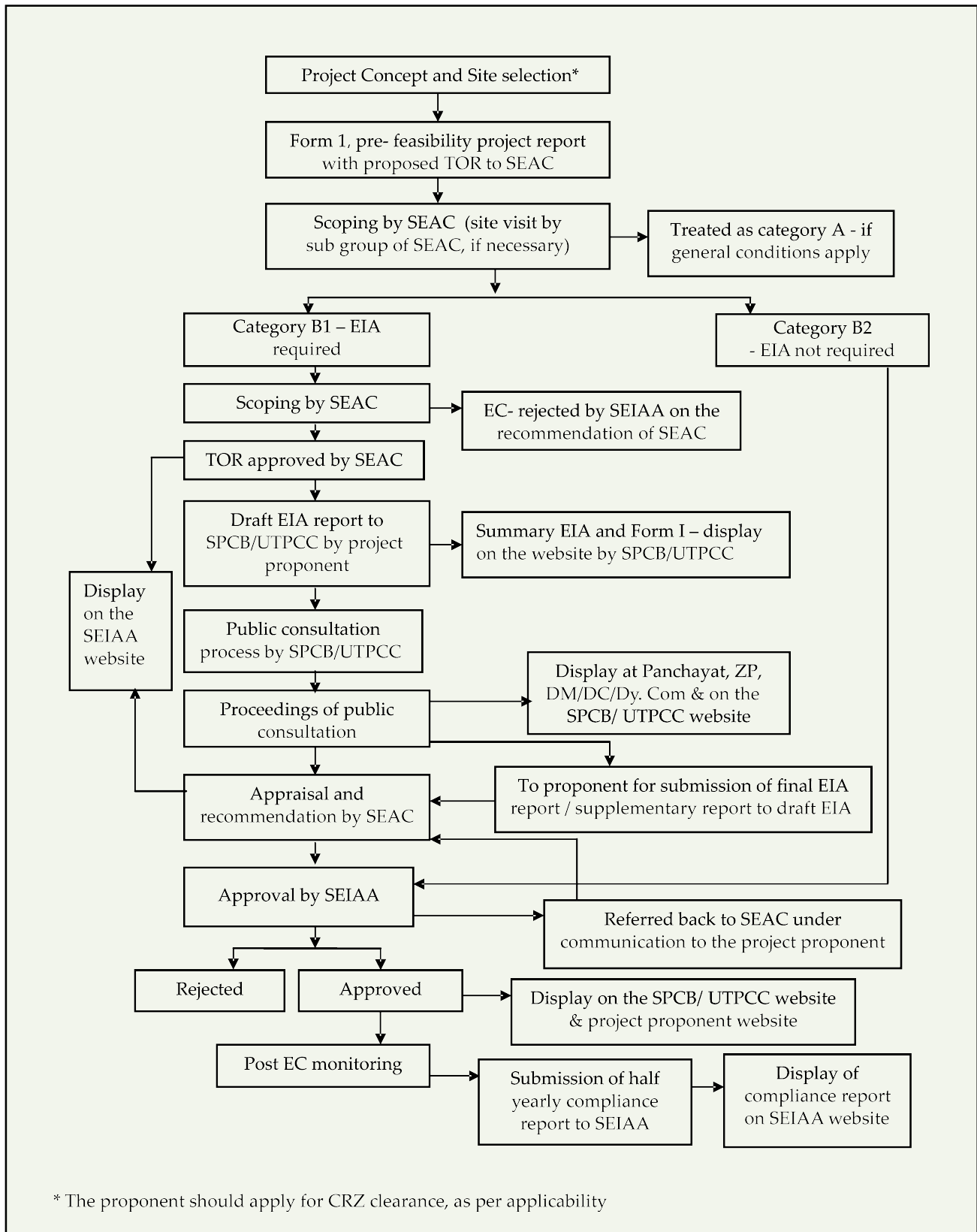


Figure 1.2 : Prior Environmental Clearance Process for Category B Projects

- The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a CRZ map duly demarcated by one of the authorized agencies, showing the project activities, w.r.t. C.R.Z (at the stage of TOR) and the recommendations of the State Coastal Zone Management Authority (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the CRZ notification, 1991 for the activities to be located in the CRZ[#]
- The projects to be located within 10km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory corridors of wild animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC)[#]
- For the projects located in critically polluted areas as notified by CPCB, the project proponent shall make available a copy of their application for the TOR to the concerned SPCB. The SPCB should either send its representative at the time of consideration of the proposal by the EAC, at the stage of appraisal of the project for prescribing TOR or consideration of EC or provide their written comments with respect to pollution load in terms of ambient air quality, water quality or solid/ hazardous waste management^{##}

