GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

From
Sri Y. Madhusudhana Reddy, I.F.S.,
Prl. Chief Conservator of Forests
(Head of Forest Force) (FAC),
Andhra Pradesh,
Guntur -522004

To
The Spl.Chief Secretary to Government,
Environment, Forests, Science
and Technology Department,
Andhra Pradesh Secretariat
Velagapudi, Amaravathi.

Rc.no. EFS02-15034/24/2018/FCA SEC -PCCF/FCA-1, Dated:08/09/2022.

Sir,

Sub: APFD – F (C) Act, 1980 – Diversion of 11.03 ha of forest land in Proddatur WL - Division in favour of Executive Engineer (R&B), NH Division, Kadapa, for up-gradation of NH-167 B from Km51/000 to Km 58/500 i.e., from Porumamilla to Chandrasekharampuram with two lanes and paved shoulders under NHDP –IV in the State of Andhra Pradesh – Proposal submitted to Government – Additional information called for – Submitted – Reg.

Ref:-
1. GoI, MoEF&CC, IRO, Vijayawada, F.no.4-APC134/2021-Vij/77, dt.30.09.2021.
2. Govt.Memo.no.1481/Section.II/2021(1226406), EFS&T (Sec.II) Dept., dt.03.11.2021.
3. CF, Kurnool, Rc.no.1885/2017-TO, dt.29.11.2021 & 14.06.2022.

* * *

Kind attention is invited to the reference 2nd cited.

It is submitted that, the Government in the reference 2nd cited, has requested certain additional information in respect of the proposal for diversion of 11.03 ha of forest land in Compartment no.253 of Kavalkuntla Extn.A&B RF, Porumamilla Range, Proddatur WL Division for upgrading and widening of the existing road to two lane with paved configuration of NH-167B from km 51/000 to km 58/500 i.e., from Porumamilla to Chandrasekharpuram in favour of Executive Engineer (R&B), NH Division, Kadapa, as sought by Government of India, MoEF&CC, IRO, Vijayawada in the reference 1st cited.

The Conservator of Forests, Kurnool in the reference 3rd cited, has submitted the additional information, which is as follows.

Sl. no.	Information requested by GoI	Information submitted
1.	Legal status of the existing road i.e., whether the existing road is a notified RoW or any prior approval accorded by the Central Government under FCA, 1980 etc., and supporting documents like RoW notification with clearly indicating actual	The Conservator of Forests, Kurnool Circle, Kurnool has reported that, the area proposed road diversion i.e., 11.03 ha is passing through Kavalkuntla Extn.A& B RF, Tekurpeta Beat, Porumamilla Range, Proddatur Division. The KavalkuntlaExt.A& B RF is notified under Section 16 of Madras Forest Act-V of 1882 vide Proceedings of Board of Revenue (Land & Revenue) Forest no.133, dt.25.03.1896. A**s per the notification of Kavalakkuntla Extn.A&B**

	length & width of RoW, and copy of the approval order under FCA, 1980 as the case may be, to be furnished.	**RF, the existing road is already a notified Right of Way over a length of about (2) miles with a width of 3 feet (copy of of notification is enclosed).** Further, the CF, Kurnool has reported that, as per the block history of working plan of the forests of Kadapa District, (period from 1994-95 to 2003-04) issued in PCCF Circular no.07/91-S3, Ref.no.73553/90-S3, dt.16.05.1991, **the legal status of the road is mentioned as civil road from Tekurpet to Seetharamapuram (Nellore District) to a length of 8 km. However, the width of the road is not mentioned.**
2.	Reasons for not including of existing road portion under the area proposed for diversion.	The Conservator of Forests, Kurnool Circle, Kurnool has reported that, the existing road portion is already a notified Right of Way (RoW) over a length of about two miles with a width of 3 feet, as per notification of Kavalakuntla Extn.A&B RF. And hence, the User Agency has proposed only 11.03 ha forest area for diversion excluding the existing road portion.
3.	Actual length and width of the road.	The Conservator of Forests, Kurnool Circle, Kurnool has reported that, the User agency informed that, NH-167 B road from km 51/500 to km 58/500 is passing through Kavalakuntla Extn.A&B RF connecting Porumamamilla and Setharamapuram. Since 1968, this road from Porumamamilla to Setharamapuram was a BT road under the jurisdiction of the PWD (R&B), Kadapa and Nellore Divisions. As per the road inspection notebook of PWD (R&B) Department, signed by EE, Nellore, the land width (RoW) was mentioned as 30 m and the existing carriage width 7.5 m (i.e., 3.70 m + 1.90 m gravel shoulders on both the sides). Hence the existing road width of 7.5 m was not included in the forest land diversion and additional width on either side of the existing road was proposed based on site conditions (as per the DGPS survey). The details may be seen.
4.	Suitable wildlife mitigation plan duly vetted by the CWLW Andhra Pradesh shall be submitted, in case the comments of the CWLW Andhra Pradesh are in affirmative as to the presence of the wildlife in the proposed area.	The User Agency has prepared and submitted Wildlife Mitigation and Conservation Plan through Conservator of Forests, Kurnool, which was approved by the Prl.Chief Conservator of Forests (WL) & Chief Wildlife Warden vide Rc.no.1929/2022/WL-2(i), dt.08.08.2022. Copy of the approved Wildlife Mitigation and Conservation Plan is enclosed.
5.	As the important flora like	The Conservator of Forests, Kurnool Circle,

	red sanders are existing in the forest area and 2410 numbers of red sanders trees are proposed to be felled. The User Agency may re-examine the width of the road and may reduce the width, if possible without compromising safety standards of such roads so as to reduce number of trees to be felled.	Kurnool has reported that, reported that, the User Agency informed that, the width of the RoW considered beyond forest stretch is 30 m as per the National Highway standards. Consideration for reduction in road width is already taken care of and a reduced width of 20 m is proposed in the forest stretch. Due to the existence of number of hair pin bends and sharp curves with steep gradients, further reduction would have an impact on road user safety issues.

The Government are requested to consider the additional information and forward the same to the GoI, MoEF&CC, IRO, Vijayawada for taking necessary action under the Forest (Conservation) Act, 1980.

Yours faithfully,
Y Madhusudhana Reddy Ifs
Prl.Chief Conservator of Forests
& Head of Forest Force

Encl:- As above.

Copy to the Conservator of Forests, Kurnool Circle,Kurnool.

Copy to the Divisional Forest Officer, Proddatur WL for information.

Copy to the Executive Engineer (R&B) NH Division, Kadapa for information.

Signed by Y Madhusudhana Reddy Ifs
Date: 08-09-2022 18:21:24
Reason: Approved

PM Submitted
- Received through E-Mail from ... 24/8/22

File No.EFS02-21052/1/2022-WILD LIFE SEC-PCCF

GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

From
Sri. Y. Madhusudhana Reddy, I.F.S.,
Prl. Chief Conservator of Forests (WL) &
Chief Wildlife Warden,
Andhra Pradesh, Aranya Bhavan,
Guntur – 522 004.

To
The Executive Engineer
(Roads & Buildings)
National Highway Division,
Kadapa, Andhra Pradesh.

Rc.no.1929/2022/WL-2(i), Dated:08/08/2022.

Sub: Andhra Pradesh Forest Department – Wildlife – Diversion of 11.03 ha forest -land for up-gradation and widening the existing road into two lane with paved configuration of No 167 B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram– Wildlife Mitigation and Conservation Plan – Approved - Regarding.

Ref:- CF, Kurnool Rc.no.1885/2017/To dated 14.06.2022

-o0o-

It is to inform that, the Conservator of Forests, Kurnool has submitted Wildlife Mitigation and Conservation plan for the proposed diversion of 11.03 ha forest land in Kavalakuntla Extn. A & B RFs of Porumamilla Range for up-gradation and widening of the existing road into two lane with paved configuration of No 167 B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram in Proddatur (WL) Division. The details are hereby authenticated.

- The proposed area of 11.03 ha forest land falls in Tekurpeta Beat of Porumamilla Range of WL Proddatur Division and Compartment no.253 of Kavalakuntla Extn. A & B Block notified under section 16 of Madras Forest Act notification no.114 date 23.03.1896 which is notified vide notification no.125 dated 23.03.1928.
- The proposed area is neither a part of Wildlife Sanctuary nor a part of National Park. The Protected Areas of Sri Lankamalleswara Wildlife Sanctuary, Sri Penusila Narasima wildlife Sanctuary, ESZ of Gundla Brahmeswaram WLS (extended core of NSTR) and notified NSTR corridor are within 30 km radius to the proposed road.
- The User Agency has proposed an amount of Rs.367.00 lakh for Wildlife Conservation Plan for the following Schedule-I fauna in the affected area to be implemented by the Forest Department.

Schedule-I Fauna

Leopard	Sloth bear
Indian Wild Dog	Indian Python
Indian Pangolin	Indian Peafowl
Four Horned antelope	Sambar Deer
Monitor Lizard	Hawk species etc.,
Striped Hyena	

- Conservation works under Wildlife Conservation Plan for improvement of infrastructure and basic requirements for wildlife within the study area.

22/8
22/8

FCA

File No.EFS02-21052/1/2022-WILD LIFE SEC-PCCF

Activity	Amount (Rs. In lakhs)
Habitat improvement & Conservation	16.600
Water Resources	94.750
Infrastructure Development	82.000
Man-Animal Conflict	35.000
Procurement of Water tanker & maintenance	32.100
Fire Protection measures	13.920
Awareness & Publicity	25.000
Monitoring of Wildlife by installing Cameras	23.500
Improvement communication network etc.,	20.000
Administrative cost	24.130
Total:	**367.000**

The following mitigation measures along with financial projections for an amount of Rs.3215.00 lakh are proposed and implemented by User Agency.

- Provision of Wildlife Crossings (Underpasses / Overpasses).
- Mitigation for Littering the area and conflict.
- Noise control.
- Prohibition of night traffic etc.,

Further, in addition to above, the following suggestions are proposed to be incorporate in Wildlife Conservation Plan based on field conditions.

- Establishment of Anti-poaching team for avoiding poaching activities in the study area.
- Providing dust bins, awareness sign boards for plastic usage, Swach sevaks to eradicate the impact of littering.
- Re-examine the locations for constructing Underpasses / Overpasses in consultation with the Divisional Forest Officer, WL- Proddatur before execution of work to avoid death / injuries of wild animals due to road accidents.

With the above suggestions, the Wildlife Mitigation and Conservation Plan is hereby approved. The Executive Engineer (Roads & Buildings) National Highway Division, Kadapa, Andhra Pradesh is requested to deposit an amount of Rs.352.00 lakh (Rupees Three hundred and fifty two lakh only) in the following Account at an early date and also supply a tractor cum triller mounted with a water tank as proposed in the Wildlife Conservation Plan.

Name of the account:	Wildlife Conservation projects & CSR (WLC & CSR)
Name of the Bank	Union Bank of India, Kannavarithota Branch, Guntur, Andhra

File No.EFS02-21052/1/2022-WILD LIFE SEC-PCCF

	Pradesh.
Account No.	024210100114054.
IFSC code:	UBIN0802425

Encl:- WL Mitigation & Conservation Plan.

Y Madhusudhana Reddy Ifs
Principal Chief Conservator of Forests (WL) &
Chief Wildlife Warden, A.P.

Copy to the Principal Chief Conservator of Forests (FCA) O/o PCCF & HoFF, AP, Guntur for information and necessary action.

Copy to the Conservator of Forests, Kurnool for information and necessary action.

Copy to the Divisional Forest Officer (WL), Proddatur for information and necessary action. He is requested to submit the details of road i.e., existing width, proposed alignment width, the period of up-gradation of road from width of 3 feet (RoW) to existing alignment.

Signed by Y Madhusudhana Reddy Ifs
Date: 08-08-2022 13:13:25
Reason: Approved

6332553/2022/FCA -PCCF

GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

FROM
Sri P.Ramakrishna, IFS.,
Conservator of Forests,
Kurnool Circle, Kurnool.

TO
The Prl.Chief Conservator of Forests
(Wildlife) & Chief Wildlife Warden,
Andhra Pradesh,
GUNTUR.

Rc.No.1885/2017-TO, Dated:- 14.06.2022

Sir,

Sub:- APFD – F(C)Act, 1980 – Wildlife Mitigation Plan for diversion of 11.03 Ha. Of forest land in Proddatur (WL) Division for upgradation of NH 167-B from Km 51/500 to Km 58/500 i.e., from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP – IV in the State of A.P – Submission of Wildlife Mitigation / Conservation Plan – Reg.

Ref:- 1) PCCF, AP, Guntur Rc.No.1929/2022-WL-2, Dt.01.03.2022
2) DFO, Proddatur (WL) Rc.No.1155/2017-P8, Dt.13.06.2022

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Adverting to the reference 1st cited, it is submitted that in the reference 2nd cited, the Divisional Forest Officer, Proddatur (WL) has submitted the Wildlife Mitigation / Conservation Plan duly following the observations communicated in Prl.Chief Conservator of Forests reference 1st cited has been obtained from the user agency and submitted in 3 sets along with undertakings on payment of the cost of Wildlife Mitigation / Conservation Plan. The same is submitted herewith in (2) sets duly after countersigned by me for approval.

This is submitted for favour of information and necessary action.

Encl:- As above.

Yours faithfully,
Sd/-P.Ramakrishna,
Conservator of Forests,
Kurnool Circle, Kurnool.

Copy submitted to the Prl.Chief Conservator of Forests & HoFF, Andhra Pradesh, Guntur for kind information and necessary action.

Copy to the Divisional Forest Officer, Proddatur (WL) for information and necessary action.

Copy to the Executive Engineer (R&B) NH Division, Kadapa for information.

//t.c.b.o.//

Technical Officer
16/6/22

5251926/2021/FCA -PCCF

O/N:- Received through mail on dt: 30/11/2021 from CF, Kurnool.

30/11/2021 Sundr (FCA)

GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

From
Sri P.Ramakrishna, IFS.,
Conservator of Forests,
Kurnool Circle, Kurnool.

To
The Prl. Chief Conservator of Forests &
Head of Forest Force,
Andhra Pradesh,
GUNTUR.

Rc.No.1885/2017-TO, Dated:29.11.2021

Sir,

Sub:- APFD – F(C)Act, 1980 - Proposals for diversion of 11.03 Ha. of forest land in Compt.No.253, Kavalakuntla Ext. RF in Porumamilla Range of Proddatur (WL) Division for upgradation of NH 167B from KM 51/00 to KM 58/500 i.e., from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP-IV in the State of Andhra Pradesh – Additional information – Submission off – Reg.

Ref:- 1) PCCF, AP, Guntur Rc.No.EFS02-15034/24/2018-FCA-SEC-PCCF/ FCA-1, Dt.20.11.2021
2) DFO, Proddatur (WL) Rc.No.1155/2017-P8, Dt.20.11.2021

* * *

Adverting to the reference 1st cited, it is sub mitted that in the reference 1st cited, the Prl.Chief Conservator of Forests, Andhra Pradesh, Guntur has requested to submit the additional information, as sought by the Government for taking further action in the matter.

In the reference 2nd cited, the Divisional Forest Officer, Proddatur (WL) has obtained the condition wise additional information from the user agency. The condition wise additional information as furnished by the user agency and submitted by the Divisional Forest Officer, Proddatur (WL) is as follows (copy enclosed).

30/11

S.NO	Condition	Reply
1	Legal status of the existing road i.e., whether the existing road is a notified RoW or any prior approval accorded by the Central Government under FCA, 1980 etc. and supporting documents like RoW notification with clearly indicating actual length & width of RoW, and copy of the approval order under FCA, 1980 as the case may be, to be furnished.	The DFO, Proddatur (WL) has stated that the proposed diversion of 11.03 Ha. forest area for upgradation of NH 167B from Km 51/500 to Km 58/500 i.e., from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP-IV in the State of Andhra Pradesh passes through Kavalakuntla Ext. A & B Reserve forest in Tekurpeta Beat of Porumamilla Range of Proddatur (WL) Division. The Kavalakuntla Ext. A & B Reserve forest was notified under section 16 of Madras Forest Act-V of 1882

		vide Proceedings of the Board of Revenue (Land & Revenue) Forest No.133, Dt.25.03.1896. The existing road is already a notified Right of Way (RoW) over a length of about two (2) miles with a width of 3 feet as per notification of the Kavalakuntla Ext. A & B Reserve forest. Notification copy (Xerox) of the Kavalakuntla Ext.A & B Reserve forest is submitted herewith for perusal. Further it is submitted that as per Block History of working plan for the forests of Kadapa District from 1994-95 to 2003-04 vide PCCF Circular No.07/91-S3, Ref.No. 73553/90-S3, Dt.16.05.1991. The legal status of the road is mentioned as civil road from Tekurpet to Seetharamapuram (Nellore District) to a length of 8 Kms. But the width of the road is not mentioned (Xerox copy is enclosed).
2	Reasons for not including of existing road portion under the area proposed for diversion.	The DFO, Proddatur (WL) has stated that the existing road portion of area is already a notified Right of way (RoW) over a length of about two (2) miles with a width of 3 feet as per notification of the Kavalakuntla Ext. A & B Reserve forest. Hence the user agency has proposed 11.03 Ha. forest area for diversion excluding the existing road portion.
3	Actual length and width of the road	The DFO, Proddatur (WL) has stated that, regarding actual length and width of the road, the user agency has submitted that the NH167 B from Km 51/500 to Km 58/500 is passing through Kavalakuntla Reserve forest connecting Porumamilla to Seetharamapuram. Since 1968, the road from Porumamilla to Seetharamapuram was Bituminous Surface (Black top road) under jurisdiction of PWD (R&B), Kadapa Division and Nellore Division. The road inspection note book of PWD (R&B) Dept, A.P signed by the Executive Engineer, Nellore Dt.05.10.1974 is herewith submitted for reference. As per the road inspection note book, the land width (RoW) was mentioned as 30 mts and as the existing carriage way width is 7.5 mts (i.e., 3.70 mts B.T + 1.90 mts Gravel shoulders on both sides). Hence the xisting road width of 7.5 mts width was not including in the forest land diversion and additional width on sides of the xisting road were proposed based on the site conditions (as per DGPS survey) and the details are as below.

S. No.	Starting chainage	Ending chainage	Length (in Km)	Existing road width (in mts)	Average additional width proposed of existing road	Total area (in Ha.)
A) Left hand side of existing road from Km 51/500 to Km 58/500						
1	51.000	51.450	0.45	7.50	4.44	0.20
2	52.100	52.950	0.85	7.50	10.24	0.87
3	55.250	55.520	0.27	7.50	10.00	0.27
4	55.920	56.320	0.40	7.50	11.50	0.46
5	57.000	58.500	1.50	7.50	16.47	2.47
		Total - A	**3.47**			**4.27**
B) Right hand side of existing road from Km 51/500 to Km 58/500						
1	51.000	52.300	1.30	7.50	11.00	1.43
2	53.000	55.300	2.30	7.50	14.48	3.33
3	55.450	55.900	0.45	7.50	12.00	0.54
4	56.130	57.230	1.10	7.50	13.27	1.46
		Total-B	**5.15**			**6.76**
					Grand Total	**11.03**

4	Suitable wildlife mitigation plan duly vetted by the CWLW Andhra Pradesh shall be submitted, in case the comments of the CWLW Andhra Pradesh are in affirmative as to the presence of the wildlife in the proposed area.	The DFO, Proddatur (WL) has stated that the proposed forest area for diversion of the above subject proposal is not form a part of National Park, Wildlife Sanctuary, Biosphere, Tiger Reserve and Elephant Corridor etc. Further the DFO, Proddatur (WL) has submitted a report to the CF, Kurnool in Rc.No.1155/2017-P8, Dt.17.08.2020 (copy enclosed) by stating that the movement of Herbivore and Carnivores likes Sloth bear, Panther was observed during field inspections in the proposed project area of forest land. The proposed road may dislocate the existence of wild animals and may hamper their survival. Hence to facilitate easy movement/undisturbed environment to the existing wild animals, it is proposed for construction of (4) nos. under passes in the proposed diverted forest area to a cost of Rs.2.00 crores at Rs.50.00 lakhs each. It is also requested to insisted the user agency for construction under passes and also insist to erect maximum number of extensive signage boards in the proposed diverted forest area with the cost of user agency.

5251926/2021/FCA -PCCF

5	As the important flora like Red sanders are existing in the forest area and 2410 numbers of Red sander trees are proposed to be felled. The user agency may re-examine the width of the road and may reduce the width, if possible without compromising safety standards of such roads so as to reduce number of trees to be felled.	The DFO, Proddatur (WL) has stated that the user agency has submitted that the width of RoW (Right of way) considered beyond the forest stretch is 30 mts as per National Highway Standards. The consideration for reduction in road width is already taken care of and reduced with of 20 mts is proposed in the forest stretch of forest area. Due to existence of number of hair pin bends and sharp curves with steep gradients, reduction further will have impact on road user safety issues.

This is submitted for favour of information and necessary action.

Yours faithfully,

29/11/24

Encl:- As above.

Conservator of Forests,
Kurnool Circle, Kurnool.

Copy to the Divisional Forest Officer, Proddatur (WL) for information.

5251926/2021/FCA -PCCF

Government of Andhra Pradesh
Forest Department

From

Sri M. Nagarjuna Reddy, SFS
Divisional Forest Officer,
Proddatur (WL) Division.

To

The Conservator of Forests,
Kurnool Circle,
Kurnool.

Rc. No. 1155 / 2017 - P8, Dt. :25/11/2021

Sir,

Sub :- APFD – F (C) Act 1980 – Diversion of 11.03 ha of forest land in WLM Proddatur Division for upgradation of NH-167 B from KM 51/500 to KM 58/500 i.e. from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP –IV in the State of Andhra Pradesh – Minutes of 50th Meeting of REC held on 21-09-2021 – Revised Additional information Submission – Regarding.

Ref :- 1) Minutes of the 50th Meeting of Regional Empowered Committee (REC) of integrated Regional Office, MoEF & CC, Chennai held through video conference on 21-09-2021 at 10.30 AM

2) Executive Engineer (R & B), NH Division, Kadapa Lr. NH-167 B / EPC Porumamilla–C.S.Puram /A2 / 2021-22, Dt. 08-10-2021.

* * *

It is submitted that, in obedience to the reference 1st cited, the Executive Engineer (R & B), NH Division, Kadapa submitted the point wise additional information sought during the 50th Regional Empowered Committee Meeting held through video conference on 21-09-2021 regarding diversion of 11.03 ha forest area for upgradation of NH 167 B from KM 51/500 to KM 58/500 i.e. from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP –IV in the State of Andhra Pradesh.

1) Legal status of the existing road i.e. whether the existing road is notified RoW or prior approval accorded by the Central Government under FCA, 1980 etc. and supporting documents like RoW notification with clearly indicating actual length & width of RoW, and copy of the approal order under FCA, 1980 as the case may be, to be furnished.

The proposed diversion of 11.03 ha forest area for upgradation of NH 167 B from KM 51/500 to KM 58/500 i.e. from Porumamilla to Chandrasekharapuram to two lanes with paved shoulders under NHDP –IV in the State of Andhra Pradesh passes through Kavalakuntla Extension A & B Reserve Forest in Tekurpeta Beat of Porumamilla Range of Proddatur (WL) Division. The Kavalakuntla Extn. A & B Reserved Forest was notified under Section 16 of Madras Forest Act - V of 1882 vide Proceedings of the Board of Revenue (Land and Revenue) Forest No.133, Dated: 25-03-1896. The existing road is already a notified Right of Way (RoW) over a length of about two (2) miles with a width of 3 feet as per notification of the Kavalakuntla Extn. A & B Reserved Forest. Notification copy (Xerox) of the Kavalakuntla Extn. A & B Reserved Forest is submitted herewith for perusal.

Further it is submitted that as per Block History of Working Plan for the Forests of Kadapa District from 1994-1995 to 2003-2004 vide Prl. Chief Conservator of Forests (HoFF) Circular No. 7/91-S3, Ref. No. 73553 / 90-S3, Dated: 16-05-1991 , the legal status of the road is mentioned as civil road from Tekurpet to Seetharamapuram (Nellore District) to a length of 8 Kms. But the width of the road is not mentioned (Xerox Copy is enclosed).

2) Reasons for not including of existing road portion under the area proposed for diversion.

It is submitted that, the existing road portion of area is already a notified Right of Way (RoW) over a length of about two (2) miles with a width of 3 feet as per notification of the Kavalakuntla Extn. A & B Reserved Forest. Hence the user agency has proposed 11.03 ha forest area for diversion excluding the existing road portion.

3) Actual length and width of the road.

It is submitted that, regarding actual length and width of the road the user agency has submitted that, the NH 167 B from KM 51/500 to KM 58/500 is passing through Kavalakuntla RF connecting Porumamilla to Seetharamapuram. Since 1968, this road from Porumamilla to Seetharamapuram was Bituminous Surface (Black top road) under jurisdiction of PWD (R & B), Kadapa Division and Nellore Division. The Road inspection note book of PWD (Roads & Buildings) Department, AP signed by the Executive Engineer, Nellore Dt. 05-10-1974 is herewith submitted for reference. As per the Road Inspection Note book, the land width (RoW) was mentioned as 30 Mts and as the existing carriage way width is 7.5 Mt. (i.e. 3.70 Mts B.T + 1.90 Mt gravel shoulders on both sides). Hence the existing road width of 7.5 Mts width was not included in the forest land diversion and additional width on sides of the existing road were proposed based on the site conditions (as per DGPS survey) and the details are as below.

Area Statement (Length and width of Road)

Sl. No.	Starting Chainage	Ending chainage	Length (in Km)	Existing road width (in Mts)	Average additional width proposed of existing road	Total Area (in Ha)
A) Left hand side of existing road from KM 51/500 to 58/500						
1	51.000	51.450	0.45	7.50	4.44	0.20
2	52.100	52.950	0.85	7.50	10.24	0.87
3	55.250	55.520	0.27	7.50	10.00	0.27
4	55.920	56.320	0.40	7.50	11.50	0.46
5	57.000	58.500	1.50	7.50	16.47	2.47
		Total (A)	**3.47**			**4.27**
B) Right hand side of existing road from KM 51/500 to 58/500						
1	51.000	52.300	1.30	7.50	11.00	1.43
2	53.000	55.300	2.30	7.50	14.48	3.33
3	55.450	55.900	0.45	7.50	12.00	0.54
4	56.130	57.230	1.10	7.50	13.27	1.46
		Total (B)	**5.15**			**6.76**
					Grand Total	**11.03**

4) Suitable wildlife mitigation plan duly vetted by the CWLW Andhra Pradesh shall be submitted, in case the comments of the CWLW Andhra Pradesh are in affirmative as to the presence of the wildlife in the proposed area

In this regard, it is submitted that, the proposed forest area of diversion is not a part of National Parks, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve and Elephant / Tiger Corridor etc.

Further it is submitted that the, then Divisional Forest Officer, Proddatur WL Division has submitted a report to the Conservator of Forests, Kurnool Circle, Kurnool vide this office Rc. No. 1155 / 2017 – P8, Dated : 17-08-2020 stating that the movement of herbivores and some carnivores like sloth bear, panther was observed during field inspections of the proposed project area. The proposed road may dislocate the existence of wild animals and may hamper their survival. Hence to facilitate easy movement / undisturbed environment to the existing wild animals it is proposed for construction of 4 Nos. under passes in the proposed diversion area and also requested to insist the user agency for construction of under passes along with the maximum number of extensive signage boards in the proposed diversion area.

It is also submitted that the under passes will facilitate movement of the wild animals as well as local forest dwellers. In this regard the Prl. Chief Conservator of Forests (HoFF), A.P. Guntur has issued instructions vide Rc. No. EFS02 / 15034 / 24 /2018 – SEC – PCCF – FCA – 3, Dated: 13-10-2020

to furnish an undertaking for providing two "Animal under passes" in the proposed diversion area from Km. 51/000 to Km. 58/500 of Porumamilla to Chandra Sekharapuram Road

Accordingly the Executive Engineer (R & B) NH – Division, Kadapa has furnished an undertaking certificate and the same is submitted to the Conservator of Forests, Kurnool Circle, Kurnool for taking further necessary action. (Xerox copy enclosed).

Further it is submitted, that in addition to that if any instructions are received from the Prl. Chief Conservator of Forests (HoFF) A.P. Guntur or Govt. of India regarding the Wildlife Mitigation Plan, the same may be intimated to the Executive Engineer (R&B), NH – Division, Kadapa for taking further necessary action.

5) As the important flora like Red Sanders are exists in the forest area and 2410 numbers of Red sanders trees are proposed to be felled. The user agency may reexamine the width of the road and may reduce the width, if possible without compromising safety standards of such roads so as to reduce number of trees to be felled.

In this regard, the user agency has submitted that, the width of RoW (Right of Way) considered beyond the forest stretch is 30 Mts as per National Highway Standards. The consideration for reduction in road width is already taken care of and reduced with of 20 mts is proposed in the Forest Stretch of forest area. Due to existence of number of hair pin bends and sharp curves with steep gradients, reduction further will have impact on road user safety issues.

This is submitted for favour of information and necessary action.

Yours faithfully

Encl. :- As above.

Divisional Forest Officer
Proddatur (WL) Division

Copy to the Executive Engineer (R & B), NH Division, Kadapa for information.

For Office Use only

GOVERNMENT OF ANDHRA PRADESH

FOREST DEPARTMENT

Working Plan for the Forests of Cuddapah District

1994-1995 to 2003-2004

Comprising of :- Proddatur, Cuddapah and Rajampet Divisions

BLOCK HISTORIES

PORUMAMILLA RANGE

By

SRI SHARDA PRASAD, I. F. S.,
WORKING PLAN OFFICER
CUDDAPAH.

And

SRI B. NAGNATH, B. Sc.,
DIVISIONAL FOREST OFFICER
(Flying Squad Party) **NIRMAL.**

Under the Guidance of
Dr. K. KESAVA REDDY, I. F. S.,
Principal Chief Conservator of Forests
Andhra Pradesh
HYDERABAD.

33

VIDE Prl.C.C.F.CIRCULAR No.7/91/S3, Ref.No.73553/90-S3, dt:16-05-1991.

BLOCK HISTORY

1. District : Cuddapah

2. Division : Proddatur

3. Range : Porumamilla

4. Name of the block : Kavalakuntla Extn. 'A & B'

5. Area (in Hectares) : 1753.95 Ha.

6. Reference to survey of India sheet number : 57 M/4 and N/1

7. Legal status : Notified under section 16 of M.F. act (I) 1967 Notification No. 114 dated 23-03-1896. No. 125 dated 23-03-1928.

