

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 12-1/2009-NTCA (Vol. II)

New Delhi, the November 16, 2019

To,

The Hon'ble Chairman,
National Green Tribunal,
Principal Bench, New Delhi

Sub: Original Application No. 1030/2018 News item published in "The Times of India"- authored by Vijay Pinjarkar titled- "String of new road projects in Maha to cut off tiger corridors – reg.

Ref: Hon'ble National Green Tribunal, Principal Bench, New Delhi order dated 01.08.2019 and this Authority letter of even number dated 29th July, 2019 and this Authority's email dated 30.10.2019.

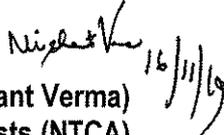
Sir,

Reference is invited to the subject and correspondence cited above. In this context, I am directed to forward herewith a copy of final Action taken Report (incorporating the Final Action Plan) on behalf of the Additional Director General of Forests (Project Tiger)/ Member Secretary, National Tiger Conservation Authority & Additional Director General of Forests (Wildlife), MoEF&CC duly approved by Competent Authority in the matter for kind information and necessary action please.

I am also directed to request for concurring the Action plan prepared and pass appropriate orders to the concerned user agencies and the State Government of Maharashtra for implementing the Action Plan in letter and spirit for maintaining functional connectivity of the tiger corridors.

Encl: Action taken report.

Yours faithfully,


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**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO. 1030/2018**

NEWS ITEM PUBLISHED IN "THE TIMES OF INDIA" AUTHORED BY VIJAY PINJARKAR
TITLED
"STRING OF NEW ROAD PROJECTS IN MAHA TO CUT OFF TIGER CORRIDORS"

ACTION TAKEN REPORT (FINAL)

**on behalf of Additional Director General of Forest (Project Tiger) / Member Secretary, National Tiger
Conservation Authority & Additional Director General of Forests (Wildlife), MoEF&CC.**

1. A news item titled "String of new road projects in Maharashtra to cut off tiger corridors" was published in The Times of India daily on 29th November, 2018. News highlighted that Eastern Vidarbha Landscape has presence of at least 200 tigers of which 60% are in Tadoba-Andhari Tiger Reserve and adjoining areas. It was mentioned in the news that several roads coming up for resurfacing/up gradation through corridor areas will make dispersal of wildlife a huge problem. Hampered movement of wildlife by increased traffic volume will also cause surge in human wildlife conflict bringing humans in direct contact with large predators such as Tigers, Leopards and Sloth Bears.
2. Taking *suo moto* cognizance of this news item, the Hon'ble National Green Tribunal initiated proceedings through Original Application No. 1030/2018. The Hon'ble Tribunal ordered Principal Chief Conservator of Forest (Wildlife), Maharashtra to hold the joint committee meeting of Ministry of Road, Transport and Highway, Government of India, National Highway Authority of India, Public Works Department, State of Maharashtra, State Forest Department and Director, Project Tiger/NTCA, MoEF & CC and furnish the report on action taken on or before 28th February, 2019.
3. Accordingly, the PCCF (Wildlife), Maharashtra submitted report to the Hon'ble NGT which is annexed as **Annexure-I**. The Hon'ble Tribunal in its order dated 26.03.2019 expressed displeasure about report submitted by the PCCF (Wildlife), Maharashtra and expressed that the report does not meet the expectation of this Tribunal. In this same order, the Hon'ble Tribunal directed Additional Director General of Forests (Wildlife), MoEF & CC along with Director, Project Tiger to prepare action plan in the matter and to oversee execution and furnish action taken report before the next date by email.
4. In compliance of the Hon'ble Tribunal order dated 26.03.2019, a meeting was convened at NTCA Hqrs., New Delhi under the Chairmanship of the ADG (Wildlife), MoEF&CC on 08.04.2019 in which the ADG (PT) & MS (NTCA) along with other NTCA officers participated. It was decided that a joint team shall be constituted involving the representatives of NTCA (AIGF, R.O. CZ, Nagpur), WII (Dr. Bilal Habib), CWLW, Maharashtra, NHAJ Nagpur and

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State PWD, Nagpur. It was also decided that this joint team shall carry out the site appraisal of the roads mentioned in the matter and submit the site appraisal report with the following terms of reference:

- a) Identification of animal crossing points / spatial locations as per delineated tiger corridors.
- b) Prescribing the mitigation structures including their designs / dimensions and special positioning as per WII technical document viz "Eco- friendly measures to mitigate impacts of liner infrastructure, 2016" (annexed at **Annexure-II**).
- c) Assessment of cost estimates of the proposed mitigation measures.

The summary record of the above meeting is enclosed as **Annexure-III**.

5. The joint site appraisal team (as constituted) convened a meeting on 22nd April, 2019 among themselves at the Field Director office, Tadoba-Andhari Tiger Reserve, Chandrapur and site appraisal of the concerned roads was carried out on the above terms of reference. During the site appraisal, the identification of wild animals crossing points / zones provisioning of the requisite mitigation structures and the cost estimates of these road projects including the cost of mitigation structures had been taken from the concerned authorities. The spatial locations of the animal crossing points as per delineated tiger corridors have been identified. The tiger corridors that have been considered in this exercise have been taken from the following:

- Adjoining Area Plan as a part of Tiger Conservation Plan prepared vide article 38 O (3) (b) of the all concerned Tiger Reserves and approved by NTCA under section 38 O (1) (a) of Wildlife Protection Act 1972.
- NTCA / WII report on "CONNECTING TIGER POPULATIONS FOR LONG-TERM CONSERVATION" meant for guiding conservation inputs in consonance with the development agenda of the country as per article 38 O (1) (g) of Wildlife Protection Act 1972. (Least Cost Pathways/LCP).
- Corridor Atlas for Eastern Vidarbha Landscape prepared by Wildlife Institute of India for Govt. of Maharashtra. (EVL Corridors)

6. The site appraisal team has submitted its report to NTCA, HQrs, New Delhi. In this report based on the animals crossing points / zones identified, the mitigation structures have been prescribed to enhance to maintain permeability for wildlife specially tiger for long term conservation and reducing human wildlife conflict. The animals under passes (flyovers for vehicular traffic) have been suggested to be constructed at prescribed geo locations with pillar type piers and clear height of 5 meter from the ground level of adjoining forest areas. Based on this report, the **Action Plan** for prescribing the mitigation structures road wise has been formulated which is annexed as **Annexure IV**. The details of under passes along with geo locations, road wise along with the length of the project, tentative cost and corridor dimensions are as under:

ACTION PLAN PROVIDING THE PROPOSED MITIGATION STRUCTURES

Sr No	Road details			Corridor Patch				Proposed*** Underpass	Cost Estimates for underpass	Remark	
	Name	Length of Project	Tentative Project Cost	Number	Approx Length of Corridor	Approx Coordinates of the Patch (DD MM SS.SS)					Corridor Crossings
1	Nagbhid-Armori NH 353 D	39.37 km	269.05 Cr	Patch I	2 km	20 36 01.42 79 47 25.02	20 36 15.72 79 48 48.53	EVL Corridor TCP Corridor	One 300 m One 150 m	26.85 Cr 14.40 Cr	This patch has agriculture area towards north from the midpoint therefore reducing the effective structural and functional connectivity. (See Map II of Annexure-IV)
				Patch II	3 km	20 30 24.18 79 56 11.36	20 28 55.22 79 57 10.69	TCP Corridor LCP	Not proposed	--	
2	Malewada-Chimur NH 353 E	30.535 km	231.11 Cr	--	--	--	--	None	Not proposed	--	Corridor here is aligned parallel to road. Road doesn't cross corridor. Therefore, underpass is not proposed.
3	Chimur-Marora NH 353 E	51.65 km	380.38 Cr	Patch I	1.5 km	20 30 29.6 79 18 26.5	20 30 19.4 79 17 38.28	TCP Corridor EVL Corridor	one 750 m	56.65 Cr	This is pinch point of connectivity between Tadoba Andhari Tiger Reserve and Umred Karhandla Pauni Wildlife Sanctuary. (See Map III of Annexure-IV)

new 16/11/19

4	Mul-Chandrapur NH 390	39.67 km	110.02 Cr	Patch I	12.5 km	20 03 03.24 79 39 10.28	20 01 23.63 79 32 47.59	TCP Corridor EVL Corridor	four 300 m	116.85 Cr	Road in this patch is passing through forest. But strength of the connectivity is weakened by agriculture and urbanization as one move away from TATR. (See Map IV) of Annexure-IV)
				Patch II	16 km	20 00 03.38 79 28 23.5	19 58 36.14 79 20 01.52	TCP Corridor EVL Corridor LCP	two 750 m between Chichpalli to Ghanatchowki	113.51 Cr	
5	Barni-Navegaon NH 353 B	42.25 km	163.60 Cr	Patch I	1.5 km	19 49 49.82 79 24 43.02	19 49 16.67 79 25 21.12	TCP Corridor EVL Corridor	one 300 m	29.21 Cr	There is stepping stone connectivity towards Tipeswar and Kawal through discontinuous forest blocks. (See Map VI of Annexure-IV)
				Patch II	12.5 km	19 47 26.4 79 30 13.1	19 45 34.4 79 36 42.1	TCP Corridor EVL Corridor LCP	two 750 m between Kothari to Ganpur	113.51 Cr	

* As, per advertisement by Ministry of Roads Transport & Highways, PWD (NH) Govt of Maharashtra for 'Foundation Stone Laying Ceremony' in The Hitawada daily dated November 11, 2018

** 32.9 km (Nagbhir-Sindewahi) out of total length is being tackled with project cost of 146.16 Cr. Cost Estimates for underpass includes cost estimate for implementing additional recommendations included in this report.

*** Underpass indicates flyovers for vehicular traffic.

Additional Recommendations of Action Plan:

- a. Underpasses (flyovers for vehicular traffic) will also have to be integrated with options of light and sound barriers, camouflaging and landscaping including restoration of habitat beneath underpasses after construction. There will not be right of passage to public via underpass.
- b. To avoid frequent repairs and disturbances, carriageway pavement within corridor patch should be rigid having well planned road side drainage and utility ducts.
- c. Sections of the road not covered under clear opening and approaches of the underpasses (flyovers for vehicular traffic) will be fenced to prevent animal crossing through those sections and subsequent road hits. Design and dimension of animal proof fencing will be considering large carnivores, reptiles, amphibians and rodents. There will be locking gates in the fence at every 500 m operated by State Forest Department to deal with emergency.
- d. User agency will make provision of vegetative or mechanical canopy closure option for movement of arboreal wildlife and pipe/ cc culvert for movement of reptiles, amphibians, rodents, etc. (both at every 100 meters of the forest patch not covered through clear opening of underpasses).
- e. User agency will install overhead signboards at every 500 meter in the forest area about animal crossing, restriction on feeding animal, garbage dumping, parking, honking, etc. as per the advice of Forest department.
- f. There should not be felling of trees. All trees (in a girth class for which there is technology available for transplantation) will be transplanted by user agency with adequate care for maximization of survival.
- g. Monitoring of flow value of corridors before, during and after construction of the roads with mitigation measures will be carried out by State Forest Department. Monitoring committee shall be constituted under chairmanship of concerned Chief Conservator of Forests or equivalent officer having representation from user agency. The Committee shall submit quarterly report to the Chief Wildlife Warden, Govt. of Maharashtra on progress of works and compliance of the conditions laid out in this Action Plan.
- h. Completion Certificate will be issued by User agency to the contractor after written certification from the Chairman of Monitoring Committee countersigned by the Chief Wildlife Warden that the all the conditions are satisfactorily complied.
- i. Post-completion monitoring and maintenance of mitigation structures will be done jointly on advice of forest department and at cost of user agency.

new 16/11/13

7. After formulating this Action Plan, with a view to discuss / finalize the same, another meeting was held on 06.05.2019 under the chairmanship of the ADG (WL), MoEF&CC & the ADG (PT) & MS (NTCA) at NTCA Hqrs, New Delhi. In this meeting, the action plan so prepared had been discussed threadbare with the concerned User Agencies, the CWLW, Govt of Maharashtra and concerned Forest authorities to formulate the implementation strategy for the same. It was decided to include reference maps showing the mitigation structures of each road, the total project cost, the cost of mitigation structures and the GPS coordinates of the same. It was also decided to prioritize the roads in view of ecological requirements of maintaining functional connectivity of the corridors for ensuring permeability of tigers. It was decided that the concerned user agency shall prepare the phased plan of the construction of the mitigation structures, keeping in mind the priority of mitigation structures for the following five roads for maintaining tiger corridor contiguity & intactness.

- i. **Mul-Chandrapur**
- ii. **Bamni-Navegaon**
- iii. **Nagbhir-Mul**
- iv. **Chimur-Warora**
- v. **Hinganghat-Mul**

The summary record of this meeting is enclosed as **Annexure-V**.

8. In compliance of the decision taken in the meeting held on 06.05.2019, the **action plan** so prepared had been submitted to user agencies viz. Ministry of Road Transport and Highways (MoRTH), State PWD (NH Division), State PWD, Nagpur NH Section and Chandrapur MSH Section, Govt. of Maharashtra for providing the comments in respect of its implementation as per requirement mentioned as above. The concerned O.M. of NTCA written in this regard is enclosed as **Annexure-VI**.

In response to the letter of NTCA, the comments of MoRTH has been received vide letter of Superintendent Engineer, Zone –IV vide letter dated 29th May, 2019 which is annexed as **Annexure VII**. The comments provided on behalf of MoRTH after approval of the competent authority are as under:

S. No.	Name of the Road	Comments Received from MoRTH	Remarks of NTCA / MoEF&CC
1	Mul-Chandrapur*	Not agreed. The project cost is Rs. 122.24 crores and the awarded cost of the project Rs.110.01 crores whereas the tentative cost of mitigation measures in form of flyovers proposed is Rs. 402.70 crores. There is an increase of 330% of the sanctioned cost. It is not possible for MoRTH to continue with present contract if construction of flyover is insisted. The present contract needs to be fore closed.	The proposed mitigation measures are important. Therefore, additional budget is to be sanctioned.
2	Bamni-Navegaon*	Not agreed. Sanctioned cost of the project is Rs. 180.00 crores and tentative cost of mitigation measures proposed in the form of fly over is Rs. 256.23 crores. There is an increase of 143% in the sanctioned cost. It is not possible for MoRTH to continue with present contract if construction of	The proposed mitigation measures are important. Therefore, additional budget is to be sanctioned.

		flyover is insisted. The present contract needs to be fore closed.	
3	Nagbhid-Mul*	This road has not been declared as NH and is being maintained by State PWD.	No comments received from MoRTH
4	Chimur-Warora*	Agreed. The tentative cost of mitigation measures is Rs. 56.65 crores. MoRTH agreed for implementation of the proposed mitigation measures subject to approval of the competent authority for the variation proposal and quantification on cost of additional measures proposed.	--
5	Hinganghat-Mul*	This road has not been declared as NH and is being maintained by State PWD.	No comments received from MoRTH
6	Nagbhid-Brahampuri Armo-ri	Agreed. Tentative cost of proposed mitigation measures is Rs. 41.25 crores. MoRTH agreed for implementation of the proposed mitigation measures subject to approval of the competent authority for the variation proposal and quantification on cost of additional measures proposed.	--
7	Gadchiroli - Mul	Agreed. Tentative cost of proposed mitigation measures is Rs. 2.91 crores. MoRTH agreed for implementation of the proposed mitigation measures subject to approval of the competent authority for the variation proposal and quantification on cost of additional measures proposed.	--
8	Chimur -Kanpa	This road has not been declared as NH and is being maintained by State PWD.	Mitigation structures not proposed in the Action Plan.
9	Malewada-Chimur	No mitigation structures proposed in the Action Plan.	Mitigation structures not proposed in the Action Plan.

