No.: NH-2023/02/DE-13/C.R. No.: MD-FDP/ENGG./ 4017
Date: 04.07.2023

MAHARASHTRA SAMRUDDHI MAHAMARG

Maharashtra State Road Development Corpn. Ltd.

(A Government of Maharashtra Undertaking)

To,
The Deputy Conservator of Forests
Roha Forest Division,
At./P.: Roha, Roha-Chanera-Murud road,
Tal.: Roha, Dist.: Raigad. PIN 402 109

Sub.: "Rehabilitation & Up gradation To Two lanes with paved shoulders / 4 Lanning configuration of Pune-Mulshi-Mangaon-Mhasla-Dighi port new National Highway no. NH 753 F section Mangaon to Dighi Port design Km. 0+000 to 54+750 in the state of Maharashtra on EPC Mode."
[Job No. : NH-753F-MAH-2016-17-1094; dtd. 25.01.2017]
- **Submission of Compliance Report to the in-principle permission reg...**

Ref.:
1. GoI, letter No.: FC-II/MH-145/2020-NGP/8052; dtd.: 22.04.2021.
2. GoM, letter No.: FLD-1321/C.R. No.: 13/F-10; dtd.: 08.03.2021.
3. Your office letter No.: B/20/Land/678/2020-21; dtd.: 02.06.2021.
4. MSRDC letter No.: NH-2021/02/DE- 7/ CR No.: IA-FDP/ENGG. /3420; dtd.: 17.06.2021.
5. Your office letter No.: B/20/Land/2170/2021-22; dtd.: 16.11.2021.
6. MSRDC letter No.: NH-2021/02/DE- 7/ CR No.: MD-FDP/ENGG./5908; dtd.: 20.10.2021.
7. MSRDC letter No.: NH-2021/02/DE-7/CR No.: MD-FDP/ENGG./6819; dtd.: 26.11.2021.
8. Your letter No.: B/20/Land/2840/2021-22; dtd.: 24.12.2021.
9. Your letter to CCF Thane office in Marathi language dtd.: 27.12.2021.
10. MSRDC letter No.: NH-2022/02/DE-7/CR No.: MMD-FDP/ENGG./65; dtd.: 05.01.2022.
11. Technical officer (Grade –I), MOEF&CC's letter no. FC/II/MH-145/2021-NGP/11693 dtd.: 30.05.2023.
12. CCF Nagpur's letter no. Desk-17/FCA-02/PID-50280/Thane/792 dtd. 13.06.2023.

With respect to above subject and referred above letter at Sr. No.: 12, this office has received the following short comings vide referred letter at sr. no. 11.

1. Detailed violation report in compliance to condition No. ix of stage I approval has not been submitted along with the compliance report. Detailed violation report mentioning action taken against the officers responsible for violation of FCA 1980 needs to be submitted.
2. Undertaking in compliance to condition No. xiii of stage I approval has not been submitted by the User Agency along with the compliance report. The same needs to be submitted.
3. Site specific wildlife conservation plan for 10 years for the area adjoining to Phansad Wildlife Sanctuary duly approved by the PCCF (Wildlife) in compliance to condition

no. x of stage I is not submitted along with the compliance report. A site specific wildlife conservation plan for 10 years duly approved by the PCCF (Wildlife) needs to be submitted.

4. Undertaking in compliance to condition No. xv of stage I approval has not been submitted by the User Agency along with the compliance report. The same needs to be submitted.

Further Reply / compliance on the short comings is as below :

Sr. No.	Condition No.	Description	Reply / Compliance
1	ix	The State Government shall undertake the action against the violation of FCA, 1980 as per provision made under Para 1.21 of Handbook of Forest (Conservation) Act, 1980 published on 28.03.2020. A detail report in this regard shall be submitted along with Stage-I compliance;	User Agency deposited / transferred the cost of penalty for violation of Forest (Conservation) Act, 1980 Rs. 5,59,569/- through E-challan in Ad-hoc CAMPA. Action taken report is hereby attached for your reference as **Annexure -1.**
2	xiii	Wherever feasible, User Agency in consultation with State Forest Department shall increase the size of box culverts in such a way that it also serve the purpose of wildlife passages as suggested by Wildlife Institute of India in manual entitled "Eco-friendly Measures to Mitigate Impacts of Linear Infrastructure on Wildlife, published in 2016".	This office vide letter dt. 20.10.2021 submitted the compliance report whereby it was submitted that necessary steps will be taken under the guidelines of Local State Forest office. It is to be informed that the work of box culverts has been completed in consultation with State Forest department.
3	x	The User Agency in consultation with State Forest Department shall prepare and implement a site specific Wildlife Conservation Plan for 10 years for the area adjoining to Phansad Wildlife Sanctuary;	User Agency vide letter dt. 05.01.2022 to the DCF Roha Forest division as submitted the copy of conservation plan for Wildlife again hereby attached for your reference as **Annexure -2.**
4	xv	User Agency shall obtain Environmental Clearance as per the provisions of the Environmental	User Agency vide letter dt. 20.10.2021 to the DCF Roha Forest division, in its compliance report as

		(Protection) Act, 1986, if applicable	stated that Environmental Clearance as per the provisions of the Environment (Protection) Act, 1986 is not applicable for this project.

In the view of above the above compliance on the short comings is hereby submitted for further necessary action.

(Chetan Wani)
Executive Engineer (NH)
M.S.R.D.C, Mumbai

Copy submitted for information to;

1. Chief Conservator of Forest (T), Thane.
2. Chief Engineer (NH), M.S.R.D.C., RGSL Project Office, Opp. Bandra Reclamation Bus Depot, Bandra (W), Mumbai- 400 050.

Maharashtra State Road Development Corporation Limited

MSRDC (A Govt. of Maharashtra Undertaking)

ACTION TAKEN REPORT

Name of Work :- Rehabilitation and up-gradation of two lane with paved shoulders Pune-Mulshi-Mangon- Mhasala-Dighi Port and Indapur (NH-66) Tala-Mandad, Agardanda-Dighi Port (SH-96 & SH-92) (Section-II Mangon-Mhasala-Dighi Port) National Highway from existing Km 00+000 (Mangon) to Km 57+750 (Dighi Port) Design KM 0.000 to KM 54.750 of NH-753F, Raigad District in the state of Maharashtra.

Executive Engineer (NH) M.S.R.D.C. Mumbai proposal is submitted for Diversion of 11.8639 ha. of forest land for Rehabilitation and up-gradation of newly declared National Highway of NH-753 F section from Mangaon to Dighi port in Tal. Mangaon & Shriwardhan, District- Raigad in the state of Maharashtra. Accordingly, it is to informed that, the traffic growth in the past few decades, particularly last decade which saw a phenomenal growth in commercial and industrial activity has affected the road network system of India, which includes Highways, State Highways, Major District Roads and Rural Roads. In order to overcome such capacity shortage, the Ministry of Road Transport and Highways (MoRT&H) Govt. of India (GOI) has come up with major investment plan with Public Private Partnership under NHDP, which includes upgradation of existing facilities, construction of new corridors for ensuring safe, smooth and uninterrupted flow of traffic and maintenance thereof with modification, repairs and improvement to the project in compliance with specifications and standards.

2.00 The Project Highway NH-753 F starts from Mangaon and connecting to Dighi Port, in the State of Maharashtra. The National Highway (NH-753F) Mangaon-Mhalsa-Dighi connects one National Highways i.e. NH 66 Mumbai Goa National Highway.

3.00 The proposed alignment is a key route for the commercial vehicles plying between Maharashtra & Dighi Port Many steel industries are coming up in the Steel Business zone. Therefore, proposed alignment will be important shorter route for the commercial vehicles from Maharashtra.

CIN: U45200MH1996SGC101586
GST: 27AAACM6833C1ZP

Registered Office: Nepean Sea Road, Besides Priyadarshini Park, Mumbai 400036

Tel:(022) 2368 5909
Tel:(022) 2361 3789
Tel:(022) 2369 1030

Corporate Office: Opp. Bandra Reclamation Bus Depot, Near Lilavati Hospital, K C Marg, Bandra (West), Mumbai 400050

Tel:(022) 2640 0190 / 201
Tel:(022) 2655 8175 / 76
Fax:(022) 2641 7893

www.msrdc.in

4.00 Accelerate the social and economic development in the state through improves access to socioeconomic services, increase employment opportunities, and improve transport services. Better approach to Medical & Educational services and quick transportation of perishable goods like fruits, vegetables and dairy products. Therefore, up gradation of existing two-lane SH 97 to National Highway (NH-753F) two lane road with paved shoulders is very much beneficial.

5.00 National Highway No.753F starts from Mangon and transverse on the coast side of Sahyadri hill range (Western Ghats) through the States of Maharashtra connecting important cities like Mangon, Mhasala, and ends near Dighi Port at Junction of NH-753F. The total length is about 54.750 Km through Maharashtra (Konkan region). The project road starts at Km. 00/00 and passes through the urbanized villages of Mhasala (Km 27), ends at Km 54/750in Dighi Project. The project road stretch is a single carriageway comprising base Single lanes with width ranging from 10m and soft shoulders on either side with width ranging from 2.0m.

6.00 Authority's requirements in clear and predictable manner with a view to ensuring:

i) Enhanced safety and level of service for the road users;

ii) Superior operation and maintenance enabling enhanced operational efficiency of the Project Highway;

iii) Minimal adverse impact on the local population and road users due to road construction;

iv) Minimal adverse impact on environment;

v) Minimal additional acquisition of land; and

vi) Phased development of the Project Highway for improving its financial viability consistent with the need to minimize frequent inconvenience to traffic that may be caused if additional works are undertaken within a period of seven years from the commencement of construction of the Project Highway.

7.00 Mangon to Dighi Port (Km 00/000 to Km 54/750) has two urbanized villages / towns viz Mangaon, Mhasala and Dighi Port with restricted road width while NH passing along existing bypass skirting Mhasala town on its north with intermittent development.

8.00 It is proposed to take up 2 laning of NH from Km 0/00 to Km 54.75 (Dighi Port) in plain stretch providing good geometrics, extra widening on the curves, grade improvements, retaining buttress walls, metal beam crash barriers on valley side and on hill side on the sharp curves, etc.

Justification & Action Taken:-

9.00 Mangon- Dighi Port section of NH-753F has been identified as part of 54.75 Km of National Highway approved by Government of India under NHDP Phase-IV. Thereafter, MoRTH initiated action for feasibility study/DPR of the project.

10.00 The **district wise breakup** of the alignment is as follows:

Chainage (Km)			**District**
Start	End	Length in km	
0+00	54.750	54.750	Raigad
Grand Total		**54.750 Km**	

11.00 However, for effective implementation of project and administrative control MoRTH has vide letter No. NH-12014/132/2016-MAH(P-6) Dated 25.01.2017. And technical approval vide letter No.RW/NH-12014/132/2016-MAH Dated 25.01.2017.

12.00 Accordingly, for Raigad District Packages are considered for two laning Work of NH-753F. Packages comes under Diversion of Forest land, these are as follows.

Package-I Rehabilitation and up-gradation of two lane with paved shoulders Pune-Mulshi-Mangon- Mhasala-Dighi Port and Indapur (NH-66) Tala-Mandad ,Agardanda-Dighi Port(SH-96 & SH-92) (Section-II Mangon-Mhasala-Dighi Port) National Highway from existing Km 00+000 (Mangaon) to Km 57+750 (Dighi Port)Design Km 0.000 to Km 54.750 of NH-753F, Raigad District in the state of Maharashtra. TAFS given by NH-12014/132/2016-MAH (P-6) dtd.: 25.01.2017.