8. Tropography : Plain and Hilly

9. Soil type : Red soil

10. Basic Rock : Shale

11. Growing Stock :

i) Forest Type (Champion & Seths) : 5-A Southern tropical dry deciduous forest.

ii) Sub-type : 5-A C3 dry mixed deciduous forest.

iii) Density : 0.3

iv) Quality : A.P.Forest Quality VI

12. Area under plantations : Species — Area in Ha.

----- Nil -----

13.	Area under encroachment and illicit cultivations	----- Nil -----
14.	Status of natural regeneration	Natural regeneration is Moderate.
15.	Status of bamboos	: ----- Nil -----
16.	Important rivers or canals passing through the block	There are no rivers or canals in this block.
17.	Important tanks or reservoirs situated in the block	There are no tanks or reservoirs in this block.
18.	Roads:	
	i) Forest roads in the block (with distances and nature of road)	There are no forest roads in this block.
	ii) Other roads in the block (with distances and nature of roads)	Civil road from Tekur pet to Sitarampuram (Nellore district) 8.0 Kms.
	Wild Life present	: Hare, Jungle sheep, Wild boar, Bear, Deer and Spotted deer.
	Mining or quarrying leases in the block	----- Nil -----
	Labour force available in enclosures or surrounding villages	100 labourers are available in surrounding villages.,
	Carrying capacity of the block	400 Cow units
	State of biotic pressure (both human and cattle) in the block	Heavy biotic pressure of human and Cattle.

24. Nature of bounderies : Length (in Kms)

i) Boundary with surrounding villages or enclosures ----- Nil -----

ii) Common block boundary with following adjacent blocks

(a) Kavalakuntla North R.F. } for Extn. A.
(b) Kavalakuntla South R.F. }

(b) Kavalakuntla south R.F. for Extn. B.

25. Area dis-reserved in the past (with Govt. Order No. and date) ----- Nil -----

26. Past history of management : This block was allotted to Minor forest produce working circle during the previous working plan period.

27. Future proposals :

Working Circles	Compt. No.	Area in Ha.
Protection working circle.	252 to 255	1753.95

28. Yields from the block :

Year	Timber (in Cms.)	Fuel (in Cms.)	Bamboo (in Nos/MTs)	Others
----- Nil -----				

[V. NAGABHUSHANAM]
DIVISIONAL FOREST OFFICER,
PRODDATUR DIVISION,
PRODDATUR.

[SHARDA PRASAD I.F.S.]
WORKING PLAN OFFICER,
PARTY NO II, CUDDAPAH.

[B. NAGNATH B.Sc.,]
DIVISIONAL FOREST OFFICER,
[F.S.P.] NIRMAL.

Board of Revenue (Land and Revenue) Forest No.133, 25th March.1896

Proceedings of the board of revenue
(Land Revenue).

- - -

READ:- the following Government Orders, Nos.91, 91-A, Revenue dated 3rd March, 1896:-

Read:-Proceedings of the Board of Revenue (Land Revenue)Forests No.49, dated 3rd February 1896.

Abstract:- Submitting to Government, for approval and publication the draft notification under section 16 of the Forest Act for the constitution of the Kavalakuntla extension blocks in the Badvel taluk, Cuddapah district, as reserved Forests.

ORDERED:- No.91, Revenue, dated 3rd March 1896.

F O R E S T No. 35

The draft notification will be published in the Fort.St. George and Cuddapah District Gazettes, the 15th May 1896 being entered as the date from which reservation shall take effect.

2. The Government agrees with the Board in the opinion expressed in paragraph 2 of its Resolution.

(True extract)

(Signed) G.S. FORBES,
Secretary to Government.

To the Board of Revenue (Land Revenue) with map.
The Superintendent , Government Press, with notification.

Endorsement No.91-A.

Copy to the Government of India, Reserve and Agril. Dept.

(signed) G.S.FORBES
Secretary to Government.

Notification

His Excellency the Governor in council declares under the provisions of section 16 of the Madras Forest Act (V of 1882), the 15th May, 1896 the area of the boundaries of which are set forth in the schedule appended notification will be constituted a reserved Forest.

40 (a)

-- 2 --

Board of Revenue (Land Revenue) Forest No.132, 25th March 1896.

Schedule

District	Taluk	Name of village.	Number and name of block.	Situation and boundari
Cuddapah	Badvel	Tsallagarigela	18-19 Kavulakuntla Extension.	Block.A

North:- Starting from the north-east corner of khandam No.7 of Tsallagarigela along the south boundary of Seshampalli agrahawam to its south-east corner; and then the south boundary of Kavulakunta south reserve to the Nellore district boundary.

East:- Thence the Nellore district boundary to the north-east corner of Gangapenta reserve.

South:- Thence along the north boundary of Gangapenta reserve to its north-west corner; then north-West to the khandam stone at the south east corner of khandam No.7, and then on to the south-east corner of survey No.367, both of Tsallagarigela.

West:- Thence a straight line north--north-east to the khandam No.7 stone due east of survey No.370; and than the east limit of khandam No.both of Tsallagi-igela to the starting poing.

-do-	Badvel	Cherlopalle Kavulakuntla	and 18-B Kavula-kuntla-extension	Block.B

North:- Starting from the south-west corner of Kavulakuntla north reserve at a point 4.45 chains south-east of the north-west corner of survey No.499 of Cherlopalle the south boundary of the Kavulakunta north reserve to the Nellore district boundary.

East:- Thence the Nellore district boundary to the north-east corner of Kavulakuntla south reserve.

South:- Thence the north boundary of Kavulakuntal south reserve to its north-west corner at a point ~~xx~~.19.51 chains south-east of khandam stone on the east side of survey No.495 of Kavulakuntla.

West:- Thence north-west to the khandam stone on the east side of survey No.495 of Kavulakuntla; then the east limits of khandam

- 3 -

No.6 of Kavalakuntla Nos. 10 and 7 of Chelopalle to the khandam stone about seventeen and a half chains south-east of the north-west corner of survey No.499 of Chelopalli and then a straight line to the starting point.

Remarks:- Right of way over the undermentioned foot-paths is admitted, Nos. 1 to 3 for men and cattle and No.4 for men only, each to a width of three feet:-

(1) Footpath from Chelopalle to Seethampuram in the Nellore District. It enters the reserve on the east side of Santayyakuntla (survey No.641 of Chelopalle) runs east for about two miles and enters the limits of the Nellore district.

(2) Foot-path from Chelopalle to Narasannapeta in the Nellore district. It enters the reserve near the first khandam stone on the east side of khandam No.6 of Kavulakuntla, runs east and north-east for two miles and enters the limits of the Nellore districts. This is known as the Sobanala pass.

5251926/2021/FCA -PCCF

43 43

(3) Foot-path from Cheyyapalle to Devanacheruvu in the Nellore district. It branches from the path (2) on the east side of Chintayavelavanikunta, runs south-east for about one and a quarter miles and enters the limits of Nellore district. This is known as the Vayathona.

(4) Foot-path from Cheyyapalle to Seethayampuram in the Nellore district. It enters the reserve in survey No.499 of Cheyyapalle runs north-east for about two miles and quits it in the nellore district limits. It is called Chidumukkama pass.

II. Government patta right over the following land of Cheyyapalle is admitted. The land will be demarcated out free from reservation and be retained as an enclosure:-

Survey Numbers	Extent Acs.	Remarks.
1541-B	1.25	Access is allowed by patta No.1

Resolution:- Forest No.133, dated 25th March, 1896.
Communicated to the Collector of Cuddapah and the Conservator of Forests, Central circle.

// true copy and extract//

(Signed) R.C.C. CARR,
Acting Secretary.

To the Collector of Cuddapah with a map.
" the Conservator of Forests, Central circle.
" Forest Settlement Officer, Cuddapah &C., District.

// true copy //

Divl. Forest Officer,
Proddatur.

5251926/2021/FCA -PCCF

GOVERNMENT OF ANDHRA PRADESH
ROADS & BUILDINGS DEPARTMENT

From
Sri. S. Obul Reddy. B.E.,
Executive Engineer (R&B),
NH Division, Kadapa

To
The Divisional Forest Officer,
Proddatur Division,
YSR Kadapa District.

Lr.No.NH-167B/EPC/Porumamilla – C.S.Puram / A2/ 2021-22 dt: 08.10.2021

Sir,

Sub: (R&B) NH Division, Kadapa – Proposals for Diversion of 11.03 Ha of forest land in Proddatur Division for Rehabilitation and up gradation of NH-167B from Km 43/097 to 99/103 (Porumamilla to C.S.Puram Via Seetharampuram) in the State of Andhra Pradesh to two-lanes with paved shoulders under NH(O) on EPC basis – Additional Information – Submitted - Reg.

8-10-2021

Ref: Minutes of the 50th Meeting of Regional Empowered Committee (REC) of Integrated Regional Office , Ministry of Environment, Forests & Climate Change, Chennai held through video conference on 21.09.2021 at 10.30 AM.

<><><>

I herewith submit the additional information sought by the MOEF & CC , IRO, Vijayawada vide reference cited. The point wise reply for the additional information sought is herewith submitted.

1. **Legal Status of the existing road i.e. whether the existing road is notified RoW or prior approval accorded by the Central Government under FCA, 1980 etc and supporting documents like RoW notification with clearly indicating actual length & width of RoW, and copy of the approval order under FCA, 1980 as the case may be, to be furnished.**

Reply:- The Existing road is old Tekurpeta to Seetharamapuram was constructed before1980 and is passing through Kavalakuntla extn. R.F in kadapa district in the state of Andhra Pradesh . The R.F notifications and the notification copies are herewith enclosed.

2. **Reasons for not including of existing road portion under the area proposed for diversion.**

Reply:- As per joint inspection, the existing road portion is not required for forest diversion and hence not included.

3. **Actual Length and Width of the road.**

Reply:- Actual length of the stretch is 7.5 Km with a width of 7m including berms.

4. **Suitable wildlife mitigation plan duly vetted by the CWLW Andhra Pradesh shall be submitted, in case the comments of the CWLW Andhra Pradesh are in affirmative as to the presence of the wild life in the proposed area**

Reply:- As per pt. no. 12, the forest area is not form part of National Parks, Wild life sanctuary, Biosphere reserve, Tiger reserve and elephant corridor etc. Hence, the requirement of the Wild Life Mitigation is not required for the forest area.

5. **As the important flora like red sanders are exists in the forest area and 2410 numbers of red sanders trees are proposed to be felled. The User Agency may re-examine the width of the road and may reduce the width, if possible, without compromising safety standards of such roads so as to reduce number of trees to be felled.**

Reply:- The width of the ROW considered beyond the forest stretch is 30m as per National Highway Standards. The consideration for reduction in road width is already taken care of and a reduced width of 20m is proposed in the Forest Stretch. There are number of hair pin bends and sharp curves with steep gradients. Reduction further will have impact on road user safety issues.

I therefore request , the Divisional Forest Officer Proddatur for favour of necessary action for onward submission for obtaining forest clearance at the earliest.

Encl: RF Notification and Typical Cross
Section of Proposed Road

Yours faithfully

8/10/21

Executive Engineer (R&B)
NH Division, Kadapa

Copy submitted to the Chief Engineer (R&B), N.H.& CRF, HOD Buildings Room No. 501 M.G.Road ,Vijayawada – 520010 for favour of information.

Copy submitted to the Superintending Engineer (R&B) NH Circle ,Ananthapuramu for favour of information

(3) Additional Information

It is to submitted that that NH 167B from Km.51/500 to 58/500 is passing through Kavalakunta RF (before conversion to NH this road is a Major District road, No.4809 connecting Porumamilla to Seetharamapuram). Since 1968, this road from Porumamilla to Seetharamapuram was Bituminous Surface (Black top road) under jurisdiction of PWD (R&B) Kadapa Division and Nellore Division. The Road Inspection Note Book of P.W.D (Roads & Buildings) Department, Andhra Pradesh signed by the Executive Engineer, Nellore dated 05.10.74 is herewith attached. Further as per the Road Inspection Note Book, the land width (ROW-Right of Way)was mentioned as 30.0m and as the existing carriage way width is 7.5m (i.e 3.70 m B.T + 1.90 m gravel shoulders on both sides).Hence the existing road width of 7.5m width was not included in the forest land diversion and additional width on sides of this existing road were proposed based on the site conditions (as per DGPS Survey) and the details are as below :

AREA STATEMENT

S.No	Strating Chainage	Ending Chaiange	Length (in Km)	Existing road width (in m)	Average Additional Width proposed on Left Side of Existing road	Total Extent (Ha)
1	51.000	51.450	0.45	7.50	4.44	0.20
2	52.100	52.950	0.85	7.50	10.24	0.87
3	55.250	55.520	0.27	7.50	10.00	0.27
4	55.920	56.320	0.40	7.50	11.50	0.46
5	57.000	58.500	1.50	7.50	16.47	2.47
Length in Kms (LHS) =			**3.47**		**Sub Total (LHS) A =**	**4.27**
S.No	**Strating Chainage**	**Ending Chaiange**	**Length (in Km)**	**Existing road width (in m)**	**Average Additional Width proposed on Right side of Existing road**	**Total Extent (Ha)**
1	51.000	52.300	1.30	7.50	11.00	1.43
2	53.000	55.300	2.30	7.50	14.48	3.33
3	55.450	55.900	0.45	7.50	12.00	0.54
4	56.130	57.230	1.10	7.50	13.27	1.46
Length in Kms (RHS) =			**5.15**		**Sub Total (RHS) B=**	**6.76**
					Grand Total =	**11.03**

18/10/21
Executive Engineer (R&B)
NH Division, Kadapa

P. W. D. (Roads & Buildings) Department

ANDHRA PRADESH

Road Inspection Note Book
VOL III FOR M.D.RS

Designation :...EXECUTIVE ENGINEER.....

Headquarters :....NELLORE.....

Division:.....NELLORE..... District:...NELLORE

Name of the Road Ponnamalla Seethavarampuram road

K M	Quarries: Metal	Gravel	Sand	Others	1967–68	1968–69	1969–70	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78	1978–79
0/15																
2					P	P	P	P	P							
4					P	P	P	P	P				P	P	P	P
6					P	P	P	P	P				P	P	P	P
8					P	P	P	P	P				P	P	P	P
10					P	P	P	P	P				P	P	P	P

Traffic Census:- Post:- Intensity :- Tonne/day

Crust	Type of soil	Cross Drainage works	Land width	Formation width	Riding surface	Geometrical Features	Particulars of Villages, Towns & Branch Roads	Remarks	General Remarks	Consolidated Remarks
6"	H.G Soil & SDR		30m	24½'	16½' 12½'					
"	"		"	"	"			P		
"	"	1) R.c. Slab culvert 1x3½' 2) R.c. Slab culvert 1x3½'	"	"	"			P		
"	"	R.c. Slab Culvert 1x3½'	"	"	"			P		
"	"	1) R.c. Slab Culvert 1x3½' 2) culvert 1x3½'	"	"	"			P		

Name of the Road Perumamilla Seetharamapuram

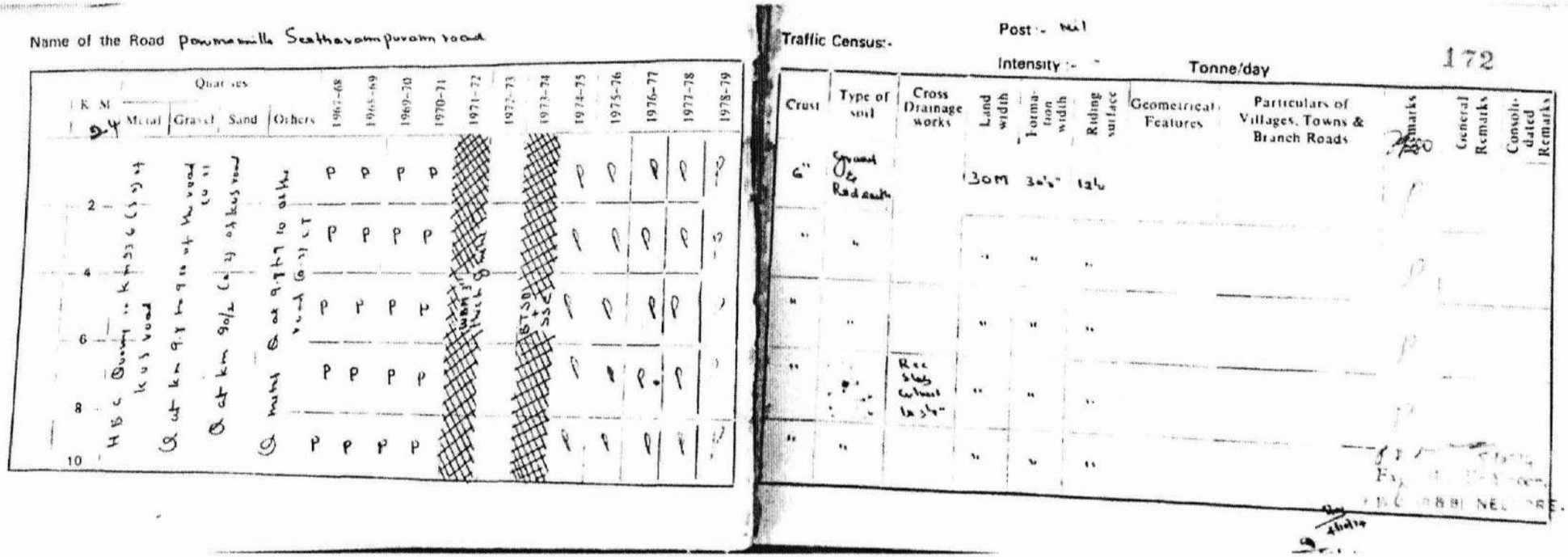
K. M	Quarries: Metal	Gravel	Sand	Others	1967–68	1968–69	1969–70	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78	1978–79
0																
2					P	P	P	P					P	P	P	P
4					P	P	P	P					P	P	P	P
6					P	P	P	P					P	P	P	P
8					P	P	P	P					P	P	P	P
10					P	P	P	P					P	P	P	P

Traffic Census:- Post:- [illegible]

Intensity:- — Tonne/day

161

Crust	Type of soil	Cross Drainage works	Land width	Formation width	Riding surface	Geometrical Features	Particulars of Villages, Towns & Branch Roads	Remarks	General Remarks	Consolidated Remarks
6"	Hy Soil ESOH		30M	24'-0"	[illegible]					
"	"		"	"	"					
"	"	Minor bridge 4 Nos	"	"	"					
"	"	Rec Slab culvert 1 No	"	"	"					
"	"		"	"	"					



Name of the Road Poonamalle Seatharampuram road

Traffic Census:- Post :- Nil

Intensity :- Tonne/day

172

KM	Quarries: Metal	Gravel	Sand	Others	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79
2					P	P	P	P				P	P	P	P	
4					P	P	P	P				P	P	P	P	
6					P	P	P	P				P	P	P	P	
8					P	P	P	P				P	P	P	P	
10					P	P	P	P				P	P	P	P	

Crust	Type of soil	Cross Drainage works	Land width	Formation width	Riding surface	Geometrical Features	Particulars of Villages, Towns & Branch Roads	Bridge Remarks	General Remarks	Consolidated Remarks
6"	Gravel & Red earth		30m	30'-0"	12'-0"					
"	"		"	"	"					
"	"		"	"	"					
"	"	Rcc slab culvert 12'-0"	"	"	"					
"	"		"	"	"					

5251926/2021/FCA -PCCF

Minutes of the 50thmeeting of Regional Empowered Committee (REC) of Integrated Regional Office, Ministry of Environment, Forests & Climate Change, Chennai held through video conference on 21.09.2021 at 10.30AM

The 49thmeeting of the Regional Empowered Committee (REC) of Integrated Regional Office, Ministry of Environment, Forests & Climate Change, Chennai was held through video conference;

The following members / special invitees were present during the meeting.

1. Shri.R.Hemanth Kumar, IFS,
   DDG/ Regional Officer (Central), Ministry of
   Environment, Forests & Climate Change
   Integrated Regional Office (SEZ),Chennai ...Chairman

2. Shri.K.Jude Sekar, IFS (Retired)
   Flat No. R-33, Arihant Heirloom Apartments,
   P.O. Thalambur, Off. OMR Chennai -600130 ...Member

3. Shri.B.S.S.Reddy, IFS (Retired)
   107, White House Apartments, Road No.13,
   Banjara Hills, Hyderabad ...Member

4. Dr.C.N. Rao, IFS (Retired) 9-10-3 Giddi Lane
   Gandhi Nagar, Kakinada,
   East Godavari District, Andhra Pradesh ... Member

5. Smt.R.Sobha, IFS, ...Special Invitee
   PCCF (HoFF), Forest Department,
   Govt. of Telangana

6. Shri R.M.Dobriyal, IFS ...Special Invitee
   PCCF (SF), Forest Department,
   Govt. of Telangana

5251926/2021/FCA -PCCF

7.	Dr. V. Naganathan, IFS, APCCF/ Nodal Officer, Forest Dept., Tamil Nadu	.. Special Invitee
8.	Shri N.S. Murali, IFS Regional Officer, IRO, Vijayawada, &Hyderabad	.. Special Invitee
9.	Shri Kumar, ACF Nodal Officer, Forest Department, Govt. of Andhra Pradesh	.. Special Invitee
10.	Shri. S. Sasikumar, IFS Deputy Inspector General of Forests (Central) Ministry of Environment, Forests & Climate Change Integrated Regional Office, Chennai	....Member
11.	Shri.K. Karthikeyan, IFS Assistant Inspector General of Forests (Central), Ministry of Environment, Forests & Climate Change Integrated Regional Office, Chennai	... Member Secretary

At the outset, Chairperson extended a warm welcome to the members of REC and other participants. As directed by the Regional Officer (Central)/ Chairman REC, the Assistant Inspector General of Forests made presentation on action taken on the decisions made by the committee during 49thmeeting held on 09.08.2021 as below:

5251926/2021/FCA -PCCF

forest land identified CA purpose, benefit of the projectand enquired about status of NBWL approval.

Recommendation: After detailed deliberation, committee decided to seek the following information from the State Government for further consideration of the proposal;

1. Approval of SC-NBWL for the project
2. Wildlife Mitigation plan

Agenda No 04. Diversion of 11.03 Ha in Proddatur Forest Division for Upgradation of NH-167B from Km 43/097 to 99/103 i.e from Porumamilla to ChandrasekharaPuram to two lanes with paved shoulders under NHDP IV in the State of Andhra Pradesh

The Regional Empowered Committee (REC) has noted the following facts of the proposal:

1. The Secretary to Government, Government of Andhra Pradesh vide letter No.1481/Section.II/2021 dated 01.09.2021 forwarded the proposal for diversion of 11.03 Ha in Proddatur Forest Division for Upgradation of NH-167B from Km 43/097 to 99/103 i.e from Porumamilla to ChandrasekharaPuram to two lanes with paved shoulders under NHDP IV in the State of Andhra Pradesh and requested to communicate GoI's approval under Forest (Conservation) Act, 1980
2. **Justification for the project:** It is reported that the existing road from KM 51/000 to 58/500 of NH-167B is passing through Kavalakuntla RF of Porumamilla Range of Proddatur Division in YSR Kadapa District of Andhra Pradesh There is no other alternative except widening of existing road. Therefore proposal for diversion of 11.03 ha of forest land is proposed. This road after completion would further improve connectivity in terms of achieving smooth and safe traffic flow and improve level of service. In addition to above, substantial economic growth in terms of reduced Vehicle Operating Cost (VOC) and reduced travel time will be achieved;
3. **Purpose wise breakup of the forest area required for diversion:** 11.03 ha in Kavalakuntla RF, WL Division, Proddatur is required for upgrading and widening of the existing road to two lane with paved configuration of NH -167 a from Km.51/000 to 58/500 i.e. from porumamilla to chandrasekharapuram. It is reported that, width of the existing BT road including side berms is about 7 mtrs and reported that 11.03 ha is for widening of 5 mtrs either sides over a length of 8 km.
4. **The State Government not reported regarding legal Status of the existing road i.e. whether the existing road is notified RoW or approval accorded by the Central Government under FCA, 1980 etc.**
5. **The existing road portion has not been proposed for diversion**
6. Status of the User Agency: Reported as Central Government , MoRTH
7. Legal Status of Forest land: Reserved Forest

8. Density of Vegetation: **0.5, Eco class 3**
9. Cost of the project:Rs.49823 lakhs
10. UA reported that,2500 permanent and 2500 number of person days of temporary employment are likely to be created due to the project;
11. The Divisional Forest Officer, WL Division, Proddatur reported that erosion to certain degree is anticipated due to formation of road, but control measures are to be taken up the user agency
12. The Divisional Forest Officer, WL Division, Proddatur reported that the forest area proposed for diversion is not form part of National Parks, Wildlife sanctuary, Biosphere Reserve, Tiger Reserve and Elephant Corridor etc
13. **The Divisional Forest Officer, WL Division, Proddaturreportedthat** rare/ endangered / unique species of flora and fauna are found in the area. Wild animals like Hare, Jungle Sheep, **Sloth bear,** Bear, Spotted deer, Wild Boar, Deer and Peacock etc. and flora like **Red Sanders** are reported in the area proposed for diversion,
14. The Divisional Forest Officer, WL Division, Proddatur reported that no protected archaeological/ heritage site/ defence establishment or any other important monument is located in the area.
15. The Divisional Forest Officer, WL Division, Proddaturhas reported that the requirement of forest land for diversion as proposed by the UA is unavoidable and the barest minimum for the project.
16. The Divisional Forest Officer, WL Division, Proddaturno work in violation of FCA, 1980 has been carried out by the User Agency;
17. Divisional Forest Officer, WL Division, Proddatur reported that 12513 number of trees / pole crop **(including 2410 numbers of red sanders trees)** are enumerated in the proposed forest area for diversion. Enumeration list of trees has been uploaded in the online application
18. The User Agency has identified degraded forest land to an extent of 22.06 ha ha in Compt No 218 K.K. Dasaripalli RF, Balayapalli beat, Pomumamilla Range, WL Division, Proddatur. CA scheme with financial out lay of Rs. 221.066 lakhs including 10 years of maintenance has been furnished. Map and kml file of the CA area have been uploaded in the online application;
19. Site Inspection reports of the Divisional Forest Officer, WL Division, Proddatur has been submitted and uploaded in the portal.
20. RoFR certificate (Form I) has been furnished;
21. Map of the Forest land proposed for diversion has been uploaded in the web portal.
22. The subject proposal has been processed through DSS cell and found not inviolate
23. The subject proposal has been uploaded in the web portal vide proposal number FP/AP/ROAD/33887/2018;

24. The Divisional Forest Officer, WL Division, Proddatur has stated that, the proposed upgradation of road (with increased traffic) would restrict the movement of wild animals and may Increase `road kills'. Hence to provide easy/unrestricted movement to wild animals and reduce fatalities to wildlife, 4 nos. of `animal underpasses' along with extensive awareness signage boards along the proposed diversion area from Kin 51/000 to Kin 58/500 of Porumamilla to Chandrasekharapuram has been recommended to be constructed with the project cost.

Deliberation: The committee examined the proposal in details, deliberated on all aspects especially rare and endangered flora / fauna exists in the proposed forest area, number of tree to be felled including red sanders, impact of the project on wildlife, degraded forest land identified CA purpose, benefit of the project, necessity for up gradation of road etc. The Committee noted that the State Government not reported the legal Status of the existing road i.e. whether the existing road is a notified RoW or prior approval accorded by the Central Government under FCA, 1980 etc and the existing road portion not proposed for diversion by the User Agency.

Recommendation: After detailed deliberation, committee decided to seek the following information from the State Government for further consideration of the proposal;

1. Legal Status of the existing road i.e. whether the existing road is notified RoW or prior approval accorded by the Central Government under FCA, 1980 etc and supporting documents like RoW notification with clearly indicating actual length & width of RoW, and copy of the approval order under FCA, 1980 as the case may be, to be furnished;
2. Reasons for not including of existing road portion under the area proposed for diversion.
3. Actual length and width of the road.
4. Suitable wildlife mitigation plan duly vetted by the CWLW Andhra Pradesh shall be submitted, in case the comments of the CWLW Andhra Pradesh are in affirmative as to the presence of the wildlife in the proposed area;
5. As the important flora like red sanders are exists in the forest area and 2410 numbers of red sanders trees are proposed to be felled. The User Agency may reexamine the width of the road and may reduce the width, if possible without compromising safety standards of such roads so as to reduce number of trees to be felled;

5251926/2021/FCA -PCCF

GOVERNMENT OF ANDHRA PRADESH
ROADS & BUILDINGS DEPARTMENT

21 JAN 2021

From
Sri. S. Obul Reddy. B.E.,
Executive Engineer (R&B),
NH Division, Kadapa

To
The Divisionl Forest Officer,
WLM Proddatur,
YSR District Kadapa.

Lr.No.NH-167B/EPC/Porumamilla – C.S.Puram / A3/ 2020-21 dt: 19.12.2020

Sir,

Sub: (R&B) NH Division, Kadapa –" Rehabilitation and up gradation of NH-167B from Km 43/097 to 99/103 (Porumamilla to C.S.Puram Via Seetharampuram) in the State of Andhra Pradesh to two-lanes with paved shoulders under NH(O) on EPC basis." – **Undertaking** – Submitted - Reg.

P8

<><><>

I submit that , I herewith enclosed the undertaking to provide two animal under passes in the proposed diversion area from Km 51/000 to Km 58/ 500 for the above subject work .

This is submitted for favour of information and taking further necessary action.

Encl: **Undertaking – 5 copies**

Yours faithfully

Executive Engineer (R&B)
NH Division, Kadapa

Copy submitted to the Superintending Engineer (R&B) NH Circle ,Vijayawada for favour of information.

5251926/2021/FCA -PCCF

Undertaking

National Highways Division (R&B) Kadapa is here by undertake to provide two animal under passes in the proposed diversion area from Km 51/000 to Km 58/500 of Porumamilla to Chandrasekhara Puram to two lane with paved shoulders in the state of Andhra Pradesh in Kavalakuntla Extn A & B RF of Proddatur WL Division at the locations identified by the forest department.

19/12/20

Executive Engineer (R&B)
NH Division, Kadapa

Place: Kadapa
Date: 19.12.2020

Wildlife Mitigation & Conservation Plan

For

Diversion of 11.03 Ha Forest land for up-gradation and widening the existing road into two lanes with paved configuration of NH 167B from 51/000 to 58/500 from Porumamilla to Chandrasekharapuram in the State of Andhra Pradesh.