* indicates Priority roads for which the proposed mitigation structures are important for maintaining permeability for tiger movement.

The reminders and follow-up with the State PWD & NH Division of State PWD, Govt. of Maharashtra was made many times through letter / email but their comments have not been received except one letter from PWD Division pertaining to Nagbhid Mul Road which is annexed as **Annexure-VII**. As per this letter, the works for mitigation measures has been budgeted in June, 2019, PW Division, Govt. of Maharashtra budget.

9. It is most humbly submitted that the proposed mitigation measures are **very necessary & important** to enhance / maintain permeability of landscape for wildlife specially tigers for long term conservation and for reducing human wildlife conflict. The MoRTH & State Govt. of Maharashtra needs to take requisite action (**on priority basis**) for providing necessary budget and sanction for implementation of the Action Plan formulated in respect of these road projects in a phased manner so as to achieve the above mentioned objectives. Efforts were made by NTCA / MoEF&CC for achieving agreement with the concerned user agencies (MoRTH & State PWD Authorities) for implementation of the action plan.

10. The preliminary Action taken report formulated was submitted for kind perusal of Hon'ble Tribunal and request was made for providing time for coordination with concerned user agencies (MoRTH & State PWD authorities) for achieving agreement for practical implementation of action plan prepared.

11. The Hon'ble Tribunal vide order dated 01.08.2019 directed the respondents to take necessary steps and file further report by 31.10.2019. In compliance of the aforesaid order, the joint site appraisal team which prepared the action plan (incorporating) the mitigation measures was asked by NTCA /MoEF&CC to assess the implementation of mitigation measures of all nine roads in question as per ecological requirements, the costs involved and provision of budget by different sources for the same. A meeting was held on 30.09.2019 at NTCA Hqrs under the joint chairmanship of ADG (Wildlife), MoEF&CC and ADG (PT) & Member Secretary (NTCA) in which the concerned CWLW, Maharashtra and officials of user agencies participated.

12. The summary of concurrence for implementation of mitigation measures for all 9 (nine) roads are as under:

S. No.	Road	Nomenclature as per PWD/NH	Status of concurrence for construction of mitigation measures
1	Nagbhir-Bramhapuri-Armori	NH 253 D	Agreed by MoRTH
2	Malewada-Chimur	NH 353 E	No mitigation prescribed
3	Chimur-Warora*	NH 353 E	Agreed by MoRTH
4	Mul-Chandrapur*	NH 930	Not agreed by MoRTH
5	Bamni-Navegaon*	NH 353 B	Not agreed by MoRTH
6	Gadchiroli-Mul	NH 930	Agreed by MoRTH
7	Chimur-Kanpa	MSH 314 (Principally declared as NH)	No mitigation prescribed. This road will be tackled after final declaration of NH
8	Hinganghat-Nandori-Kora-Khadhsangi-Neri-Pendhri-Sindewahi-Mul*	MSH 322 (Principally declared as NH)	This road will be tackled after final declaration of NH
9	Nagbhir-Mul*	MSH 9	Budgeting is done by PWD along with mitigation measures

* indicates priority roads necessary for maintaining functional connectivity of tiger corridors.

Therefore, from the above table, it is clear that there are only two roads i.e. Mul Chandrapur & Bamni-Nagegaon road for which MoRTH has not agreed for implementing mitigation action plan. However, the mitigation measures proposed are very important as these two roads passes through major portion of the tiger corridors connecting Tadoba-Andhari Tiger Reserve to the Southern and Eastern connecting tiger reserves. The decisions of the meeting are as under:

- It was decided that there is no change in the dimension, number and location of the mitigation structures proposed in the action plan. The provisioning of funds shall be worked out by MoRTH exploring the option of utilizing State Govt. funds including provision of Central Road and Infrastructure Fund (CRIF) etc. for construction of mitigation structures prescribed for the two high priority roads i.e. Mul Chandrapur & Bamni-Nagegaon road. Moreover, the State Forest Department shall also explore the provisioning of funds for mitigation measures for the above roads through State CAMPA / TCF etc.
- It was decided that MoRTH will look into feasibility of provisioning alternative designs for overpasses as animal crossing structures to check the possibility of cost reduction. The proposed mitigation

measures may be implemented in phased manner to spread the cost. It was decided that the nonstructural mitigation measures including provision of night traffic on the priority roads shall be incorporated by State Forest Department in coordination with WII to MoRTH for their implementation on priority basis. The summary record enclosed is annexed as **Annexure-IX**.

13. In response to the above meeting, the MoRTH vide letter dated 17.10.2019 (copy enclosed as **Annexure-X**) has expressed its inability to fund any additional expenditure over and above Rs. 100.81 crore for the proposed mitigation structures (agreed upon earlier) and requested the State Government and the Chief Wildlife Warden, Govt. of Maharashtra for funding the expenditure towards mitigation measures proposed for the two roads viz. Mul Chandrapur & Bamni-Navegaon (NH 930 & NH 353B). The Chief Wildlife Warden, Government of Maharashtra vide letter dated 25.10.2019 (copy enclosed as **Annexure-XI**) provided the concurrence of the decision taken in the meeting held on 30.09.2019 as mentioned above and agreed that mitigation measures proposed for the above mentioned two roads are essential in the interest of wildlife conservation. However, the Forest Department has explored the option of utilizing State CAMPA/TCF funds and activities to be taken under rules made thereunder and shall not be possible to fund the cost of construction of these mitigation structures from State CAMPA funds. Further it is stated that the TCF funds approved for expenditure in the year 2019-20 for all 6 Tiger Reserve in the state, amounts to Rs. 32 crore and therefore, will nowhere suffice for funding the cost of mitigation measures. Hence, taking in to consideration the limited amount of funds under State CAMPA/ TCF, the provisioning of funds for mitigation measures through State CAMPA / TCF will not be feasible. However, the possibility of funding the mitigation measures through the State PWD is being explored.

14. The joint team was asked to provide the phase wise mitigation plan for the two roads viz Chandrapur-Mul and Bamni-Navegaon. The Phase wise (with five phases) implementation plan (given by the team) for the construction of mitigation structures on these two roads is annexed as **Annexure-XII**.

15 In view of the deliberations/ action taken as provided in the pre-paras of this action taken report, the final action plan i.e provided by ADG (WL), MoEF&CC and ADG (PT) & MS (NTCA) is presented as under.

16/11/19

16. FINAL ACTION PLAN PROVIDING THE PROPOSED MITIGATION STRUCTURES

Structural mitigation Measures: The structural mitigation measures for the nine roads are as under:

Sr No	Road details			Corridor Patch				Proposed**	Status of concurrence for implementation by user agencies	Recommended for phase wise implementation	Cost Estimates for underpass	Remarks
	Name	Length of Project	Number	Approx Length of Corridor	Approx. Coordinates of the Patch (DD MM SS.SS)		End					
					Start	End						
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Nagbhid -Amori NH 353 D	39.37 km	Patch I	2 km	20 36 01.42 79 47 25.02	26.85 Cr 14.40 Cr	EVL Corridor TCP Corridor	One 300 m One 150 m	Agreed by MoRTH	One 300 m One 150 m Phase* III	26.85 Cr 14.40 Cr	This patch has agriculture area towards north from the midpoint therefore reducing the effective structural and functional connectivity. (See Map II of Annexure-IV)
			Patch II	3 km	20 30 24.18 79 56 11.36	---	TCP Corridor LCP	Not proposed			---	This is a non-forested patch of corridor overlapping with the major bridge on Wainganga river hence underpass is not proposed.
2	Malewa da-Chimur NH 353	30.535 km					None	Not proposed	No mitigation prescribed	-		Corridor here is aligned parallel to road. Road doesn't cross corridor.

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Patch III	2.14 km	20 15 00.2 79 39 37.48	29.26 Cr	TCP Corridor EVL Corridor	one 300 m between Murmadi to Saradpar	The mitigation structure implementation can be taken up once the funds are allotted by the State PWD, since it is a PWD road at present (shall be taken in Phase V)	29.26 Cr	These patches converge together and further diverge to connect Bramhapuri division and Gadchiroli circle, Ghodazari and Kanhalgaon WLS, Navegaon Nagzira and Indravati Tiger Reserve. However, agriculture and villages are reducing the effective structural and functional width. (See Map X & XI) of Annexure- V)
Patch IV	1.7 km	20 07 6.16 79 41 50.56	29.26 Cr	LCP TCP Corridor EVL Corridor	one 300 m	The mitigation structure implementation can be taken up once the funds are allotted by the State PWD, since it is a PWD road at present (shall be taken in Phase V)	29.26 Cr	
Patch V	1.2 km	20 05 48.1 79 42 02.8	5.82 Cr	TCP Corridor	two 30 m	The mitigation structure implementation can be taken up once the funds are allotted by the State PWD, since it is a	5.82 Cr	This small extension of Patch IV above. (See Map XII of Annexure-V)

9*	Nagbhir- * Mul MSH 9	59 km	Patch I	3.7 km	20 32 37 40 79 40 56.28	105 Cr	TCP Corridor EVL Corridor	one 750 m one 300 m	Budgeting is done by PWD along with mitigation measures	Already the budget has been received. So implementation will be in the Phase* I & II (one 750 m in Phase I and one 300 m in Phase II)	105 Cr for (75 Cr for Phase I & 30 Cr for Phase IV)	This patch has connectivity between Ghodazari WLS and Bramhapuri Forest Division and further merges with Gadchiroli, Indravati, and NNTR. This has very high tiger dispersal value. (See Map XIII of Annexure-IV)
Other patches overlap with Patch III, IV and V of Hinganghat-Mul road												
Total	405.1k m	---	59.34 km			11.79 km						---

*Efforts have been made to streamline the costs involved in the construction of mitigation structure (as provided above) across the five Phases for implementation. The tentative budget required (Phase wise) is as under:

S. No.	Phase details	Phase	Budget required (in lakhs)
1	Phase I- within 2 years	I	279.06
2	Phase-II-3rd & 4th year	II	172.72
3	Phase-III-4th & 5th year	III	144.38
4	Phase-IV-5th & 6th year	IV	170.26
5	Phase-V-6th & 7th year	V	62.48

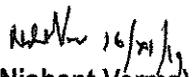
17. **Non-structural mitigation measures (as part of Action plan)**

These measures are in addition to structural measures recommended and should mandatorily be taken up where recommended structural measures are not yet taken up. The following non-structural mitigation measures are proposed:

- i. **Traffic regulation:** This includes restriction of traffic on road sections frequently used by animals for crossing during certain times of the day, particularly during peak animal activity hours, Barriers may be set-up at entry and exit points of pre-determined road sections where animals are known to cross. This measure would ensure minimal overlap of peak animal and traffic activity periods, thereby reducing the probability of animal-vehicle collisions. Efforts would be made in consultation with the District administration to ensure its implementation.
- ii. **Speed reduction measures:** These may be imposed in several ways-installations of speed breakers, rumble strips, posting of speed limits through signboards and penalizing of speeding vehicles. Reduction in vehicle speeds gives drivers enough reaction time to brake and avoid possible collisions with animals. However, speed reduction at higher traffic volumes may lead to lesser space between two vehicles or stagnation of traffic, which would ultimately cause the traffic to become a complete barrier for animal movement. The type of traffic (heterogeneity of vehicles) plying on the roads is also an important factor that would influence the effectiveness of such speed regulations. Traffic composed mostly of small vehicles would not pose a barrier to animal movement as compared to traffic composed of majority large vehicles, which could create barrier to animal movement even at low volumes.
- iii. **Sign-boards indicating presence of animals / crossing zone:** Installation of sign-boards at critical vulnerable road stretches would help in informing drivers of animal movement areas so that they may be careful and alert. These signs may be of different types- standard roadside signs with animal silhouettes, overhead signs indicating approaching animal corridor, signs with illuminating material for visibility at night. These boards would additionally help generate awareness about the important issue of animal-vehicle collisions among public.
- iv. **Monitoring of vulnerable road sections:** In areas with high movement of animals at the roadsides, manual monitoring by forest department staff by patrolling or by use of camera traps to determine movement of animals such as tigers.
- v. **Verge management:** The roadside verge, i.e. the space on either side of the road corridor may be cleared regularly of vegetation till about a distance of at least 5 m on either side. This would provide better visibility for the animals that are attracted by forage at roadsides, thereby reducing the probability of collision with vehicles.

18. The action taken report finalized as above is submitted for kind perusal of Hon'ble Tribunal with the request to pass appropriate orders to the concerned user agencies for (MoRTH & State PWD) and State Government of Maharashtra for implementing the **Action Plan** suggested in letter & spirit.

Dated: 16.11.2019


(Nishant Verma)

Deputy Inspector General of Forest (NTCA)

प्रधान मुख्य वन संरक्षक (वन बल प्रमुख) यांचे कार्यालय, महाराष्ट्र राज्य

Office of the Principal Chief Conservator of Forests (HoFF), Maharashtra State

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No :- Desk-23(2)/Survey/WL/C.R.211/4256/18-19.
Nagpur, dated :- 28/02/2019.

To
The Hon'ble Chairman,
National Green Tribunal,
Principal Bench, New Delhi.

Sub : Original Application No.1030/2018

News item published in "The Times of India" Authored by Vijay Pinjarkar
Titled
"String of new road projects in Maha to cut off tiger corridors"

Ref : Hon'ble National Green Tribunal Principal Bench, New Delhi order
dt.20/12/2018.

With reference to Hon'ble National Green Tribunal Principal Bench, New Delhi order dt.20/12/2018 a Status Report on the present situation of the Roads Projects in the vicinity of Tadoba Andhari Tiger Reserve is submitted herewith as desired by the Hon'ble National Green Tribunal in the above mentioned order.

Encl : Status Report.


Principal Chief Conservator of Forests (Wildlife)
And Chief Wildlife Warden,
Maharashtra State.

Index

Sr.no	Subject	Page no.
1	Introduction	1
2	Order of Hon'ble National Green Tribunal dt.20/12/2018.	1
3	Terms of Reference (ToR)	2-3
4	Minutes of 1 st meeting dt.25/1/2019.	4-5
4(i)	Information about ongoing Road Projects in the vicinity of Tadoba-Andhari Tiger Reserve.	4
4(ii)	Providing documents pertaining to the Road Project KML files & Maps.	4
4(iii)	Information about Mitigation Measures	5
4(iv)	Provisions in Wildlife (Protection) Act 1972.	5
5	Brief of deliberations of the 2 nd meeting dt. 22/2/2019	5-7
6	Details of the Map	7
6(i)	Map showing road projects with respect to Forest Cover	7
6(ii)	Map showing road projects with respect to Modelled Tiger Corridors	7
6(iii)	Map showing road between Malewada and Warora (via Chimur) with respect to Forest	7
6(iv)	Map showing road between Malewada and Warora (via Chimur)	7
6(v)	Map showing road between Mul to Chandrapur with respect to Forest Cover.	7
6(vi)	Map showing road between Mul to Chandrapur with respect to Modelled Tiger Corridors.	7
6(vii)	Map showing road between Gadchiroli to Mul with respect to Forest Cover.	7

6(viii)	Map showing road between Gadchiroli to Mul with respect to Modelled Tiger Corridors.	7
6(ix)	Map showing road between Chandrapur to Ashti with respect to Forest Cover	7
6(x)	Map showing road between Chandrapur to Ashti with respect to Modelled Tiger Corridors	7
7	Summary	8
*	Annexure	9-10

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI.**

Original Application No.1030/2018

News item published in "The Times of India" Authored by Vijay Pinjarkar
Titled
"String of new road projects in Maha to cut off tiger corridors "

Date of hearing : 20.12.2018

Date of Order : 20.12.2018

List for further consideration on 26.03.2019.