13.00 Present Right of Way (ROW) is about 18m in plain/rolling area and same is maintained in Forest section. The upgradation of existing State Highway to NH standard with 2 lane paved shoulders will be mostly concentric and the additional land needs to be acquired at curve improvement and Toll Plaza location only. Hence it is necessary to be acquiring addition land for Two laning purpose at some specific locations for this Project. Accordingly, Land Acquisition is proposal is submitted to Competent Authority of Land Acquisition i.e. to SDO, Mangaon and SDO, Shriwardhan of Raigad District.

14.00 In this connection Joint measurement is taken up with Dy. Superintendent of Land Record office, Mangaon and Shriwardhan adjoining various related acquiring

bodies of State Government i.e. MSRDC, Forest office, Agriculture office, MJP, MSEDCL etc. According to old record of Revenue Department, it seems that, the land for existing road along with ROW was acquired before 1980 by Public Work Department.

15.00 After Joint Measurement it is found that some length of Rehabilitation and Up gradation of NH-753 F (Old SH-96 & 92) from Km 00/00 to Km 54/750 (Mangon to Dighi Section) section of NH-753F is passing through Forest area.

1) Accordingly Executive Engineer (NH) M.S.R.D.C. Mumbai Vide letter dated 12.12.2019 has submitted proposal under Forest (Conservation) Act, 1980 for rehabilitation and up gradation of two lane with paved shoulders Pune - Mulshi – Mangaon – Mhasala - Dighi Port and Indapur (NH-66)-Tala –Mandad - Agardanda –Dighi Port (SH-96 & SH-92) [Section-II : Mangaon -Mhasala - Dighi Port] National Highway from existing Km 00+000 (Mangaon) to Km 54+750 (Dighi) [Design Km 0.000 to Km 54+750] of NH 753F in the state of Maharashtra Raigad District.

2) DCF, Roha further scrutinizes the proposal and raised remarks on 21.01.2020, 24.02.2020, 23.07.2020.

3) Meanwhile, in June & July 2020 during execution of the work the labors from contractor agency inadvertently was continued the work of road in forest area is admeasuring 2.9796 ha. Forest land assuming it is the existing ROW of the said road. The work in forest area was stopped immediately after it came to the notice of the MSRDC Mumbai and contractor agency has immediately stopped the work in forest areas. The above work has been carried out inadvertently by the contractor.

4) Executive Engineer (NH) M.S.R.D.C., Mumbai vide letter dated 20.07.2020, 29.07.2020 submitted the compliance of queries raised by DCF, Roha with details note of violation and officials responsible for violation.

5) Thereafter DCF, Roha submitted proposal to CCF, Thane Vide letter dated 30.07.2020, 20.10.2020.

6) CCF, Thane recommended and forwarded the said proposal to Additional Principal Chief Conservator of Forests & Nodal Officer, Nagpur vide letter dated 24.11.2020.

7) Additional Principal Chief Conservator of Forests & Nodal Officer Nagpur forwarded the said proposal to The Principal Secretary (Forests), Revenue & Forest Department, Mantralaya Mumbai vide letter dated 06.01.2021

8) Chief Conservator of Forests (Mantralaya) forwarded the said proposal to the Regional Officer (Central), Government of India, Ministry of Environment, Forest & Climate Change, Integrated Regional Office, Civil Lines Nagpur. Vide letter dated 08.03.2021.

9) The proposal is in principally approved by MoEF & CC, Integrated Regional Office, Nagpur vide Letter FC-II/MH-148/2021-NGP/8052 dated 22.04.2021 subject to fulfillment of some terms and conditions.

10) As per Stage-1 "In Principle" approval, Executive Engineer (NH), M.S.R.D.C. Mumbai Paid the Following charges as per Demand of Forest Department.

Sr. No.	Particulars	Amount in Rs.
1.	Net Present Value (NPV)	1,11,40,202/-
2.	Cost of Compensatory afforestation	1,75,21,272/-
3.	Cost towards Penal Compensatory Afforestation	21,75,266/-
4.	Penalty for Violation of Forest Conservation Act 1980	5,59,569/-
5.	Cost of Feeling Trees	2,96,348/-
6.	Avenue Plantation	Rs. 3,30,92,045/-

16.00 However, DCF, Roha and CCF Thane informed to take action on concern authority and concern Agencies to fulfill condition (viii) para 1.2 of Ministry of Environmental, forest & climate change vide letter no.8052 dated 22.04.2021.

17.00 Executive Engineer (NH) M.S.R.D.C. Mumbai has submitted forest land diversion proposal for area of 11.8639 on 12.12.2019. For the purpose of supervision, technical inspection and quality checking of the works, the Ministry of Road Transport & Highways have appointed a team of technical consultants to work as Authority's Engineer. There is direct supervision and inspection of Authority's Engineer on the works undertaken by the Contractor. However, the contractor while working for the two laning work has unknowingly caused forest violation of 2.9796 ha. area when the forest diversion proposal was under consideration. It is to submit that, no additional tree cutting done during this work, only small bushes cleared and road construction work continued from revenue land area to forest land. From available

details/ documents it is seems **Construction of road only is carried out by Contractor assuming it is the existing ROW of the said road.** The said forest violation has been done unintentionally by the contractor. Also, then Deputy Engineer / Executive Engineer (In-charge) was unknown about this Forest Violation.

18.00 As per the violation report, following authority/agency was responsible for violation on forest land.

Sr. No.	Name of Authority / Agency	Designation	Period of Violence
1.	Mr. Prasad Bade On behalf Contractor Agency	Project Engineer, M/s J M MHATRE INFRA PVT LTD	2020-21

19.00 The above two laning work was being undertaken through MSRDC under the supervision of Deputy Engineer Mr. Sachin Niphade. Although Deputy Engineer was unknown about the violation of forest land on site during execution by the contractor and necessary correspondence was made to them.

Sr. No.	Name of Authority / Agency	Designation	Period of Violation
1.	Mr. Sachin Niphade	Deputy Engineer, MSRDC	2020-21

(Chetan Wani)
Executive Engineer (NH)
M.S.R.D.C., Mumbai

Annexure - 2

NAME OF WORK: Rehabilitation & Up-gradation to 2 Lane with Paved Shoulder configuration of section from **Mangaon to Dighi Port** of **NH 753-F** (Length-54.75km) in the state of Maharashtra.

CONSERVATION PLAN FOR WILDLIFE

Submitted to;

Office of Deputy Conservator of Forest Roha

Roha, Tal.: Roha, Dist.: Raigad.

Project Proponent;

सड़क परिवहन और राजमार्ग मंत्रालय
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
भारत सरकार
Government of India

MSRDC

❖ EXECUTIVE SUMMARY

- Ministry of Road Transport & Highways (MoRT&H), GoI had declared certain State Highways as in-principle National Highways (NH) inclusive of subjected road and conveyed Technical, Administrative and Financial sanction for preparation of Detailed Project Report. These works was entrusted to Maharashtra State Road Development Corporation (MSRDC).
- Accordingly, MSRDC had prepared the Detailed Project Report (DPR). As an outcome of DPR, MoRTH has declared this road as a part New National Highway No.: 753-F. Further, MSRDC appointed EPC Contractor to upgrade this stretch as 2 Lane with paved shoulder configuration. The total length of the alignment is 54.75 kms.
- The proposed alignment is passing through 32 villages and 3 Tahsils namely, Mangaon, Mhasla & Shriwardhan of Raigad district in the State of Maharashtra; which starts at Mangaon town on Mumbai-Goa highway at Ch. 0+000 and terminate at the Dighi Port in Shriwardhan Tahsil at Ch.54+750 .
- The proposed project involves diversion of 11.86 ha of forest land. Proposal has been uploaded on 29th July 2020 vide FC Proposal No. FP/MH/ROAD/50280/2020 and the in-principle approval was accorded vide MoEF&CC GoI, letter No.: FC-II/MH-145/2020-NGP/8052; dtd.: 22.04.2021 and vide State Forest Dept GoM, letter No.: FLD-1321/C.R. No.: 13/F-10; dtd.: 08.03.2021.
- The proposed alignment does not pass through any protected areas and is located at an aerial distance of 14.5 kms from the boundary of the Phansad Wildlife Sanctuary. Phansad Wildlife Sanctuary (Marathi: फणसाड वन्यजीव अभयारण्य) is a wildlife sanctuary in the Murud and Roha talukas of Raigad district, Maharashtra state. It was created in 1986 to preserve some of the coastal woodland ecosystem of the Western Ghats and consists of 6,979 ha (17,250 acres) of forest, grasslands and wetlands. The area was once part of the hunting reserves of the princely state of Murud-Janjira.
- Before independence this sanctuary was private hunting Game reserve of Siddhi Nawab of Janjira State in Murud-Janjira. The entire area was notified as deemed reserved forest

under section 4 of Indian forest Act, 1927 . The major part of the present day sanctuary was a part of Phansad working Circle. The sanctuary was declared on 25-2-1986 vide Government of Maharashtra notification WLP/1085/CR-75/F-5 Dt. 25.2.1986. The final notification declaring eco sensitive zone around the Phansad sanctuary was made by Government vide Notification 105.S.O. 1603 (E) dated 17.05.2017. The Eco-Sensitive Zone (ESZ) is spread over an area of 10.96 km2 around the sanctuary. About 43 villages of Murud taluka and Roha taluka are part of the eco-sensitive zone. The management plans for Phansad wildlife sanctuary is approved vide letter Desk-22(8)/WL/M Plan/CR-166 Part14/2988/17-18 on 21/12/2017 for the year 2016–17 to 20125-26 by the Government of India.

1. INTRODUCTION

1.1 DEVELOPMENT VS. CONSERVATION

A well-knit and coordinated system of transport plays an important role in the sustained growth and development of a .country. Roads are pivotal to economic and social development by providing access to markets, places of employment, business, health, family care and education. In-fact a wide network of roads for transportation is the fundamental requirement for the economic development of any country. That is why length of paved roads in a country is often used as an index for assessing the level of its development. Globally the total length of paved and unpaved roads extends over about 64 million kilometres (CIA 2013). The Indian road network exceeds over 5.90 million kilometres in total length, making it world's second largest road network.

Transportation infrastructure affects the structure of ecosystems, the dynamics of ecosystem function, and has direct effects on ecosystem components, including their species composition. Construction of transport lines results in the direct destruction and removal of existing ecosystems, and the reconfiguration of local landforms. Roads have a wide variety of primary or direct ecological effects as well as secondary or indirect ecological effects on the landscapes that they penetrate. These effects can be measured both in a biotic as well as biotic components of terrestrial and aquatic ecosystems. The roads and traffic can significantly affect individual wildlife species, populations, communities, and landscape in the form of wildlife mortality, habitat loss, habitat degradation, and the barrier to animal movement. Road accidents directly lead to great loss to the wildlife as well as human beings.

Construction of roads also divides terrestrial animal populations into more or less isolated sub-populations, thus destroying their habitats and adversely their activities of foraging, reproduction, communication, etc. Most of the animals also suffer due to the noise of vehicles, air pollution, and restricted movement across the roads, vehicle headlights, roadside ditches and fences, bare road surfaces and heavy traffic on roads. All these barriers result in ecological disturbances, thereby disturbing food chains and reduced genetic diversity.