[#] S.O No. 3067 (E) dated 1st December 2009 of MoEF

^{##} Circular dated 25th August 2009 of MoEF

1.3 Terms of Reference (TOR)

Terms of Reference (TOR) for the Highway projects is prepared and attached as “**Annexure 1**” to this document. In addition, the proponent is required to identify specific issues, if any, pertinent to the project and include those issues also in the TOR for preparation of EIA and EMP report upon approval of the TOR by the Expert Appraisal Committee.

1.4 Validity of Environmental Clearance

The prior environmental clearance granted is valid for a period of five years. The regulatory authority concerned may extend this validity period by a maximum period of five years.

1.5 Post Environmental Clearance Monitoring

In respect of category A projects, it shall be mandatory for the project proponent to make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the district or state where the project is located and in addition, this shall also be displayed in the project proponent’s website permanently.

In respect of category B projects, irrespective of its clearance by MoEF/ SEIAA, the project proponent shall prominently advertise in the newspapers indicating that the project has been accorded environmental clearance and the details of MoEF website where it is displayed.

The project management shall submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions on 1st June and 1st December of each calendar year. All such reports shall be public documents. The latest such compliance report shall be displayed on the web site of the concerned regulatory authority.

1.6 Transferability of Environmental Clearance

A prior environmental clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor or the transferee with a written “no objection” by the transferor, to, and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period.

1.7 Generic Structure of Environmental Impact Assessment Document

In terms of the EIA notification of the MOEF dated 14th September 2006, the generic structure of the EIA document shall be as under:

- ▶ Introduction
- ▶ Project Description
- ▶ Analysis of Alternatives (Technology and Site)
- ▶ Description of the Environment
- ▶ Anticipated Environmental Impact & Mitigation Measures
- ▶ Environmental Monitoring Program
- ▶ Additional Studies
- ▶ Project Benefits
- ▶ Environmental Cost Benefit Analysis
- ▶ Environmental Management Plan
- ▶ Summary & Conclusion
- ▶ Disclosure of Consultants engaged

1.8 Identification of Project Proponent

Profile of the project proponent contact address with -mail, fax, phone numbers, implementing organization and project consultants should be furnished. All correspondence with the Ministry of Environment & Forests including submission of application for TOR/ Environmental Clearance, subsequent clarifications, as may be required from time to time, participation in the EAC meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory should also submit a document in support of his claim of being an authorized signatory for the specific project

1.9 Brief Description of the Project

Details of the project nature, size, location and its importance to the country and the region are to be included. Project site description- survey/ village, tehsil, district, state & extent of the land, latitude & longitude of the boundaries should be furnished.

Description of existing environmental laws/ regulations on the proposed activity is to be brought out clearly. If there are any notified restrictions/ limitations from environmental angle, issued by the district administration, state or central government, the same should be furnished. Details of litigation(s) pending against the project/ proposed site and or any direction passed by the court

of law against the project, if any, should be stated. Any other local/ state regulations concerning the development projects on conversion of land use, the same should be adopted as per the procedures. Approval/ clearance required under the following acts should be specifically stated:

- ▶ The Forest (Conservation) Act, 1980
- ▶ The Wildlife (Protection) Act, 1972
- ▶ The CRZ Notification, 1991

In case of expansion/ modernization of the project, the environmental compliance status for the existing project should be furnished for the following:

- ▶ Status of environmental clearance and conditions compliance for the existing project as applicable.
- ▶ Road factors :
 - ◆ Land width available
 - ◆ Geometrics – Curvature, Gradient, and pavement width etc
 - ◆ Structural condition of road and road structures
- ▶ Traffic factors :
 - ◆ Traffic volume- vehicles per day,
 - ◆ Traffic composition
 - ◆ Average speed of travel,
 - ◆ Time delays if any at railway crossings,
 - ◆ Presence of road intersection – nos./ km,
 - ◆ Access control,
 - ◆ Accidents – fatal and injury accidents per year

1.10 Environmental Standards and Code of Practices

National standards and codes of practice of Indian Roads Congress (IRC) and MoSRT&H particular to environmental issues, which are relevant to the proposed project, should be furnished.