Divisional Forest Officer (WLM)
Proddatur

Contents

Chapter 1

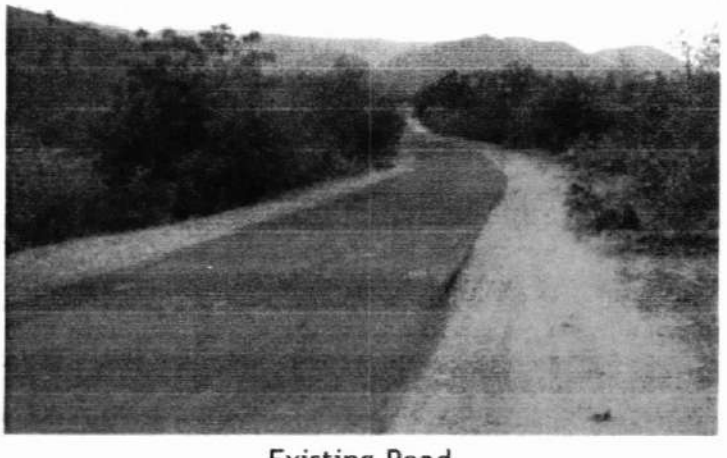
INTRODUCTION

1.1 Preamble :

Mydukur- Singaryakonda via Porumamilla & Seetharampuram road is an important National High way which was recently upgraded as a national High way NH -167 B from 0/0 to 189/050 vide Gazette Publication no. 1281 of S.O.No.1453•(dated 09.05.2017 of MORT &H ., New Delhi and as per the Memo. No.1980/EE-NH&CRF/AEE-1, dt :07.06.2017 o/o the Chief Engineer, R&B , NH & CRF Vijayawada and connecting to the District Head quarters Kadapa, Kurnool , Nellore , Prakasam and to the pilgrim centers like Bhramham gari mattam, Bhayrava Kona and Malakonda etc., The road will reduce the distance between towns of Nellore and Kadapa which reduces travel time and all over development of the region.

The preparation of Wildlife Conservation Plan and Mitigation for the up-gradation and widening the existing road into two lane with paved configuration of NH 167B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram is part of the project of " Upgrading and widening of the existing road of 167B from Porumamilla to Singaryakonda (on NH-16) via Seetharampuram - CS Puram - Pamuru- Kandukur to two lane with paved shoulders in the State of Andhra Pradesh under National Highways"

The part of the Road pertaining to DFO, WLM Proddatur falls in Compartment No: 253 of Kavalakuntla Extn. A & B Block notified U/s 16 of Madras Forest Act Notification No.114, Dt 23-03-1896 and notified vide notification no. 125 dated 23-03-1928. The area falls in Tekurpeta beat of Porumamilla Range of the WLM Proddatur Division.



Existing Road

1.1 Status of the Project:

The Project of " Upgrading and widening of the existing road of 167B from Porumamilla to Singaryakonda (on NH-16) via Seetharampuram - CS Puram - Pamuru- Kandukur to two lane with paved shoulders in the State of Andhra Pradesh under National Highways" started with the proposal of the Executive Engineer (R&B) National Highways for permission of DGPS survey in the Forest areas of Wildlife Management Division, Proddatur, Nellore and Giddalur to the Prl.Chief Conservator of Forests vide ref. EE(R&B) , NH Division, Kadapa lr. No. EPC/NH-16/ Porumamilla to Singarayakonda/2017-18 dated 17th April 2017. Accordingly, Prl.Chief Conservator of Forests, Head of Forest Force, Andhra Pradesh permitted vide his ref. 4948/2017/FCA-3 dated 20th April 2017. The authentication of data could not happen because of certain technical problems and same were rectified by the NH authorities and same has been verified and authenticated by the Prl.CCF, (Head of Forest Force), Andhra Pradesh on 24th May 2018 and issued specific instructions for the clearance of the Project to the Field Officers.

The Divisional Forest Officer, WLM Proddatur was instructed by the Prl.CCF, (HoFF), Andhra Pradesh regarding the Project specifically on the following points

1. Critically examine the feasibility of the project.
2. Should inspect in person and submit the Field inspection notes.
3. Preparation of enumeration list of the proposed diversion area after duly assessing the value of trees to be felled in the proposed area.
4. To be studied the details of vegetation, density of vegetation, vulnerability of soil erosion, impact of the project on the flora and fauna and suggestion of mitigative measures for flora and fauna.
5. Report of the vicinity of National Parks, Wildlife Sanctuaries or any Eco sensitive zones.
6. Submission of Certificate by the District Collector as per the provision of Scheduled Tribes and Other Traditional Forest Dwellers (RoFR) Act ,2006 regarding the process of settlement of rights.
7. Identify the degraded forest land over an extent of 22.06 Ha (double the area of forest land) and accord the permission to DGPS survey.

The DFO, WLM Proddatur & Conservator of Forests, Kurnool are regularly submitting the details to the Prl.CCF, (HoFF), Andhra Pradesh in series of references. Basing on the data on the Project the Prl.CCF, Head of Forest Force, Andhra Pradesh submitted proposals for the diversion to the State Government and the Government of Andhra Pradesh submitted to the Inspector General of Forests (Central), Integrated Regional Office, Vijayawada, Ministry of Environment, Forests & Climate Change, Govt of India.

The proposals were placed before the Regional Empowered Committee (REC), IRO Chennai in its 50th meeting held on 21.09.2021 , after detailed deliberation the committee decided to seek further information on the legal status of the existing road, clearances as per FCA 1980, non-inclusion of existing road portion in the diversion proposal, actual length and width of the road, Wildlife mitigation Plan duly vetted by the Chief Wildlife Warden of Andhra Pradesh and on the possibility of reduction of width of the road to reduce the no. of Red sanders trees. The Conservator of Forests, Kurnool Circle submitted the information with clarification on the points raised by the Inspector General of Forests (Central) to the Prl.Chief Conservator of Forests, Head of Forest Force, Andhra Pradesh on 18th Feb.2022. The Prl. CCF, (HoFF), Andhra Pradesh after the examination of the justification submitted by the DFO, WLM Proddatur & Conservator of Forests, Kurnool Circle, has given clear instructions for the preparation of the Wildlife Mitigation Plan covering the impact on wildlife due to upgradation and widening of the Road along with study of area in respect of Tiger Corridor of Nagarjuna Sagar Srisailam Tiger Reserve. Accordingly, the Wildlife Mitigation Plan along with the Wildlife Conservation Plan prepared.

1.3 Objectives of the Study

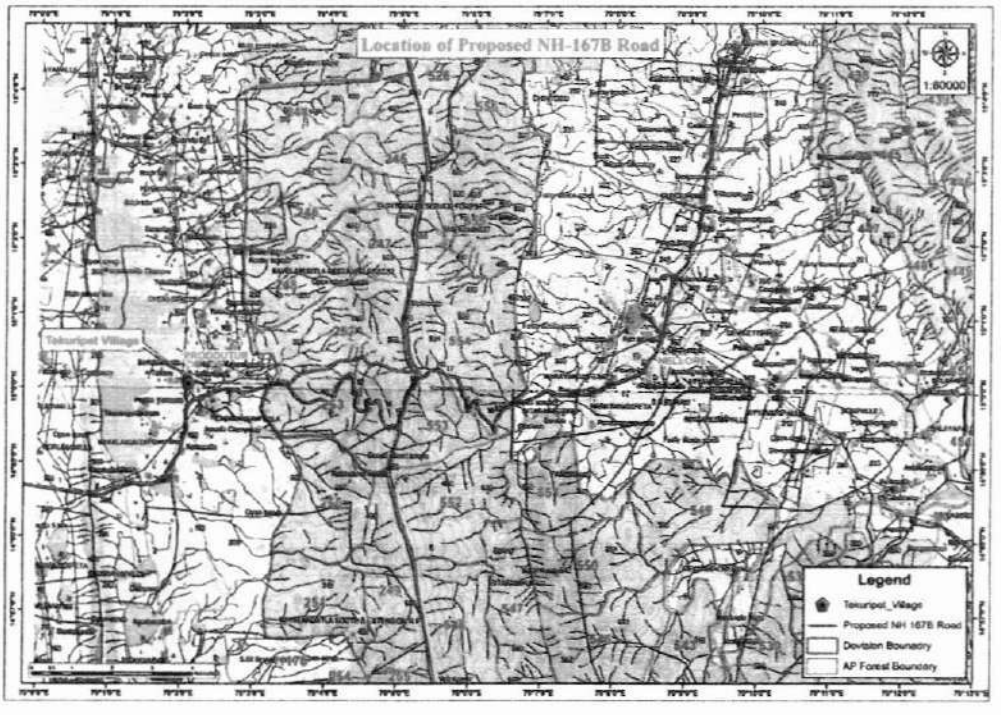
- Assessment of Impacts of the development of Project.
- Preparation of Wildlife Conservation Plan for the execution by the Forest department with an object to provide fodder, water, space to wildlife on both the sides of road planning of hygiene of the conservation area keeping the health of wildlife to reduce the conflict as a part of mitigation measures.
- Preparation of Wildlife mitigation plan to be executed by the user agency to reduce the man - animal conflict, providing passages to one side of the forest to other side to reduce the effect of fragmentation and continue the flow of gene pool and to prevent accidental killing of wild animals.
- Study of Tiger Corridor between Nagarjuna Sagar Srisailam Tiger Reserve and Seshachalam hills corridor.

Chapter 2

General Descriptions of the Project Area

2.1 Background & description of project area

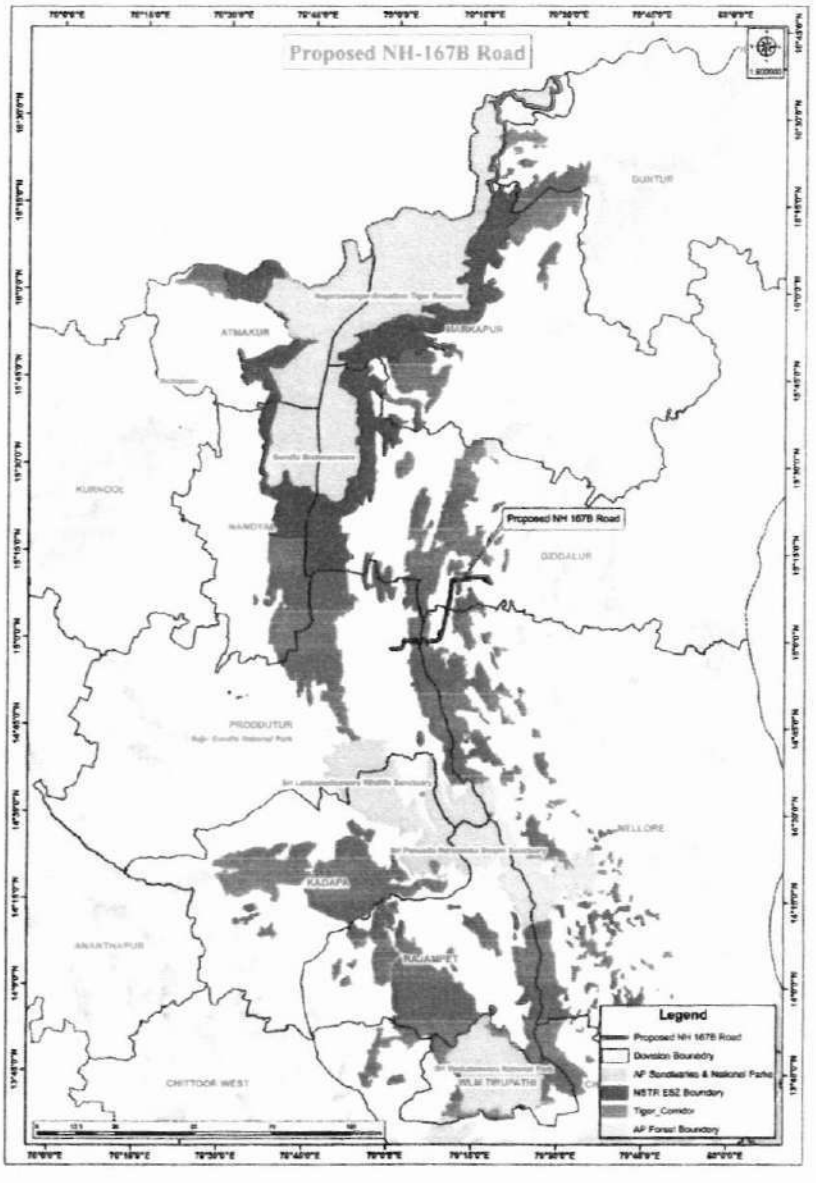
The proposed area of 11.03 ha forest land for up-gradation and widening the esixting road into two lane with paved configuration of NH 167B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram falls in Compartment No: 253 of Kavalakuntla Extn. A & B Block notified U/s 16 of Madras Forest Act Notification No.114, Dt 23-03-1896 which is notified vide notification no. 125 dated 23-03-1928. The area falls in Tekurpeta beat of Porumamilla Range of the WLM Proddatur Division. The existing road is already a notified right of way over a length of about 2 miles with a width of 3 feet as per notification of the Kavalakuntla ext. A and B Reserve forest. Copy of the Reserve forest is kept as a annexure. The road is mentiond as civil road with a length of 8 Kms from Tekuripet to Sitaramapuram (Nellore Dist) as per the Block history in the Working Plan of Kadapa District (1994- 95 to 2003 -04).

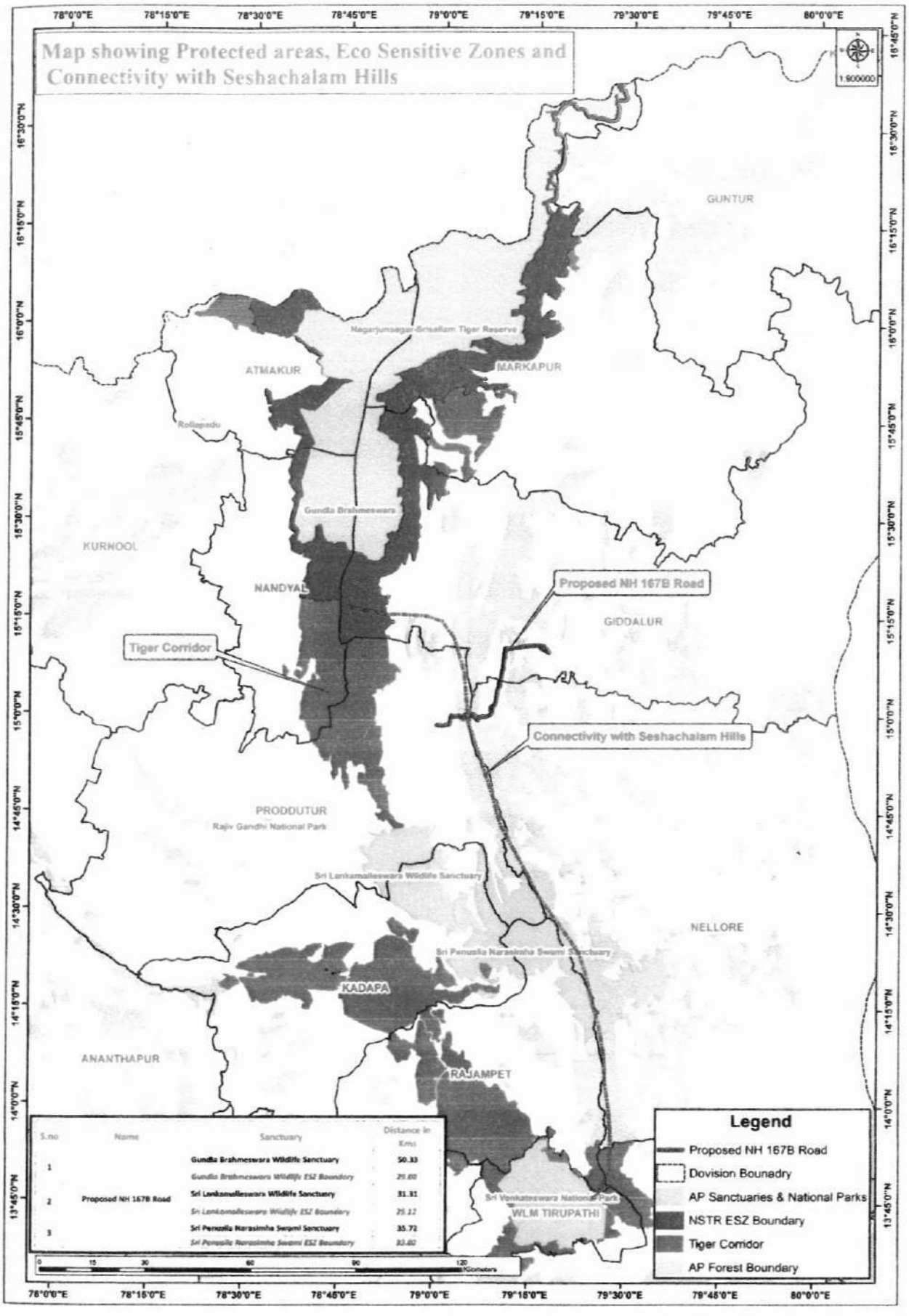


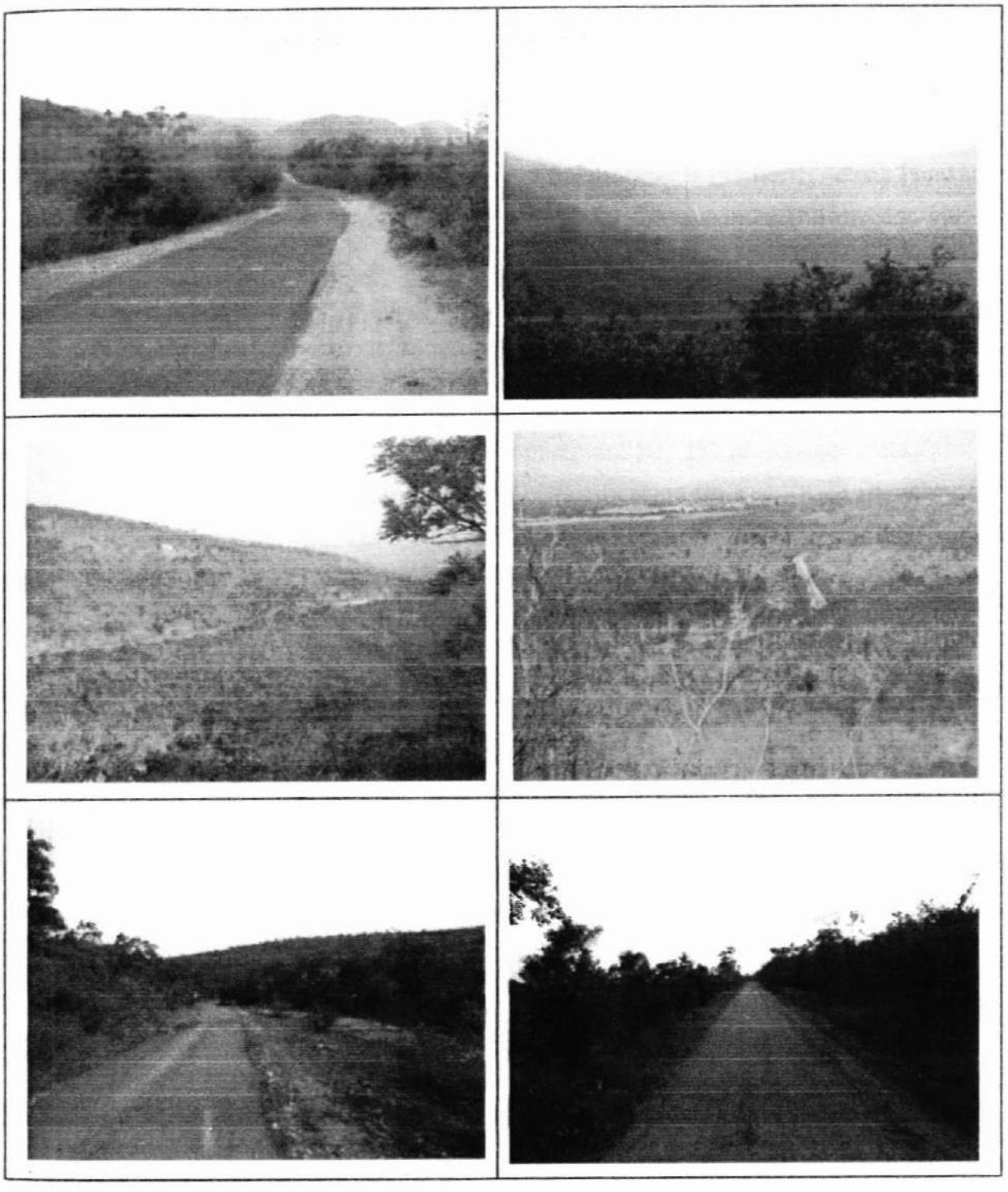
Location of the Project area

The proposed diversion area is neither a part of Wildlife Sanctuary nor a part of National Park. The area of diversion is not falling in any declared wildlife prominent areas, Eco sensitive Zone of any protected area and notified corridor of Nagarjunasagar Srisailam Tiger Reserve. However the proposed area of the diversion area of 11.03 ha is the centre

of huge biodiversity of the state of Andhra Pradesh. The Protected areas of Sri Lankamalleswara Wildlife Sanctuary, Penusila Wildlife Sanctuary, ESZ of Gundla Brahmeswaram Wildlife Sanctuary (extended core of Nagarjunasagar Srisailam Tiger Reserve) and Notified Nagarjunasagar Srisailam Tiger Reserve (NSTR) Corridor of one of the largest Tiger Reserve of the Country are within 30 Km radius to the proposed site. Though the area is not notified as tiger corridor of NSTR, the area is of prime importance as it has connectivity to Seshachalam hills and with fragmented patches of forests to the NSTR, becoming unnotified corridor between wildlife prominent areas of Seshachalam hills and NSTR. The present road which is existing is bisecting the thousands of Hectares of forest and wildlife, acting as a barrier for wildlife dividing the wildlife populations, hence the preparation of mitigation plan for creating connectivity of the both sides of the Forest. The following maps elucidate the importance of the proposed area.




Map showing Protected areas, Eco Sensitive Zones and Connectivity with Seshachalam Hills
1:900000
GUNTUR
Nagarjunsagar-Srisailam Tiger Reserve
ATMAKUR
MARKAPUR
Rollapadu
Gundla Brahmeswara
KURNOOL
NANDYAL
Proposed NH 167B Road
GIDDALUR
Tiger Corridor
Connectivity with Seshachalam Hills
PRODDUTUR
Rajiv Gandhi National Park
Sri Lankamalleswara Wildlife Sanctuary
NELLORE
Sri Penusila Narasimha Swami Sanctuary
KADAPA
ANANTHAPUR
RAJAMPET
Sri Venkateswara National Park
WLM TIRUPATHI
S.no | Name | Sanctuary | Distance in Kms
1 | Proposed NH 167B Road | Gundla Brahmeswara Wildlife Sanctuary | 50.33
Gundla Brahmeswara Wildlife ESZ Boundary | 29.60
2 | | Sri Lankamalleswara Wildlife Sanctuary | 31.31
Sri Lankamalleswara Wildlife ESZ Boundary | 25.12
3 | | Sri Penusila Narasimha Swami Sanctuary | 35.72
Sri Penusila Narasimha Swami ESZ Boundary | 33.60
0 15 30 60 90 120 KGilometers
Legend
Proposed NH 167B Road
Dovision Bounadry
AP Sanctuaries & National Parks
NSTR ESZ Boundary
Tiger Corridor
AP Forest Boundary
78°0'0"E
78°15'0"E
78°30'0"E
78°45'0"E
79°0'0"E
79°15'0"E
79°30'0"E
79°45'0"E
80°0'0"E

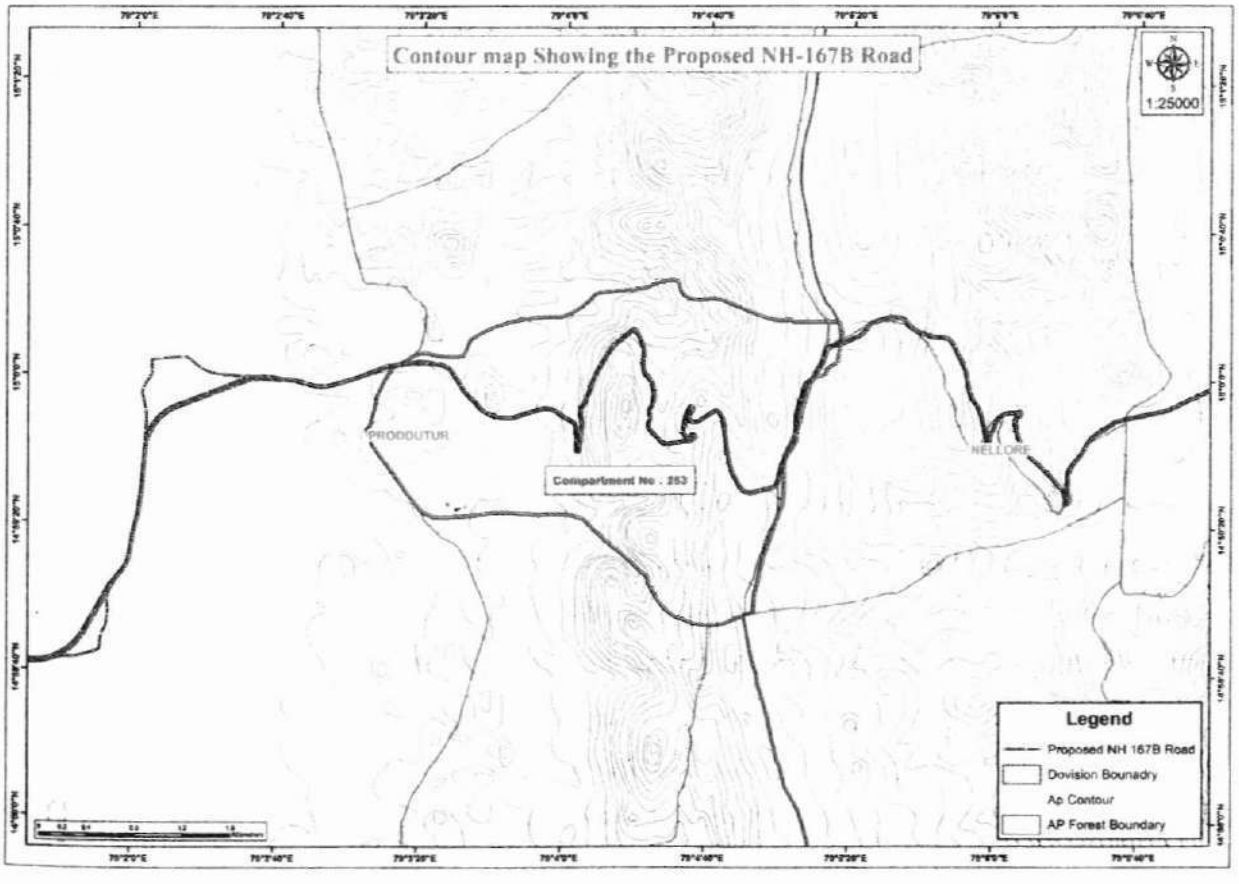


Photos of the exisiting road

2.2 General topography

After formation of Proddatur division in 1966, due to importance of wildlife, the division was redesignated as Wildlife Division from 01.01.1999. The forests of the division are largely situated on hills and over a portion of the plateau in the north - east. They are surrounded by undulating or flat cultivated plains. The elevation of the division varies from 99 meters to 902 meters above mean sea level. The Nallamalais form the northern boundary of Proddatur division confined to Vonipenta and Porumamilla Ranges which extend into the Kurnool district. These hills run in north - eastern direction forming an undulating plateau with luxuriant growth which is the best type of forest met with in the division.

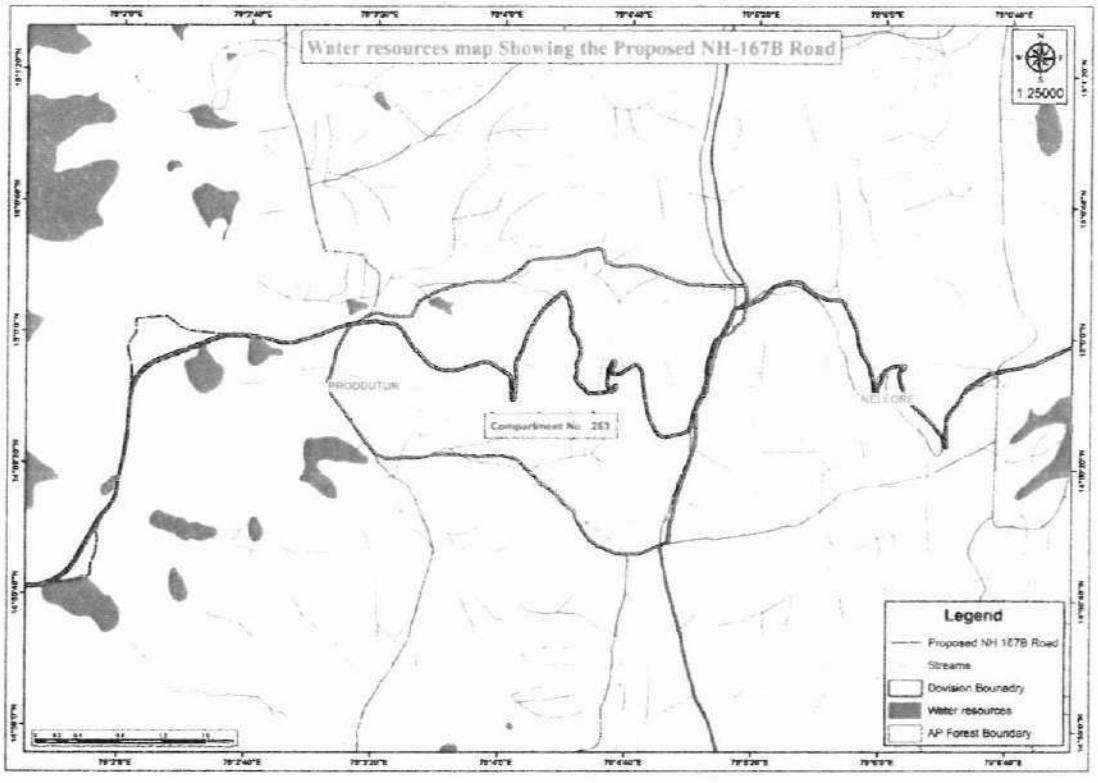
The present area of diversion falls in Compartment No: 253 of Kavalakuntla Extn. A & B Block notified U/s 16 of Madras Forest Act Notification No.114, Dt 23-03-1896 and notified vide notification no. 125 dated 23-03-1928. The area falls in Tekurpeta beat, Mallepalle section of Porumamilla Range of the WLM Proddatur Division.



Map showing the contours of the specified area.