1- Introduction :

Hon'ble National Green Tribunal, Principal Bench, New Delhi initiated proceedings on the basis of a news article published in the 'Times of India' on 29/11/2018. The title was 'String of New Road Projects in Maharashtra to Cut off tiger Corridors'. It was stated that these roads will make dispersal of tigers difficult. It also gave information about the tiger population that exists in this landscape of Eastern Vidarbha.(Annexure-I)

2- Order of Hon'ble National Green Tribunal (20/12/2018.)

Hon'ble NGT passed an order on dt.20/12/2018 & directed various state Government Departments & Central Government Departments to hold a joint meeting in the matter & give a report. State Forest Department was ordered to act as the Nodal Agency. It was also ordered to furnish the Action Taken Report on or before 28th February 2019. (Annexure-II)

After getting this order Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Maharashtra State requested Principal Secretary, Revenue & Forest Department to organize a meeting at the Government level, since it

involved many departments at State and Central Government level.(Annexure-III) -(2-1-2019)

Responding to this request, the State Government formed a Committee under the Chairmanship of the Principal Chief Conservator of Forests (HoFF) Maharashtra State as follows -(Annexure -IV)(10-1-2019)

1	Principal Chief Conservator of Forests (HoFF) Maharashtra State.	Chairperson.
2	Principal Chief Conservator of Forests (Wildlife) Maharashtra State.	Member.
3	Additional . Principal Chief Conservator of Forests and Nodal officer, Maharashtra State.	Member
4	Representative of the Ministry of Road Transport and Highways, Government of India.	Member
5	Representative of the National Highways Authority of India.	Member
6	Representative of the Public Works Department (Roads), State of Maharashtra.	Member
7	Representative of the National Tiger Conservation Authority.	Member
8	Representative of the Wildlife Institute of India, Dehradun.	Member
9	Chief Conservator of Forests (Planning & Management- Wildlife) Maharashtra State., Nagpur.	Member Secretary

3- This Committee was entrusted the following Terms of Reference (ToR)

1. Identification of proposed road projects cutting through the tiger corridors in the Eastern Vidarbha Landscape.
2. To study the effects of the proposed road Projects on tiger dispersal.

3. To suggest mitigation measures for the proposed road projects cutting through tiger corridors in the Eastern Vidarbha Landscape.
4. To decide upon the source of funds and agency for undertaking the suggested mitigation Measures.
5. To conduct meeting as per the directions of Hon'ble National Green Tribunal and submit the Action Taken Report to the Hon'ble National Green Tribunal, Principal Bench, New Delhi before 28/2/2019.

In order to complete the task of knowing present status of the roads being constructed, upgraded or repaired & the mitigation measures there of early action is required.

It was requested to nominate the representative of various departments. Accordingly the concerned departments were asked to attend a meeting scheduled on 25/1/2019 at Van Bhavan under the Chairmanship of Principal Chief Conservator of Forests (HoFF) Maharashtra, State.(Annexure-V)

1. The Ministry of Road Transport & Highways, Government of India, nominated Shri .Anshumali Srivastava, Chief Engineer, (Regional Officer) and in case of his absence Shri. Sanjay Garg, Chief Engineer, MoRT&HW, New Delhi. as their representative.
2. The Ministry of Road Transport & Highways on behalf of ,the Chairman National Highways Authority of India, New Delhi nominated Shri. Chandrashekhar RO-NHAI, Nagpur as the Representative of NHAI.
3. The Principal Secretary PWD, (Roads) Maharashtra State, Mumbai nominated Superintending Engineer,National Highway Circle, Nagpur as their representative.
4. The Member Secretary, NTCA, Head office CGO Complex, New Delhi nominated Shri. Nishant verma, DIG NTCA; New Delhi as their representative.

5. The Director, Wildlife Institute of India, Dehradun nominated Dr. Bilal Habib, Scientist 'E', WII Dehradun as their representative .

The 1st meeting of the Committee was held on 25/1/2019 at Van Bhavan, Nagpur under the Chairmanship of Principal Chief Conservator of Forests (HoFF) Maharashtra, State and minutes of the meeting were circulated to all. (Annexure-VI)

4- A brief of the deliberations in the first meeting which was held on 25th jan 20149 is as follows :

4 (i) Information about ongoing Road Projects in the vicinity of Tadoba- Andhari Tiger Reserve.

It was informed by the Superintending Engineer, National Highways Circle, Nagpur that in Chandrapur area there are 6 ongoing projects of Road upgradation over the length of 205.22 kms and he further informed that if a road passes through some Sanctuary or National Park or its Eco-Sensitive Zone only then clearance from the concerned Wildlife Authority/Forest Authority is sought. However for Road Works in corridors they do not seek approval. Chief wildlife Warden, Maharashtra State suggested that the mitigation measures should be considered for Road Works in Protected Area, Eco-Sensitive Zone & also the Wildlife Corridors.

4 (ii) Providing documents pertaining to the Road Project (KML files & Maps)

Hon'ble Chairman of the Committee directed that submission of KML files & preliminary data should be completed before 28th January 2019. Report from the field, about probable mitigation measures needs to be furnished before the 15th February 2019.

4(iii) Information about Mitigation Measures.

Representative of WII- Dehradun put forth the view that, taking up only up gradation without widening of the road created more problems. He asked for KML files from the concerned departments so as to enable him to provide data for suitable mitigation measures, type & location.

4(iv) The NTCA representative pointed out that many private areas are located in the corridors, hence road projects attract the provisions of Section 38(O) of the Wildlife (Protection) Act 1972. Considering these aspects, action for implementing /Providing mitigation measures should be carried out accordingly in areas linking one Tiger Reserve or PA to another Tiger Reserve or PA.

4(V) The Chief Engineer, Ministry of Road Transport & Highways Government of India agreed that if the mitigation measures are suggested by the WII or NTCA they will be followed with in co-ordination with the Chief Conservator of Forests (T), Chandrapur.

5. Brief of the deliberations of the second meeting held on the 22nd Feb 2019.

The 2nd meeting of the committee for preparation of the status report for submission to the Hon'ble NGT with the approval of the Government was held on 22nd February 2019.

5(i) The Chairman of the Committee also emphasised that a status Report of the Committee deliberations should be submitted before 28th February 2019 as directed by the Hon'ble NGT.

After the 1st meeting, the Executive Engineer National Highway division Gadchiroli submitted a list of the roads in the vicinity of Tadoba-Andhari Tiger Reserve to the Chief Conservator of Forests (T), Chandrapur. The Chief Conservator of Forests (T), formed a team for each of these roads under the Assistant Conservator of Forests. These teams were asked to visit & inspect the

roads & find out, which mitigation measures are required and suggest tentative locations about the same.

Accordingly the following roads were visited by the team and tentative indications for possible mitigation measures were made.

1. Malewada –Chimur NH 353E mitigation measures not required.
2. Chimur- Warora NH 353E mitigation measures required.
3. Mul- Chandrapur NH 930 mitigation measures required
4. Gadchiroli-Mul NH 930 mitigation measures required.
5. Chandrapur-
Ballarpur-Kothari NH 353B mitigation measures required
-Gondpimpri-Ashri
6. Navegon –Ashti NH 353B mitigation measures not required

5(ii) Superintending Engineer, National Highways Circle, Nagpur & Chief Conservator of Forests (T), Chandrapur gave information about the status of the road Projects that are either proposed or are under consideration for up gradation in the Chandrapur area. The following 9 roads had been mentioned in the News Item that appeared in the 'Times of India'.

1. Nagbhid-Bramhapuri- Armori.
2. Malewada- Chimur.
3. Chimur- Warora.
4. Mul- Chandrapur.
5. Bamni- Navegaon-Ashti.
6. Gadchiroli-Mul.
7. Chimur-Kanpa

8. Hinganghat-Nandori-Kora-Khadsangi-Neri-Pendhri-Sindewahi-Mul-135 km
9. Nagbhid-Mul-PWD (State) - Widening of the road is under progress but there is no proposal with the Chief Conservator of Forests (T), Chandrapur, as forest area is not involved in this road project.

5(iii) - Dr. Bilal Habib, Scientist –‘E’, WII brought to the notice of the Committee the following through a presentation.

- 6(i) Map showing road projects with respect to Forest Cover.
- 6(ii) Map showing road projects with respect to Modelled Tiger Corridors.
- 6(iii) Map showing road between Malewada and Warora (via Chimur) with respect to Forest Cover.
- 6(iv) Map showing road between Malewada and Warora (via Chimur) with respect to Modelled Tiger Corridors.
- 6(v) Map showing road between Mul to Chandrapur with respect to Forest Cover.
- 6(vi) Map showing road between Mul to Chandrapur with respect to Modelled Tiger Corridors.
- 6(vii) Map showing road between Gadchiroli to Mul with respect to
 - Forest Cover.
- 6(viii) Map showing road between Gadchiroli to Mul with respect to Modelled Tiger Corridors.
- 6(ix) Map showing road between Chandrapur to Ashti with respect to Forest Cover.
- 6(x) Map showing road between Chandrapur to Ashti with respect to Modelled Tiger Corridors.

All these Maps are annexed to this report as Annexure.

(Annexure-VII)

7. Principal Chief Conservator of Forests (HoFF) Maharashtra State emphasized that the concerned authorities should have updated information of the status of the roads like new roads, roads under repair, roads under upgradation, particularly the roads which fall under ESZ, under Protected Area & those passing through identified Tiger Corridors.

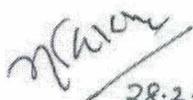
Chairman of the committee was informed that this information has been gathered by Wildlife Institute of India after doing extensive field study over a long period. Like wise site specific study for mitigation measures is required. Extensive work on the various kinds of Mitigation measures has been done in many regions of the world. Some work has just been done on NH7 in Maharashtra. There is no doubt that mitigation measures will have to be carried out on all road projects cutting across Protected Areas as well as in corridors linking one Protected Area to another.

We are now at a stage where tiger corridors in the Chandrapur District have been mapped and work on the remaining portion of the Eastern Vidarbha Landscape has also been taken up.

The Chief Conservator of Forests (T), Chandrapur has identified certain locations, where mitigation measures need to be taken up. However further detailing would have to be done in consultation with NHAI and PWD authorities. Also the Wildlife Institute of India would have to be consulted regarding the locations selected and the types of mitigation measures suggested.

Remaining areas would also have to be visited and a road wise comprehensive plan would have to be prepared and discussed with the NHAI and the PWD regarding the technicalities and costs involved.

This report is a Status report on the present situation as desired by the NGT in its order dated 20/12/2018.


28.2.2019
Principal Chief Conservator of Forests (Wildlife)
And Chief Wildlife Warden,
Maharashtra State.

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 12-1/2009-NTCA (Vol.II)

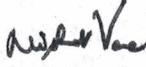
New Delhi, the April 9, 2019

OFFICE MEMORANDUM

Sub: Summary record of the meeting held on 08.04.2019 at NTCA, Hqrs, New Delhi – reg.

Please find enclosed herewith a copy of the summary record of the meeting held on 08.04.2019 in compliance to the order dated 26.03.2019 in Original Application No. 1030/2018 of Hon'ble NGT, Principal Bench, New Delhi under Chairmanship of ADG (Wildlife), Ministry of Environment, Forests and Climate Change in Conference Hall of the NTCA, for information and necessary action.

These issues with approval of the competent authority.


(Nishant Verma)
Deputy Inspector General of Forests (NTCA)
Tel. (EPABX): + 91 11 24364837-39
FAX: +91 11 24367836
Email: dig2-ntca@nic.in

F. No. 12-1/2009-NTCA (Vol.II)

Copy forwarded for kind information / necessary action to:

1. The Chief Wildlife Warden, Govt. of Maharashtra
2. The Director, Wildlife Institute of India, Dehradun
3. Dr. Bilal Habib, Scientist, Wildlife Institute of India, Dehradun
4. PS to the DG&SS, MoEF&CC, IPB, New Delhi
5. PS to the ADG (Wildlife), MoEF&CC, IPB, New Delhi
6. PS to the ADG (PT) & MS (NTCA), New Delhi
7. PA to IGF, NTCA, New Delhi
8. DIG/AIGs, NTCA, HQrs, New Delhi.

012
Nishant Verma
7/4/19

Summary record of the meeting held on 08.04.2019 at 4:00 P.M at NTCA Hqrs, New Delhi (in compliance to the order dated 26.03.2019 in Original Application No. 1030/2018 of Hon'ble NGT, Principal Bench, New Delhi)

The meeting in compliance to the Hon'ble NGT order dated 26.03.2019 in Original Application No. 1030/2018 was held on 08.04.2019 at NTCA Hqrs., New Delhi under the chairmanship of the ADG (Wildlife), MoEF&CC, New Delhi. The meeting was attended by the following officials:

- a) Dr. Anup Kumar Nayak, ADG (PT) & MS (NTCA)
- b) Dr. Amit Mallick, IGF, NTCA
- c) Shri Nishant Verma, DIGF, NTCA
- d) Dr. Vaibhav C. Mathur, AIGF, NTCA

2. At the outset, the ADG (PT) & MS (NTCA) welcomed the Chair and the participants and outlined the importance and urgency of the matter. The DIGF, NTCA informed the Chair about its background. The Hon'ble NGT initiated the proceedings on the basis of news article titled '*String of new road projects in Maharashtra to cut off tiger corridors*' and passed an order dated 20.12.2018 directing the various the Central / State Govt. Departments to hold a joint meeting and furnish action taken report on or before 28.02.2019.