Conservationists and wildlife scientists have been working on this issue to understand and minimize the negative effects of roads on wildlife.

Efforts have been to find out ways and means to improve road permeability to animal movements and promote or establish connectivity between animal populations on either side of the roads. Studies reveal that porous roadbeds with overpasses and underpasses could form one of the solutions to this problem (Forman (1995). Specific wildlife passageways have been designed and incorporated into road planning and mitigation programmes and also implemented in various countries (Clevenger and Waltho 2000; Goosem et al. 2001; Keller et al. 2002; Cain et al. 2003). Specifically, designed wildlife passages could be another option to deal with this problem. However, these might be too expensive to build and implement on a large scale.

2. PROJECT DESCRIPTION

2.1 NEED OF PROJECT AND PROJECT PROFILE

The highway caters to transportation of heavy vehicles to Dighi port and the areas of the tourism importance in the vicinity around the Konkan belt in Raigad district of Maharashtra. The highway length passes through the Hilly and Plain terrain and this is the only one road connecting Existing NH-66 Mumbai Goa Highway to Dighi Port. The average rainfall intensity in this area is more than 3000 mm.

Keeping in view of the importance of the National Highways for the economic development, the Government of India has taken up an ambitious program of development of the National Highways under different phases of National Highway Development Program (NHDP). The construction of about 54.75 km long proposed Mangaon-Dighi National Highway 753F.

Total Project Cost	:	Rs. 457.52 Crs.
Awarded Cost	:	Rs. 372.95 Crs. (4.55 % above of Tender Cost of Rs. 356.69 Crs.)
Appointed Date	:	11.07.2017

Project Length	:	54.75 Km (Two Lane Rigid Pavement)
Minor Bridges	:	Total : 14 Nos Widening : 8 Nos Re-Construction : 6 Nos
Box Culverts	:	18 Nos
Hume Pipe Culverts	:	307 Nos
Toll Plaza	:	1
Road side Drain	:	2.8 Kms
RCC Covered Drain	:	2.8Kms
Road marking and Sign Boards	:	52.56 Kms
Bus Bay & Bus Shelter	:	46 Nos
Truck Lay Bay	:	1 Nos
Over Head & cantiliver Gantry	:	9 Nos
Repair of Bridges	:	7 Nos
Road side Plantation	:	52.56 Km
Junction Improvement	:	68 Nos

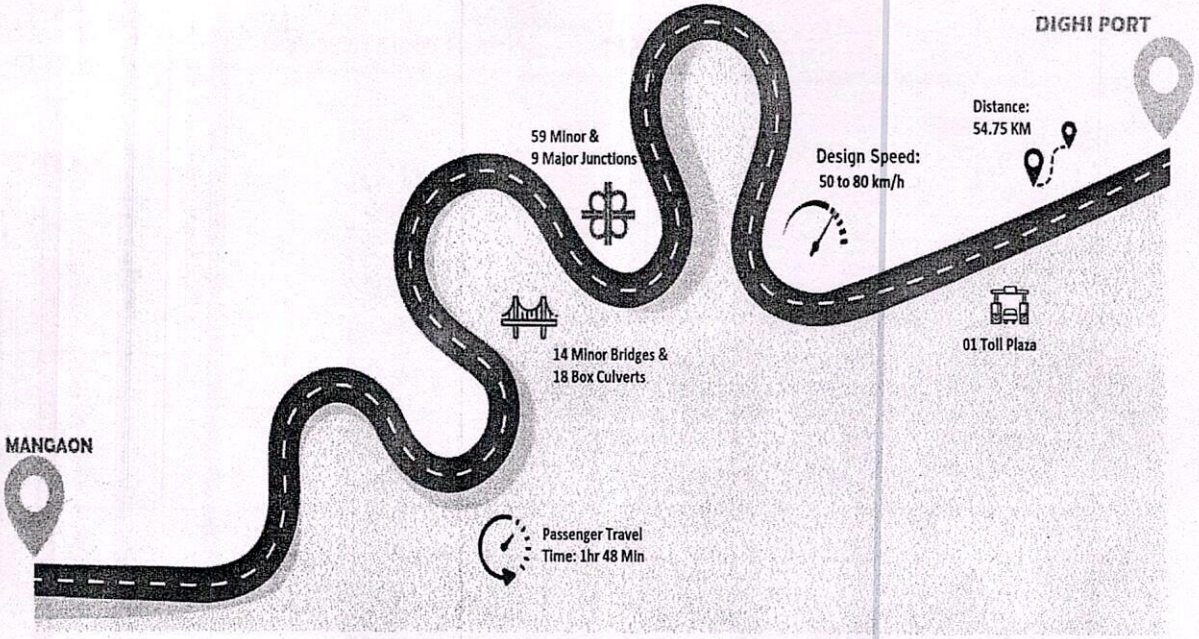

Fig.2.1 Salient Features of Project.

Table 1.1: Taluka wise break-up of Length of Proposed Highway

Sl.No	District	Taluka	Start Chainage	End Chainage	Length (Km)
1	Raigad	Mangaon	00+000	18+600	18.60
2		Mhasla	18+600	42+200	23.60
3		Shriwardhan	42+200	54+750	12.55
Total Length of Project Highway					54.75

Table 2: List of Villages falling along Proposed Alignment of Highway

Sl. No	District	Taluka	Village Name	Start Chainage	End Chainage	Length (Km)
1	Raigad	Mangaon	Khandad	00+000	01+300	1.30
2	Raigad	Mangaon	Rile	01+300	01+700	0.40
3	Raigad	Mangaon	Mhamnoli	01+700	02+100	0.40
4	Raigad	Mangaon	Nilgun	02+100	03+200	1.10
5	Raigad	Mangaon	Morba	03+200	05+000	1.80
6	Raigad	Mangaon	Surle	05+000	05+800	0.80
7	Raigad	Mangaon	Borle	05+800	07+000	1.20
8	Raigad	Mangaon	Nayitne	07+000	08+500	1.50
9	Raigad	Mangaon	Dongroli	08+500	10+300	1.80

Sl. No	District	Taluka	Village Name	Start Chainage	End Chainage	Length (Km)
10	Raigad	Mangaon	Vihule	10+300	11+600	1.30
11	Raigad	Mangaon	Vihule Khond	11+600	12+300	0.70
12	Raigad	Mangaon	Sai	12+300	14+300	2.00
13	Raigad	Mangaon	Usar Bhudru	14+300	15+300	1.00
14	Raigad	Mangaon	Nalfodi & Ranode	15+300	16+800	1.50
15	Raigad	Mangaon	Chandore	16+800	18+600	1.80
16	Raigad	Mhasla	Ghonsa	18+600	21+500	2.90
17	Raigad	Mhasla	Cansvadi	21+500	22+400	0.90
18	Raigad	Mhasla	Devgar	22+400	23+500	1.10
19	Raigad	Mhasla	Dhorje	23+500	25+100	1.60
20	Raigad	Mhasla	Mhasla	25+100	26+200	1.10
21	Raigad	Mhasla	Saklap	26+200	29+600	3.40
22	Raigad	Mhasla	Thondsure	29+600	31+000	1.40
23	Raigad	Mhasla	Varavatne	31+000	32+500	1.50
24	Raigad	Mhasla	Revli	32+500	33+000	0.50
25	Raigad	Mhasla	Banoti	33+000	33+500	0.50
26	Raigad	Mhasla	Kharsai	33+500	36+200	2.70
27	Raigad	Mhasla	Mendadi	36+200	39+900	3.70
28	Raigad	Mhasla	Gonndghar	39+900	42+200	2.30
29	Raigad	Shriwardhan	Vadavli	42+200	44+000	1.80
30	Raigad	Shriwardhan	Velas	44+000	48+000	4.00
31	Raigad	Shriwardhan	Kurgaon	48+000	52+000	4.00
32	Raigad	Shriwardhan	Gighi	52+000	54+750	2.75
Total Length of Project Highway						**54.75**

Figure 2.2: Index Map showing the location of the Proposed Highway

2.2 OBJECTIVE OF STUDY

- Preparation of Wildlife Conservation Plan for species exists in the study area or Wildlife Conservation Activities.

- Evaluate the impacts of the proposed Mangaon-Dighi Highway on the movement of animal
- Propose mitigation measures, engineering / structural and non-structural measures to address likely impacts on habitat connectivity and movement of wild animals.

2.3 SCOPE OF WORK

- Field survey for identification of wildlife corridor in forest areas covering winter and summer seasons
- Field survey for identification of sensitive location for wildlife within 10 km radius of the alignment of proposed National Highway NH753F.
- Identification of the Schedule-I species in consultation with the concerned forest /wildlife authority coming within 10 km radius of the proposed National Highway 753F. However, the list of Schedule-I species is already available in the Working Plan / Management Plan of Wildlife Division.
- A brief study of each schedule-I species in terms of their feeding habit, behaviors, seasonal migration, habitat, overall ecology.
- Mitigation measures to minimize impact on wildlife.
- Preparation of Wildlife Management Plan.
- Submission of Report to the Chief Wildlife Warden (CWW), Govt. of Maharashtra (GoM)
- Compliance of query raised by the CWW & submission of Final Conservation Plan.
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2.5 PROTECTED AREA WITHIN 10 KM RADIUS OF PROJECT HIGHWAY

"Wildlife Protection Act (1972) defines protected areas (PA) as an area declared legally protected by government under the Wildlife Protection Act". National Parks, Sanctuaries, Conservation Reserves and Community Reserves are the PA's notified under the Wildlife Protection Act (1972). The proposed highway does not pass through any Protected Areas or Conservation Reserve as per Wildlife Conservation Act, 1972.

2.6 Phansad Wildlife Sanctuary

The Phansad Wildlife Sanctuary is located between longitude 72°56'00" E & latitude 18°25'00" N in the Murud and Roha talukas of Raigad district, Maharashtra state, India. It was created in 1986 to preserve some of the coastal woodland ecosystem of the Western Ghats and consists of 6,979 ha (17,250 acres) of forest, grasslands and wetlands. The area was once part of the hunting reserves of the princely state of Murud-Janjira.

The proposed Highway does not pass through the Wildlife Sanctuary and is located at a distance of 21.1 km from the boundary of the Sanctuary. Total notified area of PWS is 60.79 sq.km as declared by Maharashtra Government

The terrain is hilly interspersed with rocky plateaus locally called as 'Mal'. There is a mixed deciduous forest along with few semi-evergreen patches along the streams. There are 27 water streams in the area of which 15 are perennial. These streams are locally called as 'Gan'.

Phansad wildlife sanctuary is a unique sanctuary in India, Originally a private hunting game reserve of siddhi Nawab of janjira state in Murud-Janjira, it was converted into a sanctuary on 25th Feb 1986 via the Govt. of Maharashtra notification.