2.3 Drainage & Water bodies

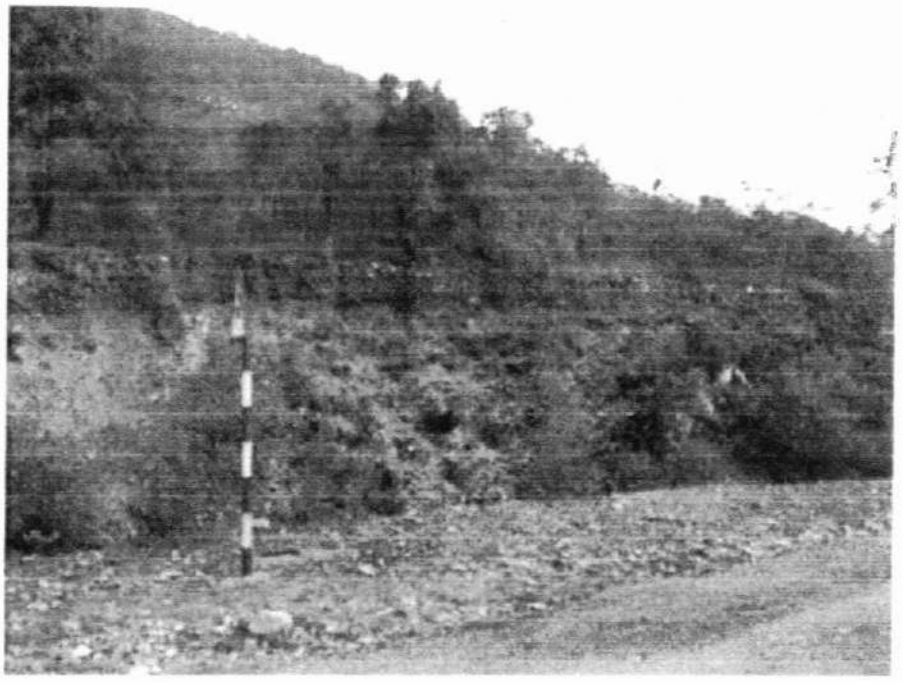
The forests of Porumamilla and Badvel Range drain into Sagileru and Kundu Rivers. All these rivers take their origin far beyond the district and none of them are perennial. These watersheds are mostly bare and rocky and almost devoid of growth which results in sudden rise and fall of the river, sometimes disappearing into the sandy beds, and appear further down as if from nowhere.



Map showing catchment and water bodies of the Specified area.

2.4 Geology, Rock and soil:

This Kadapa formation covers up whole of Badvel, Porumamilla and Onipenta ranges and part of Proddatur and Muddanur ranges. Kadapa series quartzites (altered sandstones) and shales. There seems no doubt that the geological formations have a definite influence on the species that occur. The proposed diversion area is part of veligondas is mostly of Cumbum shales and Bairankonda quartzites. The resultant soil from the disintegration of the above geological formations is red ferruginous loam, shallow and generally poor with a mixture of loose boulders of varying sizes. The reserves do not contain humus except in moist sheltered valleys in interior Lankamalais and Nallamalais. However the study area i.e., present diversion area Kavalakuntla Reserved Forests are having Red loamy soils which supports Dry Red sanders bearing forest.



Profile of soil adjoining to the Road

2.5 CLIMATE AND RAINFALL

2.5.1 Climate :-

Kadapa district is one of the drought prone districts of the state. The district is noted for the early setting in of the hot weather, which generally commences about the middle of February and lasts till the onset of the regular monsoon.

The elements which govern the climate are (i) Temperature (ii) Rainfall (iii) Altitude (iv) Humidity / Based on these factors, three distinct seasons are experienced in the division.

a. Summer season from February to June, till the onset of monsoons
b. Rainy season from break of monsoons in June to end of November
c. Winter season from December to end of January.

2.5.2 Temperature :-

The mean annual daily temperature is above 31.2°C. The temperature rises to maximum of 45°C and rarely to 47°C during summer. The temperature drops to 17°C and sometimes to 14°C during winters. The maximum and minimum temperature in the month of May, generally vary between 29°C and 48°C. Thus summer is severe in these parts. Hot winds blow and sun strokes also occur.

The temperature increases during the interval between the two monsoons and the heat becomes aggressive. The climate is quite tolerable in the rest of the year.

2.5.3 Rainfall :-

The division gets rains from both the monsoons. However the precipitation is more during the South - West monsoon. The principal rainy season is from June to November. The North -East monsoon lasts for 2 months; October and November. North - west part of the division comprises of Onipenta, Badvel and Porumamilla ranges falls part of Agro - climatic zone VI supports dry deciduous forests with canopy densities of 0.1 to 0.4.

The rainfall is not uniform and is erratic and precarious. The normal rainfall for the district is about 690 mm and the average rainfall is 764 mm. The number of rainy days in the division is 45. The post rainy season up to onset of winter (November) is quite hot and oppressive. Winter commences in December and lasts up to end of January. The maximum and minimum temperatures in the month of December vary between 28.99°C and 16.15°C respectively. The area experiences dry conditions for about 8 months in a year. But if the monsoon fails or if it is inadequate, the conditions become very dry leading to drought.

The relative humidity is highest during July - August and lowest in March. In the forests, night dew helps to replenish the moisture to a meagre extent in the sheltered valleys of the Veligondas etc.,

General conditions of plant growth are most favourable from mid-June to mid-November. During the drought years, apart from the drinking water problem, the wild animals also suffer from lack of sufficient feed. It therefore becomes necessary that more number of water harvesting structures to be developed for tapping rainwater to the maximum, which would improve the vegetation and the availability of feed for wild animals.

2.6 General description of Forests

Proddatur Forest Division (WL) is rich in biological diversity comprising of the best natural ecosystem of the District. The river Pennar and its tributaries Kundu, Sagileru passes through the Division promoting good natural regeneration. The existing locality factors that determine the floristic composition and distribution of forest types would have produced a superior dry mixed deciduous climax type forest.

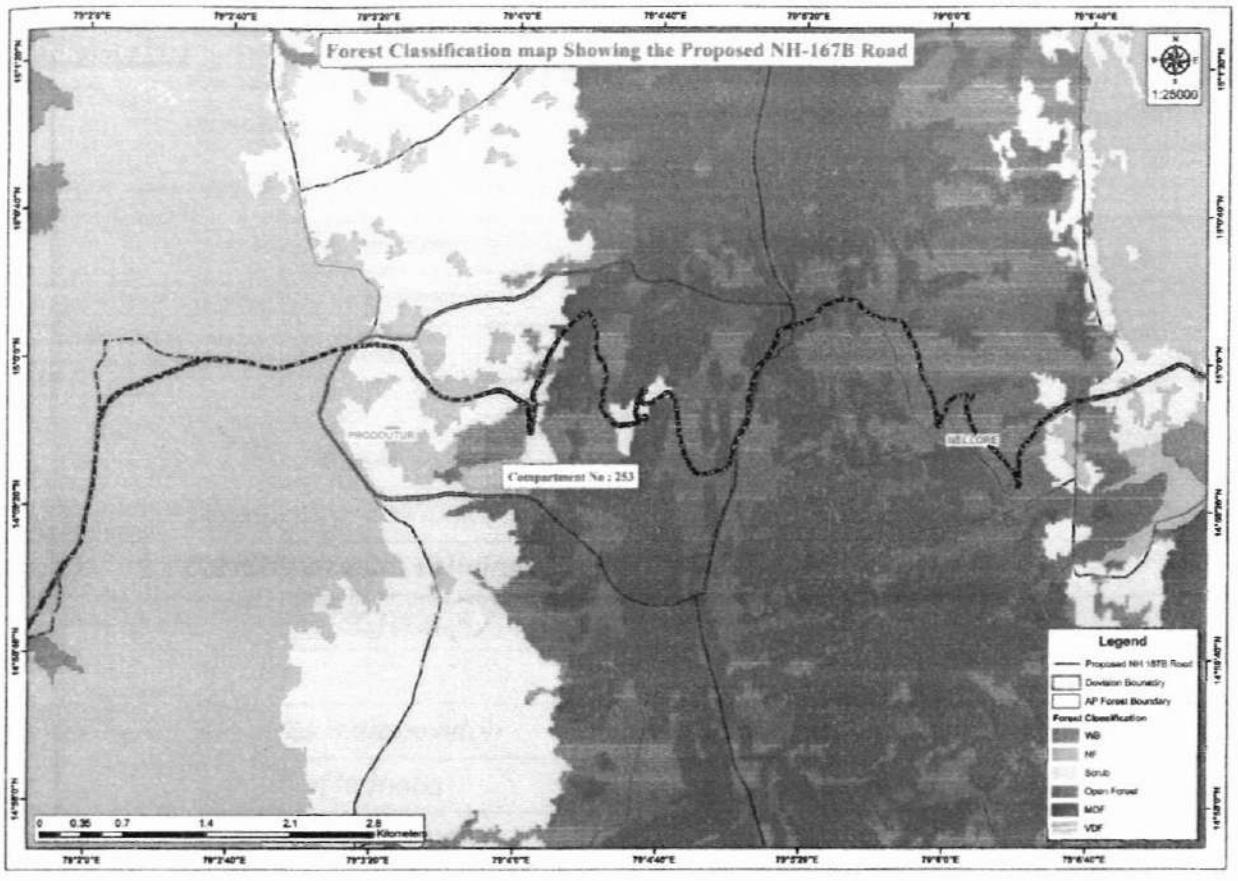
The specified area of the diversion falls under following (2) types of Forests as per H.G. Champion & Seth Classification having site quality of V.

1. **5A/C3: Southern Dry Mixed Deciduous forests:**

   There are two well pronounced storeys or tiers noticeable in this forest type. The upper storey consists of mostly dense crop. The species are deciduous and leafless for several months in the year. These often tend to become moist deciduous forests. But such species are very few. The species that are commonly met with are: Velama, (*Anogeissus latifolia*) Yepi (*Hardwickia binata*), Nalla maddi (*Terminalia tomentosa*) Yegi (*Pterocarpus marsupium*) Billudu (*Chloroxylon swietenia*) Pachari (*Dalbergia paniculata*) Chigara (*Albizzia amara*), Anduga (*Boswellia serrata*), *Dolichandrone Crispa* and kunkudu (*Sapindus emarginatus*). Under storey consists of *Grewia orbiculata, Gardenia gummifera, Zizyphus xylopyrus, Randia dumetorum, Acacia latronum, Dichrostachys cinerea, Eagle marmelos, Ixora parviflora and Gymnosporia montana*, climbers like *Cuscuta, Bauhinia, Zizyphus oenoplea, Maba buxifolia, Helicteres isora* species are of common occurrence. Bamboos are generally absent and occur only in patches. Grasses like Nendra, Khasi, and Bodha exists in open patches.

2. **5A/C2: Dry Red sanders bearing forests:**

   The composition of crop consists of *Pterocarpus santalinus, Anogeissus latifolia, Hardwickia binata, Terminalia tomentosa, Pterocarpus marsupium, Dolichandrone crispa*. Red sanders occurs on the slopes of Kavalakuntla Extn A&B Reserve Forests in Porumamilla Range at an elevation between 152.4 m & 914.4 m, where the annual rainfall ranges between 813mm & 1016 mm. The associate species are *Anogeissus latifolia, Terminalia tomentosa, Pterocarpus marsupium, Dolichandrone crispa, Hardwickia binata, Boswellia serrata, Albizzia amara, Soyamida febrifuga, Chloroxylon swietenia* etc., Grasses like Bodha, Nendra, ooba, Yerra gaddi exists in open patches In both the types of Forests the climbers namely *Butea superba, Zizyphus oenoplia, Bauhinia vahlii, Pterolobium indicum, Calycopteries floribunda, Acacia intsia, Cryptolepis buchanani* are seen. Weeds like *Lantana camara, Eupatorium sp, Anisomeles malabaricum;* epiphytes like *Loranthus sp.*, and *cuscuta reflexa* are present in open patches and Plantations of the area.



Map of Forest classification of specified area

The present corridor area is one of the best forests of Proddatur Division, most of the species as per the working plan are present here. The details of flora and fauna of the Proddatur Division as per working plan and as per the compartment history of the compartments 253 of Kavalakuntla Extn A & B Reserved Forest of Tekuripet Beat of Porumamilla Range is listed below.

2.6.1 Flora

Sl.No.	*Scientific Name*	*Local Name*
	TREES	
1	*Acacia Arabica*	*Nalla tumma*
2	*Acacia leucophloea*	*Tella tumma*
3	*Acacia sundra*	*Sundra*
4	*Adina cardifolia*	*Bandaru*
5	*Aegle marmelos*	*Maredu*
6	*Albizia lebbeck*	*Dirisanam*
7	*Anogeissus latifolia*	*Chirumanu*

8	*Azadirachta indica*	*Yepa*
9	*Bauhinia racemosa*	*Ari*
10	*Bauhinia variegata*	*Mandari*
11	*Boswellia serrata*	*Anduga*
12	*Buchanania lanzan*	*Sarapappu (Murli)*
13	*Butea monosperma*	*Moduga*
14	*Carissa spinorum*	*Kalivi*
15	*Cassia fistula*	*Rela*
16	*Chloroxylon swietenia*	*Billudu*
17	*Cleistanthus collinus*	*Kodisa*
18	*Cochlospermum religiosum*	*Kondagogu*
19	*Dalbergia latifolia*	*Irugudu (Jitregi)*
20	*Dalbergia paniculata*	*Pacharia*
21	*Diospyros melanoxylon*	*Tunki*
22	*Emblica officinalis*	*Usirikaya*
23	*Feronia elephantum*	*Velaga*
24	*Ficus bengalensis*	*Marri*
25	*Garuga pinnata*	*Garugudu*
26	*Gmelina arborea*	*Gummadi Teak*
27	*Hardwickia binata*	*Yepi*
28	*Holarrhena antidysenterica*	*Pala*
29	*Holoptelea integrifolia*	*Nemalinara*
30	*Lagerstroemia parviflora*	*Chennangi*
31	*Lannea coromandelica*	*Gumpini*
32	*Mangifera indica*	*Mamidi*
33	*Madhuca indica*	*Ippa*
34	*Mitragyna parviflora*	*Battaganam*
35	*Morinda tinctoria*	*Thogaru - Mogali*
36	*Nyctanthes arboritis*	*Pogada (Karsha)*
37	*Ougeinia oojeinensis*	*Chikkudu Dargu*
38	*Pongamia pinnata*	*Konugu*
39	*Pterocarpus marsupium*	*Yegisa*
40	*Pterocarpus santalinus*	*Rakta chandanam*

41	*Sapindus emarginatus*	*Kunkudu*
42	*Schleichera oleosa*	*Pusuga*
43	*Soymida febrifuga*	*Somi*
44	*Sterculia urens*	*Tapsi, Yeura Ponaku*
45	*Strychnos nux - vomica*	*Musti*
46	*Strychnos potatorum*	*Chilla*
47	*Syzygium cumini*	*Neradu (Ginne)*
48	*Tamarindus indica*	*Chinta*
49	*Tectona grandis*	*Teku*
50	*Terminalia arjuna*	*Tella maddi*
51	*Terminalia belerica*	*Tani*
52	*Terminalia tomentosa*	*Maddi*
53	*Wrightia tinctoria*	*Pala Kodsha*
54	*Zizyphus xylopyrus*	*Gotiki*
	SHRUBS	
55	*Cassia auriculata*	*Thangedu*
56	*Dodonaea viscosa*	*Pulivai, Bandedu*
57	*Gymnosporia spinosa*	*Danthi*
58	*Helicteres isora*	*Gubathada*
59	*Randia dumetorum*	*Manga*
60	*Vitex negundo*	*Vaaili*
	CLIMBERS & CREEPERS	
61	*Bauhinia vahlii*	*Adda theega*
62	*Butea parviflora*	*Moduga theega*
63	*Butea superba*	*Teega moduga*
64	*Calycopteris floribunda*	*Bonta theega*
65	*Smilax aspera*	*Kunmmari theega*
66	*Zizyphus oenoplea*	*pariki*
	HERBS	
67	*Achyranthes aspera*	*Uttarani*
68	*Ageratum conyzoides*	...
69	*Cassia auriculata*	*Tangedu*
70	*Dodonea viscosa*	*Bandhari*
71	*Euphorbia hirta*	...

BAMBOOS		
72	*Bambusa arundinacea*	*Mullam Bongu*
73	*Dendrocalamus strictus*	*Sadanam*
GRASSES		
74	*Andropogan contortus*	*Yedagaddi*
75	*Cynodon dactylon*	*Pandimullugaddi*
76	*Cymbopogon coloratus*	*Bodagaddi*
77	*Dichanthium annulatum*	...
78	*Eragrostis unioloides*	*Udara - gaddi*
79	*Heteropogon contortus*	*Eddi gaddi*
80	*Imperata cylindrica*	*Darbagaddi*
81	*Sehima nervosum*	*Nendragaddi*

The *Pterocarpus santalinus* (Red sanders / Rakta chandanam/ Yerra chandanam) is the endemic species of Rayalaseema area of the Andhra Pradesh and it is endangered species listed as per IUCN classification.

2.6.2 Fauna

Sl.No	*Local Name*	*Zoological name*
Mammals		
1	*Chiruthapuli*	*Panthera pardus*
2	*Adavipilli/ jungle cat*	*Felis chaus*
3	*Wild dog*	*Canis alpinus*
4	*Kanuju (Sambar)*	*Cervus unicolor*
5	*Duppi (Spotted Deer)*	*Axis axis*
6	*Krishna Jinka (Black buck)*	*Antilope cervicapra*
7	*Konda gore (Four horned antelope)*	*Tetracerus quadricornis*
8	*Gaddi Jinka (Burra Jinka) / Chinkara*	*Gazella gazella*
9	*Adavi pandi*	*Sus scrofa*
10	*Kundelu (Hare)*	*Lepus nigricollis*
11	*Kothi*	*Macaca radiata*
12	*Kondamuchu*	*Presbytis entellus*
13	*Devangana pilli*	*Loris tardigradus*
14	*Manupilli (Palm Civet)*	*Herpestes Edwards*

15	*Mungisa/ common mongoose*	*Paradoxurus hermaphroditus*
16	*Udutha*	*Funambulus pennanti*
17	*Mullapandi (Porcupine)*	*Herpestes edwards*
18	*Gabbilam (Indian flying fox)*	*Pteropus giganteus*
19	*Elugubanti (Sloth Bear)*	*Melursus Ursinus*
20	*Alawa (Scaly anteater or Pangolin)*	*Manis crassicaudata*
21	*Dumergondu*	*Hyaena hyaena*
22	*Guntanakka (Fox)*	*Vulpes bengalensis*
23	*Nakka (Jackal)*	*Canis aureus*
	Amphibians	
1	*Kappa (Ordinary Frog)*	*Rana hexadactyla*
2	*Godurukappa (South Indian toad)*	*Bufo melanostictus*
3	*Tree frog*	*Hyla arboria*
4	*Burrowing Frog*	*Canopus bystema*
5	*Frog*	*Rana tigrina*
	Reptiles	
1	*Kondachiluva (Indian Python)*	*Python molurus*
2	*Rendu muthula pamu (Sand Boa)*	*Eryx johnii*
3	*Katlapamu (Krait)*	*Bungarus caeruleus/ B. fasciatus*
4	*Nagupamu (Throchupamu) Cobra*	*Naja naja*
5	*Raktha Pinjari (Russell's Viper)*	*Vipera russelli*
6	*Saw scaled viper*	*Echis carinatus*
7	*Jerripothu (Rate Snake)*	*Tripidonatur Piscator / Ptyas mucosus*
8	*Tree Snake*	*Dryphis species*
9	*Pasarikapamu (Whip Snake)*	*Dryphis species*
10	*Udumu (Monitor lizard)*	*Varanus bengalensis*
11	*Ussravilli (Chameleon)*	*Chameleon species*
12	*Balli (Wall lizard)*	*Hemidactylus species*
13	*Tonda (Garden lizard)*	*Calotes versicolor*
14	*Golden Gecko (Small wall lizard)*	*Gecko species*
15	*Neeti tabelu (Freshwater turtle)*	*Trionys species*
16	*Metatabelu (Indian starred tortoise)*	*Testudo elegans*
17	*Tabelu (Fresh water tortoise)*	*Geomyde species*

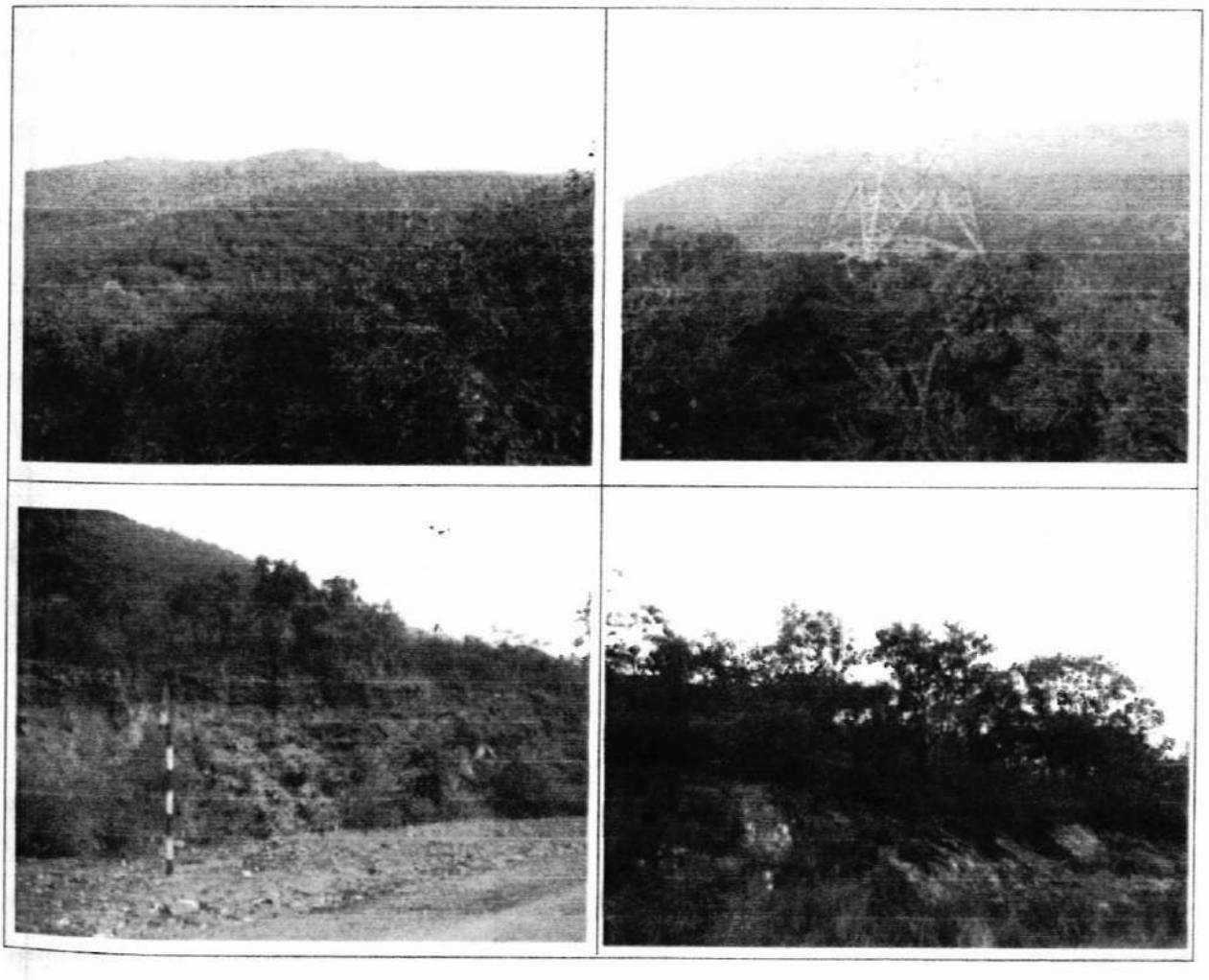
Birds		
1	*Little grebe*	*Podiceps fuficollis*
2	*Little cormorant*	*Phalacrocorax niger*
3	*Darter or Snake bird*	*Anhinga rufa*
4	*Pond heron*	*Ardeolagrayii*
5	*Cattle egret*	*Bubulcus ibis*
6	*Painted Stork*	*Mycteria leucocephala*
7	*Open billed strok*	*Anastomus oscitans*
8	*Spoonbill*	*Platalea leucorodia, Linnaeus*
9	*Shoeveller*	*Anas clypeata linnaeus*
10	*White eyed pochard*	*Aythya nyroca*
11	*Ruddy shelduck*	*Tadorna ferruginea*
12	*Pintail*	*Anas acuta Linnaeus*
13	*Common Teal*	*Anas crecca Linnacus*
14	*Garganey Or Blue Winged Teal*	*Anas querquedula*
15	*Wigeon*	*Anas peneiope*
16	*Tufted Pochard*	*Aythya fuligula*
17	*Common Pochard*	*Aythya ferina*
18	*Redcrested Pochard*	*Netta rufina*
19	*Cotton Teal*	*Nettapus coromandelianus*
20	*Nekta Or Comb Duck*	*Sarkidiornis melanotos*
21	*Black winged Kite*	*Elanus caeruleus*
22	*Brahminy Kite*	*Haliastur indus*
23	*Common Buzzard*	*Buteo buteo*
24	*White Scavenger Vulture*	*Neophron percnopterus*
25	*The Pale Harrier*	*Circus macrourus*
26	*Marsh Harrier*	*Circus aeruginosus*
27	*Bonelli's Eagle*	*Hieraaetus fasciatus*
28	*Steppe Eagle*	*Aquila nipalensis*
29	*Shikra*	*Accipiter badius*
30	*Grey Partridge*	*Francolinus pondicerianus*
31	*Jungle Bush Quail*	*Perdicula asiatica*
32	*Grey Jungle Fowl*	*Gallus sonneratii*
33	*Common Peafowl*	*Pavo cristatus*

34	Indian Moorhen	Gallinula chloropus
35	Coot	Fulica atra
36	Purple moorhen	Porphyrio porphyrio
37	White breasted water hen	Amaurornis
38	Red wattled lapwing	Vanellus indicus
39	Yellow wattled lapwing	Vanellus malabaricus scopili
40	Little Ringed Plover	Charadrius dubius
41	Marsh sandpiper	Tringa stagnatilis
42	Green SandPiper	Tringa ochropus
43	Common SandPiper	Tringa hypoleucos
44	Green Shank	Tringa nebularia
45	Stilt/ Avocets	Recurviorst
46	Black Winged Stilt	Himantopus himantopus
47	Jerdons Or Double Courser	Rhinoptilus bitorquatus
48	Sand grouse	Peroclididaae
49	Indian Sandgrouse	Pterocles exustus
50	Ring Dove	Streptopelia decaocto
51	Spotted Dove	Streptopelia chinensis
52	Little Brown Dove	Streptopelia senegalensis
53	Rose Ringed Parakeet	Psittacula krameri
54	Common Hawk Cuckoo	Cuculus varius
55	Asian koel	Eudynamys scolopaceus
56	Crow Pheasant Or Coucal	Centropus sinensis
57	Indian Great Horned Owl	Bubo bubo
58	Spotted Owlet	Athene brama
59	Indian Jungle Nightjar	Caprimulgus indicus
60	Franklin's Nightjar	Caprimulgus affinis
61	House Swift	Apus affinis
62	Palm Swift	Cypsiurus parvus
63	Crested Tree Swift	Hemiproene longipennis
64	Pied Kingfisher	Ceryle rudis
65	Small Blue Kingfisher	Alcedo atthis
66	White Breaster Kingfisher	Halcyon smyrnensis
67	Small Green Bee Eater	Merops orientalis

68	Indian Roller	Coracias benghalensis
69	Crimson Breasted Barbet	Megalaima haemacephala
70	Golden Backed Woodpecker	Pinopium bengalense
71	Ashy Crowned Finch Lark	Eremopterix grisea
72	Rufous tailed Finch lark	Ammomanes phoenicurus
73	Singing bush lark	Mirafra javanica
74	Dusky crag martin	Hirundo concolor
75	Common swallow	Hirundo rustica
76	Red rumped swallow	Hirundo daurica
77	Indian grey shrike	Lanius excubitor
78	Bay backed shrike	Lanius vittatus
79	Brown shrike	Lanius schach
80	Golden oriole	Lanius cristatus
81	Black Drongo	Oriolus oriolus
82	Rocket tailed drongo	Dicrurus paradiseus
83	White bellied drogo	Dicrurus caerulescens
84	Ashy swallow shrike	Artamus fuscus
85	Common myna	Acridotheres tristis
87	Jungle Myna	Acridotheres fuscus
88	Brahminy Myna	Sturnus pagodarum
89	Tree pie	Dendrocitta vagabunda
90	House Crow	Corvus splendens
91	Jungle Crow	Corvus macrorhynchos
92	Black headed Cuckoo Shrike	Coracina melanoptera
93	Small Minivet	Pericrocotus cinnamomeus
94	Common Iora	Aegithina tiphia
95	Redvented Bulbul	Pycnonotus cafer
96	White Browed Bulbul	Pycnonotus luteolus
97	Yellow Eyed Babbler	Chrysomma sinense
98	Common Babbler	Turdoides caudatus
99	Jungle Babbler	Turdoides striatus
100	White Headed Babbler	Turdoides affinis
101	Verditer Flycatcher	Muscicapa thalassina
102	Fantail Flycatcher (White Browed)	Rhipidura aureola

103	Paradise Flycatcher	Terpsiphone paradise
104	Greenish warbler	Phylloscoupus trochiloides
105	Largebilled Leaf warbler	Phylloscopus magnirostris
106	Tailor bird	Ortgitinys sutorius
107	Plain Wren warbler	Prinia subflava inornate
108	Ashy Wren warbler	Prinia socialis
109	Blyth's Reed warbler	Acrocephalus dumetorum
110	Magpie Robin	Copsychus saularis
111	Indian Robin	Saxicoloides fulicata
112	Black redstart	Phoenicurus ochruros

Regarding status of important fauna listed under Schedule I of Wildlife (Protection) Act 1972 and IUCN classification of the area is explained under the chapter of conservation of Mega fauna.