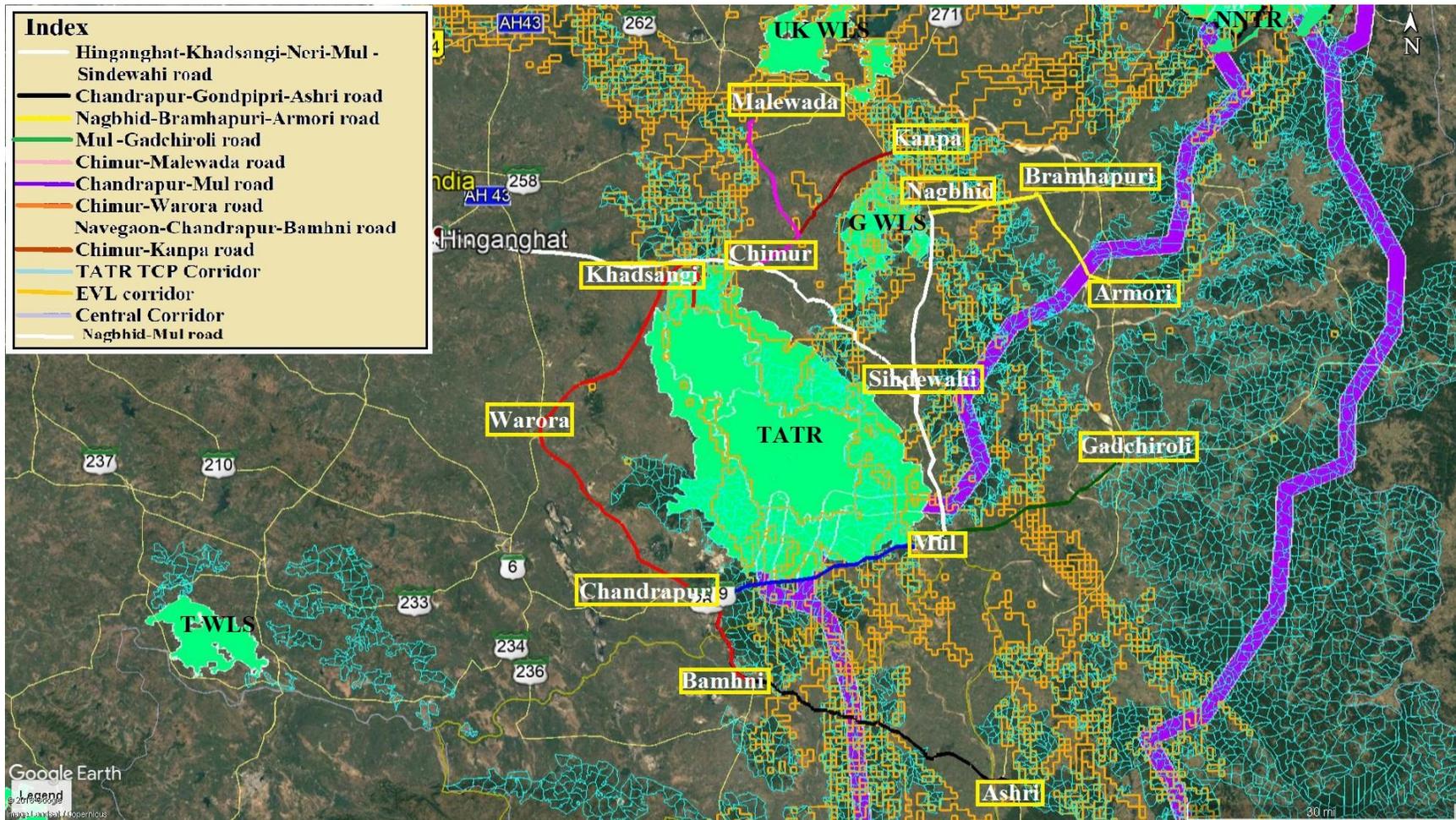
3. Now, in compliance of the Hon'ble NGT order dated 26.03.2019, the ADG (Wildlife) and the Director, Project Tiger have been directed to prepare an action plan and furnish action taken report before the next date of hearing i.e. 30.05.2019. After detailed discussions / deliberations and taking consent of the CWLW, Govt. of Maharashtra over phone, the following course of action has been decided.

- a) A joint team shall be constituted involving the representatives of NTCA (AIG, RO, CZ), representative of WII(Dr. Bilal Habib), representative of CWLW, Maharashtra, representative of NHAI, Nagpur / representative of State PWD, Nagpur.
- b) This joint team shall carry out the site appraisal of the six roads mentioned in the aforesaid order as per the following terms of reference:
 - **Identification of the animal crossing points / spatial locations as per the delineated tiger corridor.**
 - **Prescribing the mitigation structures including their designs / dimensions and special positioning as per WII technical document viz." Eco friendly measures to mitigate impacts of linear infrastructure, 2016".**
 - **Assessment of cost estimates of the proposed mitigation structures.**
 - **The team after site appraisal shall submit its report by 26.04.2019**
- c) It was decided that a meeting shall be scheduled preferably at Nagpur (in the first week of May, 2019) with all the stakeholders concerned to firm up the feasibility of mitigation structures and finalization of action taken report for submission to Hon'ble NGT.

The meeting ended with vote of thanks by the Chair.

Nishant Verma
9/4/19

Maps 1



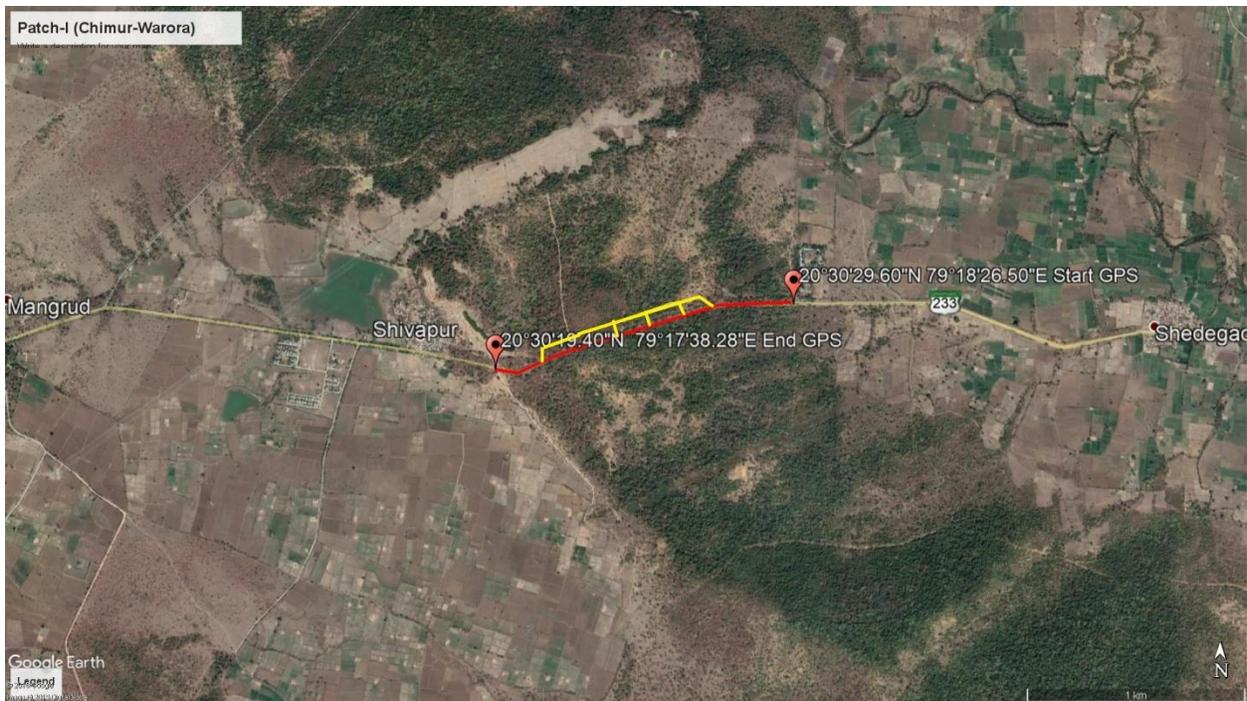
Animal crossings as per LCP, TCP and EVL corridor vis-à-vis roads mentioned in the news.

Map 2



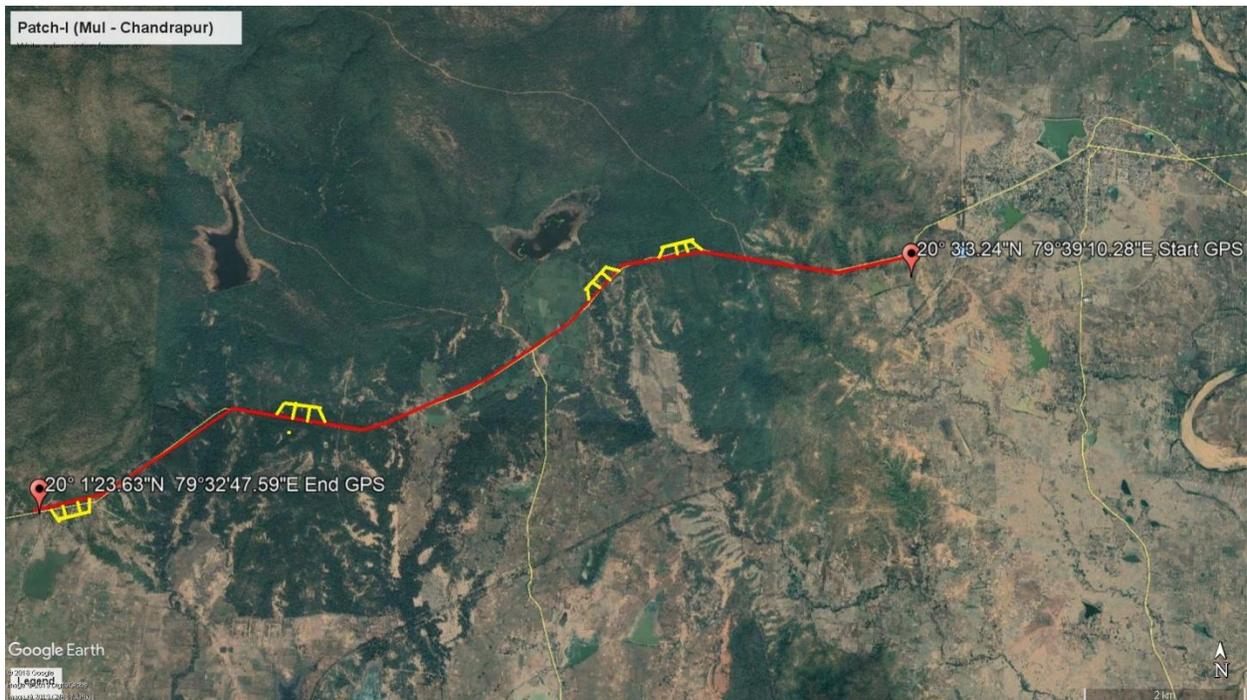
Nagbhir-Armori road - Patch I - one 300 m and one 150 m underpasses is proposed

Map 3



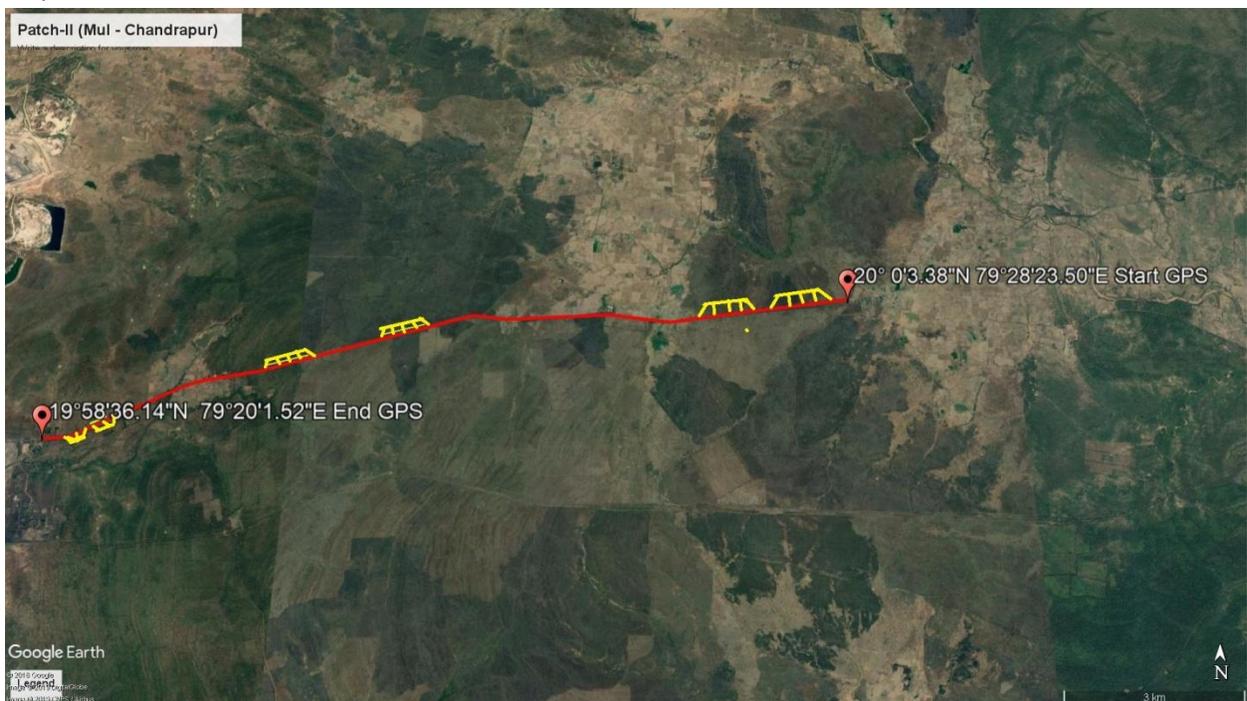
Chimur-Warora road - Patch I - one 750 m underpass is proposed

Map 4



Mul-Chandrapur road - Patch I - four 300 m underpasses are proposed

Map 5



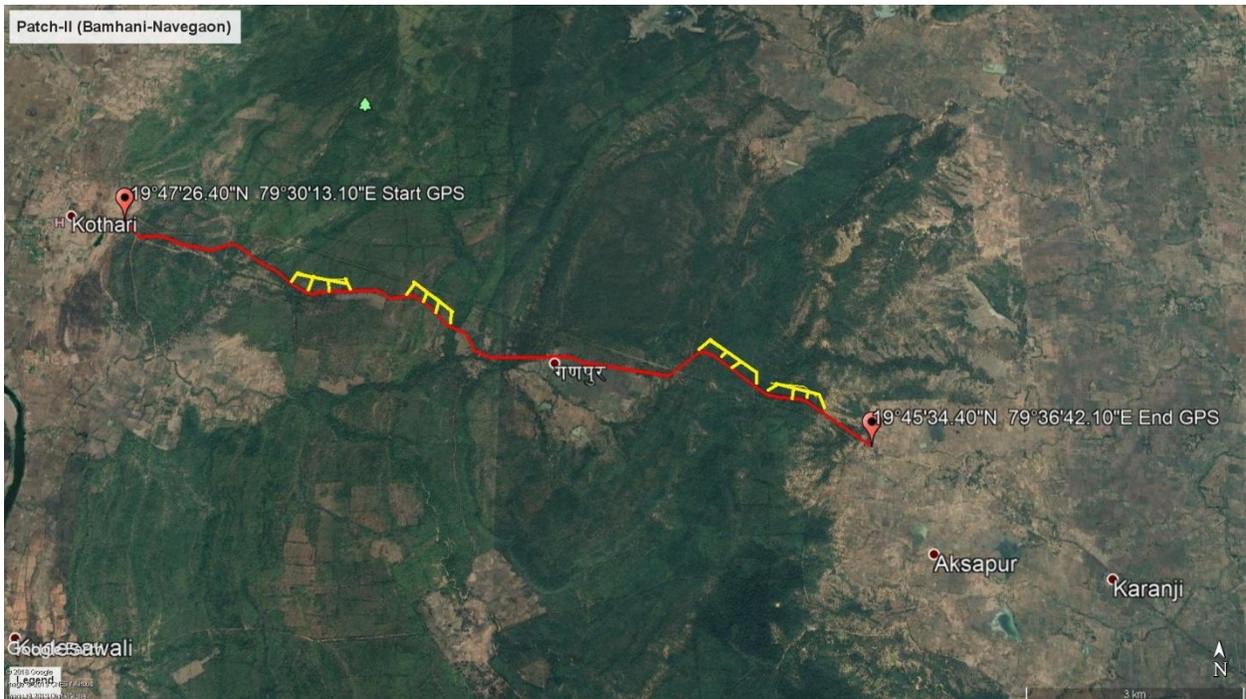
Mul-Chandrapur road - Patch II - two 750 m underpasses are proposed between Chichpalli to Ghantachowki, two 750 m underpasses are proposed between Ghantachowki to Lohara and two 300 m underpasses are proposed between Lohara to Chandrapur

