

Minutes of the 103rd SEAC Meeting held on 23rd February 2018

103- 01 F. 6474/2017	Proposed project of Forming Chennai Peripheral road connecting Poonjeri junction in Mahabalipuram to Ennore Port (via) Singaperumalkoil – Sriperumbudur – Thiruvallur – Tamaraipakkam – Periyapalayam – Puduvoyal and Kattupalli by M/s. Highways Department, Government of Tamil Nadu – Activity 7(f) – Infrastructure and Miscellaneous Projects + CRZ – Issue of ToR - Regarding
	<p>The Proponent, M/s. Highways Department, Government of Tamil Nadu has applied for ToR for conducting EIA for the proposed project of Forming Chennai Peripheral road connecting Poonjeri junction in Mahabalipuram to Ennore Port (via) Singaperumalkoil – Sriperumbudur – Thiruvallur – Tamaraipakkam – Periyapalayam – Puduvoyal and Kattupalli on 24.11.2017.</p> <p>On scrutiny of the proposal, certain additional details were called vide this office letter dated: 04.12.2017. The proponent furnished the details on 03.01.2018.</p> <p>The proposal was placed in the 102nd SEAC meeting held on 01.02.2018. The proponent made a presentation about the project and the members of the SEAC interacted with the proponent regarding the project scope and appropriate environmental management measures needed. The salient features of the project are as follows:</p> <ol style="list-style-type: none">1. The peripheral road will start at Ennore Port and ends at Poonjeri Junction (km 56/800 of ECR) in Mahabalipuram. Proposed road will connect all radial roads of Chennai. Project road is formed by improving existing road and construction of missing links. Length of the proposed peripheral road will be around 133.380 km which is split into 5 sections. <p>Out of a total length of alignment of 133.38 km, length of the existing alignment is 35.4km and the length of new alignment is 97.98 km. Since the new alignment is of larger length (about 3 times the existing alignment</p>


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length), the SEAC treated this project as a new highway project requiring EIA study.

2. The proponent informed that the project is expected to lead to cutting of about 4797 trees. Out of which 806 trees will be felled and remaining 3991 trees with girth size below 900mm will be transplanted.
3. In addition, there have been issues related to resettlement and rehabilitation, highway passing through forest, highway passing through agricultural land, etc.
4. The SEAC members suggested that the EIA study should be comprehensive covering all aspects of the possible impacts during the construction as well as operation of the road project. In order to gain firsthand information about the baseline environmental status of the alignment, the SEAC decided to have an inspection of the proposed alignment before issuing the ToR.

As per the order Lr. No. SEAC-TN/F.No.6474/2018 dated: 01.02.2018 of the Chairman, SEAC, a Technical Team comprising of the following SEAC Members was constituted to inspect and study the field conditions in the proposed project of Forming Chennai Peripheral road connecting Poonjeri junction in Mahabalipuram to Ennore Port (via) Singaperumalkoil – Sriperumbudur – Thiruvallur – Tamaraipakkam – Periyapalayam – Pudukkottai and Kattupalli by M/s. Highways Department, Government of Tamil Nadu.

1. Dr.K.Thanasekaran
2. Dr. K.Valivittan,
3. Shri M.S. Jayaram
4. Shri P. Balamadeswaran
5. Shri B. Sugirtharaj Koilpillai
6. Dr. M. Jayaprakash


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7. Shri V. Shanmugasundaram

8. Dr.S.Rajendiran, AEE will coordinate the members of SEAC
(Shri V. Shanmugasundaram could not take part in the inspection).

The technical team conducted the inspection on 06.02.2018 and submitted the report on 07.02.2018 to the Chairman, SEAC – TN.

The technical team report was placed in the 103rd SEAC meeting held on 23.02.2018.

The SEAC considered the report of the technical team. The following are the salient features as noted in the report.

I. Various possible environmental impacts scenarios:

1. Impact on the nearest habitations importantly Social impact Assessment.

The road traverses the following villages includes Ambal Nagar, Athikulam, Bhakthavachalam Nagar, Chatram, Erikarai, Gangaianman Nagar, Kelanur, Kurampakkam, Nazrath, Nandiampakkam, Nallur, Neythavoyal, Pancheti, Pattamandhri, Parasangapuram, Punnapakkam, Pollivakkam, Perumaleri, Pollivakkam, Puthur, Pungamedu, RamakrishnaNagar, Karanai, Keelapakkam, Renga Nagar, Thaneer Kulam, Thozhuvur, Thodukadu, Thinanaipakkam, Thiruvallur, Sriperumpudur, Singamperumalkoil, Sirukundram, Siruvakkam, Vadakampattu, Valliyur and Vengathur.