2.7 Eco-sensitive Zone around Phansad Wildlife Sanctuary, Maharashtra.

Phansad Wildlife Sanctuary is spread over an area of 69.79 sq km. The Sanctuary has variety of forests – semi-evergreen, evergreen and moist deciduous and is home to a variety of fauna including Leopard, Indian Giant Squirrel, vulture, Malabar Grey Hornbill, and a number of other bird species. The Sanctuary is located close to the coast on the western side and breeding of Olive Ridley turtles and bird species such as the Sea Eagle have been recorded. Representative, Government of Maharashtra apprised the committee about the proposal. The draft notification was published on November 30, 2015. The salient features are as follows:

Area of PA	: 60.79 sq km
Proposed ESZ area	: 10.96 sq km
Proposed Extent	: 100m to 2.75 km from the boundary of Phansad WLS

The area and extent of ESZ has been proposed and a minimum extent of 100m was agreed to after consultations of the local communities upto the Gram Panchayat level. The Committee

agreed to the State Government's request that the Conservator, Thane district be a member of the Monitoring Committee and the DCF to be the Member-Secretary. The Committee also agreed shifting of activity- commercial use of firewood (except saw mills and other wood based industries) and overflying of balloons, etc from prohibited to regulated category. The Committee desired that introduction of exotic species should be done only after consulting the State Biodiversity Board. The Committee desired that a representative of the State.

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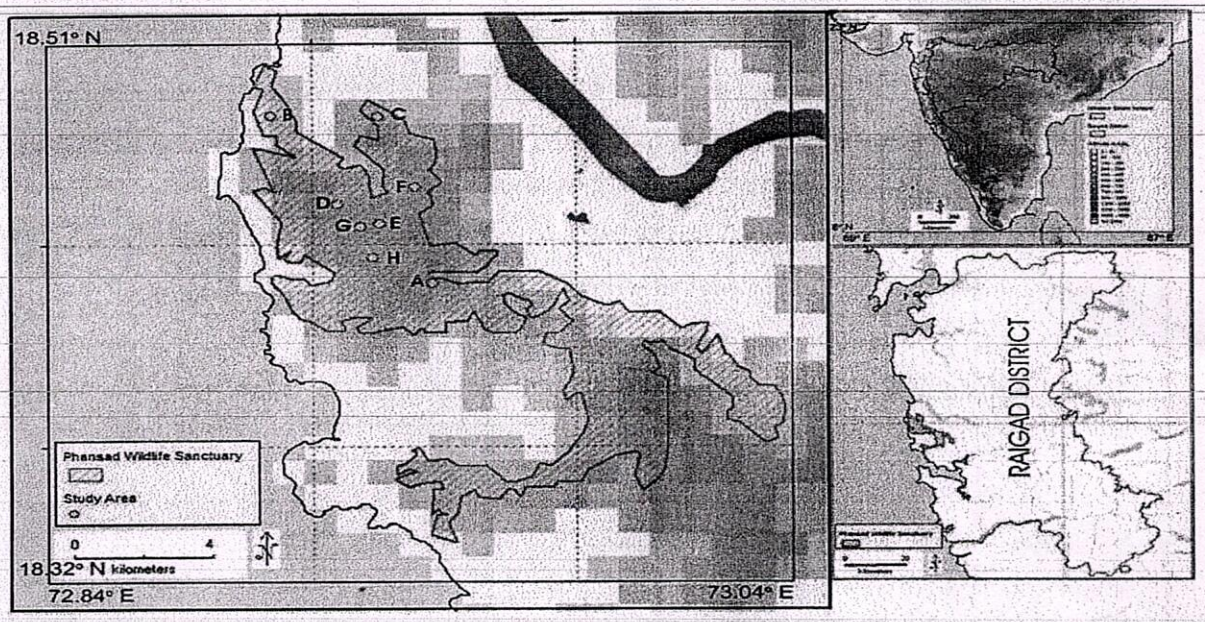


Figure 2.3: Phansad Wildlife Sanctuary Boundary.

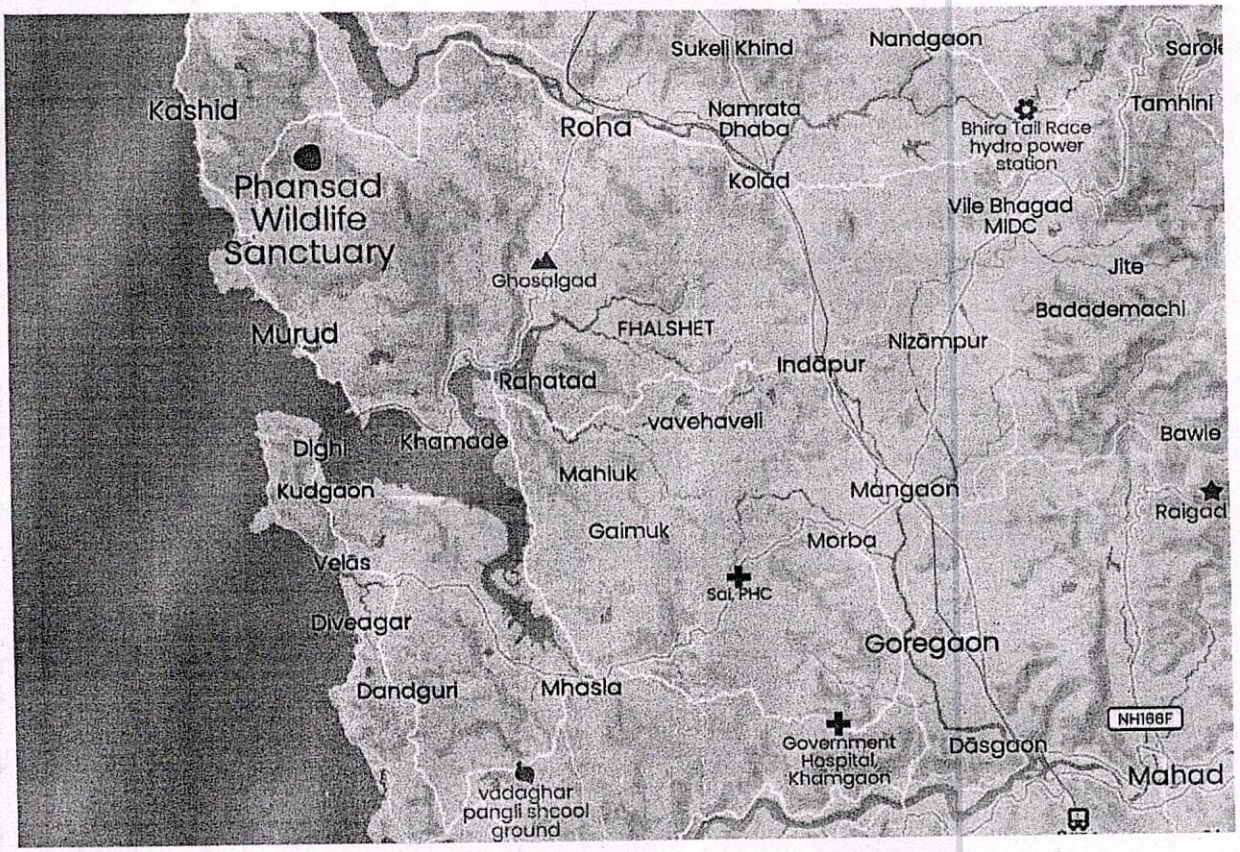


Figure 2.4: Index Map showing the location of the Phansad Wildlife Sanctuary.

3. STUDY OF APPROACH & METHODOLOGY

3.1 DTA COLLECTION

In order to understand the ecological status & biodiversity of different habitats of Wildlife Sanctuary along with identification of corridor in the forest areas, field study and public consultation have been conducted.

3.2 LITERATURE REVIEW

Considering the time limitation to undertake statistically rigorous data gathering system, study also relied on existing knowledge about the ecology and biodiversity of the region. Importantly, there are quite a few studies undertaken in the past dealing with the impacts of construction, highways, reality projects on flora and fauna and other concerns of biodiversity conservation. Literature on construction and area development projects and associated environmental issues were downloaded and collated through internet. Various relevant literatures were surveyed during the study for collection of baseline information. Maps, reports and documents collected from the project proponent were also reviewed and used in the present study. Books on flora, fauna and wildlife were also studied in order to understand the biology of several species. Other

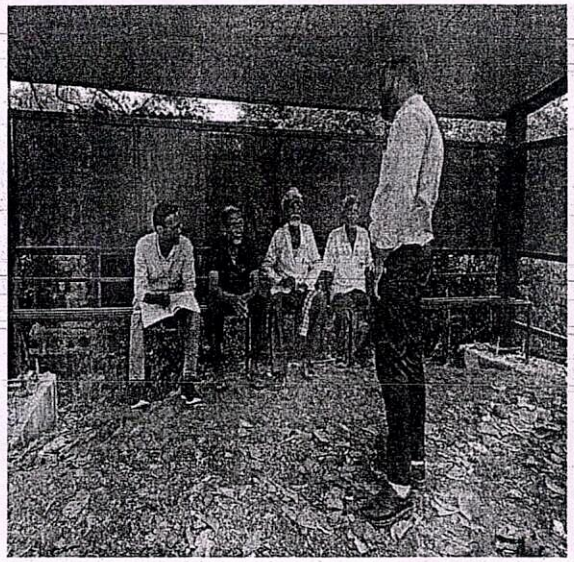
than the above, for the purpose of this study, relevant information was also collected and reviewed from following sources:

3.3 CONSULTATIONS

During the study, series of consultations were made with both technical and non-technical stakeholders to get better picture on the project area/core area and buffer zone habitats. In order to know more about the seasonal presence of several faunal species and their movement, study team informally consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

3.4 PUBLIC CONSULTATIONS

To assess the habitat, use and movement of the wild animals, consultation with locals, villagers, Forest Officials were also being carried out along with primary survey. Public consultation was conducted in the month of November 2020 & December 2020. And the conclusion of consultation with local villagers/local public is No wildlife is observed in the area. Same conclusion was found during the consultation with officials of Shriwardhan (Wild Life) Division.



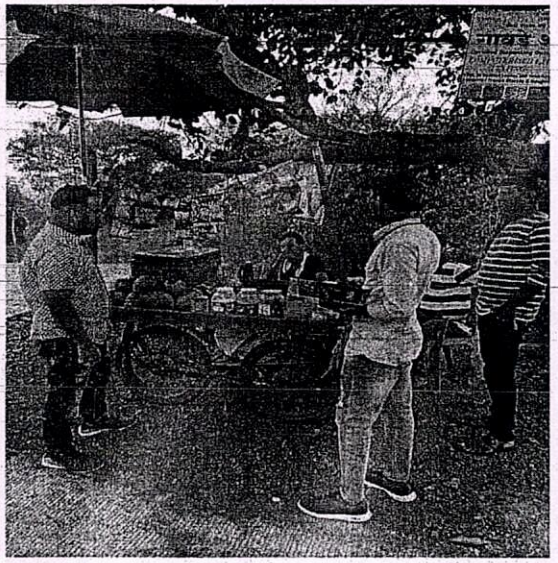


Figure 3.1: Photographs of Public Consultation

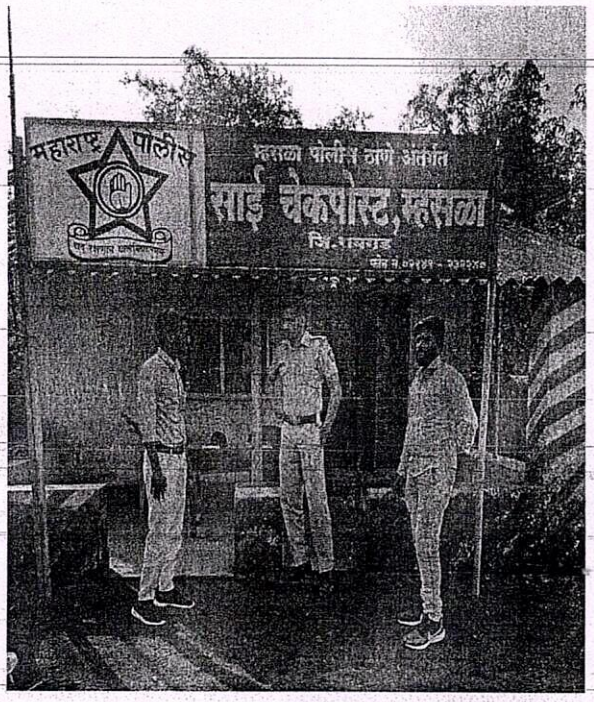


Figure 3.2: Photographs of Consultation with the Forest Officials

4. IMPACT ASSESSMEN

- The proposed Highway does not pass through any National Park, Wildlife Sanctuary, Conservation Reserve and Community Reserve. The proposed alignment of Project Highway is neither fragmenting nor diverting land of the Phansad Wildlife Sanctuary. The nearest distance of Phansad Wildlife Sanctuary from proposed alignment is 21.1 km. near the start point and nearest distance of the notified ESZ boundary of the Sanctuary is 17.0 km. Hence, there will be no direct impact on Phansad Wildlife Sanctuary since there is creek in the alignment and sanctuary location.