Map 6



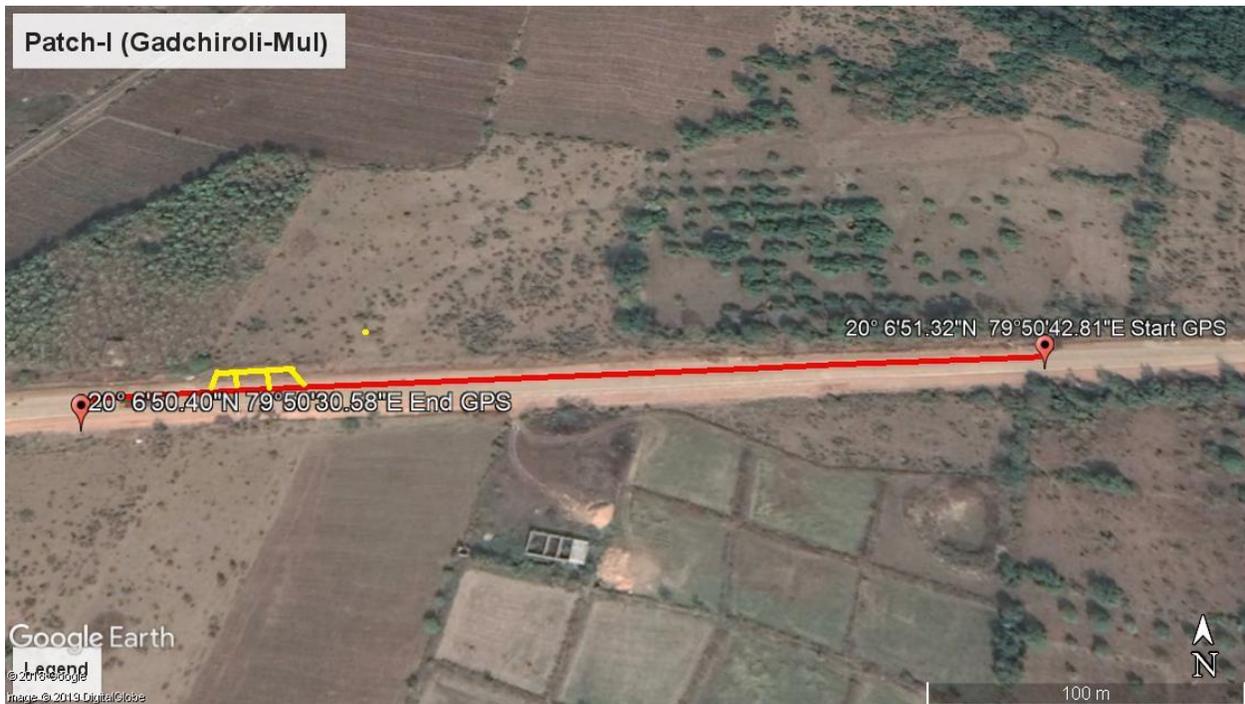
Bamni-Navegaon road - Patch I - one 300 m underpass is proposed

Map 7



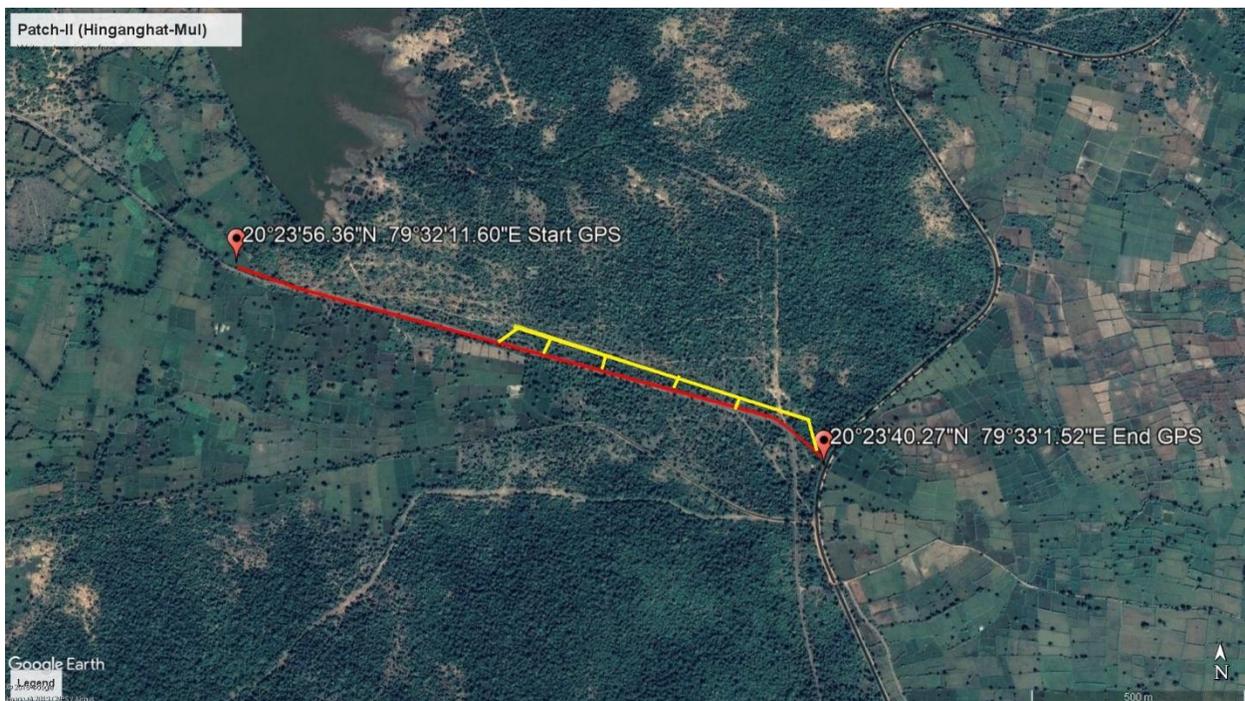
Bamni-Navegaon road - Patch II - two 750 m underpasses are proposed between Kothari to Ganpur and two 750 m underpasses are proposed between Ganpur to Aksapur

Map 8



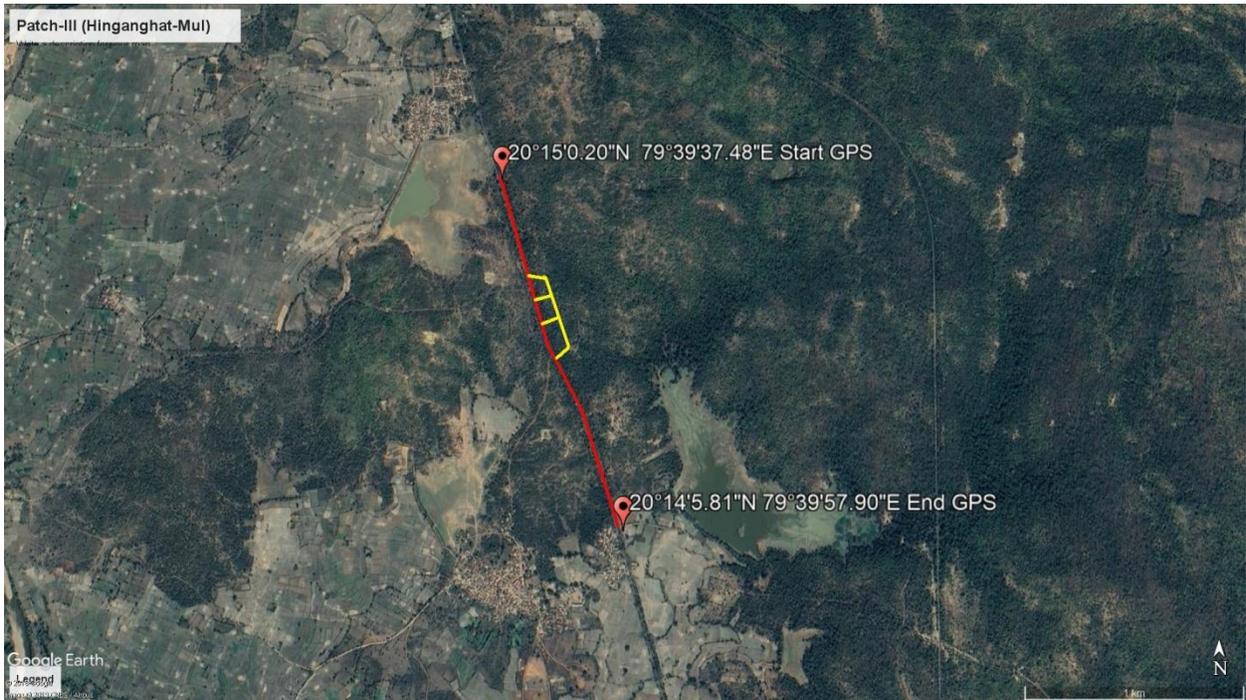
Gadchiroli-Mul road - Patch I - one 30 m underpass is proposed

Map 9



Hinganghat-Mul road – Patch II - one 750 m underpass is proposed

Map 10



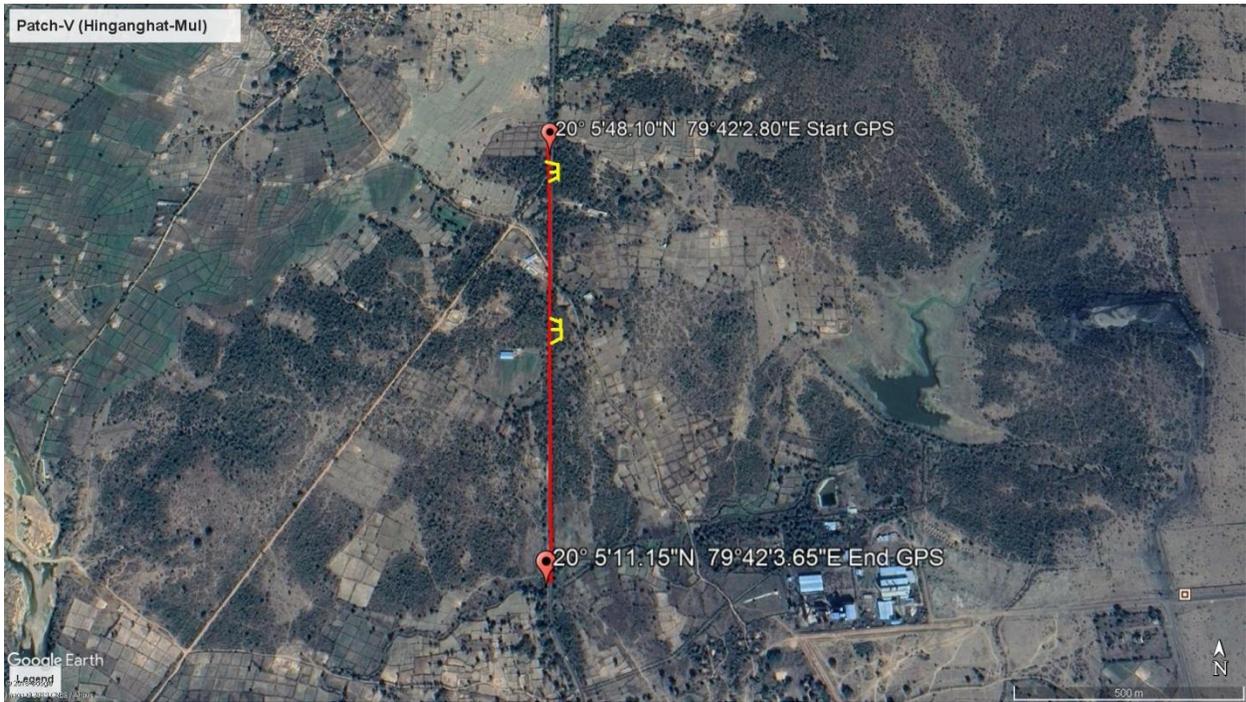
Hinganghat-Mul road – Patch III - one 300 m underpass is proposed between Murmadi to Saradpar

Map 11



Hinganghat-Mul road – Patch IV - one 300 m underpass is proposed

Map 12



Hinganghat-Mul road – Patch V - two 30 m underpasses are proposed

Map 13



Nagbhir-Mul road - Patch I – one 300 m and one 750 m underpass is proposed

2993

No.15-5 /2011-NTCA-RONGP
Government of India
Ministry of Environment, Forests & Climate Change
National Tiger Conservation Authority, Regional Office, Nagpur

Near CP & Berar High School,
Ravinagar, Nagpur (MS) – 440001
Tele/fax: +91-712-2560187
Email: aigcentral-ntca@nic.in
hkamdi@gmail.com
Dated-18th June, 2019

To
The ADG (PT) and Member Secretary
National Tiger Conservation Authority,
New Delhi.

Sub: Revised site appraisal report to suggest mitigation measures for road projects cutting through tiger corridors in the Eastern Vidarbha Landscape-reg.

Sir,
With respect to the subject mentioned above, please find enclosed here signed copy of the said report for onwards action at your end.

It is further to mentioned that, out of six members in constituted committee, report is signed by AIG, NTCA, Regional Office, Nagpur and Field Director, Tadoba Andhari Tiger Reserve. Concurrence to the said report was communicated by Dr. Bilal Habib, Scientist E, WII, Dehradun over email dated 10/05/2019 (print of the email is enclosed). However, report was deemed to be concurred by NHA and PWD representatives in absence of response to the repeated emails, calls and WhatsApp messages for seeking suggestions and concurrence (print of the email is enclosed).

Encl: As above

Handwritten signature
02/07

NTCA	
DIARY NO./	2647
DATE	2/7/19
ADG (PT)	<i>[Signature]</i>
DIG (NTCA)	<i>[Signature]</i>
<i>[Handwritten notes]</i>	

Yours faithfully,
[Signature]

(Kamdi Hemant Bhaskar, IFS)
Assistant Inspector General of Forests
NTCA, Regional Office, Nagpur

Report on

Mitigation Measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape

A news item titled "String of new road projects in Maharashtra to cut off tiger corridors" was published in The Times of India daily on 29th November, 2018 (Annexure I). News highlighted that East Vidarbha Landscape has presence of at least 200 tigers of which 60% are in Tadoba-Andhari Tiger Reserve and adjoining areas. It was mentioned in the news that several roads coming up for resurfacing/upgradation through corridor areas will make dispersal of wildlife a huge problem. Hampered movement of wildlife by increased traffic volume will also cause surge in human wildlife conflict bringing humans in direct contact with large predators such as Tigers, Leopards and Sloth Bears. It was also mentioned that as per World Bank Report "Linear Infrastructure often fragments wildlife habitat and could be single biggest threat to low density and wide-ranging species such as tiger".

Taking *sua moto* cognisance of this news item Hon'ble National Green Tribunal initiated proceedings through Original Application No. 1030/2018 (Annexure-II) dated 20/12/2019. Hon'ble Court opined that the road projects which disturb tiger corridor may need to be reviewed. Hon'ble Court ordered Principal Chief Conservator of Forest (Wildlife), Maharashtra to hold the joint committee meeting of Ministry of Road, Transport and Highway, Government of India, National Highway Authority of India, Public Works Department, State of Maharashtra, State Forest Department and Director, Project Tiger/NTCA, MoEF & CC and furnish the report on action taken.

Accordingly, Maharashtra Forest Department constituted committee and subsequently submitted report on 28/02/2019 (Annexure III).

Hon'ble Court through order (Annexure IV) dated 26/03/2019 expressed dissatisfaction about report directed Additional Director General (Wildlife) MoEF & CC along with Director, Project Tiger to prepare action plan in the matter and to oversee execution and furnish action taken report.

Accordingly, MoEF & CC constituted a team vide NTCA, New Delhi Office Memorandum No. F. No. 12-1/2009-NTCA (Vol. II) dated 15/04/2019 (Annexure V) to cause site appraisal and submit the report as per following terms of reference.

- Identification of animal crossing points/spatial locations as per delineated tiger corridors.
- Prescribing the mitigation structures including their designs/dimensions and special positioning as per WII technical document viz "Eco friendly measures to mitigate impacts of linear infrastructure, 2016".
- Assessment of cost estimate of the proposed mitigation measures.