2. Forest Clearance- Impact on the ecology of the forests.

The following forest areas covered for 10.2 ha for a length of 1.96 Km :

1. Mannur - 0.28(Ha) - 200 m
2. Sengundram - 8.09 (Ha) -1.45 Km
3. Kondamangalam - 1.86 (Ha) -310 m

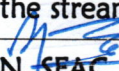
3. Clearances of existing buildings- Social impact Assessment:

The project affects nearly 948 buildings, out of which 598 were residential, 152 commercial, 94 were residence cum commercial assets, 7 of agriculture allied assets, 14 industrial use and 83 of them with loss of other assets such as compound wall and shed.

Out of the 948 affected building, 819 of the assets will be cleared due to the project. (Remaining 129 assets will remain with minor loss).

4. Stream crossings-Impact on the hydraulics and geology of the streams.


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The major streams includes the Kosasthalaiyar River, Cooum River, Buckingham Canal and Poondi- Chembarapakkam Link canal . (15 other minor canals).

5. Influx of people to an area temporarily and permanently- Social impact Assessment.

1203 Project affected families were likely to be affected due to the project. Out of which 1027 families were likely to be displaced.

6. Agricultural land- Impact on agricultural product and social impact assessment.

Totally 800.59 ha. of agricultural land will be affected.

7. Impact of Construction/Demolition on noise. Similarly, the impact of blasting or piling on Noise.

8. Impact of development of supporting facilities or ancillary developments on environment.

9. Land use changes which will have impact on the environment.

10. Areas protected- Cultural, Wetlands.

89 Common Property Resources (CPRs) / cultural properties are likely to be affected due to the project. 20 Temples, 4 Churches, 2 Schools, 2 burial grounds, 2 crematorium grounds, 2 Tombs, 25 pump houses, 5 water tanks, 3 OHTs, 11 Bus shelters, 12 Government buildings, well and a dispensary were likely to be relocated.

11. CRZ- impact on the Coastal ecosystem.

The project starts and end points are 2Km from Bay of Bengal. Part of the section falls between HTL of creek and 100 m setback from HTL of creek of Kosasthalaiyar river.

12. Impact on major water bodies

The major water bodies located along the project corridor includes Thanneerkulam Tank, Sriperumpudur Tank, Senkundram Tank , Sirukundram Tank and Manapathi tank.


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13. Trees along the alignment of the road.

A total of nearly 4800 trees have been identified in the five sections of the proposed Peripheral road. These trees are of different species and different girth size. Some trees are in the Patta land and some others are on the Government Land.

The SEAC directs the proponent to prepare EIA keeping in mind the above aspects of possible impacts.

II. Specific recommendations to minimize the adverse impact on Ecology

Specifically, the Technical Team recommends the following observations for the consideration of the proponent while preparing the Environmental Management Measures as part of the EIA report.

1. The justifications for selecting the site for proposed cross bridge (fly over) at the commencement point of the road project near Ennore Port Terminal shall be given in detail.

The commencement of road project falls within the CRZ zone and also crossing across Buckingham Canal, fragile mangroves and existing salt pans. The construction of the roads as per the present alignment at this site will cause damage to the mangroves because the piers will be constructed in the mangroves zone. Similar is the case with the Salt pans even though they are not functional at present. The proponent should consider alternative proposals in order to save the ecology (Mangroves & Salt Pans). The alternatives could be avoiding road laying across the mangroves and salt pans by choosing an alternate alignment for the road. For example, NCTP road at about 3 KM from the present chosen site can be connected to the new road at a convenient point. The proponent should seriously consider this option for implementation. The proponent is directed to critically analyse this option and evaluate the pros and cons of the implementation of this recommendation technically and


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present the details of such an evaluation in the EIA report.

2. In Section IV, a part of the road stretch from Oragadam to Singaperumalkoil (3.5 Km) passes through Vattambakkam RF (700 m) and Appur RF (2.8 Km). This stretch of the road is now being laid by TNRIDC. About 95% of the road work has been completed. After the full completion, the road stretch will be handed over to the Highways Department.

