To

The Executive Engineer,
Maharashtra State Road Development Corporation Ltd,
Bandra Worli Sea Link Project Office,
Opp. Bandra Reclamation Bus Depot,
Near Lilavati Hospital, K.C. Marg,

Bandra (West) - 50 (Maharashtra)

Sub: Development of Access controlled Nagpur-Mumbai Expressway from Talegaon Village, Igatpuri Taluka, Nashik District Border to Vadape, Bhiwandi Taluka, Thane District in Maharashtra by Maharashtra State Road Development Corporation Ltd – Terms of Reference - reg.

Sir,

This has reference to your application No.NMSCE-2016/02/DE-7/C No.3-Pkg-V/ENVT./2992 dated 06.06.2016 submitting the above mentioned proposal to this Ministry for seeking Terms of Reference (ToR) in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986.

2. The proposal for Development of Access controlled Nagpur-Mumbai Expressway from Talegaon Village, Igatpuri Taluka, Nashik District Border to Vadape, Bhiwandi Taluka, Thane District in Maharashtra by Maharashtra State Road Development Corporation Ltd, was considered by the Expert Appraisal Committee (EAC) in the Ministry for Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous projects, in its 160th meeting held on 28-29 June, 2016.

3. The details of the project, as per the documents submitted by the project proponents, and also as informed during the above said EAC meeting, ar reported to be as under:-

(i) The project involves development of Access controlled Nagpur-Mumbai Expressway from Talegaon Village, Igatpuri Taluka (Nashik District border 00.0 km) to Vadape, Bhiwandi Taluka (Thane District 80.2 km) in Maharashtra promoted by Maharashtra State Road Development Corporation Ltd (MSRDC).

(ii) The proposal has been designated as Package V of Nagpur Mumbai Expressway (80.2 km long) starting from Talegaon village, Igatpuri Taluk, Nashik District to Vadape village, Bhiwandi Taluka in Thane District (chainage km 626.00 to 706.20 i.e. 80.2 km).

(iii) The protected areas within 10 km from the project boundary are Tana Wildlife Sanctuary (2 km) and Tungareshwar National Park at a distance of 6.5 km, and as such due to applicability of general conditions, the proposal is covered under Category A in terms of the EIA Notification, 2006.
(iv) The project involves 156 ha of forest land and thus requires its prior diversion for non-forestry use for implementation of the project.

(v) The proposal would also affect 90 nos of residential/commercial buildings, and thus requires their resettlement.

(vi) MSRDC is developing package V for the Nagpur-Mumbai Expressway to divert and redistribute heavy traffic on existing corridor. The MSRDC considered five options and ranked the feasibility based on minimising forest areas, avoiding habitation railway over bridge structures, tunnel length and project cost. Considering all the options the project proponent has opted for option 1(C) alignment which is having a total length of 80.2 km covering Talegaon, Taluka Igatpuri to Vadape, Taluka Bhiwandi.

(vii) The Government of India is planning to start working on world class express highways in order to boost the road infrastructure for faster connectivity between different cities. Simultaneously Govt of Maharashtra intends to develop Nagpur Mumbai Expressway (NMEW) to divert and redistribute the heavy traffic on existing corridors. The proposed expressway (NMEW) will pass through 10 districts from Vidarbha through Marathwada and Konkan and culminating to financial capital Mumbai. The districts which are part of proposed green field alignments are Nagpur, Wardha, Amravati District, Yavatmal District, Washim District, Buldana District, Jalna District, Aurangabad District, Ahmadnagar District, Nasik District, Thane District and Mumbai. Besides a number of villages would also be part of the proposed NMSCE.

(viii) MSRDC is the implementing agency. The NMEW will be designated as a Maharashtra State Highway (MSH) built on Expressway standards. It will start from Jamtha on the outer ring road of Nagpur city up to Vadape village on bhivandi bypass in Thane district.