Following members were nominated in the team

1. Kamdi Hemant Bhaskar, AIGF, NTCA, Regional Office, Nagpur
2. Dr. Bilal Habib, Scientist E, WII, Dehradun

Md. AIGF NTCA

*PLA
FD, TATR*

3. Shri N. R. Praveen, Field Director, TATR, Chandrapur, CWLW Representative
4. Shri Chandrashekhar, Regional Officer, Nagpur, NHA Representative
5. Shri Theng, Superintendent Engineer, PWD, Nagpur, for NH section
6. Mrs. Sakharwade, Superintendent Engineer, PWD, Chandrapur, for MSH section

Team convened meeting on 22nd April, 2019 at Field Director's Office, Chandrapur (Attendance sheet is at Annexure-VI).

Review of the roads mentioned in the news item vis-a-vis their nomenclature and construction stage was assessed from PWD and NHA which is given below.

Sr. No.	Name of road as per news item	Nomenclature as per PWD/NH	Status of road upgradation/resurfacing
1	Nagbhid-Bramhapuri-Armori	NH353 D	Advance construction stage
2	Malewada-Chimur	NH353 E	Advance construction stage
3	Chimur-Warora	NH353 E	Work under progress
4	Mul-Chandrapur	NH 930	Work under progress
5	Bamni-Navegaon	NH 353 B	Work under progress
6	Gadchiroli-Mul	NH 930	Work under progress
7	Chimur-Kanpa	MSH 314 (Principally declared as NH but under jurisdiction of state PWD)	Under planning/DPR stage
8	Hinganghat-Nandori-Kora-Khadsangi-Neri-Pendhri-Sindewahi-Mul	MSH 322 (Principally declared as NH but under jurisdiction of state PWD)	Under planning/DPR stage
9	Nagbhid-Mul	MSH 9	Work under progress

It was decided in the meeting that identification of the animal crossing zones and prescribing mitigation structures will be done by NTCA, WII and CWLWs representative whereas the assessment of the cost will be done by NHA and State PWD representatives. Accordingly, report is prepared as per terms of reference.

A. Identification of animal crossing points/spatial locations as per delineated tiger corridors

Tadoba landscape has high density of tigers inside tiger reserve as well as outside. There are numerous places where tigers cross occasionally. Therefore, to prioritize resources, it was decided to follow corridors as delineated in

- Adjoining Area Plan as a part of Tiger Conservation Plan prepared vide article 38 O (3) (b) of the all concerned Tiger Reserves and approved by this authority under section 38 O (1) (a) of Wildlife Protection Act 1972. (TCP Corridors)
- NTCA/WII report on "CONNECTING TIGER POPULATIONS FOR LONG-TERM CONSERVATION" meant for guiding conservation inputs in consonance with the development agenda of the country as per article 38 O (1) (g) of Wildlife Protection Act 1972. (Least Cost Pathways/LCP)

Md
AQU NTCA

PLA
ED, TATR

Sr No	Road details			Corridor Patch				Proposed Underpass	Cost Estimates for underpass	Remark	
	Road Name	Length of Project	Tentative Protect Cost	Corridor Number	Approx Length of Corridor	Approx Coordinates of the Patch (DD MM S.S.SS)	Corridor Crossings				
1	Nagbhair-Armori NH 353 D	39.37 km	269.05 Cr	Patch I	2 km	20 36 01.42 79 47 25.02	20 36 15.72 79 48 48.53	EVL Corridor TCP Corridor	One 300 m One 150 m	26.85 Cr 14.40 Cr	This patch has agriculture area towards north from the midpoint therefore reducing the effective structural and functional connectivity. (See Map II)
				Patch II	3 km	20 30 24.18 79 56 11.36	20 28 55.22 79 57 10.69	TCP Corridor LCP	Not proposed	---	This is a non-forested patch of corridor overlapping with the major bridge on Wainganga river hence underpass is not proposed.
2	Malewada-Chimur NH 353 E	30.535 km	231.11 Cr	---	---	---	---	None	Not proposed	---	Corridor here is aligned parallel to road. Road doesn't cross corridor. Therefore, underpass is not proposed.
				Patch I	1.5 km	20 30 29.6 79 18 26.5	20 30 19.4 79 17 38.28	TCP Corridor EVL Corridor	one 750 m	56.65 Cr	This is pinch point of connectivity between Tadoba Andhari Tiger Reserve and Umred Karhandla Pauni Wildlife Sanctuary. (See Map III)
4	Mul-Chandrapur NH 390	39.67 km	110.02 Cr	Patch I	12.5 km	20 03 03.24 79 39 10.28	20 01 23.63 79 32 47.59	TCP Corridor EVL Corridor	four 300 m	116.85 Cr	Road in this patch is passing through forest. But strength of the connectivity is weakened by agriculture and urbanisation as one move away from TATR. (See Map IV)
				Patch II	16 km	20 00 03.38 79 28 23.5	19 58 36.14 79 20 01.52	TCP Corridor EVL Corridor LCP	two 750 m between Chichpalli to Ghantachowki	113.51 Cr	This patch has very strong connectivity towards Indravati and Kawal Tiger Reserve. It also connects to Kanhalgaon and Tipeswar Wildlife Sanctuary. Local dispersal of tigers towards Chandrapur and Central Chanda Division as well as FDCM areas as well as Gadchiroli also happens through this patch. (See Map V)
5	Bamni-Navegaon NH 353 B	42.25 km	163.60 Cr	Patch I	1.5 km	19 49 49.82 79 24 43.02	19 49 16.67 79 25 21.12	TCP Corridor EVL Corridor	two 750 m between Ghantachowki to Lohara	113.51 Cr	There is stepping stone connectivity towards Tipeswar and Kawal through discontinuous forest blocks. (See Map VI)
				Patch II	12.5 km	19 47 26.4 79 30 13.1	19 45 34.4 79 36 42.1	TCP Corridor EVL Corridor LCP	two 750 m between Kothari to Ganpur	29.21 Cr	This is part of the proposed Kanhalgaon Wildlife Sanctuary approved by State Board of Wildlife. (See map at annexure VIII). This is a continuous patch to the Patch II of Mul-Chandrapur road. This has very high significance for dispersal and

506-NH 353

PUR TATR
PD, TATR

Exact locations of the underpasses will be positioned based on available tiger distribution and dispersal studies through tiger collaring as well as camera trapping and after sign survey ensured by Forest Department. Locations of the underpasses will be fixed on ground after joint survey by user agency and State Forest Department.

Following roads may be taken on priority for construction of mitigation measures as agreed by participants in meeting at NTCA Hqrs on 05/05/2019. (Minutes of the meeting are placed at Annexure X)

- i. Mul-Chandrapur
- ii. Bamni-Navegaon
- iii. Nagbhir-Mul
- iv. Chimur-Warora
- v. Hinganghat-Mul

2. Underpasses will also have integrated options of light and sound barriers, camouflaging and landscaping including restoration of habitat beneath underpasses after construction. There will not be right of passage to public via underpass.
3. To avoid frequent repairs and disturbances, carriageway pavement within corridor patch should be rigid having well planned road side drainage and utility ducts.
4. Sections of the road not covered under clear opening and approaches of the underpasses will be fenced to prevent animal crossing through those sections and subsequent roadhits. Design and dimension of animal proof fencing will be considering large carnivores, reptiles, amphibians and rodents. There will be locking gates in the fence at every 500 m operated by State Forest Department to deal with emergency
5. User agency will make provision of vegetative or mechanical canopy closure option for movement of arboreal wildlife and pipe/ cc culvert for movement of reptiles, amphibians, rodents, etc (both at every 100 meters of the forest patch not covered through clear opening of underpasses).
6. User agency will install overhead signboard at every 500 meter in the forest area about animal crossing, restriction on feeding animal, garbage dumping, parking, honking, etc as per the advice of Forest department.
7. There should not be felling of trees. All trees (in a girth class for which there is technology available for transplantation) will be transplanted by user agency with adequate care for maximization of survival.
8. On-site engineering options will not mitigate the problems in totality due to roads. Therefore, user agency should keep a lump-sum amount of 5% of project cost as corpus with Tadoba-Andhari Tiger Reserve Foundation to meet the recurring cost and unforeseen expenditure to mitigate certain adverse impacts of road and to maintain corridor connectivity and meta-population dynamics, rescue of road accident animals, encroachment eviction, removal of invasive species, waste disposal, strengthening protection, habitat improvement, waterhole development, private land procurement within corridor, silvi-horti based land use promotion in private area within corridor, need based fencing of area between two underpasses, etc. for area impacted.

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TATR
(Cost estimates were not included for the Point Number 2 to 6 of mitigation part in the report except for 32.9 km (Nagbhir-Sindewahi) section of Nagbhir Mul road. It will vary as length n width of road in affected zone is to be decided. Also there may be necessity of the diversion of forest land for construction of concrete road with appropriate drain and utility duct as recommended. Explanation given by PWD NH in this regards is placed at Annexure IX A)

9. Monitoring of flow value of corridors before, during and after construction of the roads with mitigation measures will be carried out by State Forest Department.

10. Monitoring committee shall be constituted under chairmanship of concern Chief Conservator of Forests or equivalent officer having representation from user agency. Committee shall submit monthly report to the Chief Wildlife Warden on progress of work and compliance of the conditions laid out under this report as well as other if any.
11. Completion Certificate will be issued by user agency to the contractor after written certification from Chairman of Monitoring Committee countersigned by Chief Wildlife Warden that the all the conditions are satisfactorily complied.
12. Post completion monitoring and maintenance of mitigation structure will be done jointly on advice of forest department and at cost of user agency.


AGF NGA

PCA
RD, JATR

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 12-1/2009-NTCA (Vol.II)

New Delhi, the May 7, 2019

OFFICE MEMORANDUM

Sub: Summary record of the meeting held on 06.05.2019 at NTCA, Hqrs, New Delhi – reg.

Please find enclosed herewith a copy of the summary record of the meeting held on 05.05.2019 in context of mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidharbha Landscape under Chairmanship of the ADG (Wildlife), Ministry of Environment, Forests and Climate Change and the ADG (PT) & Member Secretary (NTCA), New Delhi in Conference Hall of the NTCA, for information and necessary action.

These issues with approval of the competent authority.

Encl: As above.

Nishant Verma
(Nishant Verma)
Deputy Inspector General of Forests (NTCA)
Tel. (EPABX): + 91 11 24364837-39
FAX: +91 11 24367836
Email: dig2-ntca@nic.in

Distribution:

1. The Chief Wildlife Warden, Govt. of Maharashtra
2. The Chief Conservator of Forest, Chandrapur, Maharashtra
3. The Field Director, Tadoba-Andhari Tiger Reserve, Maharashtra
4. The AIGF, NTCA, Regional Office, Nagpur.
5. Dr. Bilal Habib, Scientist – E, Wildlife Institute of India, Dehradun.
6. The Regional Officer, National Highway Authority of India, Nagpur.
7. The Secretary (Roads), State Public Works Department, Maharashtra
8. The Superintendent, Engineer & Deputy Secretary, National Highways /Roads, State Public Works Department, Maharashtra.
9. The Superintendent Engineer, Nagpur (NH Section) & Chandrapur, (MSH Section), State Public Works Department, Maharashtra.
10. The IGF, NTCA, Hqrs. New Delhi.
11. The DIGF/ AIGs, NTCA, Hqrs. New Delhi.

Copy forwarded for kind information and necessary action:

1. The Director, Wildlife Institute of India, Dehradun.
2. PPS to ADGF (WL), MoEF&CC, New Delhi
3. PS to ADG (PT) & MS (NTCA).

Nishant Verma
(Nishant Verma)
Deputy Inspector General (NTCA)

Summary record of the meeting held on 06.05.2019 at 1130 hrs. at NTCA Hqrs, New Delhi regarding mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape.

The meeting in compliance to the mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape was held on 06.05.2019 at NTCA Hqrs., New Delhi under the chairmanship of the ADG (Wildlife), MoEF&CC & ADG (PT) & MS (NTCA), New Delhi. The meeting was attended by the following officials:

- a) Shri M. S. Negi, ADG (WL), MoEF&CC.
- b) Dr. Anup Kumar Nayak, ADG (PT) & MS (NTCA)
- c) Shri Nitin Kakodkar, PCCF (WL) & CWLW, Maharashtra
- d) Dr. Amit Mallick, IGF, NTCA
- e) Shri Nishant Verma, DIGF, NTCA
- f) Dr. Vaibhav C. Mathur, AIGF, NTCA
- g) Dr. Raja Ram Singh, AIGF, NTCA
- h) Shri Kamdi Hemant Bhaskar, AIGF, NTCA, Regional Office, Nagpur
- i) Shri S. V. Rama Rao, CCF, Chandrapur
- j) Shri P. K. Mourya, SE, Ministry of Road Transport & Highway
- k) Shri B. D. Theng, SE, PWD NH Division, Nagpur

2. At the outset, the ADG (PT) & MS (NTCA) welcomed the ADG (WL), MoEF&CC and the participants and outlined the importance and urgency of the matter. Shri Nishant Verma, DIGF, NTCA informed the Chair that the Hon'ble NGT, Principle Bench, New Delhi had taken *suo moto* cognizance on a news article titled "**String of new road project to cut out tiger corridors**" published on 29.11.2018 and initiated proceedings through an Original Application No. 1030/2018. In compliance of NGT order dated 26.03.2019, the ADG (WL), MoEF&CC along with Director, Project Tiger have been directed to prepare action plan to oversee its execution and furnished an action taken report before the next date which is 30/05/2019.

3. The NTCA through its O.M dated 15.04.2019 has constituted a team to cause site appraisal and submit the report as per the following terms of reference:

- **Identification of the animal crossing points / spatial locations as per the delineated tiger corridor.**
- **Prescribing the mitigation structures including their designs / dimensions and special positioning as per WII technical document viz. "Eco friendly measures to mitigate impacts of linear infrastructure, 2016".**
- **Assessment of cost estimates of the proposed mitigation structures.**

The team consisting of Shri Hemant Kamdi, AIGF, NTCA, RO, Nagpur, Dr. Bilal Habib, Scientist, WII, Dehradun along with the representatives of CWLW, Maharashtra, NHAI & PWD department, Nagpur had carried out the site appraisal as per the terms of reference and submitted report in the meeting today.

4. Shri Nishant Verma, DIGF, NTCA presented the committee report and the same has been discussed and deliberated in detail. Consequent to the deliberations on the various aspects, the following decisions were taken in the meeting.

- It was decided to include the total length of the project road, length of the corridor being impacted and also include reference to the maps showing the mitigation structures for each road and the total project cost in the table of proposed mitigation structures.
- The GPS coordinates / Geo locations of the proposed corridor patches/mitigation measures should be indicated in the maps enclosed.
- The representative of MORTH suggested to re-examine the proposed mitigations structures on technical feasibility and optimization of costs as cost involved is very high. He requested for prioritizing the roads for implementation in phased manner.

Nishant Verma 7/5/19

- The representative of State PWD informed that the roads indicated in the report at SL.No. 7-9 viz. Chimur-Kanpa, Hinganghat -Mul and Nagbhid -Mul have not been declared as NH and are being maintained by State PWD. It was decided that the user agency shall provide information related to the DPR, status of work progress, status of road up gradation, the procedure of taking sanction of the proposed mitigation structures to the NTCA constituted committee.
- It was decided to provide the mitigation structures as per the engineering terminology viz. elevated stretches / flyovers etc.
- It was decided to prioritize the roads in view of ecological requirements of maintaining functional connectivity of the corridors for ensuring permeability of tigers. It was decided that following roads are very important for ensuring connectivity of tigers and other wild animals moving from Tadoba-Andhari Tiger Reserve to other interlinking Protected Areas viz. Ghodazari, Umred Pauni Karhandla, Kanhalgoan, Tipeswar and Navegaon Nagzira, Indravati and Kawal Tiger Reserves.