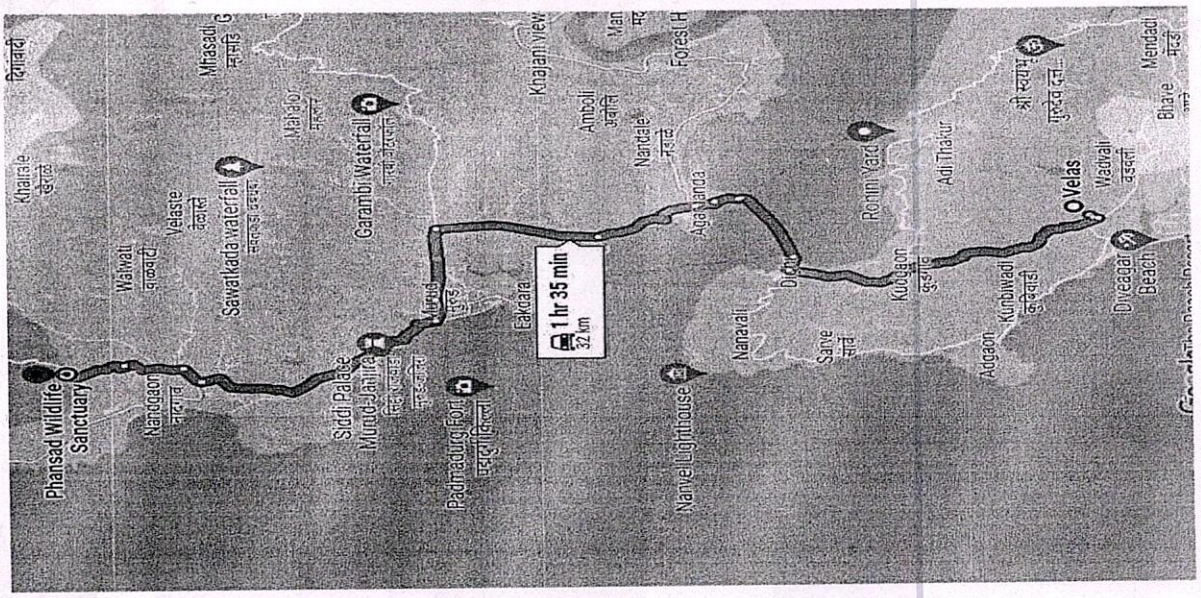


Figure 4.1: Distance Between Proposed Highway and Phansad WLS

5. MANAGEMENT AND CONSERVATION PLAN

Wildlife encompasses both wild animals and plants. Wildlife conservation is not just a strategy aimed at protection of rare, threatened and endemic biodiversity but is a well-recognized means of achieving ecological security, human wellbeing and sustainable development of any country. Establishment of Protected Areas (PAs) is a globally-accepted planning approach for the protection of wildlife, and conservation of biodiversity and valued ecosystem services.

Traditionally, highway impacts on wildlife have been viewed in terms of road mortality and threats to selected populations of animals. Viewing this issue, it is clear that highways have the potential to undermine ecological processes at a landscape scale through the fragmentation of wildlife populations, restriction of wildlife movements, and the disruption of gene flow and meta-population dynamics.

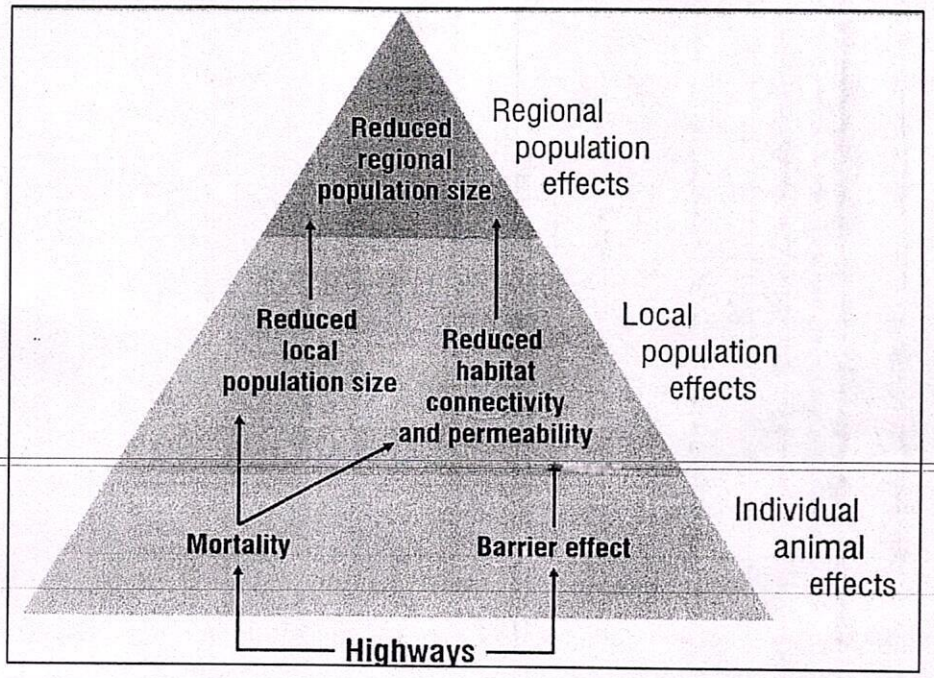


Figure 5.1 Effects of roads on individual animals and wildlife populations

5.1 PROPOSED MANAGEMENT ACTIVITY

- *Lantana Removal Work :* In forest area some grassland area is infected with lantana weed. There are biological, chemical and manual method of eradication or control. Based on advantages and disadvantages manual or physical methods are cost effective and cause least damage to other useful species. In order to maintain good grassland, lantana eradication work is very much necessary which will support herbivorous.
- *New Water Holes Creation & Maintenance of Existing Water Holes:* Water is critical for wildlife & hence its management is of paramount importance. Water resource management will include two pronged strategy i.e. Protection & Maintenance of existing water sources whether they are either perennial or seasonal and artificial or natural ones.
- *Inner road repairs:* All the existing road to be maintained annually so that they are pliable thought the year. Special repair shall also be taken up stretches where damage in prominent.
- *Informatory/Cautionary Sign Boards:* The proposed Highway connects the various villages in the forest area, So that the provision of Informatory/Cautionary Sign Boards is very much essential for safety of the local population and Road users.
- *Engineering / Structural Options:* Existing road meets numerous cross drainages, which do not have culverts in them. This causes major problem in year around patrolling. Some important roads on which if construction of culvert is taken up, the those roads can be pliable even during the rains & will be effective during sensitive period of monsoon.

Ministry of Road Transport & Highways (MoRT&H), GoI had conveyed Technical, Administrative and Financial sanction with reserved cost of Rs. 3.57 Crs for Impact Mitigation.

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Executive Engineer
M.S.R.D.C. (Ltd), Mumbai

Annexure 19

NAME OF WORK: Rehabilitation & Up-gradation to 2 Lane with Paved Shoulder configuration of section from **Mangaon to Dighi Port** of **NH 753-F** (Length-54.75km) in the state of Maharashtra.

CONSERVATION PLAN FOR WILDLIFE

Submitted to;

Office of Deputy Conservator of Forest Roha

Roha, Tal.: Roha, Dist.: Raigad.

Project Proponent;

सड़क परिवहन और राजमार्ग मंत्रालय
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
भारत सरकार Government of India

MSRDC

❖ EXECUTIVE SUMMARY

- Ministry of Road Transport & Highways (MoRT&H), GoI had declared certain State Highways as in-principle National Highways (NH) inclusive of subjected road and conveyed Technical, Administrative and Financial sanction for preparation of Detailed Project Report. These works was entrusted to Maharashtra State Road Development Corporation (MSRDC).
- Accordingly, MSRDC had prepared the Detailed Project Report (DPR). As an outcome of DPR, MoRTH has declared this road as a part New National Highway No.: 753-F. Further, MSRDC appointed EPC Contractor to upgrade this stretch as 2 Lane with paved shoulder configuration. The total length of the alignment is 54.75 kms.
- The proposed alignment is passing through 32 villages and 3 Tahsils namely, Mangaon, Mhasla & Shriwardhan of Raigad district in the State of Maharashtra; which starts at Mangaon town on Mumbai-Goa highway at Ch. 0+000 and terminate at the Dighi Port in Shriwardhan Tahsil at Ch.54+750 .
- The proposed project involves diversion of 11.86 ha of forest land. Proposal has been uploaded on 29th July 2020 vide FC Proposal No. FP/MH/ROAD/50280/2020 and the in-principle approval was accorded vide MoEF&CC GoI, letter No.: FC-II/MH-145/2020-NGP/8052; dtd.: 22.04.2021 and vide State Forest Dept GoM, letter No.: FLD-1321/C.R. No.: 13/F-10; dtd.: 08.03.2021.
- The proposed alignment does not pass through any protected areas and is located at an aerial distance of 14.5 kms from the boundary of the Phansad Wildlife Sanctuary. Phansad Wildlife Sanctuary (Marathi: फणसाड वन्यजीव अभयारण्य) is a wildlife sanctuary in the Murud and Roha talukas of Raigad district, Maharashtra state. It was created in 1986 to preserve some of the coastal woodland ecosystem of the Western Ghats and consists of 6,979 ha (17,250 acres) of forest, grasslands and wetlands. The area was once part of the hunting reserves of the princely state of Murud-Janjira.
- Before independence this sanctuary was private hunting Game reserve of Siddhi Nawab of Janjira State in Murud-Janjira. The entire area was notified as deemed reserved forest

under section 4 of Indian forest Act, 1927 . The major part of the present day sanctuary was a part of Phansad working Circle. The sanctuary was declared on 25-2-1986 vide Government of Maharashtra notification WLP/1085/CR-75/F-5 Dt. 25.2.1986. The final notification declaring eco sensitive zone around the Phansad sanctuary was made by Government vide Notification 105.S.O. 1603 (E) dated 17.05.2017. The Eco-Sensitive Zone (ESZ) is spread over an area of 10.96 km2 around the sanctuary. About 43 villages of Murud taluka and Roha taluka are part of the eco-sensitive zone. The management plans for Phansad wildlife sanctuary is approved vide letter Desk-22(8)/WL/M Plan/CR-166 Part14/2988/17-18 on 21/12/2017 for the year 2016–17 to 20125-26 by the Government of India.