The Technical team observed that in this stretch of the road, the tree planting has not been done professionally in the medians and also at the sides, resulting in poor growth of saplings even after so many years.

The suggestions are as follows:

- a. Pits of size 1 m X 1 m must be dug; filled with red soil, silt and farmyard manure. Indigenous Saplings of minimum 2 m height should be planted and watered for a period of minimum 2 years. Tree guards should have a minimum height of 2 m.
- b. Species like *Syzygium cumini* (Naval), *Mimusops elangi* (Mahilam), *Calophyllum inophyllum* (Pinnai), *Ficus bengalensis* (Alam), *Ficus retusa* (Athi), *Ficus religiosa* (Arasa maram), *Alstonia scholaris* (Palai) can be planted along the sides of the road.
- c. Medians can be planted with *Nerium* (Arali).

3. Section V passes through Kondamangalam RF and Sengundram RF. An ecological survey should be done to cover all the fauna and flora of these forests, especially about the presence of endangered fauna, flora and presence of Schedule I animals.

4. In the EIA study, the Restoration plan for the existing endangered vegetation, if any; likely to be affected during the construction of road


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project shall be prepared.

5. The possibilities of constructing the haulroad in closer proximity to the source of raw material (crushed stones) should be explored for minimizing the environmental impacts caused during the transportation and handling of the same.
6. Geology and drainage pattern of the area (Kosasthalaiyar river, Coovam river, Kannigaipair, Thamaraiikulam , Thaneerkulam and Sriperumpudur tank) should be studied in detail with an objective of understanding the impact, if any, of the road project on the drainage patterns.
7. The measures recommended for saving the trees: The proponent has furnished the following proposal related to the availability of trees and the method of saving the trees, etc along the proposed road.

Description	Girth Size				Mitigation Plan		Species
	a)Girth above 300 mm and upto 600 mm	b)Girth above 600 mm and upto 900 mm	c)Girth above 900 mm and upto 1800 mm	d) Girth above 1800 mm	No. of trees which shall be transplanted and saved	No. Of trees which will be felled	
	1	2	3	4	(1+2)	(3+4)	
Section I	125	281	22	159	406	181	Neem, Eucallyptus Casuarina
Section II	180	293	17	1	473	18	Coconut, N Casuarina, Tamarind
Section III	897	816	181	380	1713	561	Mango, N Tamarind, Banyan, Eucallyptus
Section IV	Sriperumbudur on NH 4 to Singaperumalkoil on NH-45 (23.80 KM) al laid by TNRIDC (95% completed)- This road will be as such used i Peripheral road. No tree cutting is involved in this section.						

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Section V	442	957	37	9	1399	46	Neem, Tamarind, Konrai, Coconut, Casuarina
Total	1644	2347	257	549	3991	806	-

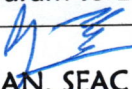
Note: Compensatory planting at the rate of 1:10 ratio is proposed. For cutting of 806 trees, the project shall plant 8060 plants in & around the project corridor.

As recommended by the Technical Team, the SEAC directs the proponent to carry out the following measures for saving the trees available in the proposed alignment of the Peripheral road.

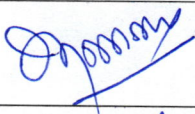


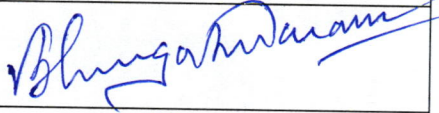

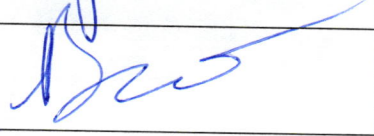

- All trees should be retained as such without felling as far as possible. If felling of trees of species like Neem, Tamarind and Banyan cannot be avoided then all the ecologically and aesthetically important trees like Neem, Tamarind and Banyan irrespective of their girth size ranging from 300mm to 1800 mm and above, should be transplanted.
- In the road stretch between 26/8 Km to 38/9 Km along the Singaperumalkoil Sriperumbudur Thiruvallur Redhills road, the Technical team observed that a large number of huge size trees (totally 561) align the road on both sides. As per the current proposal of the proponent, these trees either will be transplanted or felled. However the Technical team felt that ecologically it is a must that the trees in this stretch should be preserved as such. To realise, the proponent should consider alternatives like slightly shifting the alignment of the road to accommodate the trees.
- As proposed by the proponent 8000 trees of ecologically important species should be planted on the newly formed road sides.
- The proponent should not disturb the ecologically sensitive areas like mangroves.