Cross section of forest of the specified area

Chapter 3

Impacts of the Project on the Habitat, Flora & Fauna

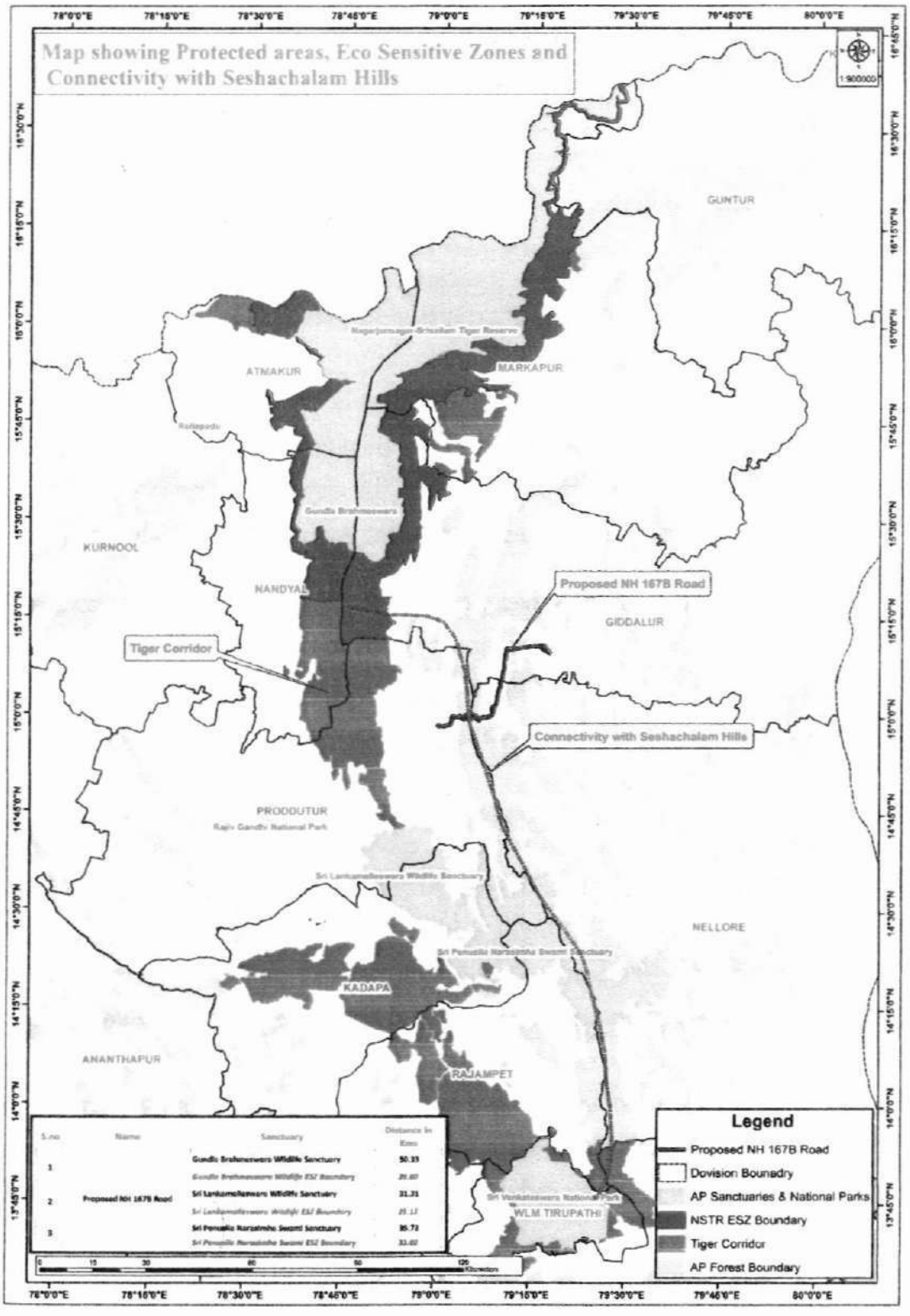
The proposed area of the diversion for the road is the centre of huge biodiversity of the state of Andhra Pradesh. The Protected areas of Sri Lankamalleswara Wildlife Sanctuary, Penusila Wildlife Sanctuary, ESZ of Gundla Brahmeswaram Wildlife Sanctuary (extended core of Nagarjunasagar Srisailam Tiger Reserve) and Notified Nagarjunasagar Srisailam Tiger Reserve (NSTR) Corridor of one of the largest Tiger Reserve of the Country are with in 30 Km radius to the proposed site. The Tiger Reserve is proliferating with tigers, presently with 60+ tigers spreading the territory to corridors right up to Seshachalam hills. The camera trap photos of Tiger in chamala valley during 2019 after 45-50 years shows the expansion of Tiger Corridor right from Nallamalais to Seshachalam hills. The Tiger Corridor is just 16 Kms away from the present proposed Road. The present area, though it is separated at places with habitations and having connectivity right up to Seshachalam hills via Penusila Narsimha wildlife sanctuary of Nellore area, Kadapa and Rajampet. The corridor supports and connects the two major wildlife habitat areas which are having very rich Biodiversity having presence of both flagship species of Tiger and Elephant in Andhra Pradesh. The proposed road is the prime link between velikondas to Seshachalam hills. The uniqueness of the area is inaccessible areas which are heaven for biodiversity. Most of the areas either side of the proposed road are inviolate areas where there is high density of wildlife. The presence of large predators Leopard and wild dogs seen regularly shows the presence of prey population. These hill ranges support some of the rare and endangered species both in floristic and in the faunal compositions. The Map down below elucidates the importance area and depicts the details of Protected areas.

Due to necessity of the upgradation and widening of the road from Porumamilla to Chandrasekarapuram the impacts have been studied since last year and major threats and negative impacts of the Project proposal area as follows.

3.1 Fragmentation of the Habitat.

Habitat loss and fragmentation of landscapes into smaller isolated patches are a major reason for the extinction of species worldwide. Such small and isolated patches of fragmented habitat endanger the faunal diversity as compared to larger and continuous fragments. Many of the species that originally inhabited large forested tracts will disappear from these isolated fragments. Habitat loss and degradation is known to affect 89% of all threatened birds, 83% of mammals, and 91% of threatened plants globally. There are also

evidences that while some species can persist or thrive in fragmented landscapes, many species become more vulnerable because of their smaller populations, more prone to over-exploitation (thereby increasing human-wildlife conflict) and their lower ability to adapt to rapid environmental change.



The fragmentation due to road bisecting a continuous populaton into two or more sub populations. Rare populations which are in low number or low density and wider range species like tigers or leopards are having greatest threat. The home range of tiger varies in Andhra Pradesh varies 50- 120 sq.km will be the major sufferer for the fragmentation. These big cats require large expanses of land for their daily, seasonal and ecological needs. These large carnivores animals migrate movements between seasonal habitats for either food or mates and they require a large amount of area to maintain a viable population. The other low density populations into smaller subpopulations can lead to the smaller, more isolated subpopulations going extinct. Civets, Four horned antelope and smaller cat species are the examples for low density population which may likely to be extinct if the proper measures are not taken due to fragmentation.

The other major threat of fragmentation is low levels of genetic connectivity, due to this situation may lead to inbreeding with in the reduced and isolated populations. Inbreeding can cause the entire population to become more susceptible to diseases or other environmental stressors resulting lowering the reproductive rate and increasing the mortality rate. If some of the species not able to tolerate the demographic factors and stress those populations may vanish from the area and they become locally extinct.

Roads can alter the spatial proportion of a given patch of habitat such that the edge to area ratio changes the results of these changes can be dramatic particularly for species that are more vulnerable to predation at the edge of habitats such as is the case of many ground nesting birds that are preyed on by predators. This phenomenon may happen to smaller prey animals with predators also.

Leopards, Sloth bear and Wild dogs are seen regularly crossing the area. The flora consists of 80+ species and fauna existing here include Leopard, Sloth bear, Wild dog, Four horned antelope, Hyena, Jackal, fox, wild pig, Chital, sambar, hare, various species of bats, reptiles include Python, Bengal monitor lizard and 110+ species of avi fauna. The flora of the area which is enumerated for felling consists of 71 species and 12,428 no.s of trees to be felled which includes 2410 Red sanders / *Pterocarpus santalinus* species which is endemic to Andhra Pradesh trees, during the process of the Road. The other shrubs, herbs, grass species will be wiped out of the area which may account of another 30-40 species in the specified area. The abstract of enumeration list with due assessed values is attached as Annexure.

Possible threats due to fragmentation of the habitat by the upgradation and widening of the road are summarised here

1. Roads may reduce access to saltlicks or waterholes by wild animals in general, access to summer and winter ranges by ungulates, to wetland breeding sites by amphibians, and to upland nesting habitat by turtles.

2. Wild animals are known to use particular corridors to move between various patches. If they are obstructed the animals may stray into human localities and feed on crops and livestock, increasing conflict.

3. Roads will act as a source of ignitions of fire in a landscape or can create firebreaks that prevent the spread of natural fires that may be important in wildlife management.

4. Roads may block movement or some small animal species and subdivide their populations. Smaller populations are vulnerable to genetic changes due to genetic drift and inbreeding depression and to extinction risk.

5. Reduce the populations by dividing the corridor or road.

6. One of the direct impacts of the road improvement in the forest are collision with vehicles or road kills. There is no proper information documented in the area. Kills of reptiles or birds were never documented.

7. Road network always increase the access to poachers. Though specific poaching data is not available with the department, there is every likely hood of poaching and even chances of poaching of big cats in the specified area of diversion.

3.2 Littering the area

Littering is seen entire area, all along the road. Many places people are using like open drinking place, consuming food and leaving plastic and food wastage in the area. The plastic include carry bags, water bottles, Gutka packets, disposable plastic plates, glasses.

3.3 Human and Wildlife conflict

Wildlife has the innate urge to migrate and disperse over large landscape in their search to colonise new areas for survival of the species. This results in wildlife traversing long distances in search of suitable habitat for colonisation and at times wildlife stray out

of forest areas into human settlement and come in direct conflict with man. Herd animals and several wildlife perambulate and cover large distances in forest in search of food and new resources. Their seasonal migratory paths interconnect forest block, unreserves and marginal lands shall not brought under plough. Their migratory routes are well defined on ground and if known and identified, they should be left undisturbed and interconnected without barriers so that wildlife can move freely from one area to the other. Any break in the connectivity results in straying out of wildlife and conflict with humans. The conservation measures taken up in these forest blocks will facilitate the animals to remain in their natural habitat and prevent them from straying out of their habitat in search of water and food resulting in man animal conflict.

Alighting the passengers / travellers is highly dangerous, may lead to man animal conflict and it may cause the huge disturbance. Alighting also cause of littering all along the Road. The littering may include carry bags, garbage, plastic and water bottles.

All along the road the monkeys are there and people are offering food, fruits to monkeys. This is a slow and more obscure manifestation of human-wildlife conflict.

3.4 Noise

As there are no restrictions on horn, vehicle horn is also an impact on wildlife. This disturbs wildlife and forces them to abandon all proximate areas.

3.4 Fire

Ninety per cent of forest fires in India are man-made. Smoking and carrying fire substances and match boxes, cooking of food in the forests is serious threat to the habitat and wildlife.

All these perceived impacts/ threats due to this project needs to be removed through different measures to improve the habitat for Wildlife, so that their status can be enhanced, and healthy environment is created. The measures for the same have been outlined in the next chapter.

Chapter 4

Impact Mitigation Plan

Wildlife, like any other living species require the primary needs of food, shelter, water and territory to roam, hunt, search for food etc. Wildlife has the innate urge to migrate and disperse over large landscape in their search to colonise new areas for survival of the species. This results in wildlife traversing long distances in search of suitable habitat for colonisation and at times wildlife stray out of forest areas into human settlement and come in direct conflict with man. Herd animals and several wildlife perambulate and cover large distances in forest in search of food and new resources. Their migratory routes are well defined on ground and if known and identified, they should be left undisturbed and interconnected without barriers so that wildlife can move freely from one area to the other. Any break in the connectivity results in straying out of wildlife and conflict with humans. The conservation measures taken up in these forest blocks will facilitate the animals to remain in their natural habitat and prevent them from straying out of their habitat in search of water and food resulting in man animal conflict.

Considering the anticipated impacts/ threats posed by the proposed project as discussed in chapter 3, it is necessary to take suitable conservation and mitigative measures to minimize the assessed impacts on the wildlife and its habitat. The strategy of conservation measures will be properly juxtaposed within the cruising radii of wild animals. The vegetation will be maintained in optimum level of interspersion as regards density cover and stand height. It will be necessary to manage the perceived adverse impact in such a manner that this does least possible harm despite the project. The Plan provides for the protection and conservation of all important species of wildlife and its habitat. The plan is broadly divided in to two parts one is to conserve wildlife and provide the requirement of wildlife such as fodder and water by protecting the existing forests both sides to retain the wild animals with out much disturbance. The other part is to provide connectivity across the road to facilitate the movement of wildlife .

4.1 Provision of Wildlife crossings

Wildlife crossing structures are being designed and incorporated into road construction and expansion projects to help restore or maintain animal movements across roads. Engineered wildlife crossings are designed both to allow animals to cross roads and to reduce hazards to motorist and wildlife. Wildlife crossing structures are typically combined with high fencing, and together these measures have proved to reduce road related mortality

of wildlife and connect populations. Road networks continue to grow and expand throughout the nation hence authorities need to know the most effective approaches in designing safe roadways for motorists and wildlife. Crossings must link to a larger functional landscape and habitat complex that allows wildlife to disperse, move freely, and meet their daily and life requisites. Having studied the behaviour of wildlife in the proposed project area the conservation plan and mitigation measures suggested.

The road leading to Chandrasekharapuram from the boundary of Kavalakuntla Extn A & B reserved forest is a barrier restricting the movement of animals. Daily, weekly or seasonal movements across landscape is necessary for the most terrestrial species. It may not be a serious threat for the smaller mammal and other terrestrial species but the large mammals may get highly affected. To prevent the impacts of fragmentation due to the road viz., limiting the availability of habitat, prevent access to water & other resources on the other side of the road, sub division of wildlife populations in to smaller and more vulnerable sub populations and affects the regular movement of wildlife, it is necessary to construct wildlife crossings in order to facilitate the smooth movement of animals all through its natural habitat. Wildlife crossings are a practice in habitat conservation, allowing connections or reconnections between habitats, combating habitat fragmentation. Wildlife passage (or crossing) structures are typically the most visible and engineering intensive green infrastructure employed to address wildlife needs along roads and highways, and often are the cornerstone of successful strategies to reduce the effect of roads on wildlife. In conjunction with wildlife fencing, these structures have dramatically reduced the incidence of wildlife-vehicle collisions as much as 98% (Clevenger et al. 2001, Dodd et al. 2007a, Olsson et al. 2008, Gagnon et al. 2015), thus enhancing motorist safety and reducing direct impact on wildlife populations.

The broad objectives of the Wildlife crossing structures

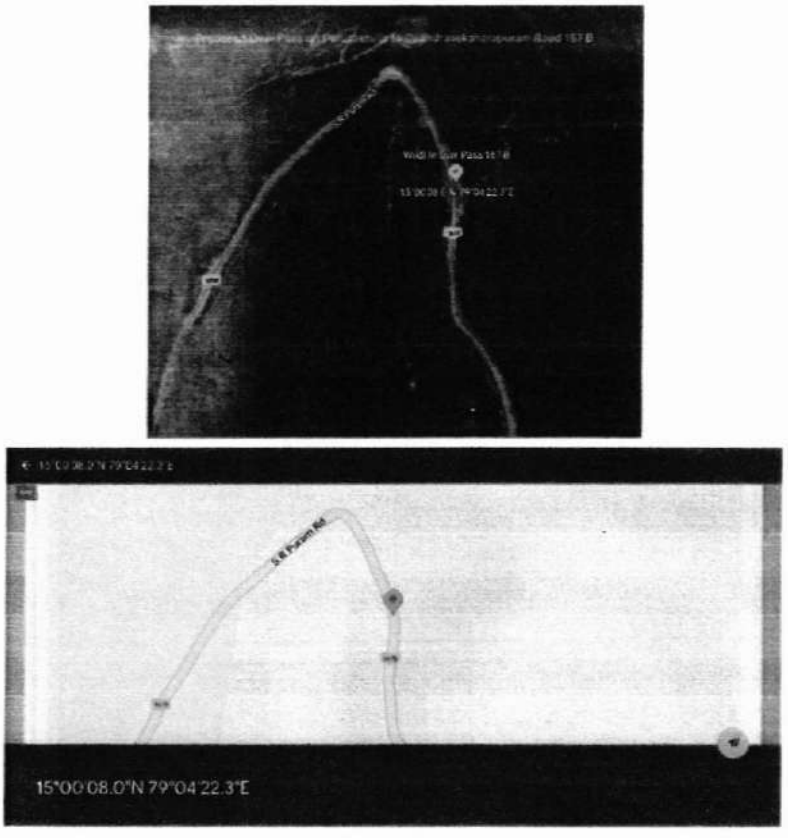
1. Facilitate connections between habitats and wildlife populations
2. improve motorist safety and reduce wildlife vehicle collisions.

Objective 1. Facilitate connections between habitats and wildlife populations

There are 4 types of wildlife overpasses and 7 types of wildlife underpasses. the overpasses include landscape bridge, wildlife overpass, multi-use overpass and canopy crossing. In the present project department proposing one wildlife overpass and two canopy crossings. Wildlife overpasses are the largest crossing structures to span roadways. These structures are intended to Accommodate the movement of a broad spectrum of wildlife

from large mammals to reptiles and even invertebrates. The overpass allow the natural movement of wild animals as they are less confining, quieter, have ambient natural conditions of rainfall, light and temperature and can be used by wide range of fauna . Most of the fauna of the area will utilise if habitat elements are provided on overpasses. Suitable vegetation is to be developed by planting trees on the area. The bridge is typically enhanced with habitat features such as native vegetation, rock or logs etc.,

Wildlife overpasses are generally 50 to 70 metres width. The wildlife overpass should be closed to public and any other human use our activities. In the present project there is only one possibility of Wildlife Over Pass which has been shown down below. 40 to 50 Mt width may be comfortable for the over pass. Due to terrain/ topographical features the present site is selected , suitable financial provision is made. Out of the total length of 7.5 Kms of the stretch, only 2.0 Kms are plain area and the rest of the area is hilly. The area proposed is the ideal with small hillocks, wild animals have least disturbance to cross over. Ideally 40-50 mts width bridge is essential in the area. The length is site specific , adjusted accordingly with slope not more than 25 degrees. The bridge may be rectangular or hour glass shaped depending the construction ability. If any crossovers are observed in either side of the proposed crossover, proper fencing also may done to drive or force to habituate the cross over through the over pass. The tentative location proposed for the over pass is



Google earth Screen shot along with GPS readings.

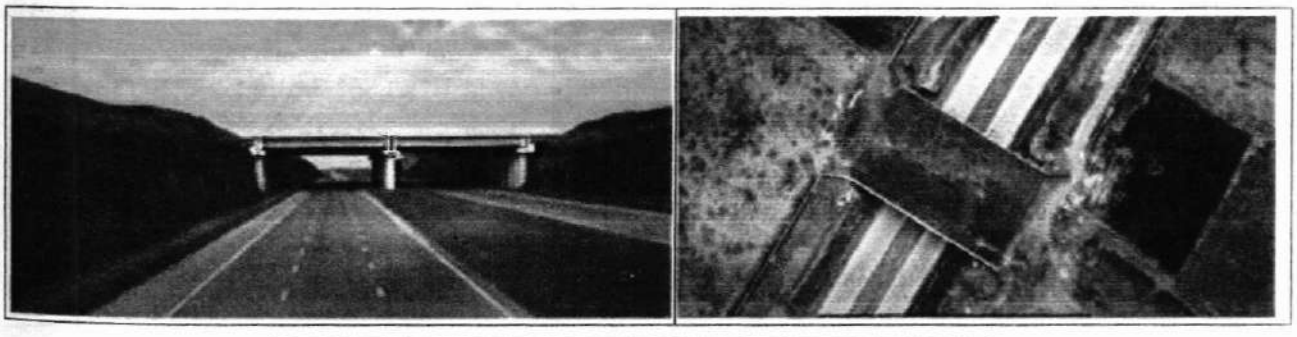
Some of the Wildlife Overpasses are given below.

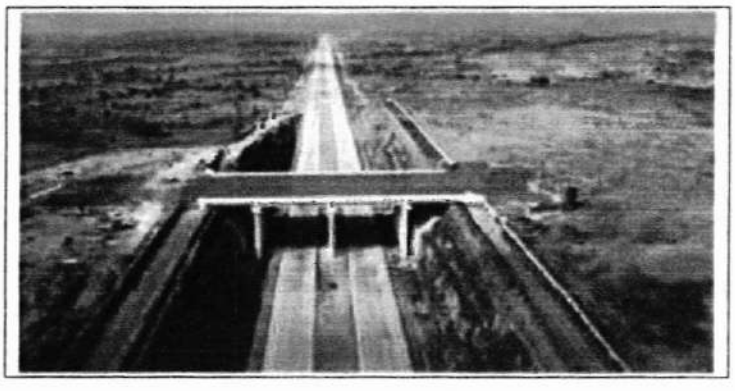
2 Wildlife Bridge Over An Autobahn in Germany

3 Bridge for animals in the Netherlands

#24 Ecoduct In The Netherlands

Wildlife Overpasses constructed on NH 44 of India,
Planting pattern may be seen on the photo





Various types of wildlife underpasses which are in use across the world are Viaduct or flyover, Large mammal Underpass, Underpass with water flow, small to medium sized underpasses, modified culverts and Herptile tunnels facilitating reptiles to cross over. The underpasses play a vital role in restoring the connectivity. There are currently no standard design specifications for wildlife crossing structures adopted by the Department, however there are several examples of structures that have been utilized for different species and environmental circumstances. Since crossing locations can be expected to differ substantially from one another in terms of topography, facility type, focal species, grade, and other considerations, design specifications must be location, species, and goal-appropriate.

The following points to be kept in view while designing the underpasses in the corridor area.

- The crossing structure will only be effective if it is accessible and acceptable to the species that will potentially utilize it.
- The design and size of under pass greatly influence its use. Moreover the body size of the animal and its behaviour will influence the design of underpass.
- Greater the length, height and opening that allow an unobstructed view of habitat has a more chances of the use of the structure. Structures should be designed to enable animals to view the horizon from a distance and see habitat on the opposite side of the corridor.
- The location of the under pass is also a critical aspect. The crossing structure should allow for natural movement of the animal and it should be constructed at the location where the possibility of animals using them is high.
- Road cuts, steep deep-offs and cliffs may dissuade animals from making a successful crossing. Structures should be designed as flat and straight as the terrain permits crossing's with a steep grade reduce the openness of structures and appropriate use of vegetation (trees, shrubs and grasses) can play a significant role in enhancing the naturalness of an engineered structure.

Considering all the possibilities, the Wildlife Institute of India has published a book (WII, 2016) "Eco-friendly measure to mitigate the impact of linear infrastructure on wildlife" which guides the wildlife consultants, staff, NHAI authorities in the development of infrastructure in wildlife prominent areas. The tentative model road in wildlife prominent area should be as follows.

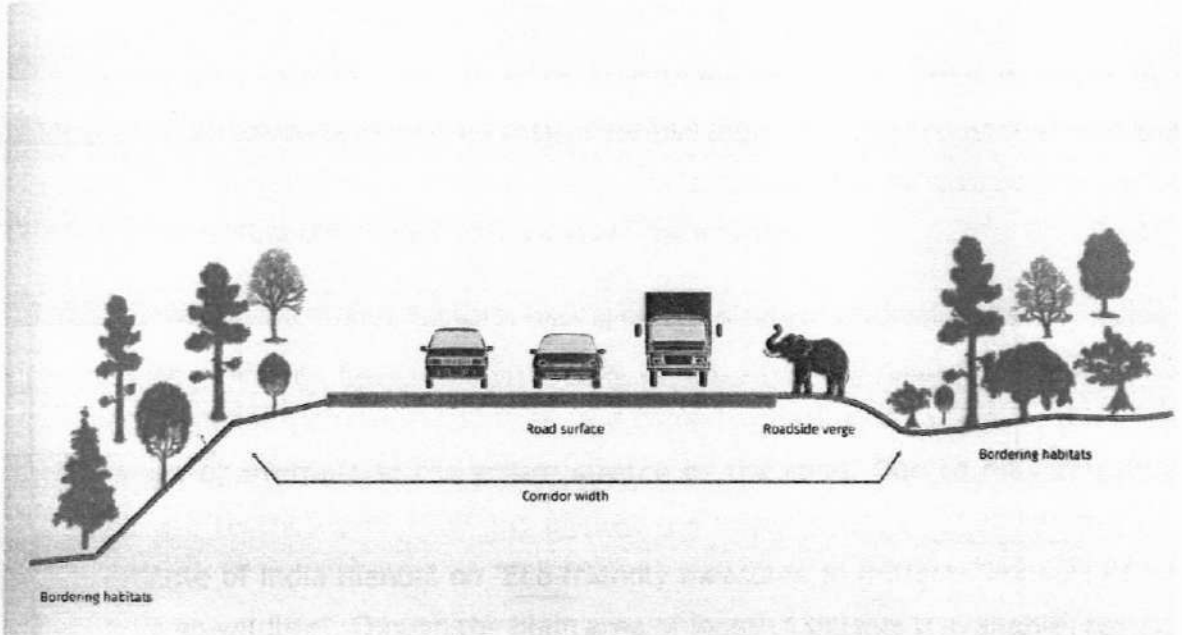


Figure 6.1. Components of a road transportation corridor. Source: *Illustration by N. S. Bist*

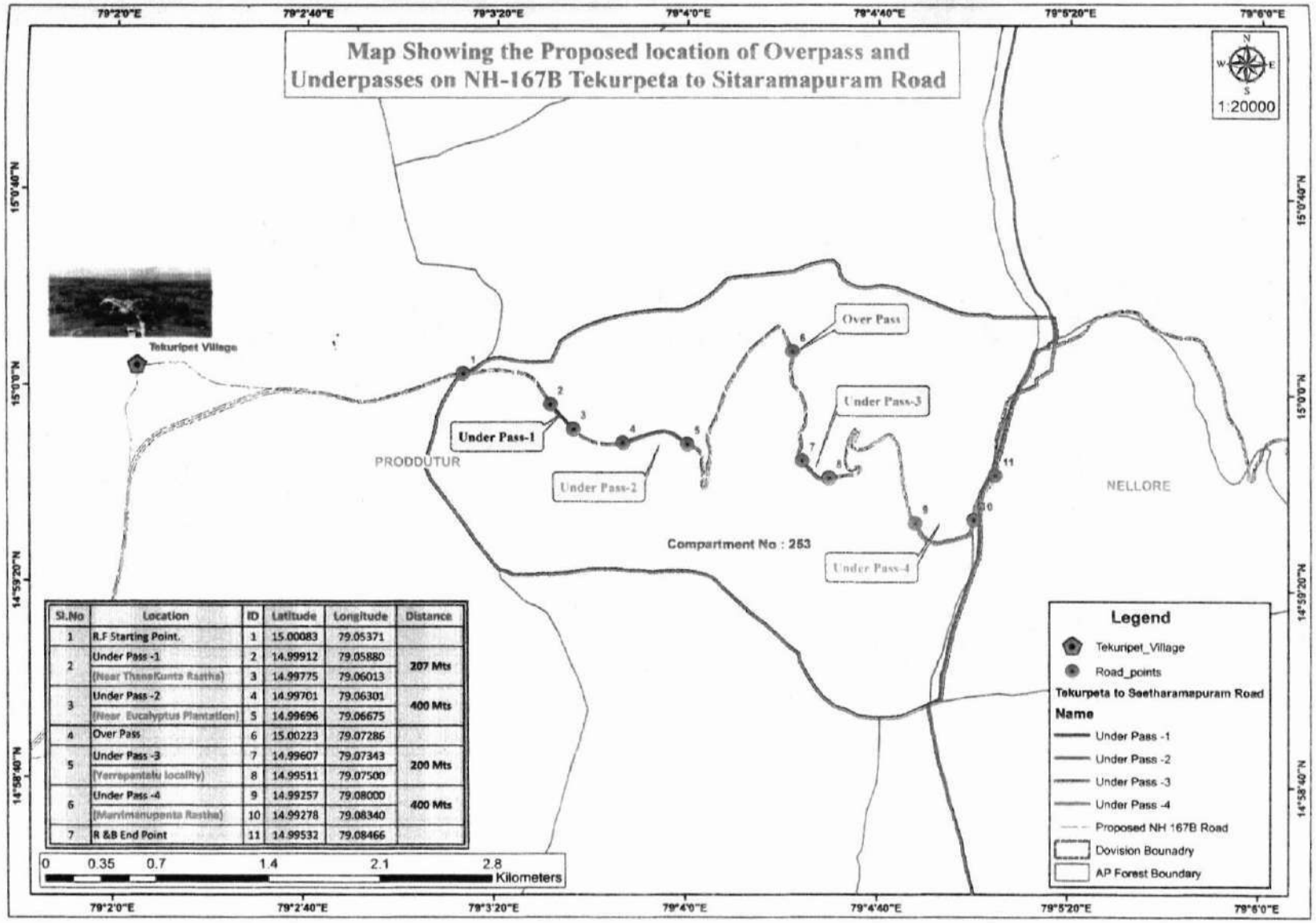
The purpose of this cross section is that an animal should have roadside verge, so that the animal think twice before crossing on the road. This is essential because we are not providing underpasses all over the road. Out of 7500 mts length of the road the feasibility of wildlife underpasses are to a length of 1100-1200 mts, as the most of the terrain is hilly. The plain area which is suitable for construction of underpasses is around 1400 mts. With due allowance, department is proposing the underpasses of 1000 mts for which financial provision is made. The book states that if the width of the corridor / length of road passing through the wildlife prominent areas or protected areas is more than 3 Km, there should be 300 Mt under pass at every kilometre. The wildlife institute of India has prescribed 5 metres height for all the wild animals in central India landscape and tiger corridors. This prescription holds good our present project area

A viaduct is the largest of the underpass structures for wildlife use. This type of structure maintains or elevates the grade of the road, allowing for the passage of fauna below. The largest span and clearance will allow for use by a wide range of wildlife. These structures can be adopted for amphibians and semi aquatic and semi arboreal species in addition to the large mammals, small mammals and reptiles. The design of the walls and appears of an underpass can significantly improve the acceptability of passive structure by animals. Isolated piers are more favourable than wall type piers, Because isolated piers increase the lateral visibility and reduce tunnel effects. These viaducts have been proposed in the present project area.