1. INTRODUCTION

1.1 DEVELOPMENT VS. CONSERVATION

A well-knit and coordinated system of transport plays an important role in the sustained growth and development of a country. Roads are pivotal to economic and social development by providing access to markets, places of employment, business, health, family care and education. In-fact a wide network of roads for transportation is the fundamental requirement for the economic development of any country. That is why length of paved roads in a country is often used as an index for assessing the level of its development. Globally the total length of paved and unpaved roads extends over about 64 million kilometres (CIA 2013). The Indian road network exceeds over 5.90 million kilometres in total length, making it world's second largest road network.

Transportation infrastructure affects the structure of ecosystems, the dynamics of ecosystem function, and has direct effects on ecosystem components, including their species composition. Construction of transport lines results in the direct destruction and removal of existing ecosystems, and the reconfiguration of local landforms. Roads have a wide variety of primary or direct ecological effects as well as secondary or indirect ecological effects on the landscapes that they penetrate. These effects can be measured both in a biotic as well as biotic components of terrestrial and aquatic ecosystems. The roads and traffic can significantly affect individual wildlife species, populations, communities, and landscape in the form of wildlife mortality, habitat loss, habitat degradation, and the barrier to animal movement. Road accidents directly lead to great loss to the wildlife as well as human beings.

Construction of roads also divides terrestrial animal populations into more or less isolated sub-populations, thus destroying their habitats and adversely their activities of foraging, reproduction, communication, etc. Most of the animals also suffer due to the noise of vehicles, air pollution, and restricted movement across the roads, vehicle headlights, roadside ditches and fences, bare road surfaces and heavy traffic on roads. All these barriers result in ecological disturbances, thereby disturbing food chains and reduced genetic diversity.

Conservationists and wildlife scientists have been working on this issue to understand and minimize the negative effects of roads on wildlife.

Efforts have been to find out ways and means to improve road permeability to animal movements and promote or establish connectivity between animal populations on either side of the roads. Studies reveal that porous roadbeds with overpasses and underpasses could form one of the solutions to this problem (Forman (1995). Specific wildlife passageways have been designed and incorporated into road planning and mitigation programmes and also implemented in various countries (Clevenger and Waltho 2000; Goosem et al. 2001; Keller et al. 2002; Cain et al. 2003). Specifically, designed wildlife passages could be another option to deal with this problem. However, these might be too expensive to build and implement on a large scale.

2. PROJECT DESCRIPTION

2.1 NEED OF PROJECT AND PROJECT PROFILE

The highway caters to transportation of heavy vehicles to Dighi port and the areas of the tourism importance in the vicinity around the Konkan belt in Raigad district of Maharashtra. The highway length passes through the Hilly and Plain terrain and this is the only one road connecting Existing NH-66 Mumbai Goa Highway to Dighi Port. The average rainfall intensity in this area is more than 3000 mm.

Keeping in view of the importance of the National Highways for the economic development, the Government of India has taken up an ambitious program of development of the National Highways under different phases of National Highway Development Program (NHDP). The construction of about 54.75 km long proposed Mangaon-Dighi National Highway 753F.

Total Project Cost	:	Rs. 457.52 Crs.
Awarded Cost	:	Rs. 372.95 Crs. (4.55 % above of Tender Cost of Rs. 356.69 Crs.)
Appointed Date	:	11.07.2017

Project Length	:	54.75 Km (Two Lane Rigid Pavement)
Minor Bridges	:	Total : 14 Nos Widening : 8 Nos Re-Construction : 6 Nos
Box Culverts	:	18 Nos
Hume Pipe Culverts	:	307 Nos
Toll Plaza	:	1
Road side Drain	:	2.8 Kms
RCC Covered Drain	:	2.8Kms
Road marking and Sign Boards	:	52.56 Kms
Bus Bay & Bus Shelter	:	46 Nos
Truck Lay Bay	:	1 Nos
Over Head & cantiliver Gantry	:	9 Nos
Repair of Bridges	:	7 Nos
Road side Plantation	:	52.56 Km
Junction Improvement	:	68 Nos

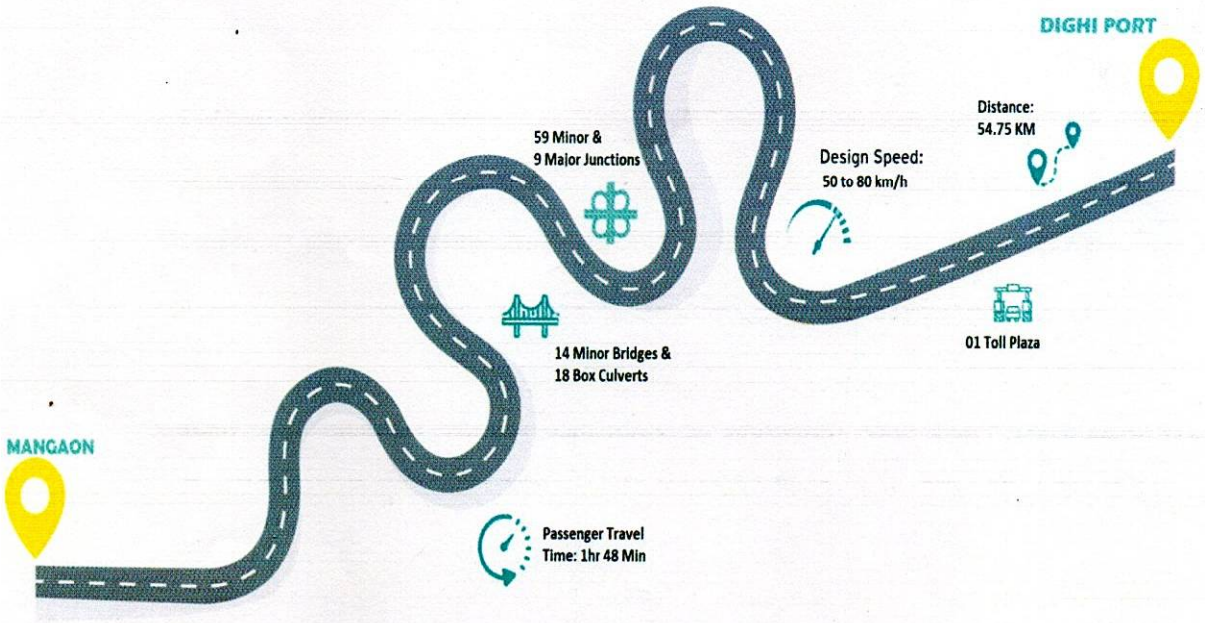

Fig.2.1 Salient Features of Project.

Table 1.1: Taluka wise break-up of Length of Proposed Highway

Sl.No	District	Taluka	Start Chainage	End Chainage	Length (Km)
1	Raigad	Mangaon	00+000	18+600	18.60
2		Mhasla	18+600	42+200	23.60
3		Shriwardhan	42+200	54+750	12.55
Total Length of Project Highway					**54.75**

Table 2: List of Villages falling along Proposed Alignment of Highway

Sl. No	District	Taluka	Village Name	Start Chainage	End Chainage	Length (Km)
1	Raigad	Mangaon	Khandad	00+000	01+300	1.30
2	Raigad	Mangaon	Rile	01+300	01+700	0.40
3	Raigad	Mangaon	Mhamnoli	01+700	02+100	0.40
4	Raigad	Mangaon	Nilgun	02+100	03+200	1.10
5	Raigad	Mangaon	Morba	03+200	05+000	1.80
6	Raigad	Mangaon	Surle	05+000	05+800	0.80
7	Raigad	Mangaon	Borle	05+800	07+000	1.20
8	Raigad	Mangaon	Nayitne	07+000	08+500	1.50
9	Raigad	Mangaon	Dongroli	08+500	10+300	1.80

Sl. No	District	Taluka	Village Name	Start Chainage	End Chainage	Length (Km)
10	Raigad	Mangaon	Vihule	10+300	11+600	1.30
11	Raigad	Mangaon	Vihule Khond	11+600	12+300	0.70
12	Raigad	Mangaon	Sai	12+300	14+300	2.00
13	Raigad	Mangaon	Usar Bhudru	14+300	15+300	1.00
14	Raigad	Mangaon	Nalfodi & Ranode	15+300	16+800	1.50
15	Raigad	Mangaon	Chandore	16+800	18+600	1.80
16	Raigad	Mhasla	Ghonsa	18+600	21+500	2.90
17	Raigad	Mhasla	Cansvadi	21+500	22+400	0.90
18	Raigad	Mhasla	Devgar	22+400	23+500	1.10
19	Raigad	Mhasla	Dhorje	23+500	25+100	1.60
20	Raigad	Mhasla	Mhasla	25+100	26+200	1.10
21	Raigad	Mhasla	Saklap	26+200	29+600	3.40
22	Raigad	Mhasla	Thondsure	29+600	31+000	1.40
23	Raigad	Mhasla	Varavatne	31+000	32+500	1.50
24	Raigad	Mhasla	Revli	32+500	33+000	0.50
25	Raigad	Mhasla	Banoti	33+000	33+500	0.50
26	Raigad	Mhasla	Kharsai	33+500	36+200	2.70
27	Raigad	Mhasla	Mendadi	36+200	39+900	3.70
28	Raigad	Mhasla	Gonndghar	39+900	42+200	2.30
29	Raigad	Shriwardhan	Vadavli	42+200	44+000	1.80
30	Raigad	Shriwardhan	Velas	44+000	48+000	4.00
31	Raigad	Shriwardhan	Kurgaon	48+000	52+000	4.00
32	Raigad	Shriwardhan	Gighi	52+000	54+750	2.75
Total Length of Project Highway						**54.75**