Details of the scope of study as per the Terms of reference approved by the Expert Appraisal Committee and the details of regulatory scoping carried out should be mentioned

PROJECT DESCRIPTION

2.0 General

The description of the project to be given in this chapter of the EIA study report should be reasonably adequate to understand the likely overall impact of the project construction and operational phases on various facets of environment and should include:

- ▶ Project coverage, master plan, phasing and scope
- ▶ Relevance of the project in the light of the existing development plans of the region / state / nation
- ▶ Description of all alternative alignments considered avoiding the ethnic minorities living in the proposed right-of-way
- ▶ Procedures and criteria adopted for selection of the alignment of right of way, alternative alignments considered, if any, details of land acquisition involved, rehabilitation of villages/ communities if any, proposed methods there of etc.,
- ▶ Overall suitability of the identified alignment and the proposed activity in the light of the existing environmental acts and serious deviations, if any

2.1 Broader Details of the Project and Location

- ▶ Description of the alignment, broad geology, topography, connectivity, demographic aspects, socio, cultural and economic aspects, villages, settlements
- ▶ Details of environmentally sensitive places, land acquisition, rehabilitation of communities / villages and present status
- ▶ Historical data such as climatic conditions, rainfall, history of cyclones, earthquakes etc
- ▶ Technologies involved for design and construction

Essential Maps to be Provided

- ▶ Highway alignment plan with the help of latest available cloud free satellite imagery of project alignment in 1:25,000 scale, and surrounding area covering 10 Km distance on either side of the proposed right of way showing the details of (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically polluted areas as identified by the Central Pollution Control Board from time to time, (iii) Eco-sensitive areas as notified under section 3 of the E (P) Act, 1986, such as Mahabaleshwar, Panchgani, Matheran, Pachmarchi, Dahanu, Doon Valley, and (iv) Inter-state boundaries and international boundaries
- ▶ Alignment plan, with details such as nature of terrain (plain, rolling, hilly), details of villages, tehsil, districts and states, latitude and longitude for important locations falling on the alignment shall be submitted

- ▶ A map derived from the recent satellite imagery covering aerial distance of 15 Km from the proposed alignment delineating environmental sensitive areas as specified in Form I of EIA notification dated 14th Sep 2006
- ▶ Land use map of the study area to 1: 25,000 scale based on recent satellite imagery of the study area 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
- ▶ Area drainage map covering 500 meters on either side of proposed right of way shall be clearly indicated. In case of any proposed diversion of nallah/ canal/ river either during the construction phase or operational phase, same shall also be shown in the map
- ▶ Detailed ground surveyed map in 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archeological & religious, monuments etc.

The List of critically polluted industrial clusters/ areas identified by CPCB is given in **Annexure 2**

2.2 Activities for Site Preparation

- ▶ 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 provided. Source and type of fill materials and its storage places should be furnished
- ▶ If the proposed route involves stripping, the details of the area to be stripped, locations, volume and quantity of earth to be removed, type of soil and proposal for utilization of removed top soil with location of dump site to be provided
- ▶ 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 its utilization plan or location of dump site to be provided
- ▶ If the proposed alignment is passing through any hilly area and avalanche area the details to be provided
- ▶ If the proposed route involves tunneling, the details of the tunnel and locations of tunneling with geological structural fraction should be provided. Quantity and type of cut material and its utilization plan should or location of dump be submitted
- ▶ In case of road passes through a flood plain of the river, the details of micro drainage, flood passages and information on flood periodicity in the area should be provided.
- ▶ If the proposed project involves any land reclamation*, details to be provided for the activity for which land to reclaimed and the area of land to be reclaimed
- ▶ If the proposed route involves any migratory path of animals, details about fauna, habitat and period of the year in which activity take place, should be provided
- ▶ Is there a possibility that the construction of roads will cause impact such as destruction of forest, poaching, reduction in wetland areas, if so, details should be provided
- ▶ If there will be any change in the drainage pattern after the proposed activity, details of changes should be furnished
- ▶ If the proposed route is passing through a city or town, with houses and human habitation on either side of the road, the necessity for provision of service ducts to be studied
- ▶ Whether project involves cutting/ disturbance of mangroves? If so, the details should be furnished