(ix) The NMEW will be developed as a high density corridor establishing high speed connectivity between Nagpur and Mumbai. As a first step in this direction the Government of Maharashtra has decided to develop and strengthen the linkages and connectivity of major cities of State with Mumbai, the state capital. Exploring the viability of one such connectivity between Nagpur Mumbai, which includes links with and through Butibori-Wardha-Karanja-Aurangabad-Sinnar-Ghoti-Vadape along with link from Karanja-Loni-Nagzari corridor. The entire length of the proposed expressway is about 706.2 km and is divided into five packages as follows:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Project work</th>
<th>Approximate Length in kms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Package-I: Jamtha-Butibori MIDC-Wardha-Pulgaon (in Nagpur Division)</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>Package-II: Pulgaon-Karanja-Sindhakhedraja (in Amravati Division)</td>
<td>256</td>
</tr>
<tr>
<td>3</td>
<td>Package-III: Jalna District Border-Aurangabad-Kopargaon (in Marathwada Division)</td>
<td>154</td>
</tr>
<tr>
<td>4</td>
<td>Package-IV: Kopargaon-Sinnar, Sinnar-Igatpuri (in Nashik Division)</td>
<td>127</td>
</tr>
<tr>
<td>5</td>
<td>Package-V: Igatpuri to Bhiwandi (in Mumbai Division)</td>
<td>80.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>706.2</strong></td>
</tr>
</tbody>
</table>

(x) Forest land: The proposed Package-V alignment passes through approximately 156 ha of forest land.

(xi) Wildlife issues: Tansa Wildlife Sanctuary is 2.0 km and Tungareshwar National Park is 6.50 km from the project site. Necessary Forest Clearance/ NBWL Clearance will be obtained from the competent authorities.
Water Bodies: Nearest water bodies are Tansa Lake is 7 km, Bhatasa River is 0.7 km, Dharna River is 3.8 km and Upper Vaitrana Reservoir is 9.61 km from the project site.

Importance of the project:
- Technologies are available for construction of super infrastructure
- In terms of technology, viaducts, tunnels the travel time will be reduced substantially considering travel through alternative available routes.
- It connects Industrial places at Bitubori, Amravati, Jalna, Chikalthana, Shendra, Waluj, Sinnar to Mumbai
- It will create employment during construction and operation phase beside boosting industrialization which will largely benefit the entire region
- The length passes through under developed regions of Vidarbha and Marathwada.
- It connects Tourist places such as Karanja, Lonar, Sindkhedraja, Veru Ajentha, Shirdi, Bhandardara, Trembakeshwar etc.

Various options of alignments were studied based on reconnaissance survey, topo-sheets, satellite imagery and maps made available by MRSA showing geomorphology and landuse and actual site inspection. After preliminary study of various alignments, three alignments were finalised for detailed evaluation and subsequent comparative studies based on Engineering, social, environmental and cost criteria.

For evaluation of the three alignment options, the following basic criteria were followed:
- Minimise forest areas
- Minimise passing through areas already under planning/development (e.g. Development Plan areas of urban centres, industrial areas etc.)
- Minimise route through irrigated/two season crop area
- Maximise route through barren land
- Avoid from habitations/gaothan areas
- Alignment to have least number of curves and max possible radius
- Minimise number of Railway over Bridges
- Minimise number of water bodies
- Minimise length between start and end points
- Minimise tunnel length
- Least project cost

Alignment 1 got preference over other alignment because of the following points:
1. Alignment option-2 has got 3 major bridges having approximate length of km, which makes the alignment more expensive and uneconomical in comparison with alignment option-1. Also, the area of forest diversion along alignment option-2 increases over alignment option-1
2. Alignment option-3 has got 3 major bridges. Also, the area of forest diversion along alignment option-3 increases over alignment option-1. Also, alignment option-3 has got tunnel of length about 5500 m, which makes the alignment option-1
3. Alignment option-1 is safe in construction, where a detour of about 6 km is taken to smoothly negotiate a level difference of 180 m to avoid steep gradient as encountered in alignment option-2 at the same location between Igatpuri and Kasara. The alignment option-1 follows nature
terrain, which reduces cost of cutting and filling and structures, aligning the alignment.