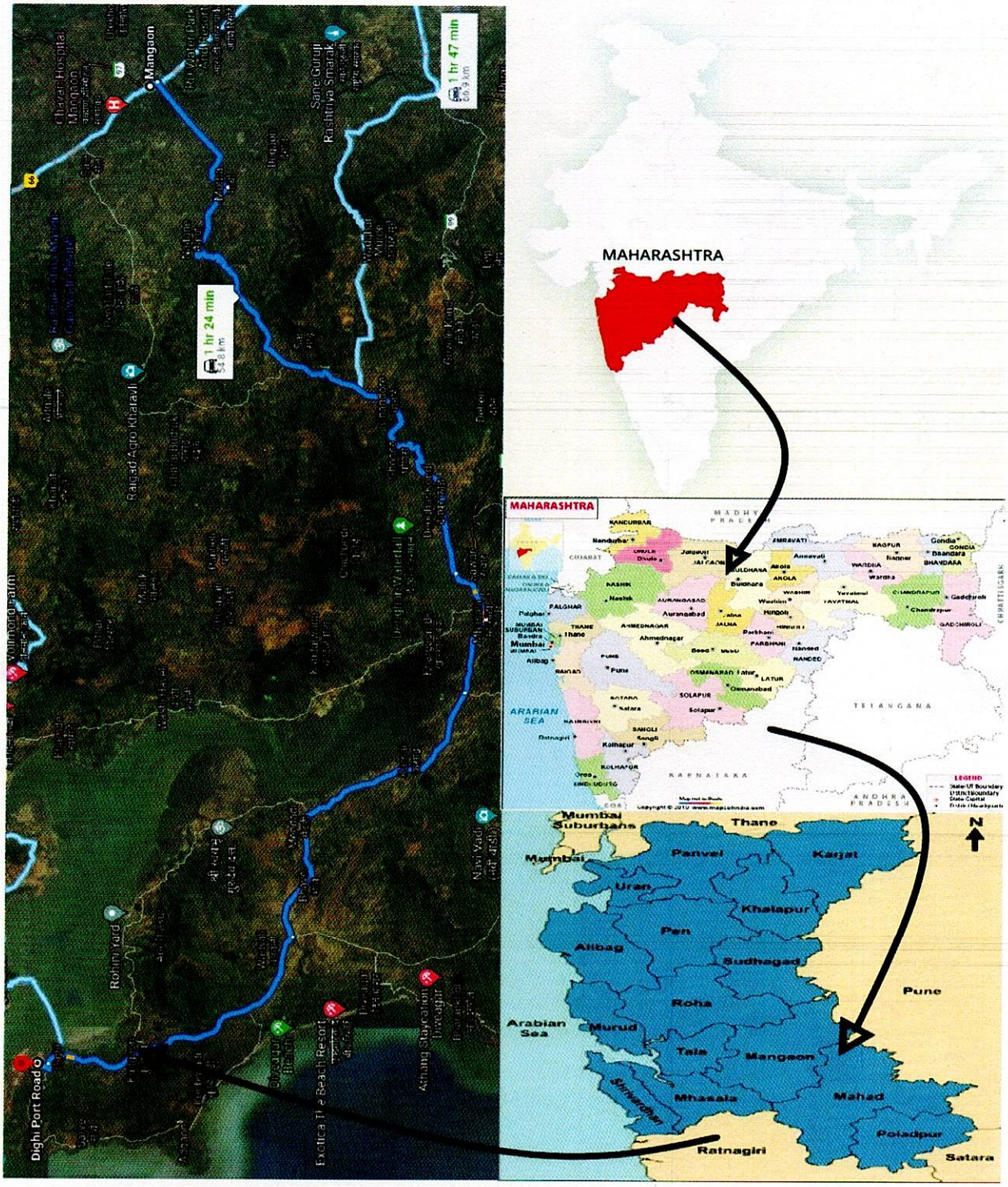

Figure 2.2: Index Map showing the location of the Proposed Highway

2.2 OBJECTIVE OF STUDY

- Preparation of Wildlife Conservation Plan for species exists in the study area or Wildlife Conservation Activities.

- Evaluate the impacts of the proposed Mangaon-Dighi Highway on the movement of animal
- Propose mitigation measures, engineering / structural and non-structural measures to address likely impacts on habitat connectivity and movement of wild animals.

2.3 SCOPE OF WORK

- Field survey for identification of wildlife corridor in forest areas covering winter and summer seasons
- Field survey for identification of sensitive location for wildlife within 10 km radius of the alignment of proposed National Highway NH753F.
- Identification of the Schedule-I species in consultation with the concerned forest /wildlife authority coming within 10 km radius of the proposed National Highway 753F. However, the list of Schedule-I species is already available in the Working Plan / Management Plan of Wildlife Division.
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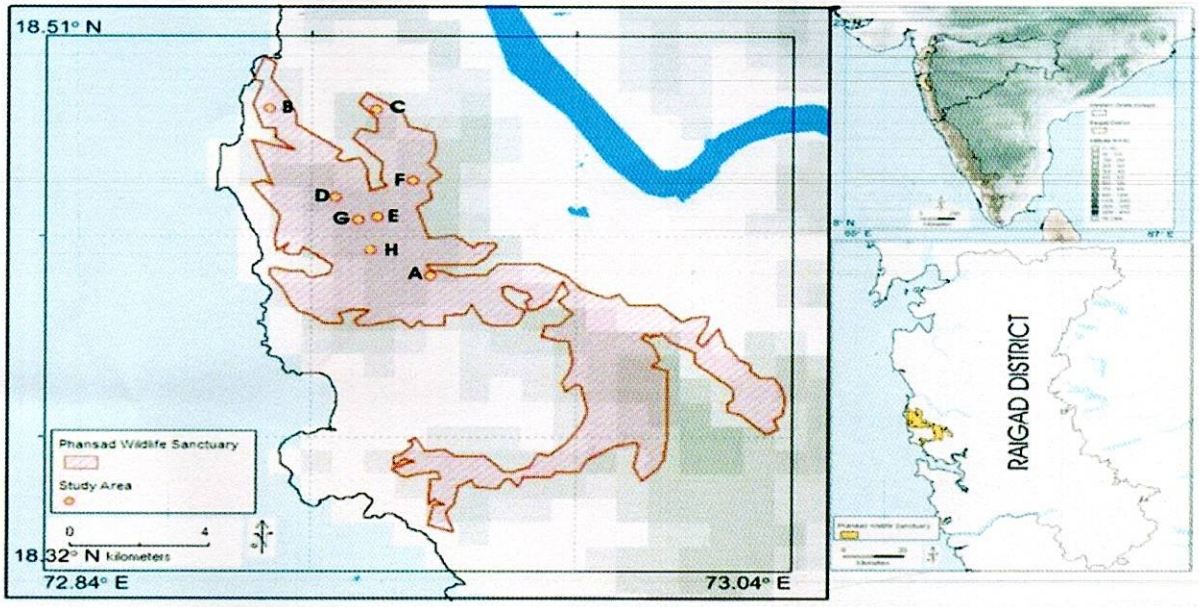

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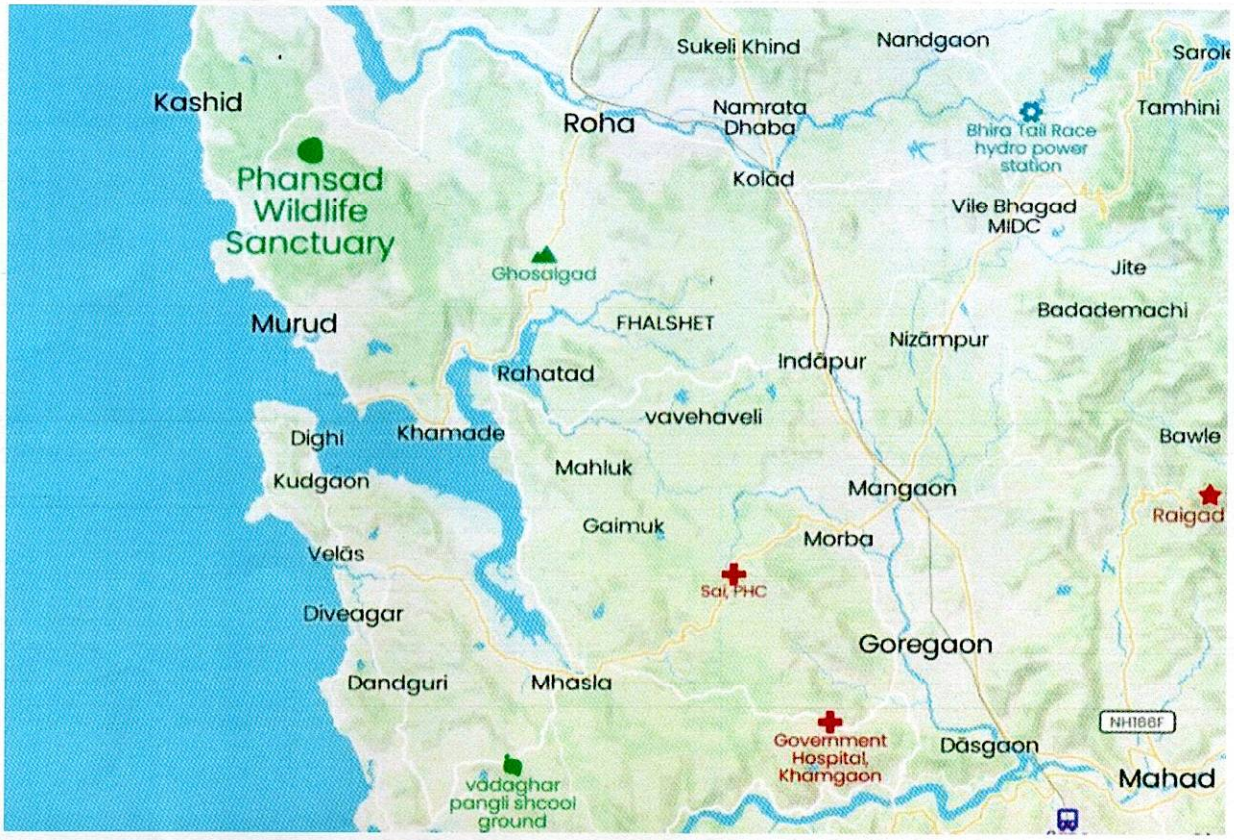


Figure 2.4: Index Map showing the location of the Phansad Wildlife Sanctuary.

3. STUDY OF APPROACH & METHODOLOGY

3.1 DTA COLLECTION

In order to understand the ecological status & biodiversity of different habitats of Wildlife Sanctuary along with identification of corridor in the forest areas, field study and public consultation have been conducted.

3.2 LITERATURE REVIEW

Considering the time limitation to undertake statistically rigorous data gathering system, study also relied on existing knowledge about the ecology and biodiversity of the region. Importantly, there are quite a few studies undertaken in the past dealing with the impacts of construction, highways, reality projects on flora and fauna and other concerns of biodiversity conservation. Literature on construction and area development projects and associated environmental issues were downloaded and collated through internet. Various relevant literatures were surveyed during the study for collection of baseline information. Maps, reports and documents collected from the project proponent were also reviewed and used in the present study. Books on flora, fauna and wildlife were also studied in order to understand the biology of several species. Other

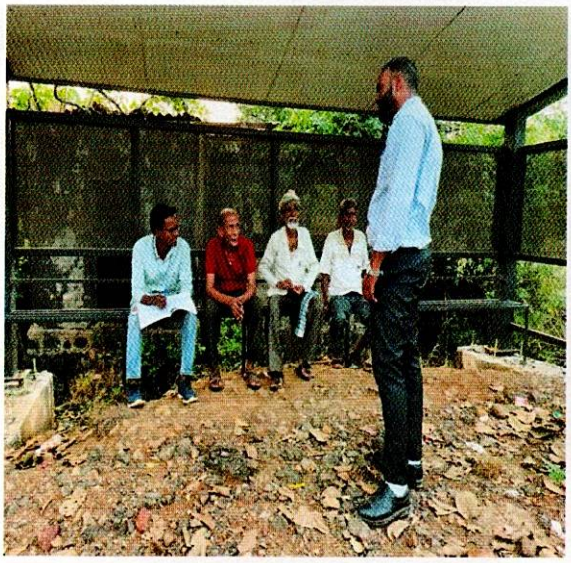
than the above, for the purpose of this study, relevant information was also collected and reviewed from following sources:

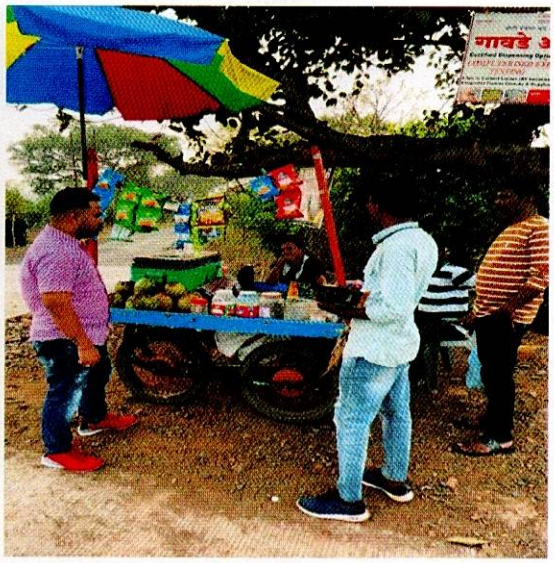
3.3 CONSULTATIONS

During the study, series of consultations were made with both technical and non-technical stakeholders to get better picture on the project area/core area and buffer zone habitats. In order to know more about the seasonal presence of several faunal species and their movement, study team informally consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

3.4 PUBLIC CONSULTATIONS

To assess the habitat, use and movement of the wild animals, consultation with locals, villagers, Forest Officials were also being carried out along with primary survey. Public consultation was conducted in the month of November 2020 & December 2020. And the conclusion of consultation with local villagers/local public is No wildlife is observed in the area. Same conclusion was found during the consultation with officials of Shriwardhan (Wild Life) Division.





