F. No. 10-30/2018-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj
New Delhi - 110 003

Dated: 8th June, 2018

To

The Project Director (PIU-Chennai)
National Highways Authority of India
'SRI Tower' 3rd Floor, DP-34 (SP),
Industrial Estate, Guindy
Chennai - 600 032

Sub: 'Development of 8 lane access controlled Chennai-Salem Greenfield Corridor of 277.3 km Tambaram to Harur Section of NH-179B, Harur to Salem Section of NH-179A, Chengalpattu to Kancheepuram Section of NH-132B, Semmampadi to Chetpet Section of NH-179D and Polur to Tiruvannamalai Section of NH-38' by M/s National Highway (NHAI) Authority of India - Terms of Reference regarding.

Sir,

This has reference to your letters No. NHAI/18011/252/2018/PIU-Chennai/1503 dated 19th April, 2018 NHAI/18011/252/2018/PIU-Chennai/1627 dated 26th April, 2018, submitting above mentioned proposal for seeking Terms of Reference (TOR) as per the provisions of the Environment Impact Assessment (EIA) Notification, 2006 and subsequent amendments under the Environment (Protection) Act, 1986.

2. The proposal for 'Development of 8 lane access controlled Chennai-Salem Greenfield Corridor of 277.3 km Tambaram to Harur Section of NH-179B, Harur to Salem Section of NH-179A, Chengalpattu to Kancheepuram Section of NH-132B, Semmampadi to Chetpet Section of NH-179D and Polur to Tiruvannamalai Section of NH-38' by M/s National Highway (NHAI) Authority of India was considered by the Expert Appraisal Committee (EAC) for Industrial Estate/Area, SEZ and Highways projects in its 189th meeting held on 7th May, 2018 in the Ministry of Environment, Forest and Climate Change, New Delhi.

[Online Proposal No.: IA/TN/MIS/74037/2018 submitted online on 28th April, 2018]

3. During the above meetings, the project proponent along with EIA Consultant M/s Feedback Infra Private limited, Gurugram made a presentation and provided following information to the Committee:

- The proposed project is a development of 8 lane Greenfield Corridor (Total Length of 277.300 km) for development of Tambaram to Harur Section of NH-179B, Harur to Salem Section of NH-179A and 3 nos. of Spurs namely; Chengalpattu to Kancheepuram Section of NH-132B, Semmampadi to Chetpet Section of NH-179D and Polur to Tiruvannamalai Section of NH-38.
- Proposed Greenfield Corridor starts near Chennai ring road in Vandalur and ends at NH-544 bypassing Salem. Proposed alignment passes through Kanchipuram, Tiruvannamalai, Krishnagiri, Dharampuri and Salem Districts of Tamil Nadu State
- The project envisages construction of 3 Spurs namely; Kanchipuram Spur (length-30.000 km) at km 24.050, Chetpet Spur (length- 4.700 km) at km 94.800, Thiruvannamalai Spur (length- 16.000 km) at km 122.700.
- The major settlements along the alignment are Chennai, Kanchipuram, Tiruvannamali, Harur and Salem.
- Four alignment options (3 existing routes improvement and one proposed Greenfield Corridor) were analysed for the project and comparison has been drawn based on Techno-Commercial characteristics. Major technical aspects for comparative analysis were environment, social and design concepts. Efforts were made to avoid the forest and settlement areas to the maximum extent possible.
- The land use pattern on 10km either side of the project road is predominantly agriculture followed by habitation and Forest Area.
- Tentative length of affected forest area along the proposed alignment is about 13.290km with about 120 ha of affected forest area considering the RoW of 90m. Chainage wise distribution of the forest area is given in Table below.