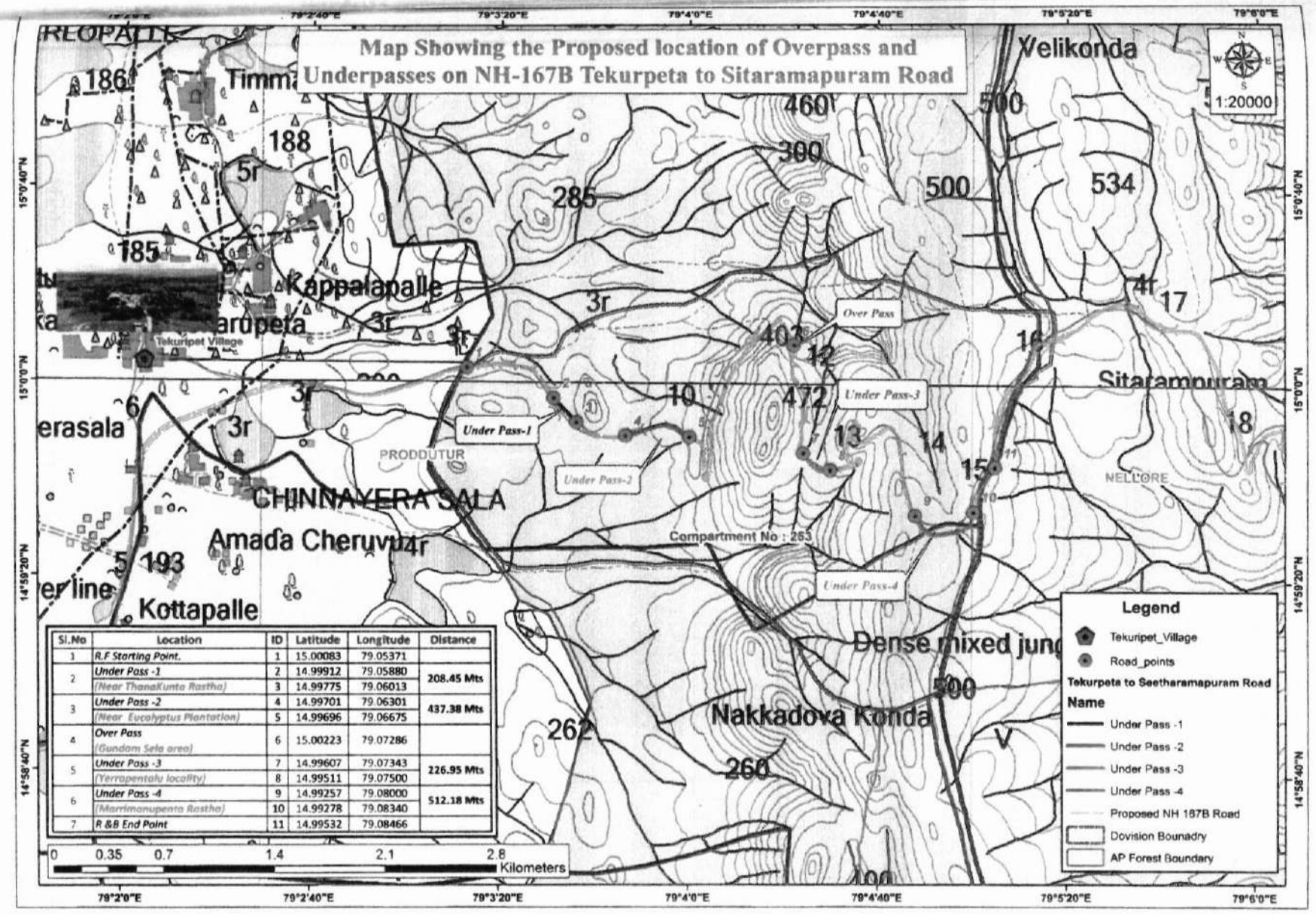
Both underpasses and overpasses need to be fortified with sound barriers to prevent any disturbance to wildlife, without them investments in constructing underpasses and overpasses can go to waste as wildlife may never use them. It is important that wild animal movement is channeled to the passageway for crossing the infrastructure by using appropriate funnelling structures either natural or artificial.

Considering all the above factors, basing on the study of animal crossings during the last year, after thorough inspection has made on the proposed road along with Wildlife consultants, National Highway authorities and came to conclusion to finalise the location of underpasses or overpass in the entire stretch of the road. Due to hilly terrain, the underpasses are restricted to 1000 mts against the requirement of 2100 Mts as per the Wildlife Institute of India manual on "Eco friendly measures to mitigate impacts of linear infrastructure on wildlife". Though the plain area of length 1385 mts is available, restricted the underpasses to 1000 mts and the no. of passes proposed at (4) places. The reduction of the length proposed is to facilitate the Engineers in designing the underpass considering the topographical features. The suggested exact location of these under passes / overpasses are given in the following table. The details have shown on the Maps also.

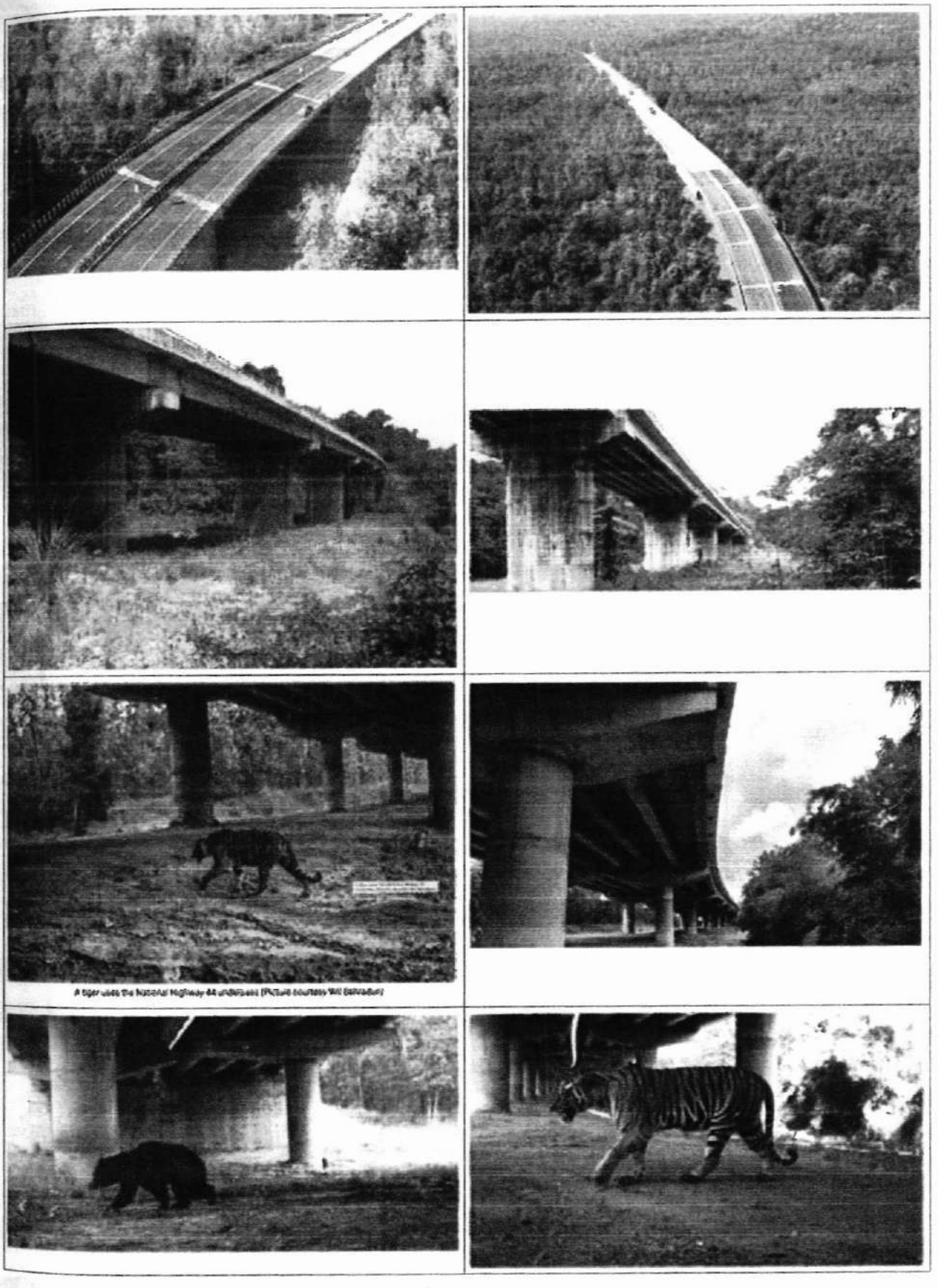
Sl. no.	Local name of location	Latitude & Longitude of starting point of underpass	Latitude & Longitude of end point of underpass	Actual distance	Span/ length of underpass proposed
1	Overpass (Gundam Sela area)	15.00223 79.07286		Only one location is taken as the length may vary either side with a min. 50 Mts.	
2	Underpass 1 (near thana kunta rasta)	14.99912 79.05880	14.99775 79.06013	208.45mts	150 mts
3	Underpass 2 (near Eucalyptus plantation)	14.99701 79.06301	14.99696 79.06675	437.38 mts	300 mts
4	Underpass 3 (Yerra pentalu locality)	14.99607 79.07343	14.99511 79.07500	226.95 mts	150 mts
5	Underpass 3 (Marri manu penta rasta)	14.99257 79.08000	14.99278 79.08340	512.18 mts	400 mts
	Total	**1384.96 mts**	**1000 mts**		



Sl.No	Location	ID	Latitude	Longitude	Distance
1	R.F Starting Point.	1	15.00083	79.05371	
2	Under Pass -1	2	14.99912	79.05880	207 Mts
	(Near ThaneKunta Rastha)	3	14.99775	79.06013	
3	Under Pass -2	4	14.99701	79.06301	400 Mts
	(Near Eucalyptus Plantation)	5	14.99696	79.06675	
4	Over Pass	6	15.00223	79.07286	
5	Under Pass -3	7	14.99607	79.07343	200 Mts
	(Yerrapantalu locality)	8	14.99511	79.07500	
6	Under Pass -4	9	14.99257	79.08000	400 Mts
	(Marrimanupenta Rastha)	10	14.99278	79.08340	
7	R &B End Point	11	14.99532	79.08466	

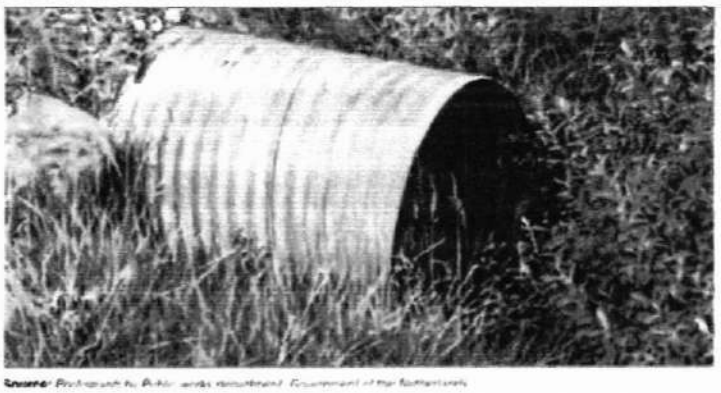


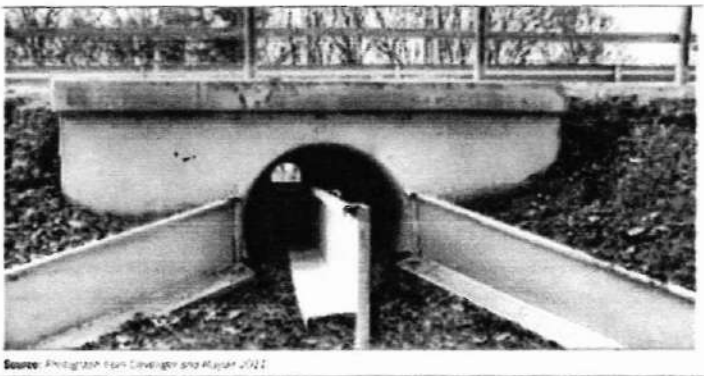
Sl.No	Location	ID	Latitude	Longitude	Distance
1	R.F Starting Point.	1	15.00083	79.05371	
2	Under Pass -1	2	14.99912	79.05880	208.45 Mts
	(Near ThanaKunta Rastha)	3	14.99775	79.06013	
3	Under Pass -2	4	14.99701	79.06301	437.38 Mts
	(Near Eucalyptus Plantation)	5	14.99696	79.06675	
4	Over Pass (Gundam Sela area)	6	15.00223	79.07286	
5	Under Pass -3	7	14.99607	79.07343	226.95 Mts
	(Yerrapentalu locality)	8	14.99511	79.07500	
6	Under Pass -4	9	14.99257	79.08000	512.18 Mts
	(Marrimanupenta Rastha)	10	14.99278	79.08340	
7	R &B End Point	11	14.99532	79.08466	



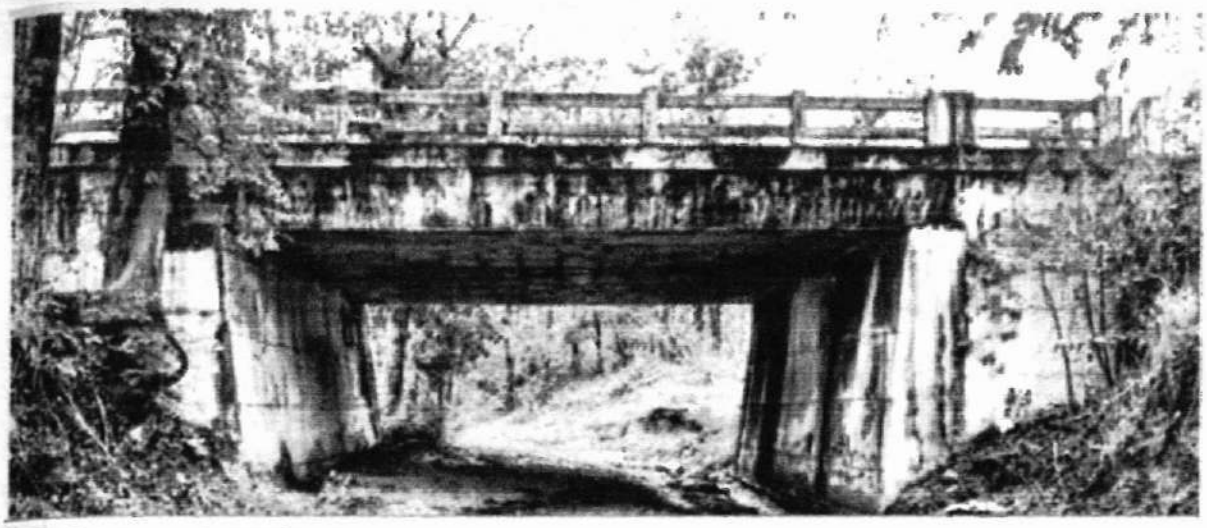
Photos of Under passes constructed on NH 44 of India

To maintain the connectivity other than larger mammalian species, for amphibians or reptiles across landscape, small pipe culverts are bridges should be constructed in every 100 metres stretch of the road. Pipe culverts are typically With round pipes of having less than 1.5 metre diameter made up smooth steel, corrugated metal or concrete. Their primary purpose is to convey water under roads. A variety of wild animals has been observed using them as passageways. They are often used by small mammals, reptiles and amphibians. They have also been used as a fish passages. These pipe culverts or culverts modified by using furniture which include Guard rails or wooden planks, certain species of wild animals use this type of passages. At least one crossing structure should be located within an individual's home range. Because most reptiles, small mammals, and amphibians have small home ranges, metal or cement box culverts should be installed at intervals of 300mt-500mts; at least 2-3 no's per Kilometre, though the prescription as per the WII manual of underpasses is one each for 100 Mts.The National High way authority will place the proposal accordingly in their estimates of the roads, as they need to construct the water ways across roads. Both the possibilities need to be worked together and planned.





Another design generally followed in the linear infrastructure is box type culvert. While designing the roads , these type of boxculverts are usually designed for the passage of water/ drainage purpose, as the culvert heights are not up to the mark for the cross over, by increasing the height of the culverts , these culverts also facilitate the connectivity of wild animals.



Source: *Photograph by Akanksha Saxena*

There are huge population of monkeys and langurs living on the road, to take care of these animals the canopy crossings may be made 2-3 places facilitate these animals to crossover the road. National Highway authorities were requested to make a provision in their estimates.

#17 Bridge For Monkeys And Other Animals To Cross Over The Road In Bahia, Brazil

Objective 2. Improve motorist safety and reduce wildlife vehicle collisions

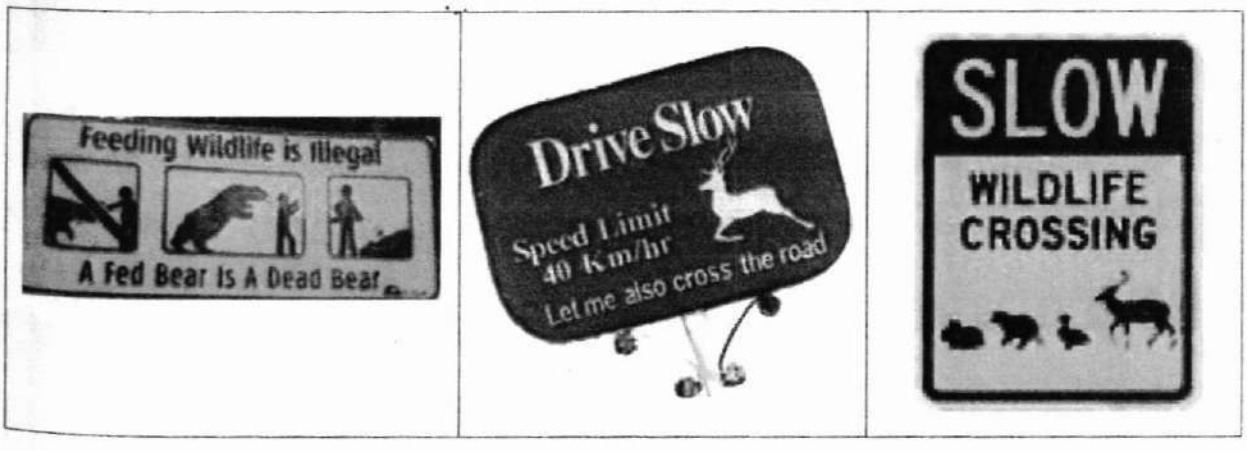
Traffic related mortality of wildlife can significantly impact some wildlife populations particularly those that are found in low densities, slow reproducing and travel over large areas. Very common and large populations viz., ungulates... chital, sambars may cause serious problems for motorists. Under this object the specific measures for wildlife crossing structures are classified into (3) types.

(i) Specific measures : These are the measures design to improve motorist safety and reduce collisions with wildlife.

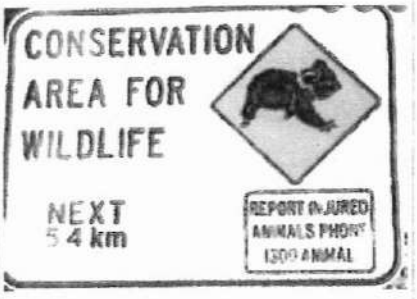
(a) The specific measures are fencing the places where generally wild animals cross over the road by identifying and preventing the possibility of road kills. The funnelling role of fencing that guides animals to passage structures that otherwise may be minimally effective, along with limiting access to roadways and thus reducing wildlife-vehicle collisions, justifies their use despite concerns on cost and maintenance.Barricading and closing the way is not the solution , the driving away of the wild animals to the nearest underpass and fence the areas other than underpasses prevents the road accidents. Suitable provision is made in the conservation plan for fencing. 65-70% of area is hilly terrain which is having retaining walls, in the rest of area approximately 1200-1400 mts underpasses will come and the rest of area need to be fenced in a planned manner.

(b) Another preventive measure is signage. Signs warning of wildlife are put up all along the 7.5 Km road to caution drivers about the potential presence of animals. The purpose of animal warning signs and detection systems is to prevent or reduce the number of animal vehicle collisions. The wild animals have their right of way in the Forest , hence we should keep boards at regular intervals to keep attention of drivers and prevent accidental kills. Standard black and yellow deer warning signs are probably the most widespread roadside mitigation measure to reduce wildlife vehicle collisions.

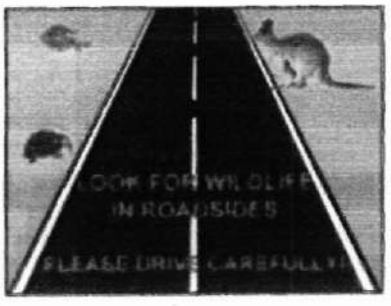
Few examples of signs used commonly given here.




SLOW
DOWN

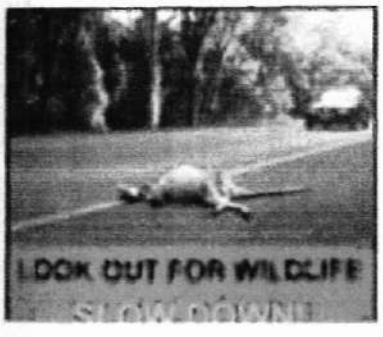

CONSERVATION
AREA FOR
WILDLIFE
NEXT
54 km
REPORT INJURED
ANIMALS PHONE


PLEASE
DO NOT FEED
THE ANIMALS

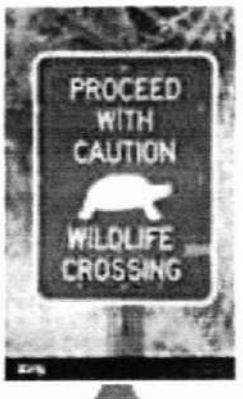



Please
DO NOT
FEED THE
WILDLIFE


CAUTION
BEAR IN
AREA


LOOK OUT FOR WILDLIFE

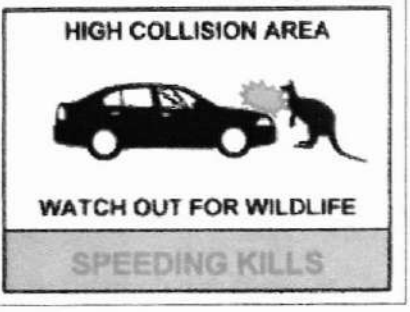

CAUTION
WILDLIFE
CORRIDOR
DRIVE
WITH CARE
NEXT XXX KM


PROCEED
WITH
CAUTION
WILDLIFE
CROSSING

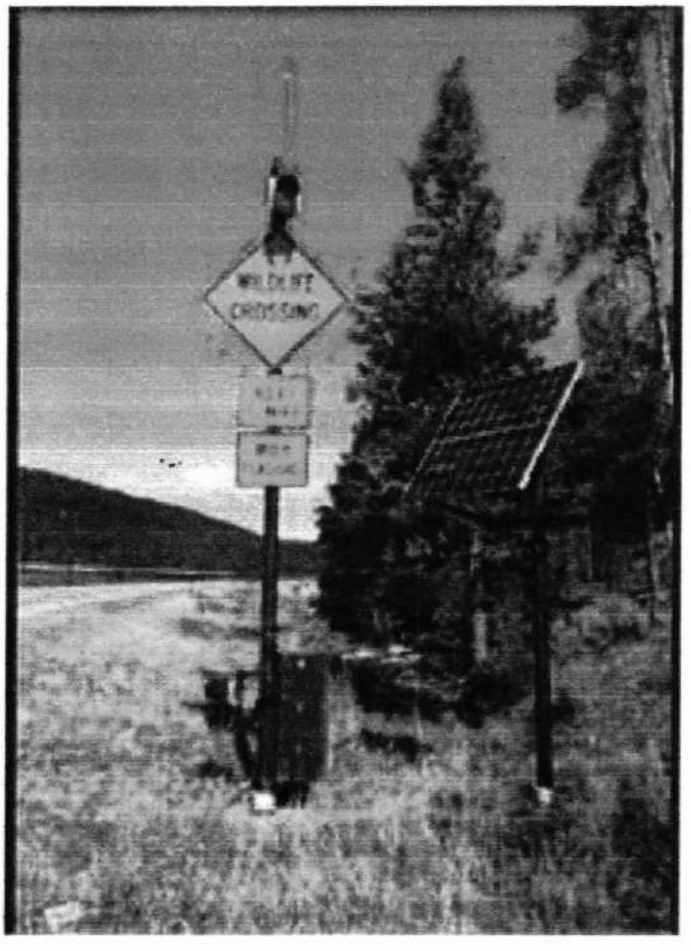

SPEED
LIMIT
20 KMPH
आगे गति रोधक है


TODAY'S FIRE DANGER


PLEASE
SLOW DOWN
WILDLIFE
CROSSING


HIGH COLLISION AREA
WATCH OUT FOR WILDLIFE
SPEEDING KILLS

(c) Advanced technology of animal detection system to alert the drivers to prevent accidents. Road based animal detection systems use sensors to detect large animals that approach the road. Once a large animal is detected warning signals are activated basing on that drivers to slow down and be more alert. Animal detection systems provide an extremely time specific warning signal to drivers. However it is extremely important for an animal detection system to be reliable, it must detect all or nearly all large animals that approach the road and it may not produce too many false warning signals. If an animal detection system is too unreliable can erode drivers confidence in the system and consequently result an ineffective system. Animal detection systems have the potential to provide wildlife with safe crossing opportunities anywhere along the mitigated roadway. Presently these systems are used successfully in Yellow stone National Park, USA (photo down below using solar power) and yet to start in our country, by the time of construction, depending on the availability they may be used at appropriate places.



(d) Another measure to prevent collision is restriction of speed. The present diversion area is not a part of the Sanctuary or National park, with due consideration the authorities try to restrict the speed for the forest stretch and necessary orders may be obtained by the Chief Wildlife Warden of the State of Andhra Pradesh or State Government. The entire stretch of the road is just 7.5 Kms, the State Forest Departments shall work to install speed-detection devices and speed cameras at all sensitive stretches of road passing through. Speed limit monitoring and imposition and collection of fines shall be the prerogative of State Forest Departments as well as highways and traffic police authorities. Speed breakers are to be laid for the entire stretch of the road, suitable financial provision is made. Speed restrictions and other guidelines that spell out rules and avoidance of disturbance to wildlife and habitats along roads in natural areas must be prominently conveyed through well-designed signboards at entry and exit points.

(ii) The second method of 2nd objective is mitigation measures that require habitat alterations in or near the roads. Under this component, the view lines need to maintained to have clear vision to both the driver and animal to prevent collisions. Financial provision is for this component in the conservation plan. The other habitat manipulation is to intercept the feeding.

(iii) The third method is infrastructure adaptation i.e., need to be specific in the infrastructure of the roads, curbs, ramps, meridians (preferably more width of meridian). All these infrastructure facilities are human and wildlife friendly.

4.2 Mitigation measures for littering in the area & conflict :

(i) Alighting en-route to be stopped with immediate effect. This will not only reduces the littering on both sides of the road and prevents conflict.

(ii) Smoking is prohibited in the forest areas and regular monitoring will be undertaken to avoid forest fires.

4.3 Noise control

Noise pollution control and abatement is therefore a mandatory activity, especially when designing and planning a roadway project, attenuation or reduction in noise due to

vehicular traffic can be achieved by the use of noise barriers, limitation of vehicle speeds. alteration of roadway surface texture, limitation of heavy vehicles use of traffic controls let smooth vehicle flow to reduce breaking and acceleration and the tyre designs. Both underpasses and overpasses need to be fortified with sound barriers to prevent any disturbance to wildlife, without them investments in constructing underpasses and overpasses can go to waste as wildlife may never use them.

The noise need to be controlled, by restricting the No horn sign boards and audio systems in non AC vehicles, so that the animals may not be scared.

4.4 Prohibition on night traffic :

Prohibition of night traffic need to be studied after the implementation of all the mitigative measures. Wildlife crossings are to be monitored, afte due assessment of any more road kills even though after the implementation of all the precautions, then complete ban on night traffic along roads may be implemented using existing provisions as per the Wildlife (Protection) Act, 1972.

4.5 Mitigation of impacts during project implementation :

(i) Water shall be sprayed by high-pressure water hoses during dust generating construction activities e.g. excavation, crushing/demolishing, concrete mixing, material handling etc. to suppress dust; and vehicles delivering loose and fine materials like sand and fine aggregates shall be covered by tarpaulin to reduce spills on roads.

(ii) All roads (internal and external) to be used by the project authorities should be made 'pucca' (Sprinkled with water) to mitigate the dust generation along the roads.

(iii) Idle running of vehicles will be minimized during transport and handling activities.

(iv) The noise pollution will be checked and maintained by installing sound barricades around crushing plants and by taking up regular maintenance of heavy earth moving vehicles. Selection of equipment with less noise generation will be used.

(v) No labour camps are allowed inside the forest areas. Labours will be trained for protection of trees and conservation and importance of wildlife. Smoking is prohibited in the forest areas and regular monitoring will be undertaken to

avoid forest fires. Labor camps will be provided with LPG for cooking and hence illegal felling of trees will be avoided.

(vi) The debris materials will be disposed off only at identified area for disposal and proper levelling will be done after disposing the materials and shall be covered with top soil and some plantation will be done at the disposal site.

(vii) No material including earth should be used from the forest area. All construction materials should be brought from outside the forest area including earth, stones etc.

(viii) All outside material left over after construction or repair (including stones, sand, cement, packaging material, papers, cartons, oils, cans, bags, wires, metal objects, housing sheds, plastics and glass) should not be left on site, but should be carefully removed and carried away outside the natural area and safely disposed off or reuse elsewhere.

(ix) The agency should ensure that no damage to any flora or fauna is caused during the course of the execution of maintenance and repair work.

(x) The project proponents should also abide by any other conditions that may be prescribed by the Chief Wildlife Warden or in site inspection and impact assessment reports. During construction phase, forest department will depute staff to monitor the activities.

(xi) The site will be cleaned immediately after the construction activity is over.

4.6 Monitoring of wildlife crossings and study the long-term impacts.

Monitoring needs to be an integral part of a highway mitigation project even though measures have been taken. Mitigation measures are important investment of public funds, these evaluations can help agencies to save money in future projects. Monitoring and research can range from a simple single species population with the highway corridor to more complex ecological processes and functions with regional landscapes. The parameters which are to be monitored are the mortality, increased movement of animals within populations, biological requirements such as food cover and mates, redistribution of populations and long term maintenance of meta populations and ecosystem processes.

Monitoring of underpasses have been studied in India and elsewhere. The wild animals are using the underpasses comfortably without any hesitation. Study was conducted in Narayanaghat - Muglin road under pass of Nepal - (7) mammalian species are using the underpasses. The underpasses which are constructed on the National high way / Kanha - Pench corridor are being utilised by the (18) species which include Tiger, Leopard, Wild dogs, Sloth bear, Jungle Cat, Hares, Wild pigs, Spotted deer, Indian gaur, Nilgai, Sambar and rusty spotted cats. (11) individual tigers are crossed 89 times in (6) of wildlife structures reveal the utilisation of underpasses by animals.

Chapter 5

Wildlife Conservation Plan

(incl. conservation of mega fauna)

Considering the anticipated impacts / threats posed by the project as indicated, it is necessary to take suitable amelioration measures to minimize the assessed impacts on the wildlife and its habitat. The strategy of conservation measures will be properly juxtaposed with in the cruising radii of wild animals. The plan provides for the protection and conservation of all important species of wildlife and its habitat. The components of the wildlife conservation plan are related to infrastructure improvement, providing additional water resources like percolation tanks, Check dams, repairs to existing percolation tanks, repairs to Check dams, repairs to natural water holes in the Forests, provision of funds for awareness creation in surrounding villages, development of fodder plots etc., The works will be carried out by the Forest department, hence the funds shall be deposited by the user agency with the Chief Wildlife Warden of the state of Andhra Pradesh.

As per the Working Plan of Proddatur Wildlife Division, YSR Kadapa District, Kurnool Circle by Sri P. Siva Shankara Reddy for the period of 2013-14 to 2022-23 the available fauna details are

Mammals	: 23 species
Amphibians	: 5 species
Reptiles	: 17 species
Birds/ Avi fauna	: 111 species

Though 156 species were present as per the Working plan, important conservation measures were made for the mega faunal species of the specified area.