The SEAC recommends to SEIAA for consideration of issue of ToR to the proponent M/s. Divisional Engineer (Highways), Highways Department, Construction and Maintenance, Chengalpattu, Tamil Nadu for the proposed project on forming Chennai Peripheral road connecting Mahabalipuram to Ennore


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Port (Officially renamed as Kamarajar Port) (via) Singaperumalkoil, Sriperumbudur, Thiruvallur, Tamaraipakkam, Periyapalayam, Pudukkottai and Kattupalli subject to the condition contained in this proceedings described above, in addition to the normal conditions including the conduct of Public hearing.			
S.No	Name	Designation	Signature
1	Dr. K. Thanasekaran	Member	
2	Dr.K.Valivittan	Member	
3	Dr.Indumathi M. Nambi	Member	
4	Dr. G. S. Vijayalakshmi	Member	
5	Dr. M. Jayaprakash	Member	
6	Shri V. Sivasubramanian	Member	
7	Shri V. Shanmugasundaram	Member	
8	Shri B. Sugirtharaj Koilpillai	Member	
9	Shri. P. Balamadeswaran	Co-opt Member	
10	Shri. M.S. Jayaram	Co-opt Member	

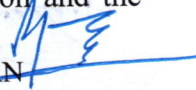

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7(f): STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR HIGHWAYS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT


- 1) Examine and submit a brief description of the project, project name, nature, size, its importance to the region/state and the country.
- 2) In case the project involves diversion of forests land, guidelines under OM dated 20.03.2013 may be followed and necessary action taken accordingly.
- 3) 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.
- 4) Submit detailed alignment plan, with details such as nature of terrain (plain, rolling, hilly), land use pattern, habitation, cropping pattern, forest area, environmentally sensitive places, mangroves, notified industrial areas, sand dunes, sea, river, lake, details of villages, teshils, districts and states, latitude and longitude for important locations falling on the alignment by employing remote sensing techniques followed by ground truthing and also through secondary data sources.
- 5) Describe various alternatives considered, procedures and criteria adopted for selection of the final alternative with reasons.
- 6) Submit Land use map of the study area to a scale of 1: 25,000 based on recent satellite imagery delineating the crop lands (both single and double crop), agricultural plantations, fallow lands, waste lands, water bodies, built-up areas, forest area and other surface features such as railway tracks, ports, airports, roads, and major industries etc. and submit a detailed ground surveyed map on 1:2000 scale showing the existing features falling within the right of way namely trees, structures including archeological & religious, monuments etc. if any.
- 7) If the proposed route is passing through any hilly area, examine and submit the stability of slopes, if the proposed road is to pass through cutting or embankment / control of soil erosion from embankment. Landslide, rock fall protection measures to be indicated.
- 8) 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 the river, the details of micro drainage, flood passages and information on high levels flood periodicity at least of last 50 years in the area should be examined.
- 9) The projects is located within 10km. of the sanctuary a map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the



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recommendations or comments of the Chief Wildlife Warden thereon should be furnished at the stage of EC.

- 10) 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.
- 11) 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. Animal and wild life crossings to be provided in areas inhabited by wild life.
- 12) 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.
- 13) If the proposed route is passing through a city or town, with houses and human habitation on the either side of the road, the necessity for provision of bypasses/diversions/under passes shall be examined and submitted. The proposal should also indicate the location of wayside amenities, which should include petrol station/service centre, rest areas including public conveyance, etc. Noise reduction measures should also be indicated.
- 14) Submit details about measures taken for the pedestrian safety and construction of underpasses and foot-over bridges along with flyovers and interchanges. If any.
- 15) 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). Specific care be also taken to ensure that by passes have a sufficient buffer to prevent unwanted obstructions defying the purpose of the by pass
- 16) Examine and submit the details of use of fly ash in the road construction, if the project road is located within the 100 km from the Thermal Power Plant.
- 17) Examine and submit the details of sand quarry, borrow area and rehabilitation.
- 18) Explore the possibilities of utilizing the debris/ waste materials available in and around the project area.
- 19) Submit the details on compliance with respect to Research Track Notification of MoRTH
- 20) Examine and submit the details of sand quarry and borrow area as per OM no.2-


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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.