S. No.	Tentative Chainage		Tentative Length (m)	District	Division Name	Reserved Forest Name
	From	To				
1	13.000	13.560	460	Kancheepuram	Chengalpattu	Siruvanjur
2	81.000	81.340	340	Tiruvannamalai	Tiruvannamalai(N)	Nambedu
3	107.300	108.640	1340	Tiruvannamalai	Tiruvannamalai(N)	Alialamangalam
4	171.600	172.290	690	Tiruvannamalai	Tiruvannamalai(S)	Anandavadi
5	175.650	176.360	710	Tiruvannamalai	Tiruvannamalai(S)	Ravandavadi
6	180.900	182.700	1800	Tiruvannamalai	Tiruvannamalai(S)	Ravandavadi
7	38.580	35.800	2780	Salem	Salem	Manjavadi Ghat & Pallipatti Extn

S. No.	Tentative Chainage		Tentative Length	District	Division Name	Reserved Forest Name
8	14.600	13.240	1360	Salem	Salem	Jarugumalai
9	12.780	12.000	780	Salem	Salem	Jarugumalai
10	11.100	10.250	855	Salem	Salem	Jarugumalai
11	9.945	9.800	145	Salem	Salem	Jarugumalai
Tiruvannamali Spur						
1	6.250	8.280	2030	Tiruvannamalai	Tiruvannamalai(S)	Sorakolathur

- No wildlife sanctuary or national park is located within 10km radius of the proposed alignment. However, Arignar Zoological Park, Chennai is located about 1.5 Km from the proposed start point of the project.
- Total land acquisition for the proposed alignment is about 2560 ha. There are about 32 settlements along the proposed alignment.
- Proposed RoW for the greenfield corridor is in the tune of 90m except stretches between 0.000 to 25.600 (at start) and 21.800 to 0.000 (at end), where RoW is confined to 70m to minimise the resettlement impacts.
- 23 Major bridges, 1 MJB cum ROB, 156 Minor bridges, 578 Culverts, 2 MNB cum VUP, 2 MNB cum VUP Grade-II, 9 Flyovers, 1 MJB cum Flyover, 22 VUP's, 2 VOP's, 33 VUP Grade-II and 3 tunnels are proposed along the project stretch for free passage to locals and avoid any impact on local hydrology.
- 8 nos. Toll Plaza and 10 nos. Bus & Truck Lay Bays shall be provided.
- Safety measures will be provided as per NHAI Safety Manual and IRC: SP 88 and Expressway Manual IRC: SP 99. Safety Measures, as provided in NHAI Safety Manual i.e. Unit-3 (pertaining to Traffic Safety, such as traffic control zone, advance warning zones, traffic control devices, regulatory & warning signs cylindrical cones, drums, flagman, Barricades, Pedestrian Safety, Speed control, etc.) and other safety guidelines and measures suggested in Unit-4 (Construction Zone Safety), Unit-5 (Temporary Structures Safety), Unit-6 (Workers & Work Zone Safety), Unit-7 (Electrical & Mechanical Safety) will be strictly implemented. All required illustrative plans for safety at construction sites keeping in view all situations highlighted IRC: SP 55 and in NHAI Safety Manual will be prepared and strictly implemented.
- Materials requirement are about Aggregates- 54,00,800 cum, Sand- 14,54,200 cum, Cement- 11,09,800 MT, Bitumen- 1,63,000 MT, Steel- 1,28,500 MT, Earth Material- 93,16,900 cum.
- Water Requirement: Total requirement of water for construction is estimated to 11,20,000 KL during the construction phase of the project which will be arranged from tanker supply.
- Tree cutting, types, numbers, girth sixe etc.:About 6400 trees are likely to be affected due to proposed RoW of 90m. Efforts will be made to minimize the trees loss by restricting tree cutting with formation width. Avenue plantation shall be

carried out as per IRC SP21:2009 on available RoW apart from statutory requirements of Compensatory Afforestation. The tree enumeration of total trees and affected trees will be prepared during detailed EIA Study and the preparation of Forest Clearance proposals. The inventory will include Tree species, girth and height.