- ▶ Whether the project involves any dredging? If so, details to be given
- ▶ Whether any likely ingress of saline water into groundwater due to the proposed project?
(* Fill material and land reclamation shall be planned as per Fly ash Rules 2009, where ever applicable)

2

If the Project Attracts the Provisions of CRZ Notification

- ▶ In case the proposed route falls totally or partially in CRZ area, indicate the category of the area and also show under what provision this activity is permitted
- ▶ CRZ maps indicating the High Tide Line (HTL), Low Tide Line (LTL), demarcated by one of the authorized agencies and the project activities superimposed on the map shall be submitted on 1:5000 scale map at the stage of TOR and recommendations of the State Coastal Management Authority at the stage of EC

2.3 Summary of Project Details

| S.No | Description | Quantity |
|------|---|----------|
| 1 | Length of new alignment proposed (kilometers) | |
| 2 | Width of the new alignment (meters) | |
| 3 | Length of existing alignment proposed to be strengthened/ widened (kilometers) | |
| 4 | Width of the existing alignment (meters) | |
| 5 | Width of the existing alignment after widening (meters) | |
| 6 | Total length of the alignment (kilometers) | |
| 7 | Number of bridges Major Minor | |
| 8 | Length of bridges (meters) Width of bridges (meters) | |
| 9 | Number of culverts | |
| 10 | Length of culverts (meters) | |
| 11 | Number and distance (meters) between underpasses | |
| 12 | Number of intersections | |
| 13 | Length of intersections (meters) | |
| 14 | Number of railway crossings | |
| 15 | Length of railway crossings (meters) | |
| 16 | Number of villages through which alignment passes | |
| 17 | Population of the villages through which alignment passes | |
| 18 | Length of new alignment proposed in agricultural land | |
| 19 | Width of new alignment proposed in agricultural land | |
| 20 | Length of new alignment proposed in forest area | |
| 21 | Width of new alignment proposed in forest area | |

2.4 Natural Resources

Requirement of natural resources for construction along with their sources, its transportation, should be furnished. Water requirement during the construction stage along with its availability should be furnished. Utilization of solar energy for lighting etc should be explored. Utilization of fly ash should be explored. Raw materials and water requirement details may be given as in **Table 2.1 & 2.2.**

2.5 Man Power Requirement

The proponent shall indicate the requirement of various categories of manpower such as skilled, semi-skilled workers, technicians, engineers, managers and other professionals for both construction phase and operational phases

2.6 Project Implementation Schedule

The proponent shall submit the project implementation schedule bar chart and other relevant and related things

ANALYSIS OF ALTERNATIVES

3.0 General

In case, the scoping exercise results in the need for consideration of alternative solutions/ alignments/ technologies on account of predicted environmental impact, the details of such alternatives should be included in this chapter.

3.1 Consideration of Alternatives

Sound and sustainable highway project involve the consideration of two types of alternatives. These are usually referred to as alternative solutions to the transportation problem and alternative designs for a selected project. The first is an early planning period where general environmental impact from alternative solutions to a road transportation problem are identified and compared, resulting in the selection of an environmentally acceptable project option. This analysis should identify the preferred solution to the transportation problem for which the planning activity was initiated. The second stage is at the project design level, where the optimal or preferred project design is selected in terms of alignment, grade, pavement treatment, median type etc.