(xvii) **Components of the project:** Interchanges are proposed at Talegaon and Mokhawane for faster dispersal of traffic AH-47. Similarly, interchanges at Nandgaon (SH-44), Khutghar (SH-79) and Devrung are proposed for seamless traffic entry/exit for respective highways. The project intends to connect NH-3 at Ghoti, NH-50 at Sinnar. The project will have connectivity with AH-47 at Sinnar. The project will also increase transportation connectivity between various MIDCs to JNPT. Along the NMEW smart cities and educational complexes will be developed. The NMEW will have optical fibre network all along its stretch to ensure Wi-Fi connectivity. The proposed expressway is passing through a large number of underdeveloped districts and the government hopes to ensure their economic development using the expressway as an infrastructural launch pad. Additionally, it is also proposed to have area development, real estate development, emergency landing of plane, medical facilities, food courts, police stations, public toilets, petrol pumps and other allied amenities along the corridor. Other planned activities include construction of intersections/junctions, bridges, ROBs, culverts, drainage works, toll plaza & ancillary structures, and site locations for construction related plants and establishments. The offsite work includes, quarrying from nearby quarry sites and earth from nearby borrow area.

4. The proposal was considered by the EAC in its 160th meeting held on 28-29 June, 2016 and was recommended for grant of scoping clearance. As per the recommendation of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords ToR to the **Development of Access controlled Nagpur-Mumbai Expressway from Talegaon Village, Igatpuri Taluka, Nashik District Border to Vadape, Bhiwandi Taluka, Thane District** in Maharashtra by Maharashtra State Road Development Corporation Ltd, for preparation of the Environment Impact Assessment (EIA) Report and Environment Management Plan (EMP) with the specific and general conditions as under:

(i) The facilities to be provided along the alignment shall be restricted to highway tourism, auto and auto ancillary hub, logistic park and convenience shopping in keeping with the given charter of MSRDCC.

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

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

(iv) 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.

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

(vii) Submit Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railways, ports, airports, roads, and major industries etc. and submit a 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.

(viii) If the proposed route is passing through any hilly area, examine and submit the measures for ensuring stability of slopes and propose measures to control soil erosion from embankment.

(ix) 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 should be examined.

(x) 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 this clearance from the standing committee of NBWL.

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

(xii) The information should 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. Submit the details of compensatory plantation. Explore the possibilities of relocating the existing trees.

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

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

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

(xviii) Explore the possibilities of utilizing the debris/waste materials available in and around the project area.

(xix) Submit the details on compliance with respect to Research Track Notification of MoRTH.

(xx) Examine and submit 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.

(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 should 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 base line data used for the EIA shall be not more than one year old.

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

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

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

(xxvii) 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.

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

(xxix) Examine and submit 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.

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

(XXxi) Examine and submit 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. Provision of speed breakers, safety signals, service lanes and foot paths should be examined at appropriate locations throughout the proposed road to avoid accidents.

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

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

(xxiv) 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.

(xxv) Submit the details of road safety, signage, service roads, vehicular underpasses, accident prone zones and the mitigation measures.

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

(xxvii) Submit details of social impact assessment due to the propose construction of the road.

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

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

(xl) If the proposed project involves any land reclamation, details to be provided of the activity for which land is to be reclaimed and the area of land to be reclaimed.
Details of the properties, houses, business activities etc likely to be effected by land acquisition and an estimation of their financial losses.

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.

Submit environment management and monitoring plan for construction and operation phases of the project. Submit a copy of your corporate policy on environment management and sustainable development.

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.

Submit a copy of your CSR policy and plan for meeting the expenditure to address the issues raised during Public Hearing.

**General Guidelines**

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

(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 issued under the EIA Notification 2006, 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 when submitting the EIA/EMP report shall give an undertaking to the effect that the prescribed TORs (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 thereunder (Please refer MoEF Office Memorandum dated 4th August, 2009). The project leader of the EIA study shall also be mentioned.

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

5. A detailed draft EIA/EMP report should be prepared in terms of the above additional TORs and should be submitted to the State Pollution Control Board for conduct of 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 should be conducted based on the TOR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.

6. The project proponent submit the detailed final EIA/EMP prepared as per the TORs including issues raised during Public Hearing to the Ministry for considering the proposal for environmental clearance within 3 years as per the MoEF&C O.M. No.J-11013/41/2006-IA-II(l)(P) dated 08.10.2014.

7. The consultants involved in preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board for 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 the Organization(s)/Laboratories including their status of approvals etc. vide notification of the MoEF dated 19.07.2013.

8. The prescribed TORs would be valid for a period of three years from submission of the EIA/EMP Reports.

(S.K. Srivastava
Scientist)

Copy to:
The Member Secretary, Maharashtra State Pollution Control Board, Kalpataru Points, 3rd & 4th floor, Opp. Cine Planet, Sion Circle, Sion (E), Mumbai - 22