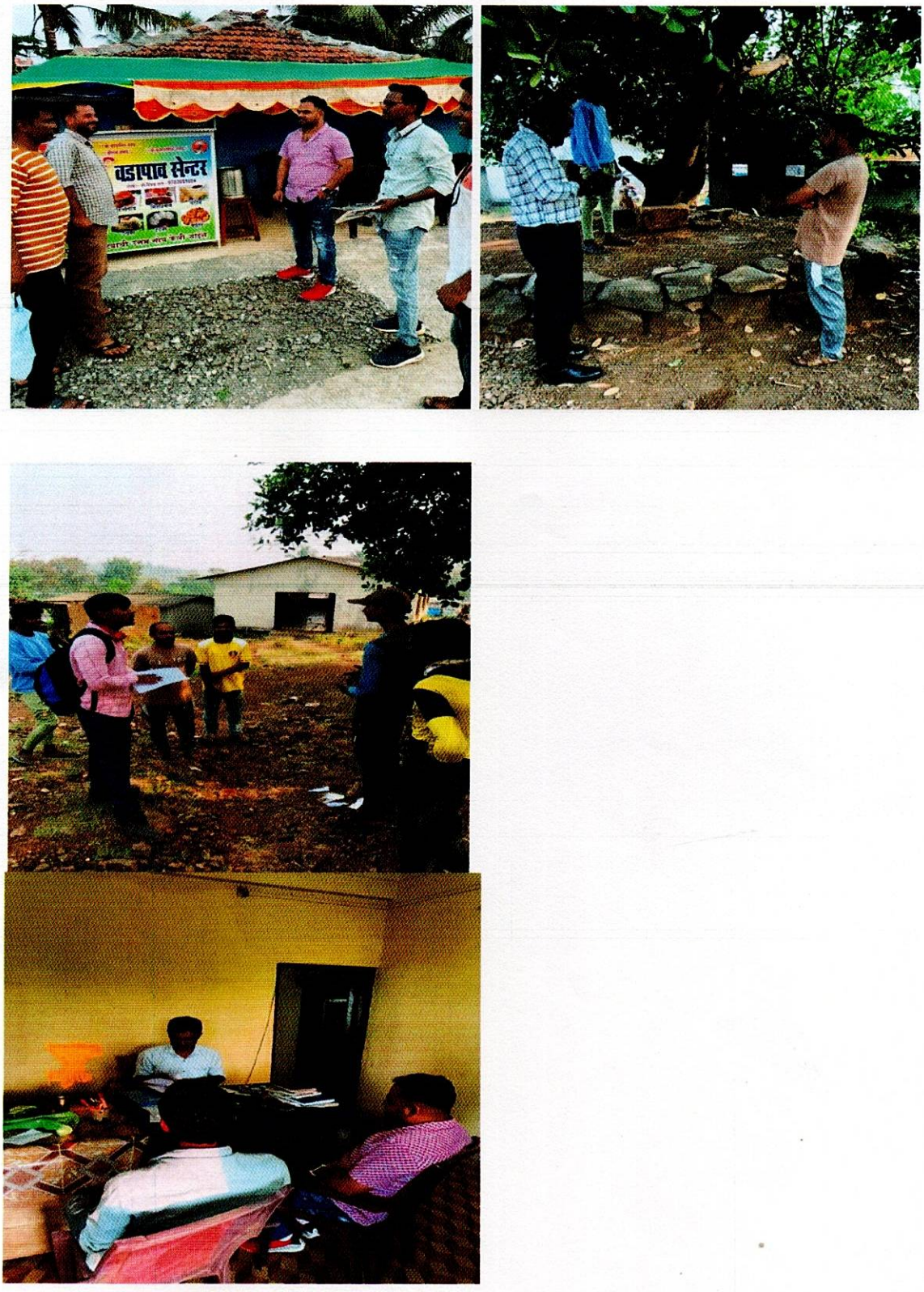


Figure 3.1: Photographs of Public Consultation

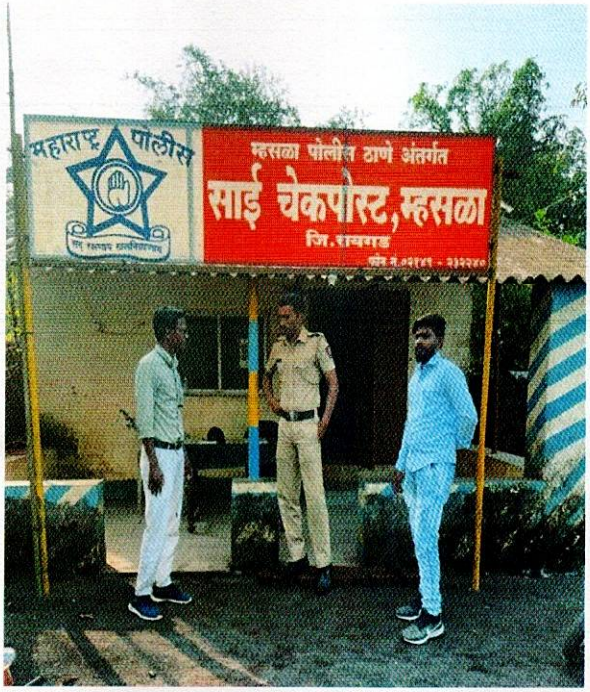


Figure 3.2: Photographs of Consultation with the Forest Officials

4. IMPACT ASSESSMEN

- The proposed Highway does not pass through any National Park, Wildlife Sanctuary, Conservation Reserve and Community Reserve. The proposed alignment of Project Highway is neither fragmenting nor diverting land of the Phansad Wildlife Sanctuary. The nearest distance of Phansad Wildlife Sanctuary from proposed alignment is 21.1 km. near the start point and nearest distance of the notified ESZ boundary of the Sanctuary is 17.0 km. Hence, there will be no direct impact on Phansad Wildlife Sanctuary since there is creek in the alignment and sanctuary location.

Figure 4.1: Distance Between Proposed Highway and Phansad WLS

5. MANAGEMENT AND CONSERVATION PLAN

Wildlife encompasses both wild animals and plants. Wildlife conservation is not just a strategy aimed at protection of rare, threatened and endemic biodiversity but is a well-recognized means of achieving ecological security, human wellbeing and sustainable development of any country. Establishment of Protected Areas (PAs) is a globally-accepted planning approach for the protection of wildlife, and conservation of biodiversity and valued ecosystem services.

Traditionally, highway impacts on wildlife have been viewed in terms of road mortality and threats to selected populations of animals. Viewing this issue, it is clear that highways have the potential to undermine ecological processes at a landscape scale through the fragmentation of wildlife populations, restriction of wildlife movements, and the disruption of gene flow and meta-population dynamics.

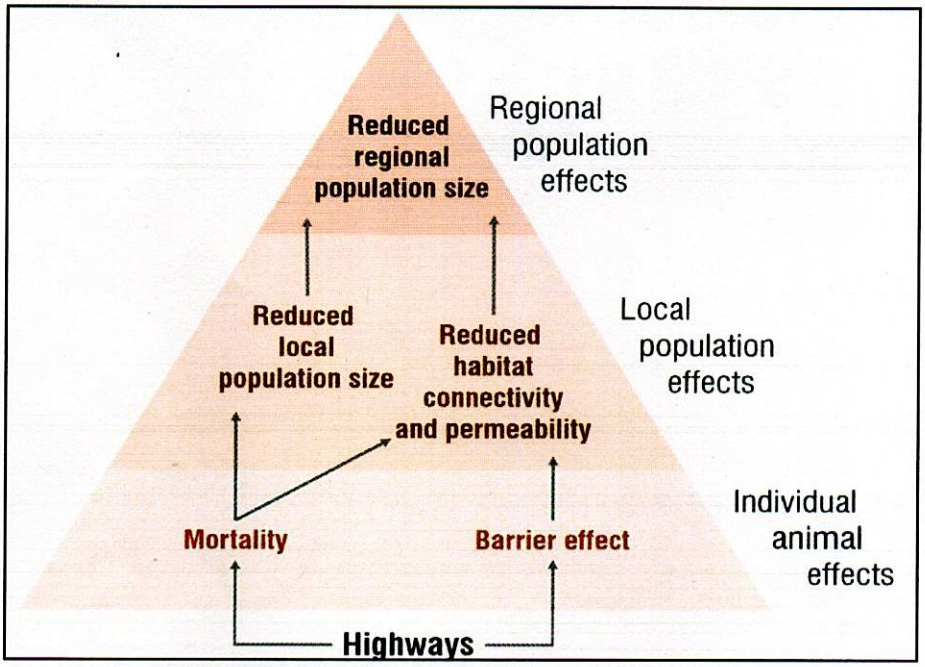


Figure 5.1 Effects of roads on individual animals and wildlife populations

5.1 PROPOSED MANAGEMENT ACTIVITY

- *Lantana Removal Work :* In forest area some grassland area is infected with lantana weed. There are biological, chemical and manual method of eradication or control. Based on advantages and disadvantages manual or physical methods are cost effective and cause least damage to other useful species. In order to maintain good grassland, lantana eradication work is very much necessary which will support herbivorous.
- *New Water Holes Creation & Maintenance of Existing Water Holes:* Water is critical for wildlife & hence its management is of paramount importance. Water resource management will include two pronged strategy i.e. Protection & Maintenance of existing water sources whether they are either perennial or seasonal and artificial or natural ones.
- *Inner road repairs:* All the existing road to be maintained annually so that they are pliable thought the year. Special repair shall also be taken up stretches where damage in prominent.
- *Informatory/Cautionary Sign Boards:* The proposed Highway connects the various villages in the forest area, So that the provision of Informatory/Cautionary Sign Boards is very much essential for safety of the local population and Road users.
- *Engineering / Structural Options:* Existing road meets numerous cross drainages, which do not have culverts in them. This causes major problem in year around patrolling. Some important roads on which if construction of culvert is taken up, the those roads can be pliable even during the rains & will be effective during sensitive period of monsoon.

Ministry of Road Transport & Highways (MoRT&H), GoI had conveyed Technical, Administrative and Financial sanction with reserved cost of Rs. 3.57 Crs for Impact Mitigation.

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