1. Mul-Chandrapur
2. Bamni-Navegaon
3. Nagbhid-Mul
4. Chimur-Warora
5. Hinganghat-Mul

- It was decided that the team shall review its report in light of above mentioned points and shall submit the final report for approval to this Authority.
- It was also decided that the concerned user agency shall prepare the phased plan of construction of mitigation measures keeping in mind the importance of the above mentioned **five** roads. Moreover, the further **course of action / the plan of action** that has been decided are as under:
 1. The committee shall submit its final report as per the above decided points and submit the same to NTCA Hqrs. New Delhi by **10.05.2019**.
 2. The report so received shall be submitted to MoRTH as well as the concerned division of State PWD for getting their comments / response to NTCA Hqrs. by **17.05.2019**.
 3. The report after taking due approval from the competent authority shall be submitted to the Hon'ble NGT, Principle Bench, New Delhi in the form of an affidavit latest by **24.05.2019**

The meeting ended with vote of thanks by the Chair.

Nishat Vasa 27/5/19

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 12-1/2009-NTCA (Vol.II)

New Delhi, the May 15, 2019

To,

1. The Superintendent Engineer,
Ministry of Road Transport and Highways,
Government of Maharashtra.
2. The Superintendent, Engineer & Deputy Secretary,
National Highways / Roads,
State Public Works Department,
Maharashtra
3. The Superintendent Engineer,
Nagpur (NH Section) & Chandrapur (MSH Section),
State Public Works Department, Maharashtra.
4. The Regional Officer,
National Highway Authority of India,
Nagpur

Sub: Site appraisal report to suggest mitigation measures for road projects cutting through tiger corridors in the Eastern Vidarbha Landscape.

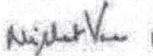
Ref: 1. Meeting held on 06.05.2019 at NTCA Hqrs, New Delhi.
2. This Authority's O.M of even number dated 07.05.2019.

Sir,

Please find enclosed herewith a copy of letter No. 15-5/2011-NTCA-RONGP dated 14.05.2019 along with site appraisal report submitted by Assistant Inspector General of Forest, NTCA, Regional Office, Nagpur on the subject cited above. In this context, I am directed to request you to kindly send your comments to this Authority latest by 20.05.2019 for further necessary action in this regard.

Encl: As above.

Yours faithfully,



(Nishant Verma)

Deputy Inspector General (NTCA)

Email: dig2-ntca@nic.in

Tel. (EPABX): + 91 11 24364837-39

FAX: +91 11 24367836

F. No. 12-1/2009-NTCA (Vol.II)

Copy forwarded for information / necessary action to: (with Enclosures)

1. The Chief Wildlife Warden, Govt. of Maharashtra
2. Dr. Bilal Habib, Scientist-E, Wildlife Institute of India, Dehradun.
3. The AIGF, NTCA, Regional Office, Nagpur.
4. PPS to ADG (Wildlife), MoEF&CC, New Delhi.
5. PS to ADG (PT) & MS (NTCA), New Delhi.

No.12037/01/2019-MAH (Z-4)
Government of India
Ministry of Road Transport and Highways
Transport Bhavan, 1, Parliament Street, New Delhi -110001

Dated the 29th May, 2019

To,

Deputy Inspector General
Ministry of Environment, Forest and Climate Change,
National Tiger Conservation Authority, New Delhi
(Kind Attention: Sh. Nishant Verma, Email: dig2-ntca@nic.in)

Subject: Site appraisal report to suggest mitigation measures for road projects cutting through tiger corridor in the Eastern Vidharbha Landscape in the State of Maharashtra- submission of comments reg.

Sir,

Kindly refer to Site appraisal report submitted by NTCA constituted committee vide letter no. 12-1/2009-NTCA (VolII) dated 15.05.2019, Following comments are offered on behalf of MoRTH after approval of competent authority: -

- (i) Nagbhid-Bramhapuri-Armori: - The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 41.25 Cr. (excluding centages). This Ministry agrees for implementation of above mitigation measures as proposed by NTCA for this stretch subject to approval of competent authority for the variation proposal & cost quantification of additional measures given under para (vii) below. NGT may be requested to allow the present on-going works.
- (ii) Malewada-Chimur: - The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 0.00 Cr. (excluding cost of additional measures). This Ministry agrees for implementation of above mitigation measures as proposed by NTCA for this stretch. NGT may be requested to allow the present on-going works.
- (iii) Chimur-Warora: - The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 56.65 Cr. (excluding centages). This Ministry agrees for implementation of above mitigation measures as proposed by NTCA for this stretch subject to approval of competent authority for the variation proposal & quantification on cost of additional measures given under para (vii) below. NGT may be requested to allow the present on-going works.
- (iv) Mul-Chandrapur: - The project was sanctioned by Ministry having civil cost construction of Rs. 122.24 Cr. The awarded cost of the project is Rs. 110.01 Cr. The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 402.07 Cr. (excluding centages and cost of additional measures). There is increase of 330% in the sanction civil cost of the project due to above mitigative measures excluding additional measures. Revised cost estimates for this road project will be considered by Project Appraisal committee after following due process before conveying about their approval. It is however stated that it is not possible for M/o RT&H for continuing with present contracts, if the condition for the construction of flyovers is insisted. The present contracts needs to be foreclosed which obviously delay the completion of road improvement works on this stretch as it will require the execution of work through new contracts as well as depending upon the inter-se-priority of NH works & fund availability for Maharashtra state. Alternatively, since, only improvement of riding quality of existing road has been incorporated in the scope of this work in the sections, which are passing through wildlife corridor zones, NGT may be requested to allow the execution of on-going works with non-structural measures for reducing mortalities as suggested in the booklet titled eco-friendly measures to mitigate impacts of linear

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infrastructure on wildlife issued by Wildlife Institute of India for minimizing conflict of human with animals.

(v) Bamni-Navegaon: - The project was sanctioned by Ministry having civil cost construction of Rs. 180.00 Cr. The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 256.23 Cr. (excluding centages and cost of additional measures). There is increase of 143% in the sanction civil cost of the project due to above mitigative measures excluding additional measures. Revised cost estimates for this road project will be considered by Project Appraisal committee after following due process before conveying about their approval. It is however stated that it is not possible for M/o RT&H for continuing with present contracts, if the condition for the construction of flyovers is insisted. The present contracts needs to be foreclosed which obviously delay the completion of road improvement works on these two stretches as it will require the execution of work through new contracts as well as depending upon the inter-se-priority of NH works & fund availability for Maharashtra state. Alternatively, since, only improvement of riding quality of existing road has been incorporated in the scope of both works in the sections, which are passing through wildlife corridor zones, NGT may be requested to allow the execution of on-going works with non-structural measures for reducing mortalities as suggested in the booklet titled eco-friendly measures to mitigate impacts of linear infrastructure on wildlife issued by Wildlife Institute of India for minimizing conflict of human with animals.

(vi) Gadchiroli-Mul: - The tentative cost of mitigation measure in the form of flyover proposed by NTCA is Rs. 2.91 Cr. (excluding centages and cost of additional measures This Ministry agrees for implementation of above mitigation measures as proposed by NTCA for this stretch. NGT may be requested to allow the present on-going works.

(vii) There is further cost implication due to adoption of additional measures like landscaping, light & sound barrier, fencing, vegetative canopy etc. the actual cost implementation for such mitigative measures is not furnished in the report. Accordingly, it is difficult to make any comment without knowing the cost implication of such measures.

(viii) The proposed lump sum provision @5% to be kept as corpus by user agency is not agreed to.


(P K Mourya)

Superintending Engineer (Zone-IV)

Copy to:

(i) Principal Chief Conservator of Forest (Head of Forest Force), Maharashtra State, Van Bhavan, Ramgiri Road, Near Police Gym Khana, Civil Line Nagpur -440001, email - pccfwlngp@mahaforest.gov.in

(ii) ADG, Wildlife, MoEF&CC, New Delhi

(iii) The Chief Engineer (Regional Officer), Ministry of Road Transport & Highways, Room No-508, 509, 5th Floor, Konkon Bhawan, CBD Belapur, Navi Mumbai-400614

(iv) Shri. Chandrasekhar RO-NHAI, Nagpur, Plot No. 159, Bunglow No. 2, Shubhankat Apartment, Ambezogoi, Vermalayout Ramnagar, Nagpur-440033

(v) Shri Sujay Dodal, Joint Secretary (Forests) Revenue and forest Department, Mantralaya, Mumbai-32 email - ms325@ifs.nic.in



(P K Mourya)

Superintending Engineer (Zone-IV)

Office Of the
Executive Engineer
P. W. Division, Nagbhid
Phone No. 07179-240066
E-mail- agbhid.ee@mahapwd.com
date -

No. /Tech/2019
To,

Hemant Kamdi
AIGF, NTCA,
Regional Officer Nagpur

Subject :- Report on Mitigation measures for road Project Cutting through Tiger corridors in the Earthan Vidharbh Landscape Nagbhid Mul Road MSH - 9

Improvement To Nagbhid Sindewahi Road in Ch. 97/200 to Ch. 130/100 under Hybrid Annuity is in Progress.

As per the Report Form NTCA, Two Cattle underpasses are suggested to Construct on this road as the mitigation measures for wild life crossing, for which co-ordinates are given in the report Form the Co-ordinates provided in the report it is going difficult for us to trace exact location of cattle underpasses at site.

Therefor it is requested to Show us the exact location of the cattle underpasses on site it self and the length fo road affected.

The Work for mitigation measures is budgeted in june 2019 P W maharashtra Govt. budget. **In the report some points are also highlighted .**

1. Underpasses will also integrated option of light & sound barrier comouflagging and landscaping including restoration habitat beneath under passes after construction.
2. User agency will make provisions of vegetative or mechanical canopy closure option for movement of reptiles, amphibians, rodents etc. both at 100 mt. of forest patch not covered through clear opening of underpasses.
3. User agency will install overhead sign board at way 500 mt. in the forest area about animal crossing, restriction for feedup animal, garbage dumping, parking, honking etc. as per the advice of forest department.

Some more detailed information is required form your side regarding point 1 to 3 mentioned above so that provision can be made in DPR to cope up the above measures.

The work is already budgeted & tender is to be floatad at an earlist, please give the above clarification at an earlist.

21/1/19
Executive Engineer
P. W. Division,
Nagbhid

Copy Submitted to Superintending Engineer P.W. Circle Chandrapur For necessary Information.

भारत सरकार
Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण
National Tiger Conservation Authority

F. No. 12-1/2009-NTCA (Vol.II)

New Delhi, the October 07, 2019

OFFICE MEMORANDUM

Sub: Summary record of the meeting held on 30.09.2019 at NTCA, Hqrs, New Delhi – reg.

Please find enclosed herewith a copy of the summary record of the meeting held on 30.09.2019 in context of mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidharbha Landscape under Chairmanship of the ADG (Wildlife), Ministry of Environment, Forests and Climate Change and the ADG (PT) & Member Secretary (NTCA), New Delhi in Conference Hall of the NTCA, for information and necessary action.

These issues with approval of the competent authority.

Encl: As above.

Nishant Verma
(Nishant Verma)

Deputy Inspector General of Forests (NTCA)

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FAX: +91 11 24367836

Email: dig2-ntca@nic.in

Distribution:

1. The Chief Wildlife Warden, Govt. of Maharashtra
2. The Field Director, Tadoba-Andhari Tiger Reserve, Maharashtra
3. The AIGF, NTCA, Regional Office, Nagpur.
4. Dr. Bilal Habib, Scientist – E, Wildlife Institute of India, Dehradun.
5. The Superintendent Engineer, Ministry of Roads, Transport and Highway.
6. The Executive Engineer, Ministry of Roads, Transport and Highway.
7. The IGF, NTCA, Hqrs. New Delhi.
8. The DIGF/ AIGs, NTCA, Hqrs. New Delhi.

Copy forwarded for kind information and necessary action:

1. The Director, Wildlife Institute of India, Dehradun.
2. PPS to ADGF (WL), MoEF&CC, New Delhi
3. PS to ADG (PT) & MS (NTCA).

Nishant Verma
(Nishant Verma)

Deputy Inspector General (NTCA)

Summary record of the meeting held on 30.09.2019 at 1130 hrs. at NTCA Hqrs, New Delhi regarding mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape.

The meeting in context of the mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape was held on 30.09.2019 at NTCA Hqrs., New Delhi under the chairmanship of the ADG (Wildlife), MoEF&CC & ADG (PT) & MS (NTCA), New Delhi. The meeting was attended by the following officials:

- a) Shri M. S. Negi, ADG (WL), MoEF&CC.
- b) Dr. Anup Kumar Nayak, ADG (PT) & MS (NTCA)
- c) Shri Nitin Kakodkar, PCCF (WL) & CWLW, Maharashtra
- d) Dr. Amit Mallick, IGF, NTCA
- e) Shri Nishant Verma, DIGF, NTCA
- f) Dr. Vaibhav C. Mathur, AIGF, NTCA
- g) Shri Kamdi Hemant Bhaskar, AIGF, NTCA, Regional Office, Nagpur
- h) Dr. Bilab Habib, Scientist-E, Wildlife Institute of India, Dehradun
- i) Shri P.K. Mourya, Superintendent Engineer, Ministry of Roads, Transport and Highway (MoRTH)
- j) Shri Naresh Kumar Chopra, Executive Engineer, Ministry of Roads, Transport and Highway.

At the outset, the ADG (PT) & MS (NTCA) welcomed the ADG (WL), MoEF&CC and the participants and reviewed the progress of action plan as required to be submitted in Hon'ble National Green Tribunal by 31st October, 2019. He briefed that the Ministry of Roads, Transport and Highway has partially agreed for implementation of mitigation measures subject to approval of the competent authority for variation proposal and cost quantification of additional non-structural mitigation measures. The summary of concurrence for implementation of mitigation measures for all 9 (nine) roads are given in the table below:

S. No.	Road	Nomenclature as per PWD/NH	Status of concurrence for construction of mitigation measures
1	Nagbhir-Bramhapuri-Armori	NH 253 D	Agreed by MoRTH
2	Malewada-Chimur	NH 353 E	No mitigation prescribed
3	Chimur-Warora*	NH 353 E	Agreed by MoRTH
4	Mul-Chandrapur*	NH 930	Not agreed by MoRTH
5	Bamni-Navegaon*	NH 353 B	Not agreed by MoRTH
6	Gadchiroli-Mul	NH 930	Agreed by MoRTH
7	Chimur-Kanpa	MSH 314 (Principally declared as NH)	No mitigation prescribed. This road will be tackled after final declaration of NH
8	Hinganghat-Nandori-Kora-Khadsangi-Neri-Pendhri-Sindewahi-Mul*	MSH 322 (Principally declared as NH)	This road will be tackled after final declaration of NH
9	Nagbhir-Mul*	MSH 9	Budgeting is done by PWD along with mitigation measures

* indicates priority roads necessary for maintaining functional connectivity of tiger corridors.

Therefore, from the above table, it is clear that there are only two roads i.e. Mul Chandrapur & Bamni-Nagegaon road for which MoRTH has not agreed for implementing mitigation action plan. However, the mitigation measures proposed are very important as these two roads passes through major portion of the tiger corridors connecting Tadoba-Andhari Tiger Reserve to the Southern and Eastern connecting tiger reserves.

Handwritten signature and date: *Handwritten signature* 7/10/19

The participants agreed over critical importance of these mitigation measures and discussed the various activities for reducing cost of the animal crossing structures and to seek additional funding to the make the mitigation plan practically implementable. The decisions taken in the meeting are as under:

1. The members of the joint team submitted that there is no change in the dimension, number and location of the mitigation structures proposed in the action plan. It was decided that the joint team shall submit its final report within 7 days.