5.1 Conservation status of mega faunal species in "Diversion of 11.03 Ha Forest land for up-gradation and widening the existing road into two lane with paved configuration of NH 167B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram includes both components of impact mitigation and management of wildlife in the specified area".

Sl. no	Common name	*Scientific name*	IUCN Conservation status	Status of Scheduled in Wildlife (Protection) Act 1972
1	Leopard	*Panthera pardus*	Vulnerable	I
2	Indian pangolin	*Manis crassicaudata*	Endangered	I
3	Four horned antelope	*Tetracerus quadricornis*	Vulnerable	I
4	Sloth bear	*Melursus ursinus*	Vulnerable	I
5	Indian wild dog	*Cuon alpinus*	Endangered	II part I
6	Striped Hyena	*Hyena hyena*	Not assessed	III
7	Sambar deer	*Rusa unicolor*	Vulnerable	III

In addition to the above important megafauna the other Schedule I fauna present in the specified area are Indian Python *Python molurus*, Monitor lizard (*Varanus bengalensis*), Hawk species (Shikra- *Accipiter badious*; White eyed buzzard - *Butastur teesa*; Crested serpent eagle- *spilornis cheela*; Black eagle -*Ictinaetus malayensis*) and Peafowl- *Pavo cristatus* were present in the area.

The conservation aspects for the preparation of Wildlife Management & Mitigation Plan of the above mega-fauna and other important species are arrived based on their behaviour, preferable habitats, breeding sites, food and water availability in the region. The details are as given below;

The camera traps have been installed on the road to assess the faunal diversity of the specified area, the results of camera traps shown the presence of Sloth bear, Leopard, Wild dogs, Four horned antelope, Sambhar, Chital, Mouse deer, Wild pig, Palm civet crossing the area frequently. The population of Wild dogs are high, 3-4 packs are identified in the specified area. The Sloth bears are comfortably breeding in the area and are seen by most of the villagers on the road. The good population of Four horned antelope is seen on the hilly area, all along the road and on the plateaus of hills on the both sides.

Species notes were prepared for mega fauna of the specified area giving emphasis on Schedule I fauna as per the Wildlife (protection) Act 1972. The Sambar species was dealt basing on the importance of fauna, as the sambar was the main prey of the top predator Tiger and also for Leopard and wild dogs in the schedule area. There are other schedule I fauna in the specified area like Bengal monitor lizard, Python and avian species which include 8-10 species of Raptors and Peafowl. The conservation measures suggest for these species is awareness among people, less disturbance from pilgrim's and provision of water bodies in the specified areas.

5.2 Conservation aspects of mega-faunal species and other important species recorded in "Diversion of 11.03 Ha Forest land for for up-gradation and widening the existing road into two lane with paved configuration of NH 167B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram includes both components of impact mitigation and management of wildlife in the specified area.

Sl.no	Species & Description	Behaviour	Habitat & Breeding	Food	Conservation aspects to be covered
1	**Leopard (Panthera pardus)** Head and Body length 203- 243 cm (male), 180-208 cm(female), Ht at Shoulder 50-75cm, tail 76-106 cm, Wt 45-77 Kg (male, 30-45 Kg (female). The most adaptable cat of Indian sub continent, has background color varies from pale cream, through various shades of orange, to dark rufous brown with white under parts covered with rosettes, each a cluster of small black spots around a normally unspotted centre darker than the body colour. It has small spotted head with powerful jaws, and long tail.	Solitary, nocturnal (less diurnal near human habitats) and territorial. Most comfortable in the lower forest canopy, where they often feed, and descend from the canopy head-first. Comfortable in water and are adequate swimmers. Carries the carcass to a secluded feeding location, typically in a nearby tree. Rest in the branches of trees with dense canopies in order to escape the heat of the day and increase their sense of safety Home range varies 9-27 Km for females and 52-136 km for males.	Deciduous and ever green forests, scrub jungle, open country and fringes of human habitations. Oestrous 7-14 days; gestation 90-106 days. Litter size normally 1-4, weaning begins at around 8-10 weeks, cubs independent at 12-18 months. Males associated with familiar females and cubs for as long as 24 hours, but never form permanent family groups.	Extremely catholic and kills small birds to adult animals weighing 100 Kg +, generally prefers prey of 10-50 Kg, prey include deer's, wild pig, young individuals of larger animals, hares, small animals, rodents, birds like peafowl and jungle fowls. Preys on live stock, occasional entering in settlements kills domestic dogs. Facultative drinkers and obtain much of their water requirements from ingested prey	• Wildlife crossings to provide accessibility to the resources on the other side of the canal. • Water holes for drinking purpose. • Proposed grasslands for prey of the animal.

2	**Indian Pangolin** ***(Manis crassicaudata)*** Indian Pangolin is sexually dimorphic with males being up to 90% heavier than their counterparts. The entire body except the foot pads, ventral side of the head and trunk, and inner surface of the limbs are covered by epidermal derived scales. The scales are overlapping. Parts not covered by scales have a sparse cover of white or grey hairs. The mouth is small, the external ears or pinnae are very reduced and the eyes are small. The hind legs are longer than the forelegs. The claws on the digits are extremely long. Teeth are absent. The size of the Indian pangolin, head and body length 48-82cm, tail length 40-60 cm and having weight of 9-18 Kg. The adult male is about one third larger than the female.	The species has been reported from a variety of habitat types that include open grasslands, scrub and rain forests, and near human settlements. Indian pangolins have been reported to prefer hilly terrains as compared to other habitat types near and around of termite mounds and ant's colonies.	The species has been reported from a variety of habitat types that include open grasslands, scrub and rain forests, and near human settlements. Indian pangolins have been reported to prefer hilly terrains as compared to other habitat types (Roberts 1977). Breeding aseasonal, usually give birth to single; gestation period 65-70 days. Maternal care around three months Young pangolins become independent at five to eight months of age, and are believed to reach sexual maturity at 2 years The life expectancy is 13.5 years.	Pangolins are obligate myrmecophagids foraging on eggs, young and adults of ants and termites with a preference for insect eggs over adults. (Prater 1980). The most favoured food sources have been reported to be leaf nests containing eggs and adults of large red ants Feeding is determined by the availability of ant and termite prey close to the soil surface nest and prey is consumed using their specialized tongue.	Create fire lines in the Pangolin habitats to control forest fire. Control human and livestock pressure in pangolin habitats. These two actions will increase the dry forest produce in the forest and facilitate the increase in the termite mounds, facilitates the Pangolins.
3	**Four horned Antelope** ***(Tetracerus quadricornis)*** Head and body length 90-110 cm, Height at shoulder 55-65 cm, horns 8-10cm posterior, 1-2.5 cms anteriour, Wt 15-25 Kg. A smallest Asian bovid endemic to India and	Primarily grazers, but browse when lack of grasses. Diurnal and solitary by nature. It uses the same latrine sies regularly for defecation and alys droppings in piles.	Dry deciduous forest, Open grassland, dry thorn scrub, scrubland and lightly wooded country. Prefers undulating terrain. Habitats close to water bodies.	Herbivorous animals with a ruminal digestive system, they prefer to feed on nutrient rich fruits, flowers and fresh leaves.	1. Wildlife crossings to provide accessibility to the resources on the other side of the road. 2. Water holes for drinking purpose.

	Nepal, Only males in this species grow horns. One pair of horns is located between the ears, and the other on the forehead. Four-horned antelopes have a slender body with thin legs and a short tail. Their coat is yellowish brown to reddish in color. The underparts and the insides of the legs are white. Facial features include black markings on the muzzle and behind the ears. A black stripe marks the outer surface of each leg.		The reproductive activity is seasonal with mating taking place during early monsoon (May - July) and fawning during spring (February-April). Gestation period 8 months. Males associate with females for copulation with the rest of the parental investment in terms of gestation and caring of young being provided by the females. Females are sexually mature by one year of age and size of litter between 1-2 , mostly two.		3. Development of grasslands within the specified area.
4	**Sloth bear *(Melursus ursinus)*** Sloth bears are mostly black, rarely reddish brown or blackish brown tinge on the shaggy coat, with no under fur. A V or U shaped whitish or buff coloured breast patch is present, the long pale muzzle is covered with thin short greyish white hair. The region just below the eyes up to the ears and the sides of the head is covered with short black hair. It is the only bear with long hair on its ears. The neck region and behind possesses long	Nocturnal and crepuscalar. The Sloth bears come out shortly before sunset, hunt for food in the night and retire in the morning.	Wide range of habitats including wet and dry tropical forests, savannahs, scrub lands and grass lands. It shelters rin rock out crops, thickets and tree cavities. Endemic to Indian sub continent. Mating occurs in May to July, mating pairs come together for one or two days. However, breeding and birthing may occur at other times of the year	The species is opportunistic feeder, eats whatever available in diff. seasons including natural, cultivated, animal food viz insects or carrion - omnivores food habit. Adopted to myrmecophagy with flexible protrusible lips and nostrils that can seal while sucking termites and ants. Open ant mounds and enjoy the termite food by sucking	Wildlife crossings to provide accessibility to the resources on the other side of the road. Water holes for drinking purposes. Plantation of fruit bearing trees proposed.

	hair up to 30 cm long. They have long (6-8cm), slightly curved, ivory-coloured front claws, for digging, and shorter claws in the rear. The front feet are turned inward, also probably an adaptation for digging. They have a broad palate, protractible lips, and they lack the upper two middle incisors, all specializations for eating ants and termites. Sloth bears measures height at shoulder 65-85 cms and 140-170 cms from nose to tail, weighing 80-150kg - Males and 60- 100 Kg of females.		also. During the time there is considerable vocalizing and fighting occurs. Gestation period lasts for six to seven months, litter size 1-3 (usually 2) Cubs comes out from the den after (6) months and ride on the mothers back for another (6) months to prevent predation. Females remain indens for 2-3 months, and during this period rarely come out to eat Weaning period 18-24 months. First breeding for females at 4 years and males little later. The life span is around 40 years.	termites and ants. Open ant mounds and enjoy the termite food by sucking them like a vaccum cleaner. The other food include insects, fruits, plants, tubers, roots, flowers and vegetation. They are good climbers to feed honey and fruits. Mohwa flowers, white grub also favourite food.	
5	**Indian wild dog *(Cuon alpinus)*** Head and body length 88-135 cm, Tail length 32-50 cm, Wt 15-20 Kg (male) and 10-13 Kg (female). Uniquely Asian reddish brown forest dog, has shorter legs, more bushy tail, shorter, thicker muzzle. The dorsal body fur is red to brown in color while the fore neck, chest and stomach are white colored. They have a large ear which is rounded and give their characteristic look.	Species tend to live in groups (Packs) varies numbers from 5- 20+ also. There is a strict social hierarchy within the pack, mostly diurnal and certain times hunts in the night also. They have a very complex and an elaborate communication system. They produce a characteristic whistle like coo-coo in	Open woodland interspersed with grassy meadows, dry deciduos, moist deciduous and tropical dry forests. The breeding season in wild dogs is between November and December with a gestation period around 63-70 days. The pups are born by February and every litter has around 1-12 pups. The life span of the species is 15 years.	Their common preys are deer, sambar, wild boar etc. On its own, it will hunt small prey, such as fawns and hares, but at times it may hunt in pairs and will kill medium-sized ungulates, such as deer. Occasionally scavenge on leopard and tiger kills. It drinks frequently after eating and will actively search for a water source	1. Wildlife crossings to provide accessibility to the resources on the other side of the road. 2. Water holes for drinking purpose. 3. Development of grasslands within the specified area.

		order to co-ordinate the packs while moving through jungles and keeping them intact.		once finished. Wild dogs start eating the prey even before it is dead. Cleaning it to the bones within a few hours.	
6	**Striped Hyena *(Hyena hyena)*** Head and body length 100-115 cm, Ht at shoulder 66-75 cm, wt 26-41 kg (male) 26-34 Kg (female). Skulking scavenger has a sloping back, spindly legs, a buff body with a black stripes on the flanks and legs, and coarse long fur. The back has a dark crest and the throat and breast are black. The tail is long and shaggy. The forelegs are longer than the hind ones giving it an ungainly slouched appearance. Sexual dimorphism does not exist other than the visible teats in case of pregnant females and the genetalia. The young are pale white, mane less, but with stripes.	Generally considered solitary, burt has some social organization. Forages individually principally at night and is rarely seen in groups. Water is consumed every night if it is available, can survive without water for long periods and live under desert conditions. The hyena is known to paste two diff. coloured secretions from its anal grand, white and black for communication.	Arid, mountainous regions with scrub woodland. Tropical forests of southern peninsula. It dens in rocky hills, ravines and crevices. Breeding season aseasonal, oestrus reportedly only one day, gestation 90-91 days, litter size 1-4, cubs begin to. Eat meat at around one month but are suckled for 6-12 months. Females are sexually mature at one year and may give birth at 15-18 months. Life span 23-24 years in captivity.	Predominantly scavenger, diet consists mainly carrion and human refuse. Scavenges large and medium sized mammals, even eating bones from carcasses if the meat has been picked off. Supplements it sdiet with fruit, insects and occasionally by killing small animals like hare, rodents, reptiles and birds.	1. Wildlife crossings to provide accessibility to the resources on the other side of the road. 2. Water holes for drinking purpose.
7	**Sambar *(Rusa unicolor)*** Head and body length 160-210 cms, Ht at shoulder 110-160 cm, antler size 70-100 cm, record 128 cm, wt 180-270 Kg (male), 130-230 kg (female). A typical forest deer with a shaggy, dark brown coat, and large spreading antlers, largest	Sambar are predominantly forest dwellers, favouring the cover of trees, venturing out in to the open mainly at night and lat at dusk or early dawn. They usually rest the whole of day.	It has wide ranging habitat types from mixed deciduous forest , arid and dry forests. Prefers moist habitat with undulating terrain. River and stream banks are chosen for daytime rest.	Sambars are herbivores, eating various grasses, foliage, fruits, leaves, water plants, herbs, buds, berries, bamboo, stems, and bark, as well as a wide range of shrubs and trees. At certain times of the	Sambars constitute one of the largest and most favoured prey species for tiger, leopard and Wild dog. Sambar preference of cover, presence of water and inviolate spaces (free of disturbance) is basic

	deer in India. The antlers in the Sambar are three tined with a long, acutely angled brow tine and main beam that forks into a terminal fork. The belly is darker than the back. Females are lighter and less shaggy. Both sexes have a well-developed throat mane and an enigmatic sore spot on the troat. These are preferred prey of Tiger.		Sambars are polygynous, one male mating with multiple females. Males are very aggressive at the time of the breeding season. They guard their breeding territory and attract female deer by means of vocal displays and smell. There is no specific breeding season, though it most commonly takes place between September and January. Usually, just one fawn is born, after a gestation period of about 9 months. They begin to eat solid food from 5 to 14 days and ruminate once they are 27 to 35 days old. They stay with their mothers for approximately 2 years.	year, they like eating different types of fruit.	requirement. Presence of sambar is an indicator for tiger presence also in the area, hence need to be protected. Wallowing is one of the unique character, requires slushy area with water for wallowing. Proposed underpasses, water holes and required grass species planting near water holes like Napier grass species.

5.3 Managerial prescriptions for Wildlife Conservation of the specified area.

5.3.1 Fodder Management in the specified area.

The following operations to be done in the management of fodder Plots.

1. Grass lands having more than 5-10 Ha need to be identified in the Forests blocks and demarcated by planting stones or by suitable methods to relocate comfortably. Proper record need to be maintained for the plots identified.

2. A study to be conducted on the utility of grass species by herbivore in the Reserved Forests and species need to be identified. The palatable grass species will be listed out and the soft and coarse grass species will be identified. The forest area does not harbour any coarse grass feeder like Gaur/ wild buffalo to graze and keep the coarse grass at a low height so that fresh flush of tender shoots come up naturally to meet the needs of soft grass feeders like deer's, antelopes.

3. Unpalatable grass species and weeds like *Parthenium, Cassia tora, Eupatorium* species need to be removed. The species need to be identified for the removal from the grass plots. In addition to the weed species, the natural grasslands roughly measuring 15 Ha in area in the forest beats are basically invaded and overgrown with unpalatable grass and weeds that are to be manually uprooted first and staked in heaps within the plot and left to decompose as humus in course of time.

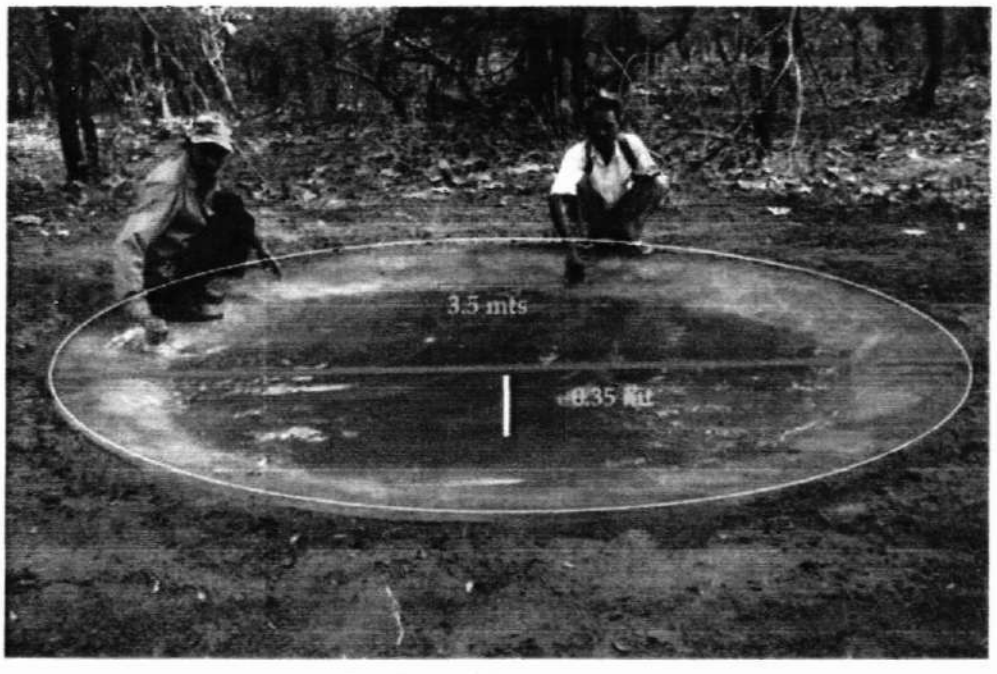
4. The gaps within the grass plots will be enriched by dibbling with grass seed ball composed of *Dicanthium annulatum, Aristida species, Cenchrus ciliaris,Setaria pumilla, Setaria intermedia, Eragrostris uniloides,Apluda mutica, Panicum repens, Chloris barbeta, Hetropogan contortus, Chrysopogan fulvus, Themeda triandra, Themeda quadrivalvis* and wild tuwar dal (*Atlosia scorbioides*) will be broadcast sown at the rate of 3 to 5 kgs seeds / Ha during the month of May/ June (broadcast sowing is considered in view of large area involved) and weeding will be done twice a year i.e. after commencement of monsoon (Sept/Oct) and (Nov/ Dec) month. Exotics may be avoided as far as possible to prevent future problems.

5. The treated grass plots will be maintained for three years until the entire area is covered with local palatable grass species.

5.3.2 Providing Water Resources in the Reserved Forest :

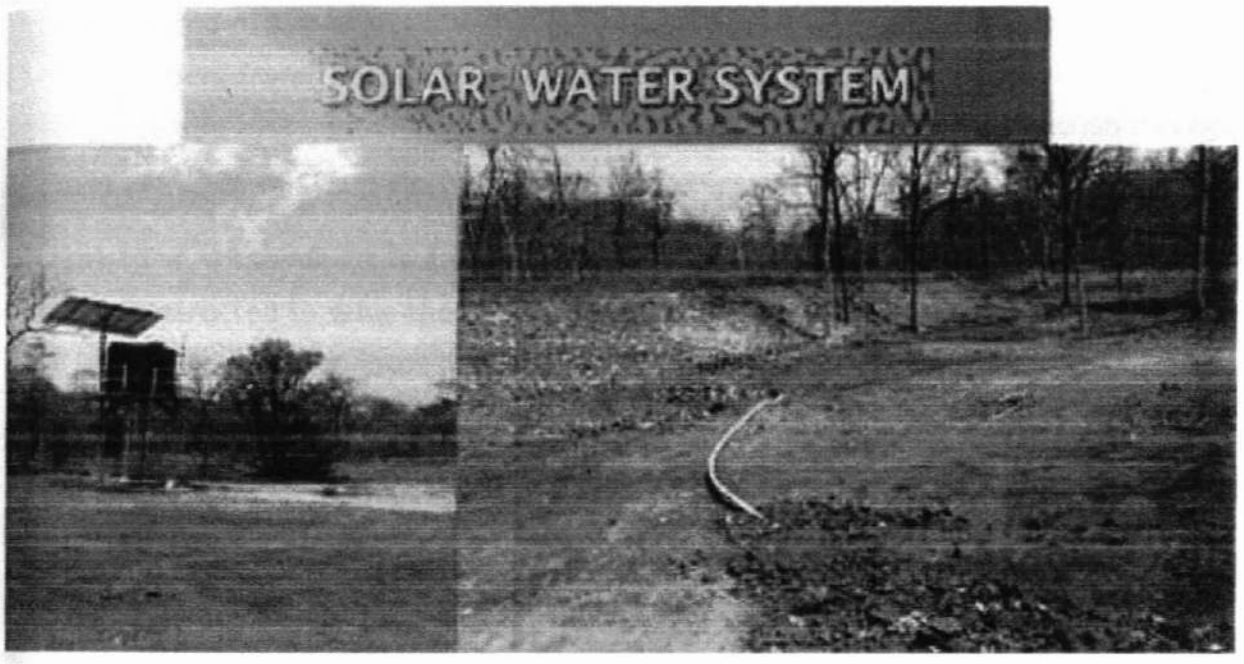
Many abandoned Kunta's and tanks exist in the forest areas. Such sites can be conveniently restored and improved. Similarly perennial water holes in streams may be improved by erecting or strengthening with additional water storing structures to help augment water availability in the hot weather. The catchment areas lies in the Forest Blocks may be suitably treated by constructing check dams, rock filled dams and farm ponds to store water to be available for wildlife in summer months. There is need to increase the quantum of water in the Reserved Forests hence proposed constructions of (6) Percolation tanks,(6) mini percolation tanks (9) Check dams, (60) Saucers and repairs to Kunta's. Two no.s solar systems may be installed in important areas of Major percolation tank with in the specified area.

(60) Saucer pits with the following measurements have proposed. The width of saucer is 3.5 Mt and net height of saucer is 0.35 Mt may be followed for the construction of Saucer pits. The dimensions are specific for Herbivore to drink water comfortably. There is every likelihood of injuries to herbivore population and small animals ,if depth of saucer is increased. Natural rain water is available in the forest during the rainy season , and the shortage of water begins in the forest from December to May months. During this pinch period water will be artificially filled into the saucer pit through the help of a tanker mounted tractor once a week. Water will be drawn from the nearby permanent water sources of local ryots or from the water resources of the developed area of temple premises.



Design of Saucer pit.

Two no's solar water systems are proposed in the specified area along with the percolation Tank. This solar system contains one Borewell with Grundfos Submersible Motor, solar panels and Water tanker near solar water system for getting water filled for the other saucers and rest of the time the borewell functions with solar power and flows the water into percolation Tank. The entire system is seen in the Photo down below. Provision is made for repairs of old Kunta's and improvement of peri annual water holes in the specified Area.



5.3.3 Enforcement of Forest & Wildlife Laws, procurement of vehicle and providing the base camp and assistance in maintenance of Forest Check post at the Gate.

Enforcing the provisions of the forest and wildlife laws, which include control of littering in the area, control of plastic, halting by the vehicles en-route, control of speed, noise control and protection of wildlife in the area is a herculean task for the Forest Range Officer, Porumamilla. The Forest Range officer, Porumamilla is also the project implementing officer for the wildlife conservation works that are to be implemented in the specified area. It is proposed following measures for enforcing laws and smooth functioning of temple tourism/ pilgrimage.

a) Strengthening of Forest Check post at the gate. It is suggested to construct well-equipped constructed check post with suitable personnel. The staff should record the movement of the vehicles and maintain the data.

b) The vehicles shall be stopped at Check Post for verification, the staff will give proper instructions to the travellers by way of pamphlet regarding do's and don'ts in the area along with penal provisions as per the Wildlife (Protection) Act 1972.

c) The do's and don'ts shall include the following details. For the easy understanding and smooth functioning instructions may be written on the board, which may visible to all the tourists at a glance.

(i) Speed of the vehicle is restricted in the forest area (DFO should obtain necessary orders from the Chief Wildife Warden of the State of Andhra Pradesh in this regard by explaining the importance of wildlife prominent area though it is not notified as corridor)

(ii) The wild animals in the area have right of way and the all the travellors are instructed to drive the vehicle by watching the wildlife. They should allow the wild animals to cross over the road.

(iii) All the passengers / travellors are not supposed to alight in between Seetharampuram and Check post.

(iv) Travellors / passengers are instructed not to litter the area.

(v) Smoking is strictly prohibited.

(vi) Feeding of wild animals *en-route* is strictly prohibited.

(vii) Contraventions by travellor's are liable for punishment as per the Wildlife (Protection) Act 1972.

a. One person will be nominated by the user agency for any issues related in the protection and wildlife accident cases. He will be the coordinator between the department and National Highway authority.

5.3.4 Publicity and awareness programmes:

- Awareness activities need to be carried out in surrounding villages. The awareness programs include display of posters, signage, celebration of Wildlife Week, Van mahotsava and other important days related to conservation of wildlife, organizing nature camps involving schools, colleges in the respected

area, distribution of Brochure's, pamphlets regarding the wildlife area & conservation measures to be taken.

- The publicity material / Posters may be displayed at all Government buildings, schools, colleges in surrounding villages. The awareness programmes with the targeted populations in the surrounding villages should include the conservation wildlife & Avi fauna.

- Hoardings and posters to be displayed at important junctions to create awareness on conservation of Wildlife and penal provisions of Wildlife (Protection) Act 1972.

Suitable amount is provided in the financial provision for awareness activities.

5.3.5 Fire protection and maintenance of view lines :

Fire protection is also an important operation in the management of the corridor of Nagarjunasagar Srisailam Tiger Reserve. In addition to the fire protection, it is advised to maintain the view lines with a 5 Mt width on both the sides of road. The clearance will facilitate the travellor's and as well as wild animals to wait and crossover the road. Suitable amount is provided in the financial provision.

5.3.6 Veterinary services & Stray dog population control :

Veterinary services by regular vaccination of livestock in adjoining villages. Advised to carry out periodic disease and parasite surveillance and monitor health conditions of the wild animals. Stray dogs are huge menace in the forest for prey animals. It is suggested to control stray dog population through sterilization of female dogs in the surrounding areas by involving the local bodies.

Chapter 6

Conservation Plan & Financial Projections

The Wildlife Mitigation and Conservation plan for the diversion of 11.03 Ha forest land for up-gradation and widening the existing road into two lane with paved configuration of NH 167B from Km 51/000 to Km 58/500 from Porumamilla to Chandrasekharapuram includes both components of impact mitigation and management of wildlife in the specified area. The mitigation works executed by the user agency and being maintained by the Forest department. Works related to forestry such as clearance of view lines, maintenance of wildlife crossing structures (culverts, underpasses and over passes), maintenance of sign boards & speed breakers, enforcement of violations like over speed, alighting of the road enroute and littering of specified area and road are being done by the Forest Department. Accordingly, the proposed plan broadly divided in to two parts.

6.1 Impact Mitigation Plan :

The impact mitigation measures are to be executed by the user agency. The details have been explained in the Chapter 3 & 4. Mitigation plan include implementation schedule, clear institutional responsibilities for implementation of measures and the approximate cost projection. The real estimation need to be done by the National High way authority depending on the topographical features.

6.1.1 Tentative proposal for mitigation measures executed by User agency .

Sl.no	Details of works	Quantity	Rate	Amount (Rs. In lakhs)
1	Construction of unique overpass facilitating the movement of herds like chital and other animals which don't prefer the underpasses or viaducts or narrow passages to facilitate the flow of animals.	One 5o mt x 12 mt at the specific location.	Rs.30,000/- per sq.mt	180.000
2	Construction of underpasses to facilitate the movement of wild animals from one side to the other side.(4) no.s of Underpasses proposed with a span of 150 mts, 300 mts, 150 mts and 400 mts. The length may slightly altered depending on the terrain, restricted to the plain area of the track on both sides.	Four No.s 1000 Mts.	Rs.30,000/- per sq.mt (exclusive of the cost of the Road)	3010.000
	Tentative caliculation			
	1. 1000mts (Total span) x12 mts (Carriage way) x Rs. 30,000 = 3600 lakhs (as per the Normative Cost Norms for the national Highways vide Ref.RW/NH-24036 /55/201 dated 19th January 2022.)			

	2. Cost of the Road = 590 lakhs per Km (provided by Voyents Consultancy) 3. Cost of the Road for 1000 Mts. 1.2 Kms x 590 lakhs = Rs.590 lakhs. 4. Cost of under passes for 1000 mts. 3600 - 590 = Rs.3010 lakhs. (Road cost is deducted from the cost of structural area because road is not laid in underpasses.) 5. Overpass also calculated on the same basis and the cost of road was not deducted as the overpass is to be done on the road connecting the both the hills. 6. No specific provision is made here like item 3 by merging the area. The detailed locations have been kept in Chapter 4.			
3	Small culverts are to be placed 2-3 no.s per Km, which are there in the provison of the road by the National High ways authority. The same culverts will be useful for the movement smaller mammals, Reptiles and Amphibians. It is requested to make it still smaller by keeping Angulars or structures .	No specific provision is made here.		
4	Cost of sign boards including fixing on the road (24) no.s and lay out of series of speed breakers (12) places on the stretch of 6 Km road	24 no.s of boards, 12x3 = 36 speed breakers for the length of 6 Km Road		12.000
5	Funnelling of the wild animals near overpass & Overpasses; providing proper fencing.		LS	10.000
6	Provision of pipe culverts, Box culverts on the entire stretch. 2-3 no.s per Km depending on the water courses and necessities, NHAI will make provision in the estimates.	No specific provision is made here.		
7	Misc and unforeseen expenditure		LS	3.000
	Total cost of mitigation for wildlife crossings, Speed breakers & signages.			3215.00

6.2 Wildlife Conservation works for the improvement of infrastructure and basic requirements for wild animals with in the specified area.