- Rehabilitation involved if any: The details of structure to be rehabilitated or resettled shall be provided in the EIA report.
- Water bodies, diversion if any: The proposed stretch passes through 7 rivers and bridges shall be proposed at them.
- Court cases if any: None
- Investment Cost: The total estimated project civil cost is approximately INR 10,000 Crores.
- Employment potential: 1800 (during construction phase only)
  Benefits of the project: Better connectivity of Chennai and Salem to Other parts of the state and neighbor states.

4. Based on the deliberations in the meeting and information provided by the proponent in support of the project, the EAC, in its 189th meeting on 7th May, 2018, recommended for grant of TOR. As per the recommendation of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords TOR for Construction of '8-lane of Bangalore-Chennai Expressway Phase-I from Bangalore at km 0.000 and ends at km 71.000 near Village N.G. Hulkur, Taluk Bangarpet, District Kolar (Karnataka) (Length of 73.050 including Spur Alignment of 2.05 km)' by M/s National Highways Authority of India and for preparation of EIA/EMP report with public consultations subject to compliance of all conditions as notified in the standard ToR applicable for highways and specific conditions, as mentioned below:

A. Project Specific Conditions: EAC recommended the following additional ToR to this project in addition to standard ToR:

(i) Reanalyse options of possible routesin respect of their suitability from environmental point of view and issues related to R&R.

(ii) Possibility of re-alignment from Chengram to Salem to avoid Kalrayan Hill Forest.

(iii) Thorough assessment of proposed road alignment on wetlands including tanks and small reservoirs along the alignment and its mitigation strategy.

(iv) The water should be procured from authorised tankers. Details of the authorised agency be mentioned and also needs to submit the permission to use water from concerned department.

(v) No objection certificate to be obtained from the Chief Wildlife Warden that proposed alignment is not passing through any wildlife corridor and also that

no wildlife sanctuary and Eco-Sensitive Area/Zone are within the 10 km of proposed alignment.

(vi) Comprehensive assessment of impact of road on local biodiversity, wildlife corridors and its mitigation strategy from a nationally recognized institute.

B. General Conditions

(i) A brief description of the project, project name, nature, size, its importance to the region/state and the country shall be submitted.

(ii) In case the project involves diversion of forests land, guidelines under OM dated 20.03.2013 shall be followed and necessary action be taken accordingly.

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

(iv) Detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive areas, mangroves, notified industrial areas, sand dunes, sea, rivers, lakes, 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 shall be submitted.

(v) Describe various alternatives considered, procedures and criteria adopted for selection of the final alternative with reasons.

(vi) 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. alongwith detailed ground survey 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, shall be submitted.

(vii) If the proposed route is passing through any hilly area, the measures for ensuring stability of slopes and proposed measures to control soil erosion from embankment shall be examined and submitted.

(viii) If the proposed route involves tunneling, the details of the tunnel and locations of tunneling with geological structural fraction should be provided. In case the road passes through a flood plain of a river, the details of micro-drainage, flood passages and information on flood periodicity at least of the last 50 years in the area shall be examined and submitted.

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(ix) If the project is passing through/located within the notified ecologically sensitive zone (ESZ) around a notified National Park/Wildlife Sanctuary or in the absence of notified ESZ, within 10 km from the boundary of notified National Park/Wildlife Sanctuary, the project proponent may simultaneously apply for the clearance for the standing committee of NBWL. The EC for such project would be subject to obtaining the clearance from the standing committee of NBWL.

(x) Study regarding the animal bypasses/underpasses etc. across the habitation areas shall be carried out. Adequate cattle pass for the movement of agriculture material shall be provided at the stretches passing through habitation areas. Underpasses shall be provided for the movement of Wild animals.

(xi) Study regarding in line with the recent guidelines prepared by Wildlife Institute of India for linear infrastructure with strong emphasis on animal movement and identifying crossing areas and mitigation measures to avoid wildlife mortality.