In describing the project and its alternatives, four key characteristics of each proposed alternative should be determined before a comparative analysis can be undertaken. The four characteristics are

- ▶ Spatial requirements
- ▶ Natural resources (including productive land) consumption
- ▶ Human resource benefits and costs (such as resettlement versus better access to market) and;
- ▶ Waste production during the construction and operation/ maintenance periods

These details shall comprise of:

- ▶ Description of various alternatives viz locations or layouts or technologies studied
- ▶ Description of each alternative
- ▶ Summary of adverse and positive impact of each alternative
- ▶ Selection of the alternative which is the best with respect to use of resources and adverse environmental impact

DESCRIPTION OF THE ENVIRONMENT

4.0 General

Baseline conditions define the characteristics of the existing environment and shape projected future conditions, assuming no project is undertaken. They provide the basis from which project impact comparisons are made. Baseline analysis should take into account:

- ▶ Past trends in environmental quality
- ▶ Other current or proposed development programs in the project area.

Environmental components to be considered in relation to highway projects are: (a) land, (b) water, (c) air and meteorological (d) biological (e) noise (f) solid waste management (g) socio economic and health environment. Hence it is necessary to ascertain the baseline data of these environmental components. As a primary requirement of EIA process, the proponent should collect baseline data in the project area as well as the study area, which is likely to be affected by the project activity for one season (non-monsoon).

4.1 Study Area

As a primary requirement of EIA process, the proponent should collect primary baseline data in the right of way as well as the area falling within 500 meters on either side of right of way and secondary data should be collected within 15 km aerial distance as specifically mentioned at para 9(iii) of Form I of EIA Notification 2006. The study area mentioned in this document should be considered for guidance purpose. But the exact study area for different environmental components is to be submitted for review and appraisal by the expert appraisal committee. Map of the project area and study area clearly delineating the location of various monitoring stations (air / water / soil and noise) superimposed with locations of habitation should be shown. Monitoring should be done as per CPCB guidelines.

4.2 Land Environment

- ▶ Land use plan should be ascertained from the existing approved master plan of the region, if any. The environmental sensitivity areas as mentioned at Para 9 (III) of form I of EIA notification 2006, covering the following within an aerial distance of 15 km should be furnished along with the aerial distance from the project boundary:
 - ◆ Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value
 - ◆ Areas which are important or sensitive for ecological reasons – wetlands, mangroves watercourses or other water bodies, coastal zone, biospheres, mountains, forests
 - ◆ Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration
 - ◆ Inland, coastal, marine or underground waters
 - ◆ State, national boundaries

- ◆ Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas
 - ◆ Defense installations
 - ◆ Densely populated or built-up area
 - ◆ Areas occupied by sensitive man-made land uses (*hospitals, schools, places of worship, community facilities*)
 - ◆ Areas containing important, high quality or scarce resources (*groundwater resources, surface resources, forestry, agriculture, fisheries, tourism, minerals*)
 - ◆ Areas already subjected to pollution or environmental damage (*those where existing legal environmental standards are exceeded*)
 - ◆ 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*)
- ▶ Details of villages, survey numbers of the area, tehsil, districts and states, elevation above mean sea level & latitude and longitude of important locations and existing drainage system throughout the proposed highway alignment should be collected
 - ▶ The details of demographic profile should be given as in **Table 4.1**
 - ▶ Data of the proposed land and its availability is to be ascertained from local authorities, revenue records etc.
 - ▶ Description of the existing situation of the land along the alignment, study of the land use pattern, habitation, cropping pattern, forest area, environmentally sensitive places, mangroves, notified industrial areas, sand dunes, nature of the terrain (plain, rolling, hilly), sea, river, lake etc. by employing remote sensing techniques and also through secondary data sources. The land use/ land cover classification system as per **Annexure 3** should be furnished
 - ▶ Details of the alignment passing totally or partially in CRZ area and applicable notified restrictions should be furnished
 - ▶ Identification of major and minor irrigation tanks, with in 2 kms on the upstream side of alignment, in consultation with local and irrigation authorities should be done. This will help to identify the vulnerability due to breeches during the heavy rainfall
 - ▶ Identification of quarries, stone crushers and borrow areas should be under taken. This will help in assessing the impact due to these activities and to prepare suitable mitigation plan. The details of identified quarries and borrow areas should be given as in **Table 4.2 & 4.3**
 - ▶ Inventory of the environmental features such as trees/ forests if any/ drainage lines, rivers and water crossings/ irrigation water courses/ water bodies/ grazing lands/ cultural properties/ utilities/ community facilities/ schools/ hospitals/ seasonal markets or cultural congregations etc, along the proposed highway should be prepared

Geology

The geological information such as rock types, history of any volcanic activity, seismicity, and land slides and associated hazards should be covered. The alignment segments falling under each seismic zone should be listed. Details of precautionary measures proposed for the section of alignment falling under zone 5 should be listed.