- 21) Climate and meteorology (max and min temperature, relative humidity, rainfall, frequency of tropical cyclone and snow fall); the nearest IMD meteorological station from which climatological data have been obtained to be indicated.
- 22) The air quality monitoring should be carried out as per the new notification issued on 16th November, 2009.
- 23) 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 near by habitation during the construction and operational phases of the proposed highway. Identify noise reduction measures and traffic management strategies to be deployed for reducing the negative impact if any. Prediction of noise levels should be done by using mathematical modeling at different representative locations.
- 24) 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.
- 25) Also examine and submit the details about the protection to existing habitations from dust, noise, odour etc. during construction stage. IRC guidelines to be followed for traffic safety while passing through the habitat.
- 26) If the proposed route involves cutting of earth, the details of area to be cut, depth of cut, locations, soil type, volume and quantity of earth and other materials to be removed with location of disposal/ dump site along with necessary permission.
- 27) If the proposed route is passing through low lying areas, details of fill materials and initial and final levels after filling above MSL, should be examined and submit.
- 28) Examine and submit the water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity, quality likely impacts on them due to the project.
- 29) Examine and submit details of water quantity required and source of water including



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water requirement during the construction stage with supporting data and also categorization of ground water based on the CGWB classification.

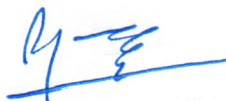
- 30) Examine and submit the details of measures taken during constructions of bridges across river/ canal/major or minor drains keeping in view the flooding of the rivers and the life span of the existing bridges. Provision of speed breakers, safety signals, service lanes and foot paths should be examined at appropriate locations through out the proposed road to avoid the accidents.
- 31) If there will be any change in the drainage pattern after the proposed activity, details of changes shall be examined and submitted.
- 32) 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.
- 33) If there is a possibility that the construction/widening of road will cause impact such as destruction of forest, poaching, reductions in wetland areas, if so, examine the impact and submit details.
- 34) Submit the details of road safety, signage, service roads, vehicular under passes, accident prone zone and the mitigation measures.
- 35) IRC guidelines shall be followed for widening & upgradation of road.
- 36) Submit details of social impact assessment due to the proposed construction of road.
- 37) 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.
- 38) Accident data and geographic distribution should be reviewed and analyzed to predict and identify trends - incase of expansion of the existing highway and provide Post accident emergency assistance and medical care to accident victims.
- 39) If the proposed project involves any land reclamation, details to be provided for which activity land to reclaim and the area of land to be reclaimed.
- 40) Details of the properties, houses, businesses religious and social places etc. activities likely to be effected by land acquisition and their financial loses annually.
- 41) Detailed R&R plan with data on the existing socio-economic status of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternative livelihood concerns/employment and rehabilitation of the displaced people, civil and housing amenities being offered, etc and the schedule of the implementation of the project specific.


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- 42) Submit details of Corporate Social Responsibility. Necessary provisions should be made in the budget.
- 43) Estimated cost of the project including environmental monitoring cost and funding agencies, whether governmental or on the basis of BOT etc and provide details of budget provisions (capital & recurring) for the project specific R&R Plan.
- 44) Submit environmental management and monitoring plan for all phases of the project viz. construction and operation.
- 45) Details of blasting if any, methodology/technique adopted, applicable regulations/permissions, timing of blasting, mitigation measures proposed.keeping in view mating season of wild life.
- 46) 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.
- 47) Details to ensure free flow of water in case the alignment passes through water bodies/river/ streams etc.
- 48) In case of bye passes, the details of access control from the nearby habitation/habitation which may come up after the establishment of road.
- 49) Bridge design in eco sensitive area / mountains be examined keeping in view the rock classification hydrology etc.
- 50) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 51) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 52) In case of alignment passing through coastal zones
 - a) HTL/LTL map prepared by authorized agencies superimposed with alignment and recommendation of Coastal Zone Management Authority
 - b) Details of CRZ-I (I) areas, mangroves required to be removed for the project along with the compensatory afforestation, area and location with budget
 - c) Details of road on stilt in CRZ-I areas, design details to ensure free tidal flow
 - d) Details of Labour camps, machinery location,
- 53) 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>".


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