(Action: AIGF, NTCA, R.O., Nagpur)

2. The Maharashtra State Wildlife Board in 14th meeting dated 05.12.2018 requested NHAI to include mitigation measures while upgrading roads in Tadoba-Andhari Tiger Reserve Landscape. The Chairman of SBWL also assured State governments funding in case if NHAI declines implementation of mitigation structures. It was decided that the provisioning of funds shall be worked out by MoRTH exploring the option of utilizing State Govt. funds including provision of Central Road and Infrastructure Fund (CRIF) etc. for construction of mitigation structures prescribed for the two high priority roads i.e. Mul Chandrapur & Bamni-Nagegaon road. Moreover, the State Forest Department shall also explore the provisioning of funds for mitigation measures for the above roads through State CAMPA / TCF etc. The inputs in this respect shall be submitted to NTCA within 7 days.

(Action: MoRTH & CWLW, Govt. of Maharashtra).

3. Option of overpasses as animal crossing structures was discussed in the meeting. Participants agreed that overpasses give more natural passage for animal movement than underpasses. It was decided that MoRTH will look into feasibility of provisioning alternative designs for animal overpasses to see the possibility of cost reduction and communicate the same to NTCA within 15 days.

(Action: MoRTH)

4. It was decided that the proposed mitigation measures may be implemented in phased manner to spread the cost. The joint team shall submit the phased implementation plan for the above two roads in view of ecological considerations for maintaining connectivity to NTCA Hqrs and MoRTH within 7 days. MoRTH in tern shall provide 5 years phased implementation plan for mitigation measures over the two roads within 15 days. The team members shall provide technical inputs to MoRTH for prioritizing mitigation structures to make phased implementation plan.

(Action: AIGF, NTCA, R.O, Nagpur & Dr. Bilal Habib, Scientist, WII & MoRTH).

5. It was decided that the nonstructural mitigation measures including provision of night traffic on the priority roads shall be provided by State Forest Department in coordination with WII to MoRTH for their implementation on priority basis. Moreover, the quick survey shall be carried out by the joint team to finalize the spatial locations of the mitigation structures proposed.

(Action: CWLW, Govt. of Maharashtra & MoRTH)

6. Since, the final report it to be submitted to Hon'ble NGT within the month of October, 2019. It was decided that the requisite action shall be taken by the concerned officials within decided time frame so that the final action plan can be submitted by **24.10.2019**.

The meeting ended with vote of thanks by the Chair.

Kuldeep Singh
7/10/19

IMPORTANT TIME BOUND MATTER

No.12037/01/2019-MAH (Z-4)

Government of India

Ministry of Road Transport and Highways

Transport Bhavan, 1, Parliament Street, New Delhi -110001

Dated the 17th Oct, 2019

To,

1. The Secretary (Works)
Public Works Department
Government of Maharashtra
Mantralaya
Mumbai - 400 032
2. The Chief Wildlife Warden
Govt. of Maharashtra

Subject: Site appraisal report to suggest mitigation measures for road projects cutting through tiger corridor in the Eastern Vidharbha Landscape in the State of Maharashtra- Funding for Mitigation Measures reg.

Sir,

Kindly refer to para 2 of Minutes of Meeting dated 07.10.2019 attached herewith vide which summary record of meeting held on 30.09.2019 at National Tiger Conservation Authority (NTCA), New Delhi was submitted to this Ministry for further necessary action.

2. This Ministry vide letter dated 29.05.2019 has already in-principally agreed for mitigation measures amounting to Rs. 100.81 Cr. for project listed at Sl. No. 1, 2, 3 & 4 (refer Annexure below) subject to approval of competent authority. However, NTCA vide above Minutes of Meeting has directed for additional lump sum expenditure of approximately Rs.700 Cr. for the roads namely Mul-Chandrapur & Bamni-Navegaon also.

3. The MOM dated 07.10.2019 has been examined in Ministry and undersigned has been directed to convey that due to already huge committed liability for ongoing National Highway projects in the State of Maharashtra, this Ministry is unable to fund any additional expenditure over and above Rs. 100.81 Cr. for such mitigation measures. Accordingly, it is requested that in view of direction recorded under para 2 of Minutes of Meeting dated 07.10.2019, State Govt. may fund the expenditure towards any mitigation measure for the roads namely Mul-Chandrapur & Bamni-Navegaon as desired by NTCA. **An early decision is solicited in this regard as the matter is under Hon'ble NGT and a report has to be filed by NTCA in Hon'ble NGT within the month of October 2019 and they have requested for submission of action plan by 24th October 2019.**

Encl: As above



(P K Mourya)

Superintending Engineer (Zone-IV)

For Director General (Road Development) & SS

Copy to:

- (i) Principal Chief Conservator of Forest (Head of Forest Force), Maharashtra State, Van Bhavan, Ramgiri Road, Near Police Gym Khana, Civil Line Nagpur -440001, email - pccfwlmgp@mahaforest.gov.in
- (ii) ADG, Wildlife, MoEF&CC, New Delhi
- (iii) The Chief Engineer (Regional Officer), Ministry of Road Transport & Highways, Room No-508, 509, 5th Floor, Konkon Bhawan, CBD Belapur, Navi Mumbai-400614 **with a request to pursue the matter with State Govt. for early decision.**
- (v) Shri Sujay Dodal, Joint Secretary (Forests) Revenue and forest Department, Mantralaya, Mumbai-32 email - ms325@ifs.nic.in
- (vi) Chief Engineer, PWD, NH, Maharashtra



(P K Mourya)

Superintending Engineer (Zone-IV)

For Director General (Road Development) & SS

ANNEXURE

Tentative cost of structural mitigation measures

Sr. No.	Name of road	NH No.	Length of Project (km)	Length of Tiger Corridor (in km)	Proposed Flyover (excluding approaches)	Tentative cost (Cr.) of flyovers	Status
1	Nagbhid-Bramhapuri-Armon	NH353D	39.37	5	450 m	41.25	Agreed in-principle by MoRT&H subject to approval of competent authority
2	Malewada-Chimur	NH353E	30.53	0	0	0	
3	Chimur-Warora	NH353E	51.65	1.5	750	56.65	
4	Gadchiroli-Mul	NH 930	41.62	In fragments	30 m	2.91	
5	Mul-Chandrapur	NH 930	39.67	28.5	4800 m	402.07	Not agreed
5	Bamni-Navegaon	NH 353 B	42.25	14	3300 m	256.23	Not Agreed
	Sub-total		245.09		9330 m	759.11 Cr.	

Principal Chief Conservator of Forest (Head of Forest Force) Maharashtra State

"Van Bhavan", Ramgiri Road, Near Police Gym Khana, Civil Lines, Nagpur -- 440 001.
Third Floor, D-Wing, Phone No. 0712-2560953, Fax No. --0712-2553018, E-mail ID- pccfwingsp@mahaforest.gov.in
I.S.O. 9001 : 2015 Certified

Urgent

Desk-23(2)/WL/Survey/CR.No.211/2847/2019-20, Date 25/10/2019

To,
The Deputy Inspector General (NTCA),
Government of India,
Ministry of Environment Forest and Climate change
Indira Paryavaran Bhavan,
Jor bagh Road, Aliganj,
New Delhi-110 003.

Sub :- Summary records of the meeting held on 30.09.2019 at NTCA, Hqrs. New Delhi regarding mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape.

Ref : 1. Your office Letter No. 12-1/2009-NTCA (Voll. II), dt. 07.10.2019.
2. Government of Maharashtra letter No. WLP- 01.19/C.R.No. 06/F-1, dt. 25.10.2019.

In continuation of this office letter No. Desk-23(2)/WL/Survey/CR.No.211/2815, dt. 24.10.2019 with reference to the subject cited above, the information as sought by NTCA regarding mitigation measures for road projects cutting through Tiger corridors, in Eastern Vidarbha Landscape as now approved by the State Government of Maharashtra vide its letter at reference above is annexed herewith for further necessary action.

Encl : Report as above



(N.H.Kakodkar)

Principal Chief Conservator of Forest (wildlife)
Maharashtra State

Copy to : The Principal Secretary (Forests), Revenue and Forest Department, Mantralaya,
Mumbai-32 for information.

Sub :- Summary records of the meeting held on 30.09.2019 at NTCA, Hqrs. New Delhi regarding mitigation measures for road projects cutting through Tiger corridors in the Eastern Vidarbha Landscape.

Ref: Letter No. 12-1/2009-NTCA (Voll. II), dt. 07.10.2019 from NTCA.

With reference to the decisions taken in the meeting regarding mitigation measures for road projects cutting through Tiger Corridors in Eastern Vidhrbha Landscape, the following information is hereby submitted.

2.1. Provisioning of funds through State CAMPA/ TCF for funding construction of mitigation measures prescribed for two high priority roads with estimated cost as follows :

i) Mul-Chandrapur	-	Rs. 402.29 Cr. (Approx.)
ii) Bamni-Navegaon	-	Rs. 256.23 Cr. (Approx.)
Total	-	Rs. 658.52 Cr. (Approx.)

The tentative cost of constructing these mitigation measures is expected to be Rs. 658.52 cr. The department has explored the option of utilizing State CAMPA/ TCF funds for this purpose. Considering the limited annual CAMPA budget and activities to be taken under rules made thereunder it shall not be possible to fund the cost of construction of these mitigation structures from State CAMPA funds. Further it is stated that the TCF funds approved for expenditure in the year 2019-20 for all 6 Tiger Reserve in the state, amounts to Rs. 32 Cr. & therefore will nowhere suffice for funding the cost of mitigation measures. Hence, taking in to consideration the limited amount of funds under State CAMPA/ TCF the provisioning of funds for mitigation measures through State CAMPA/ TCF will not be feasible. However, the forest department agrees that mitigation measures proposed are essential for these 2 roads in the interest of Wildlife conservation.

Since the above roads are State Highways (managed by PWD) which are now being upgraded as National Highways, the possibility of funding the mitigation measures through the State PWD is being explored.

2.2. As far as the implementation of the non - structural mitigation measures is concerned, the Forest Department in consultation with the WII proposes the following non - structural mitigation measures :

i) Traffic regulations :

This includes restriction of traffic on road sections frequently used by animals for crossing during certain times of the day, particularly during peak animal activity hours. Barriers may be set-up at entry and exit points of pre-determined road sections where animals are known to cross. This measure would ensure minimal overlap of peak animal and traffic activity periods, thereby reducing the probability of animal-vehicle collisions. However, such restrictions are often met with protests from local communities that are inconvenienced due to the restrictive traffic timings, and may become a cause of opposition. Efforts would be made in consultation with the District administration to ensure its implementation.

ii) Speed reduction measures:

These may be imposed in several ways- installation of speed breakers, rumble strips, posting of speed limits through signboards & penalising of speeding vehicles. Reduction in vehicle speeds gives drivers enough reaction time to brake and avoid possible collisions with animals.

However, speed reduction at higher traffic volumes may lead to lesser space between two vehicles or stagnation of traffic, which would ultimately cause the traffic to become a complete barrier for animal movement. The type of traffic (heterogeneity of vehicles) plying on the roads is also an important factor that would influence the effectiveness of such speed

regulations. Traffic composed mostly of small vehicles would not pose a barrier to animal movement as compared to traffic composed of majority large vehicles, which could create barrier to animal movement even at low volumes.

iii) Sign-boards indicating presence of animals/crossing zones

Installation of sign-boards at critical vulnerable road stretches would help in informing drivers of animal movement areas so that they may be careful and alert. These signs may be of different types – standard roadside signs with animal silhouettes, overhead signs indicating approaching animal corridor, signs with illuminating material for visibility at night. These boards would additionally help generate awareness about the important issue of animal-vehicle collisions among public. It is essential that signboards are designed with minimum text and more informative graphics.

iv) Monitoring of vulnerable road sections:

In areas with high movement of animals at the roadsides, manual monitoring by forest department staff by patrolling or by use of camera traps to determine movement of animals such as tigers. Traffic restrictions would then be set-up to avoid animal-vehicle collisions.

v) Verge management:

The roadside verge, i.e., the space on either side of the road corridor may be cleared regularly of vegetation till about a distance of at least 5 m on either sides. This would provide better visibility for the animals attempting to cross roads and aid in better decision-making. It would also discourage the presence of animals that are attracted by forage at roadsides, thereby reducing the probability of collision with vehicles.

This is for your kind information & further necessary action.

Prioritization and five year phased implementation plan for construction of mitigation measures on two roads around Tadoba Andhari Tiger Reserve

Mitigation plan as proposed in joint team report was communicated to Ministry of Roads, Transport and Highway, New Delhi for comments. MoRTH agreed for implementation of structural mitigation measures for Nagbhir-Bramhapuri-Armori road, Chimur-Warora road and Gadchiroli-Mul road subject to approval of competent authority for the variation proposal and cost quantification of additional mitigation measures. However, MoRTH did not agree for construction of mitigation measures for Chandrapur-Mul and Bamni-Navegaon road owing to high cost of construction.

Therefore, it was decided in the joint meeting at NTCA Hqrs, New Delhi on September 9, 2019 that constituted joint team will submit a five year phased implementation plan to spread the cost of construction of mitigation measures over Chandrapur-Mul and Bamni-Navegaon roads. In persuasion of minutes of the said meeting communicated vide NTCA Hqrs letter F. No. 12-1/2009-NTCA (Vol II) dated October 7, 2019 and directives from NTCA Hqrs over email dated October 30, 2019 prioritization and five year phased implementation plan for construction of mitigation measures on roads around Tadoba Andhari Tiger Reserve is prepared in consultation with members of the joint team.

Following studies/aspects were considered for prioritization and preparation of five year phased implementation plan

1. Long term monitoring of tigers in Chandrapur based on Camera trap and collaring by Wildlife Institute of India.
2. Report on "Recommendations for wildlife mitigation measures on road expansion projects in the Tadoba Landscape" based on Camera trapping data and Road kill surveys by Wildlife Conservation Trust with Maharashtra Forest Department.
3. Existing traffic on the road.
4. Administrative and Technical ease for implementation of mitigation structures for user agency.

Accordingly, following priority is decided for implementation of mitigation structure.

1. Mitigation measures on Mul-Chandrapur road/NH 930 should be considered on priority than Bamni-Navegaon road/NH 353 B.
2. Within individual road, priority of mitigation structures should be in decreasing order as we move away from Chandrapur towards Mul and from Bamni towards Navegaon.

Details of the prioritization and five year phased implementation plan are given below

Road	Patch		Proposed underpass (in meters)	Year of implementation	Cost estimate (in Cr)	
		Approx Coordinates (in Degree Minutes Seconds)			Structure Wise	Year wise
Mul – Chandrapur	I	Start 20 03 03.24	300	1 st Year	29.21	87.63
		79 39 10.28	300		29.21	
		End 20 01 23.63	300		29.21	
		79 32 47.59	300		29.21	
	II	Start 20 00 03.38	750	2 nd Year	56.76	142.72
		79 28 23.5	750		56.76	
		End 19 58 36.14	750	3 rd Year	56.76	
		79 20 01.52	750		56.76	
			300	4 th Year	29.21	
			300		29.21	
Bamni - Navegaon	I	Start 19 49 49.82	300	4 th Year	29.21	144.385
		79 24 43.02				
	II	End 19 49 16.67	750	5 th Year	56.76	
		79 25 21.12	750		56.76	
		Start 19 47 26.4	750		56.76	
		79 30 13.1	750		56.76	
End 19 45 34.4	750					
79 36 42.1	750					
Total					658.51	658.51