Soil data

The soil profile of the highway alignment should be presented based on the soil series maps of National Bureau of Soil Survey and Land Use.

The suggested parameters for soil analysis are pH, Electrical conductivity, sand (%), silt (%), clay (%), texture, moisture retention capacity (%), infiltration rate (mm/ hour), bulk density (gm/ cc), porosity (%), organic matter (%), nitrogen (mg/ 1000g), potassium (mg/ 1000g), phosphorous (mg/ 1000g), sulphates and sodium sulphates. The soil sample locations and monitored values should be given as in **Table 4.4**.

4.3 Water Environment

Details of surface water bodies within right of way and within 500mts from the right of way should be documented along with the present usage. The description of these water bodies should be given as in **Table 4.5** Monitoring of surface water and ground water within the study area should be furnished. The samples should be collected and analyzed as per the standard procedures. The description of the water sampling locations should be given as in **Table 4.6 & 4.7** and the monitoring results should be given as in **Table 4.8 & 4.9**. The flow and other details of the streams crossing the alignment should be furnished.

The Central Pollution Control Board has stipulated criteria for raw water usages, use based classification of surface water and these are given in **Annexure 5**.

4.4 Air Environment

Meteorological Data

Meteorological data covering maximum and minimum wind speed, wind direction, rain fall, relative humidity and temperature for atleast 10 years period should be presented from the nearest meteorological station. Recording velocity and direction of wind along the proposed alignment, where sensitive receptors are located nearby, should be generated by installing continuous and self-recording anemometer. History of cyclones, earth quakes and snow fall data shall be collected from the nearest meteorological station for a period of 50 years.

Ambient Air Quality

Baseline data for the parameters - particulate matter size less than 10 μ m or PM₁₀ μ g/ m³, particulate matter size less than 2.5 μ m or PM_{2.5} μ g/ m³, sulphur dioxide (μ g/ m³), nitrogen dioxide (μ g/ m³) and carbon monoxide (μ g/ m³) in the study area should be generated for one season other than monsoon as per CPCB norms. The monitoring locations and the result should be given as in **Table 4.10 & 4.11**. While selecting the monitoring locations specific importance should be given where ever sensitive environmental receptors exist. The National Ambient Air Quality Standards is given in **Annexure 4**.

4.5 Noise Environment

Baseline data in the study area should be generated. While selecting the monitoring locations specific importance is to be given for sensitive environmental receptors like thickly populated areas, hospitals, schools, wildlife corridors etc. Hourly monitoring of noise levels (Leq) should be recorded for 24 hours by using integrated noise meter. Noise standards have been designated for different types of land use, i.e. residential, commercial, industrial areas and silence zones as per

the Noise Pollution (Regulation and Control) Rules 2000 (**Annexure 6**). The description of noise monitoring locations should be given as in **Table 4.12**.

4.6 Biological Environment

The baseline status for biological environment should be established by studying distribution pattern, community structure, population dynamics and species composition of flora and fauna. The following should be covered:

- ▶ Details on secondary data on the existing flora and fauna in the study area, carried out by an university/ institution under the relevant discipline (such as BSI, ZSI, WII, etc) should be included in the list of flora and fauna along with classification as per Schedule given in the Wild Life Protection Act, 1972 and in the Red Book Data and a statement clearly specifying whether the study area forms a part of an ecologically sensitive area or migratory corridor of any endangered fauna. The list of endangered and endemic species should be given as in **Table 4.13**.
- ▶ If the proposed project site involves any breeding or nesting ground, details about the name of the aquatic organism, type of habitat and period of year in which activity takes place should be provided
- ▶ If the proposed route requires cutting of trees, then the information should be provided for number of trees to be cut, their species and whether it also involved any protected or endangered species
- ▶ Location of national parks, sanctuary, and biosphere reserve, tiger reserve, elephant reserve and wildlife migratory routes with in aerial distance of 10 km either side of proposed alignment should be furnished
- ▶ Information on dependence of ethnic minorities on minor forest products should be furnished

4.7 Socio Economic and Health Environment

Baseline data in the study area particularly on human settlements, health status of the communities, existing infrastructure facilities should be collected through secondary sources. Present employment, livelihood and awareness of the population about the project should be collected. **Annexure 7** gives the illustrative types of socio-economic impact for reference.