(xii) The information shall be provided about the details of the trees to be cut including their species and whether it also involves any protected or endangered species. Measures taken to reduce the number of the trees to be removed should be explained in detail. The details of compensatory plantation shall be submitted. The possibilities of relocating the existing trees shall be explored.

(xiii) Necessary green belt shall be provided on both sides of the highway with proper central verge and cost provision should be made for regular maintenance.

(xiv) 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 bypasses/diversions/under passes shall be examined and submitted. The proposal should also indicate the location of wayside amenities, which should include petrol stations/service centres, rest areas including public conveyance, etc.

(xv) Details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges shall be submitted.

(xvi) The 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) shall be addressed.

(xvii) 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 shall be examined and submitted.

(xviii) The possibilities of utilizing debris/waste materials available in and around the project area shall be explored.

(xix) The details on compliance with respect to Research Track Notification of Ministry of Road, Transport and Highways shall be submitted.

(xx) The details of sand quarry and borrow area as per OM No.2-30/2012-IA-III dated 18.12.2012 on 'Rationalization of procedure for Environmental Clearance for Highway Projects involving borrow areas for soil and earth" as modified vide OM of even No. dated March 19, 2013, shall be examined and submitted.

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

(xxii) The air quality monitoring shall be carried out as per the notification issued on 16th November, 2009. Input data used for Noise and Air quality modelling shall be clearly delineated.

(xxiii) The project activities during construction and operation phases, which will affect the noise levels and the potential for increased noise resulting from this project shall be identified. Discuss the effect of noise levels on nearby habitations 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 shall be done by using mathematical modelling at different representative locations.

(xxiv) 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 examined and carried out.

(xxv) The details about the protection to existing habitations from dust, noise, odour etc. during construction stage shall be examined and submitted.

(xxvi) 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 sites along with necessary permission.

(xxvii) If the proposed route is passing through low lying areas, details of filling materials and initial and final levels after filling above MSL, shall be examined and submitted.

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(xxviii) The water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity, quality and likely impacts on them due to the project along with the mitigation measures, shall be examined and submitted.

(xxix) The 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, shall be examined and submitted.

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

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

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

(xxxiii) If there is a possibility that the construction/widening of road may cause an impact such as destruction of forest, poaching or reduction in wetland areas, examine the impact and submit details.

(xxxiv) The details of road safety, signage, service roads, vehicular under passes, accident prone zones and the mitigation measures, shall be submitted.

(xxxv) IRC guidelines shall be followed for widening & upgradation of roads.

(xxxvi) The details of social impact assessment due to the proposed construction of the road, shall be submitted.

(xxxvii) Examine the 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.

(xxxviii) Accident data and geographic distribution shall 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.

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

(xl) Details of the properties, houses, business activities etc likely to be effected by land acquisition and an estimation of their financial losses, shall be submitted.

(xli) 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 specific project, shall be submitted.

(xlii) The environment management and monitoring plan for construction and operation phases of the project shall be submitted. A copy of your corporate policy on environment management and sustainable development, shall also be submitted.

(xliii) Estimated cost of the project including that of environment management plan (both capital and recurring) and source of funding. Also, the mode of execution of the project, viz, EPC, BOT, etc, shall be submitted.

(xliv) Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.

(xlv) Details of blasting if any, methodology/technique adopted, applicable regulations/permissions, timing of blasting, mitigation measures proposed keeping in view mating season of wildlife.

(xlvi) In case of river/ creek crossing, details of the proposed bridges connecting on either banks, the design and traffic circulation at this junction with simulation studies.

(xlvii) Details to ensure free flow of water in case the alignment passes through water bodies/river/streams etc.

(xlviii) In case of bye passes, the details of access control from the nearby habitation/habitation which may come up after the establishment of road.

(xlix) Bridge design in eco sensitive area /mountains be examined keeping in view the rock classification hydrology etc.