The data required for R&R of the effected population as per the government norms should be collected.

Government of Jammu and Kashmir

OFFICE OF THE EXECUTIVE ENGINEER (R&B) DIVISION CHADOORAEmail Id. xenrnbchd@gmail.com

Ghulam Nabi Bhat,
S/o Ab Satar Bhat,
R/o Wathora Chadoora
Contact No. 7006061684

No: EE/R&B/CHD/ 1794-98

Dated: 29-06-2026

Subject: Request for information under the Right to Information Act, 2005.

Kindly find enclosed the requisite information sought by you under Right to Information Act, 2005.

Executive Engineer, *86*
PW(R&B) Division Chadoora.

Copy to:

1. Superintending Engineer PW(R&B) Circle Budgam for favour of information.

593
OFFICE OF THE EXECUTIVE ENGINEER (R&B) DIVISION CHADOORA

Email Id. xenrnbchd@gmail.com/xenrnb-chd@jk.gov.in

Phone No. 01951-451320

The Superintending Engineer
PWD(R&B) Circle Budgam.

No. EE/R&B/CHD/ 491-92

Dt: 23/04/2026

Subject:- OA. NO. 229/2025 titled Gh Nabi Bhat V/s National Highway authority of
india and ors.

Reference: SE/R&B/BUD/LEG/735-36 Dt. 22-04-2026.

Madam,

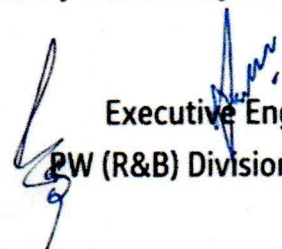
With reference to the subject and communications cited above, it is to submit that the matter regarding water logging and damage to the orchard/agricultural land at Wathoora was examined through the Assistant Executive Engineer, R&B Sub-Division Chadoora.

A detailed field report has been furnished by the concerned AEE vide his office letter No. CSD/58 Dt. 21-04-2026.

- The primary cause of water logging in the said orchard is the ongoing construction of the Srinagar Ring Road by the National Highways Authority of India (NHAI). The earth filling carried out for the road embankment has adversely affected the natural drainage system of the area.
- The cross drainage pipes, which were previously laid by this Division for proper water discharge, have been choked and blocked due to construction activities and the dumping of materials associated with the Ring Road project by NHAI.
- It is clarified that no construction activity has been undertaken by the R&B Division Chadoora at the said location during the reported period.

Therefore, as per the ground report, the accumulation of water and subsequent damage to the orchard is entirely attributable to the works being executed by NHAI.

The factual report along with the communication from the AEE is hereby submitted for favour of your kind information and further necessary action at your end.


Executive Engineer,
PW (R&B) Division Chadoora

Copy to the:-

1. Assistant Executive Engineer R&B Sub-Division Chadoora for information.



Saurabh Sharma <saurabh.envirolawyer@gmail.com>

Advance Service of Reply to the Additional Affidavit of R-2

1 message

Saurabh Sharma <saurabh.envirolawyer@gmail.com>

Wed, Jul 1, 2026 at 12:26 PM

To: Vijay Kumar <vijay3312@gmail.com>, Madhu Sweta <madhu@singhania.in>, Brij Sharma <membersecy.pcb@jk.gov.in>, cs-jandk <cs-jandk@nic.in>

Dear Sir/s,

Please find attached the advance service of Reply on behalf of the Applicant to the Additional Affidavit dated 07.03.2026 of Respondent No.2 in OA 229/2025 titled Ghulam Nabi Bhat vs. NHAI & Ors., listed on 02.07.2026

Regards

--

Saurabh Sharma, Advocate
Counsel for the Applicant
+91 9810983559

**Reply on behalf of the Applicant to Additional Affidavit of R2.pdf**

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