(l) Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.

(li) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

(lii) In case of alignment passing through coastal zones, following documents are required to furnished along with EIA/EMP report:

a. Form-I (Annexure-IV of the CRZ Notification, 2011)

b. Rapid EIA Report including marine and terrestrial component,

c. Disaster Management Report, Risk Assessment Report and Management Plan,

d. CRZ map indicating HTL and LTL, demarcated by one of the authorized agency in 1:4000 scale,

e. Project layout superimposed on the above map,

f. CRZ map covering 7 km radius around the project site, and indicating the CRZ-I, II, III & IV areas including other notified ecologically sensitive areas,

g. NOC from the concerned SPCB/UT PCC for the projects involving discharge of effluents, solid wastes, sewage and the like.

(liii) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "http://moef.nic.in/Manual/Highways".

5. Following general guidelines shall be strictly adhered:

(i) The EIA document shall be printed on both sides, as for as possible.

(ii) All documents should be properly indexed, page numbered.

(iii) Period/date of data collection should be clearly indicated.

(iv) Authenticated English translation of all material provided in Regional languages.

(v) The letter/application for EC should quote the MoEF&CC File No. and also attach a copy of the letter prescribing the TOR.

(vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.

(vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Questionnaire related to the project (posted on MoEF&CC website) with all sections duly filled in shall also be submitted at the time of applying for EC.

(viii) Grant of TOR does not mean grant of EC.

[Online Proposal No.: IA/TN/MIS/74037/2018 submitted online on 28th April, 2018]

(ix) Grant of TOR/EC to the present project does not mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.

(x) Grant of EC is also subject to Circulars and Office Memorandum issued under the EIA Notification 2006 and subsequent amendments, which are available on the MoEF&CC website: www.envfor.nic.in.

(xi) The status of accreditation of the EIA consultant with NABET/QCI shall be specifically mentioned. The consultant shall certify that his accreditation is for the sector for which this EIA is prepared.

(xii) On the front page of EIA/EMP reports, the name of the consultant/consultancy firm along with their complete details including their accreditation, if any shall be indicated. The consultant while submitting the EIA/EMP report shall give an undertaking to the effect that the prescribed TOR (TOR proposed by the project proponent and additional TOR given by the MoEF) have been complied with and the data submitted is factually correct (Refer MoEF office memorandum dated 4th August, 2009).

(xiii) While submitting the EIA/EMP reports, the name of the experts associated with/involved in the preparation of these reports and the laboratories through which the samples have been got analysed should be stated in the report. It shall clearly be indicated whether these laboratories are approved under the Environment (Protection) Act, 1986 and the rules made there under (Please refer MoEF office memorandum dated 4th August, 2009). The project Coordinator of the EIA study shall also be mentioned.

(xiv) All the TOR points as presented before EAC shall be covered.

6. A detailed draft EIA/EMP report shall be prepared in terms of the above additional TOR and should be submitted to the State Pollution Control Board for Public Hearing. Public Hearing to be conducted for the project in accordance with the provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing shall be conducted based on the TOR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the website.

7. The project proponent shall submit the detailed final EIA/EMP report prepared as per TOR including issues raised during Public Hearing to the Ministry for considering the proposal for environmental clearance within 3 years as per the MoEF&CC OM No J-11013/41/2006-IA-II(I) (Part) dated 29th August, 2017.

8. The consultants involved in preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc. vide notification of the MoEF dated 19th July, 2013.

9. The prescribed TOR would be valid for a period of three years for submission of the EIA/EMP Reports.

Reena 08/6/2018

(Raghu Kumar Kodali)
Director/Scientist F

Copy to: The Member Secretary, Tamil Nadu Pollution Control Board, No.76, Mount Salai, Guindy, Chennai – 600 032.

Reena 08/6/2018

(Raghu Kumar Kodali)
Director/Scientist F

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