Sl.no	Activity or description of works proposed	Lat Longs	Location	Phy	Fin
1	**Habitat improvement & Conservation**				
(i)	Development of Natural grass lands over an area of 5 Ha. In various bits of Kavalakuntla Extn. A&B of Tekuripet Beat in Porumamilla Range. If necessary fencing also may be proposed depending on site specific conditions. Estimates may be prepared basing on FSR & Data of that specific area. The operation includes removal of Lantana or unwanted species and tree species in the grass lands.	1) 14.99652 79.06285 2) 15.03136 79.08082 3) 15.00471 79.08282	1) Sobanalabodu 2) Yenamalapenta 3) Chintamanupenta penta		
	a) Creation			30 Ha	6.600
	b) Maintenance of fodder plots for (3) years			30 Ha	3.000
	Sub total				
(ii)	Dibbling of pre sprouted / treated seed of forest fruit plants and forest flowering plants @ 5 Kgs / Ha in identified sutiable patches in Kavalakuntla Extn. A & B Reserve Forests over an area of 60 Ha for 3 years. (Average cost of seed per kg is taken as Rs.200/- per Kg)	1) 14.99129 79.08188 2) 15.03136 79.08082 3) 15.00602 79.05941	1) Marrimanupenta 2) Yenamalapenta 3) Thanakunta Locality	60 Ha	3.000
(iii)	Cost of Salt licks @ Rs. 1000 / 1 No for 4 year i.e., 15 Nos (including cost of transport and fixing at site).			400	4.000
	Sub total				**16.600**
2	**WATER RESOURCES**				
(i)	Construction of Saucers in Reserved Forests with specific measurements shown in the plan @ 20,000/- Track to be prepared to move small tanker for refilling the saucers. **Locations will be identified by conducting the study of animals and assessing the existing water resources.**	1) 15.00258 79.08146 2) 14.99129 79.08188 3) 14.99032 79.08197	1) Kanamrastha (Surrounding area 10 Nos) 2) Marrimanupenta (Surrounding area 10 Nos) 3) Yerrapentalu (Surrounding area 10 Nos)	60	12.000

		4) 15.00285 79.06174 5) 14.99533 79.06449 6) 14.99479 79.079402	4) Thanakunta (Surrounding area 10 Nos) 5) Sobanala Sela (Surrounding area 10 Nos) 6) Yerrapetupenta (Surrounding area 10 Nos)		
(ii)	Improvement of track / path for filling the sauces in the forest to facilitate the movement of Tractor cum trailer			LS	3.750
(iii)	Formation / Improvement of Peroclaotin Tank @3,00,000/-	1) 14.98951 79.06778 2) 15.00917 79.06539 3) 15.00400 79.06615 4) 14.99286 79.06020 5) 14.00245 79.08256 6) 14.98941 79.08127	1) Sobanala Sela 2) Gadidlabodu 3) Yeguvapentala-padi 4) Addagarugulu 5) Ramadandu padi 6) Yerrapentalu	6	18.000
(iv)	Formation of mini percolation tanks @ 50,000/-	1) 14.99331 79.06488 2) 15.00309 79.06397 3) 15.00285 79.06580 4) 15.00035 79.06285 5) 15.00010 79.05874 6) 14.99980 79.05919	1) Addagarugu 2) Kapparamanupadi 3) Thanakunta vagu start 4) Thaanakunta near 5) Addagarugu 6) Addagarugu	6	3.000

(v)	Construction of Check dams in Kavalakuntla Extn. A & B Reserved Forests @ 4.00 lakhs	1) 15.00293 79.06399 2) 14.99769 79.05267 3) 15.00547 79.05629 4) 15.00548 79.06209 5) 14.99904 79.06589 6) 14.99174 79.06484 7) 14.99734 79.05240 8) 15.00200 79.05542 9) 15.00562 79.06481	1) Thanakunta vagu 2) Gundamvagu 3) Gundamvagu 4) Gundamvagu 5) Thanakunta Vagu 6) Sobanala Sela 7) Pudonibavi vanka 8) Thummonipadi 9) Gundamvagu	9	36.000
(vi)	Repairs to tanks and improvement of perennial water resources in the study area.	15.00272 79.06014	Thanakunta	Ls	2.000
(vii)	Digging of Borewell in Kavalakuntla Extn. A & B Reserved forests and installation of Solar panels, fixing of Grundfos motor.Rs 10 lakhs each.	1) 15.00258 79.08146 2) 14.98209 79.08190	1) Kammarenirastha 2) Marrimanupenta	2	20.000
	Sub total				**94.75**
3	**Infrastructure Development**				
(i)	Construction of watch tower Rs 10 lakhs per watch tower			2	**20.000**
(ii)	Construction of semi-permanent structure for base camp Rs.12 lakhs per structure.	1) 15.00258 79.08146 2) 14.98209 79.08190	1) Kammarenirastha 2) Marrimanupenta	2	**24.000**

(iii)	*Improvement of forest roads for extinguishing fires and making convenient to fill the water in saucers by small tanker across forests.* 20 Kms	Start 1) 14.99493 79.08435 End 15.03967 79.08235 Start 2) 14.99151 79.08078 End 14.91511 79.09976	1) Kammarenirastha 2) Marrimanupenta Rastha	20	20.000
(iv)	Improvement of office infrastructure such as Rest house, Range Offfice, Porumamilla, Frontline Staff quarters and Strengthning the Forest Check post, Tekuripet	15.01065 78.98818	Forest Range complex, Porumamilla	6	18.000
	Sub total				82.000
4	**Man - Animal Conflict**				
(i)	Payment of compensation, Crop damages including preventive steps to reduce man-animal conflict and other issues			Ls	5.000
(ii)	Fencing with 8mm x 8mm chain-link mesh, using angulars duly fixed with CC on either side of the road to avoid wild animal crossing the road. The locations are except underpasses, over passes and retaining wall portion areas.	14.99448 79.06747	Road side Kavalakuntla R.F	6	30.000
	Sub total				35.000
5	**Procurement of Water tanker & Tractor and maintenance**				
(i)	Cost of tractor cum trailer mounted with a water tank			1	15.000
(ii)	Wages to tractor driver and one assistant for filling of water in the saucer pits. Driver wage @ 22,000/- month for 5 years. Wages to Assistant @10,000/- per month for a period of 5 years. Calculated for (6) months per year.			2	11.100
(iii)	Fuel charges and maintenance for the tractor cum trailer @ 1,20,000/- per (6) months for a period of 5 years			1	6.000
	Sub total				32.100

6	**Fire Protection measures**				
(i)	Creation of Firelines to a width of 5 mts	14.99743 79.06803	Addagarugu	50 Kms	**7.300**
(ii)	Maintenace of fire lines (sq.mts.)	14.99643 79.07306	Yerragoiguntalu	40,000 sq.mts.	**0.620**
(iii)	Procurement of firefighting equipment			Ls	**6.000**
	Sub total				**13.92**
7	**Awareness & publicity**				
(i)	Awareness activities need to be carried out in the villages of Buffer area and surrounding villages. The awareness programs include display of posters, signage, celebration of Wildlife Week, Van mahotsava and other important days related to conservation of wildlife distribution of Brouchures, pamphlets regarding the wildlife and conservation of ecosystem. Organising nature camps involving schools, colleges in the respected area regarding the Wildlife Conservation & Bio diversity.			20	**5.000**
(ii)	Publicity material preparation like Brochure's, Pamphlets, Posters, calendars etc.,			Ls	**5.000**
(iii)	Erection of display boards at important places, giving message of Conservation and penal provisons of Wildlife (Protection) Act 1972 15 no.s	15.00110 79.05459	Kavalakuntla R.F Road NH Road Sides	**Ls**	**15.000**
	Sub total				**25.000**
8	**Monitoring of Wildlife by installing Cameras**				
(i)	Procurement of camera traps 50 no.s				12.500
(ii)	Monitoring the wildlife using camera traps using personnel and maintaing data (includes cost of Computer and data resources)				11.000
	Sub total				**23.500**
9	**Improvement of Communication Network such as installation of Wireless equipment and maintenance etc.,**				
(i)	Improvement of Communication Network such as installation of Wireless equipment and maintenance etc.,	15.01065, 78.98818		Ls	20.000
	Sub total				**20.000**

10	***Administrative cost***				
(i)	Engaging data entry operators @25,000/- per month for (5) years			1	15.000
(ii)	Procurement and maintenance of Computer Peripherals			Ls	3.750
(iii)	Monitoring and evaluation			Ls	1.600
(iv)	Unforeseen & miscellaneous expenditure(Electricity bills, Stationary etc.,)			Ls	3.780
	Sub total				**24.130**
	Total of Wildlife Conservation plan works				**367.000**

The year wise splitup Wildlife Conservation Plan is placed as Annexure 10. The user agency shall execute the proposed works at appropriate locations to the tune of 3215 lakhs towards mitigation measures. User agency shall procure Tractor cum water tanker and hand over to department. Leaving the cost of tractor cum water tanker, rest of the funds Rs.352 lakhs related to wildlife conservation will be deposited with the Chief Wildlife Warden of the State of Andhra Pradesh.

Divisional Forest Officer
Proddatur (WL) Division

Countersigned

Conservator of Forests,
Kurnool Circle, KURNOOL

Pri. Chief Conservator of Forests (WL)
& Chief Wildlife Warden, A.P.

Chapter 7

Clarification of Tiger Corridor of Nagarjunasagar Srisailam Tiger Reserve and Seshacham hills

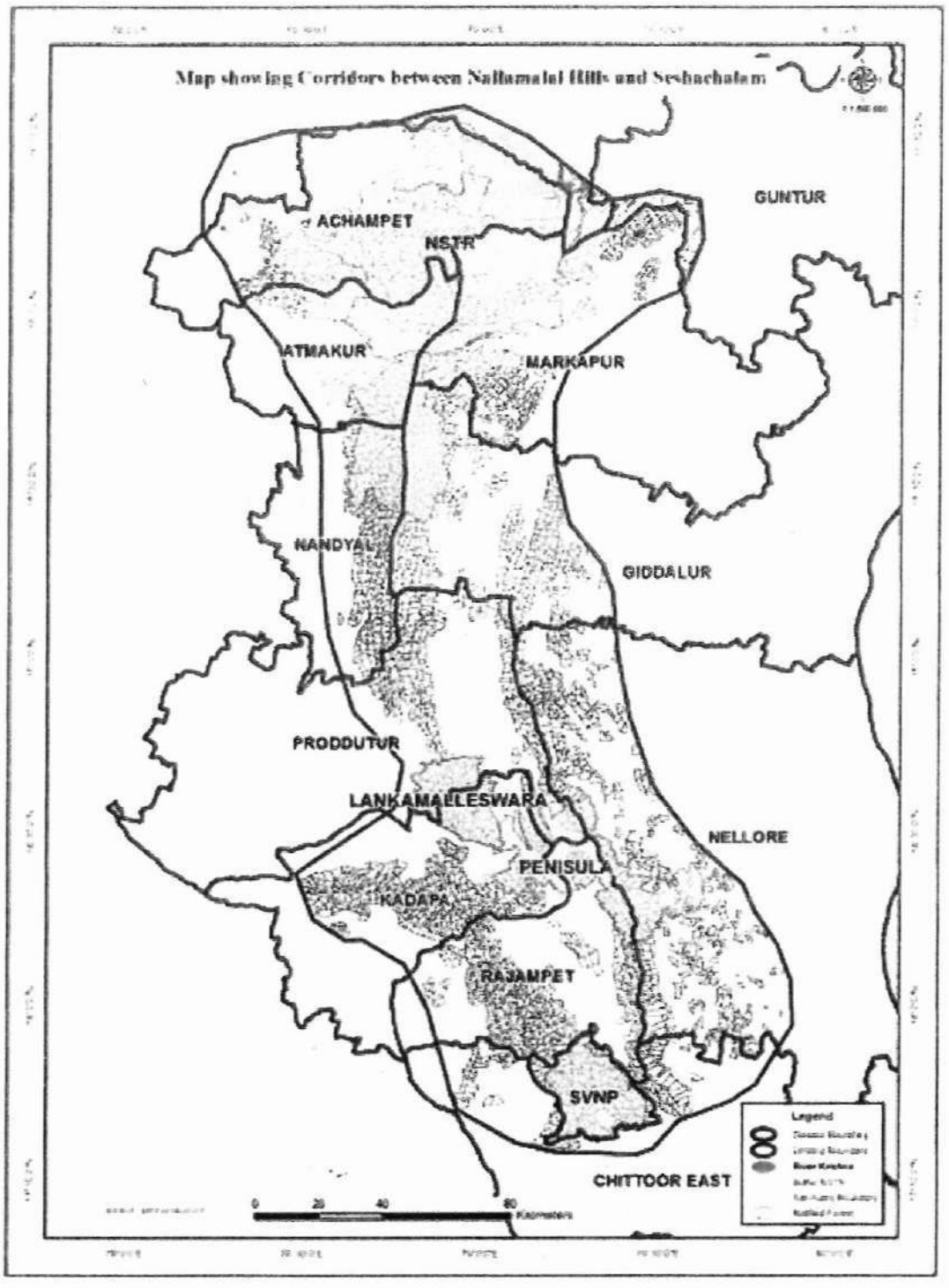
As per the Tiger Conservation Plan ***"The length of the corridor between Nagarjunasagar Srisailam Tiger Reserve to Seshachalam Hills of S.V. National Park is about 350 Kms and entire corridor passes through Reserve Forest area and Protected Area which has been mentioned in the table below. The minimum width of the corridor is 3.27Kms and more. The corridor passes through 3 Divisions of Tirupathi WLM Circle, & 3 Divisions of NSTR viz., Chittoor East (WL) Division, Rajampeta WL Division, Tirupathi WLM Division, Nandyal WL Division, Proddatur WL Division and Kadapa."***

Sl. No.	Division	No. of Compart-ments	No. of Beats	No. of sections	No. of Ranges	Total Area (in Ha.)	Area under Sanctuary (in Ha.)
1	2	3	4	5	6	7	8
1.	Tirupathi	183	28	11	3	81076.77	53811.37
2.	Chittoor East. (WL)	19	3	2	1	8938.71	0.00
3.	Rajampeta	353	29	12	4	111819.10	0.00
4.	Nandyal (WL)	289	28	16	5	104532.32	37114.37
5.	**Proddatur (WL)**	**181**	**22**	**6**	**4**	**87179.21**	**21033.37**
6.	Kadapa	164	15	6	4	70903.67	27279.34
	Grand Total :-	**1173**	**125**	**53**	**21**	**464449.78**	**139238.5**

The details of Proddatur Wildlife Management Division area consists of 87179.21 Ha out of which 27279.34 Ha area is under Sanctuaries. The split of the area in to Ranges is shown below. Out of 87,179.21 Ha of Corridor area of Proddatur WLM Division 29,279.18 Ha area falls in Porumamilla Range. **Tekuripet Beat is not the part of the Corridor , hence the present specified area of the proposed road is not notified as Tiger Corridor as per the Conservation Plan.** Though the Map of Corridor which was taken entire forest areas surrounding right from GBM Core to Seshachalam hills are shown in the Map. The Forest Blocks without contiguity of the forest also shown on the Map, however Compartment no.s, Beats, Sections and Range wise detailed statement is prepared to give clarity of the Tiger Corridor between Nagarjunasagar Srisailam Tiger Reserve and Seshachalam hills.

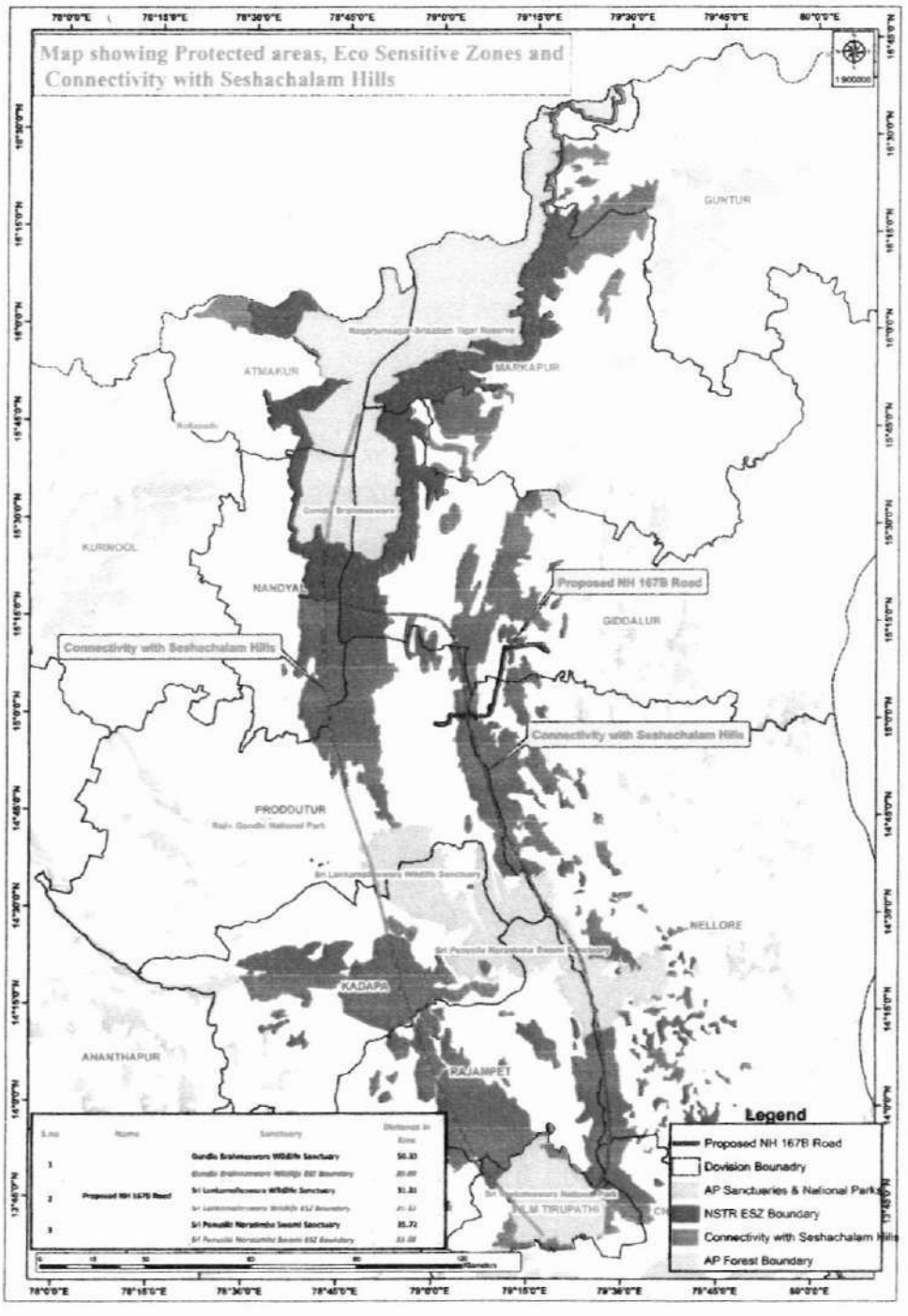
Details of notified Tiger Corridor as per Tiger Conservation Plan of Proddatur WLM Division

Range	Section	Beat	Areas (Ha)
Porumammila	Thambalapalli	Pedhabhavi	4493.00
		Thaduku	4970.00
		Balayapalli	5747.76
		Jyothi	5147.00
	Mallepalli	Itukulapadu	4647.00
		Mallepalli	4274.42
	Total area of the Range		**29279.18**
Onipenta	Ganjikunta	Thippireddipalli	5635.00
		Neelapuram	4700.00
		Ganjikunta	3755.00
		Kothapalli	4503.12
	Onipenta	Mudireddypalli	5005.00
		Maddivaripalli	3535.00
		Gangayapalli	2602.52
	Total area of the range		**29735.66**
Badvel	Vothimadugu	Gangireddipalli	3260.00
		Jangamrajupalli	3871.00
		Lothuvanka	5871.19
		Balayapalli	4531.71
	Total area of the Range		**17,533.9**
Proddatur	Khazipeta	Jandlavaram	2200.00
		Nagasanipalli	1989.23
		Pathur	2225.00
		Bayanapalli	1863.890
		Balasingapalli	2352.350
	Total area of the Range		**10630.47**
	Total area of the Division		**87179.21**



The corridor is mostly covered by Seshachalam hill ranges and extended core Gundla Brahmeswaram which is GBM wildlife sanctuary. The terrain is undulating and interrupted with hillocks of igneous rocks. The Principal hill range in this tract of forest consists of Nallamala, Kancherlamoram and Lankamalais, Veligondas, the Seshachalams, Palakondas, which are situated in the Corridor. There were reports of the presence of tiger earlier in the region and habitat suits for it. From Talakona to Velikondas it is a continuous patch

without any fragmentation and habitation. Sri Venkateswara National Park and Sanctuary are part of this region. Moreover, area covering seshachalam hills was declared as Seshachalam Biosphere Reserve (BR) by MOEF during 2011. Though it looks like both corridors reaching Seshachalam hills, the corridor of cumbum range part of veligondas (present specified area) is separated right from Giddalur to Badwel due to presence of huge habitations in between both the Corridors of Forests, however it has connectivity down below to seshachalam hills considered to be corridor though it is specifically not notified as per the Tiger Conservation Plan.



Finally the map showing both the Corridors of Nagarjunasagar Tiger Reserve and Seshachalam hills one is right below of Gundlabrahmeswaram Wildlife Sanctuary or Extended Core of Nagarjunasagar Tiger Reserve to Lankamalleswara Wildlife Sanctuary, then to Penusula Narsimha Wildlife Sanctuary and reaching Seshachalam hills via Kadapa and Rajampet Divisions is the main Corridor and all the compartments enroute are notified as Tiger Corridor. The other Corridor with lot of population in between Nandhyal and Proddatur WLM divisions and fragmented patches reaches surroundings of veligondas (Specific area of the road) and traverses to Seshachalam hills enroute Penusila Narsimha Wildlife Sanctuary and part of Nellore division. Though connectivity down below is there, but basic connectivity with NSTR is highly fragmented, probably with this reason the corridor from veligondas to Seshachalam was not notified.

However every attempt is made to conserve Biodiversity in the specified area i.e., proposed road and to reduce the impact of fragmentation of the forest, facilitate the genetic interchange of both sides of Forests by providing the mitigation measures for the conservation of the wildlife in the specified area. In a clear conclusion presence of the present specified area of the Road is not finding any place in the notified Corridor as per the Tiger Conservation Plan.

Fourhorned antilope in the proposed area

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ANNEXURES

Annexure-1

Board of Revenue (Land and Revenue) Forest No.137, 25th March 1896.

Proceedings of the board of revenue
(Land Revenue).

- - -

READ:- the following Government Orders, Nos.91, 91-A, Revenue dated 3rd March, 1896:-

Read:-Proceedings of the Board of Revenue (Land Revenue) Forests No.49, dated 3rd February 1896.

Abstract:- Submitting to Government, for approval and publication the draft notification under section 16 of the Forest Act for the constitution of the Kavalakunta extension blocks in the Badvel taluk, Cuddapah district, as reserved Forests.

O R D E RS:- No.91, Revenue, dated 3rd March 1896.

F O R E S T No. 35

The draft notification will be published in the Fort.St. George and Cuddapah District Gazettes, the 15th May 1896 being entered as the date from which reservation shall take effect.

2. The Government agrees with the Board in the opinion expressed in paragraph 2 of its Resolution.

(True extract)

(Signed) G.S. FORBES,
Secretary to Government.

To the Board of Revenue (Land Revenue) with map.
The Superintendent, Government Press, with notification.

Endorsement No.91-A.

Copy to the Government of India, Reserve and Agril. Dept.

(signed) G.S.FORBES
Secretary to Government.

Not i fi ca t i o n

His Excellency the Governor in council declares under the provisions of section 16 of the Madras Forest Act (V of 1882), the 15th May, 1896 the area of the boundaries of which are set forth in the schedule appended notification will be constituted a reserved Forest.

Board of Revenue (Land Revenue) Forest No.133, 25th March 1965.

Schedule

District	Taluk	Name of village.	Number and name of block.	Situation and boundaries
Cuddapah	Badvel	Tsallagarigela	18-19 Kavulakuntla Extension.	Block.A

North:- Starting from the north-east corner of khandam No.7 of Tsallagarigela along the south boundary of Seshampalli agraharam to its south-east corner; and then the south boundary of Kavulakuntla south reserve to the Nellore district boundary.

East:- Thence the Nellore district boundary to the north-east corner of Gangapenta reserve.

South:- Thence along the north boundary of Gangapenta reserve to its north-west corner; then north-west to the khandam stone at the south east corner of khandam No.7, and then on to the south-east corner of survey No.367, both of Tsallagarigela.

West:- Thence a straight line north-north-east to the khandam No.7 stone due east of survey No.370, and then the east limit of khandam No.both of Tsallagi-igela to the starting point.

-do- Badvel Cheplopalle and 18-B Kavula- Block.B
Kavulakuntla kuntla-extension

North:- Starting from the south-west corner of Kavulakuntla north reserve at a point 4.45 chains south-east of the north-west corner of survey No.499 of Cheplopalle the south boundary of the Kavulakuntla north reserve to the Nellore district boundary.

East:- Thence the Nellore district boundary to the north-east corner of Kavulakuntla south reserve.

South:- Thence the north boundary of Kavulakuntal south reserve to its north-west corner at a point 19.51 chains south-east of khandam stone on the east side of survey No.495 of Kavulakuntla.

West:- Thence north-west to the khandam stone on the east side of survey No.495 of Kavulakuntla; then the east limits of khandam

No.6 of Kavalakuntla Nos. 10 and 7 of Cherlopalle to the khandam stone about seventeen and a half chains south-east of the north-west corner of survey No.499 of Cherlopalli and then a straight line to the starting point.

Remarks- I Right of way over the undermentioned foot-paths is admitted, Nos. 1 to 3 for men and cattle and No.4 for men only, each to a width of three feet:-

(1) Footpath from Cherlopalle to Seethampuram in the Nellore District. It enters the reserve on the east side of Sankayya-kuntla (survey No.641 of Cherlopalle) runs east for about two miles and enters the limits of the Nellore district.

(2) Foot-path from Cherlopalle to Narasannapeta in the Nellore district. It enters the reserve near the first khandam stone on the east side of khandam No.6 of Kavulakuntla, runs east and north-east for two miles and enters the limits of the Nellore districts. This is known as the Sobanala pass.

(3) Foot-path from Chelopalle to Devinnchevve in the Nellore district. It branches from the path (2) on the east side of Chintayavelavanikunta, runs south-east for about one and a quarter miles and enters the limits of Nellore district. This is known as the Varethona.

(4) Foot-path from Chelopalle to Seethavampuram in the Nellore district. It enters the reserve in survey No.499 of Chelopalle runs north-east for about two miles and quits it in the nellore district limits. It is called Chidumukkama pass.

II. Government patta right over the following land of Chelopalle is admitted. The land will be demarcated out free from reservation and be retained as an enclosure:-

Survey Number	Extent	Remarks.
	Acs.	
1541-B	1.25	Access is allowed by patta No.1

Resolution:- Forest No.133, dated 25th March, 1896.
Communicated to the Collector of Cuddapah and the Conservator of Forests, Central circle.

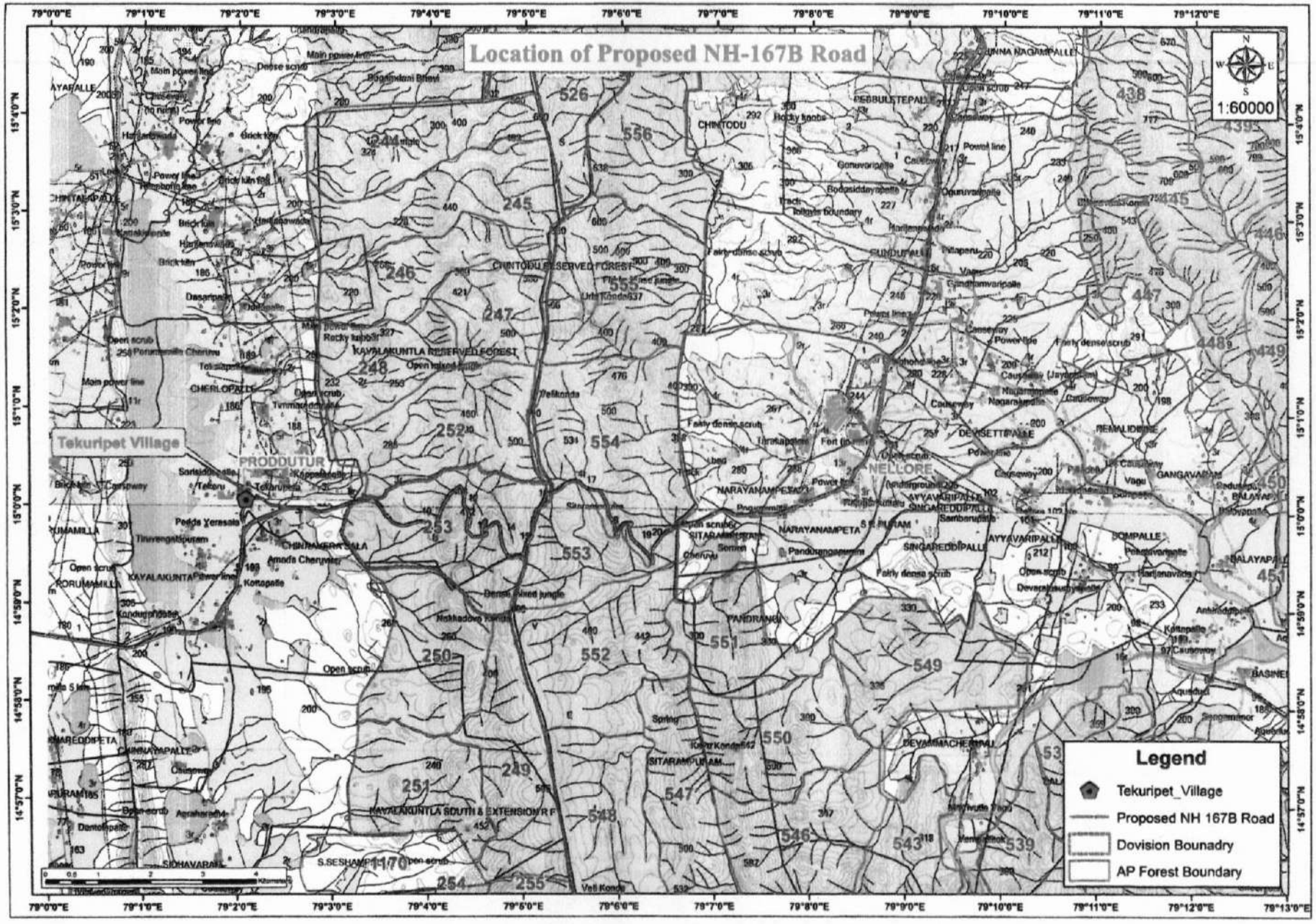
// true copy and extract//

(Signed) R.C.C. CARR,
Acting Secretary.

To the Collector of Cuddapah with a map.
" the Conservator of Forests, Central circle.
" Forest Settlement Officer, Cuddapah &C., District.

// true copy //

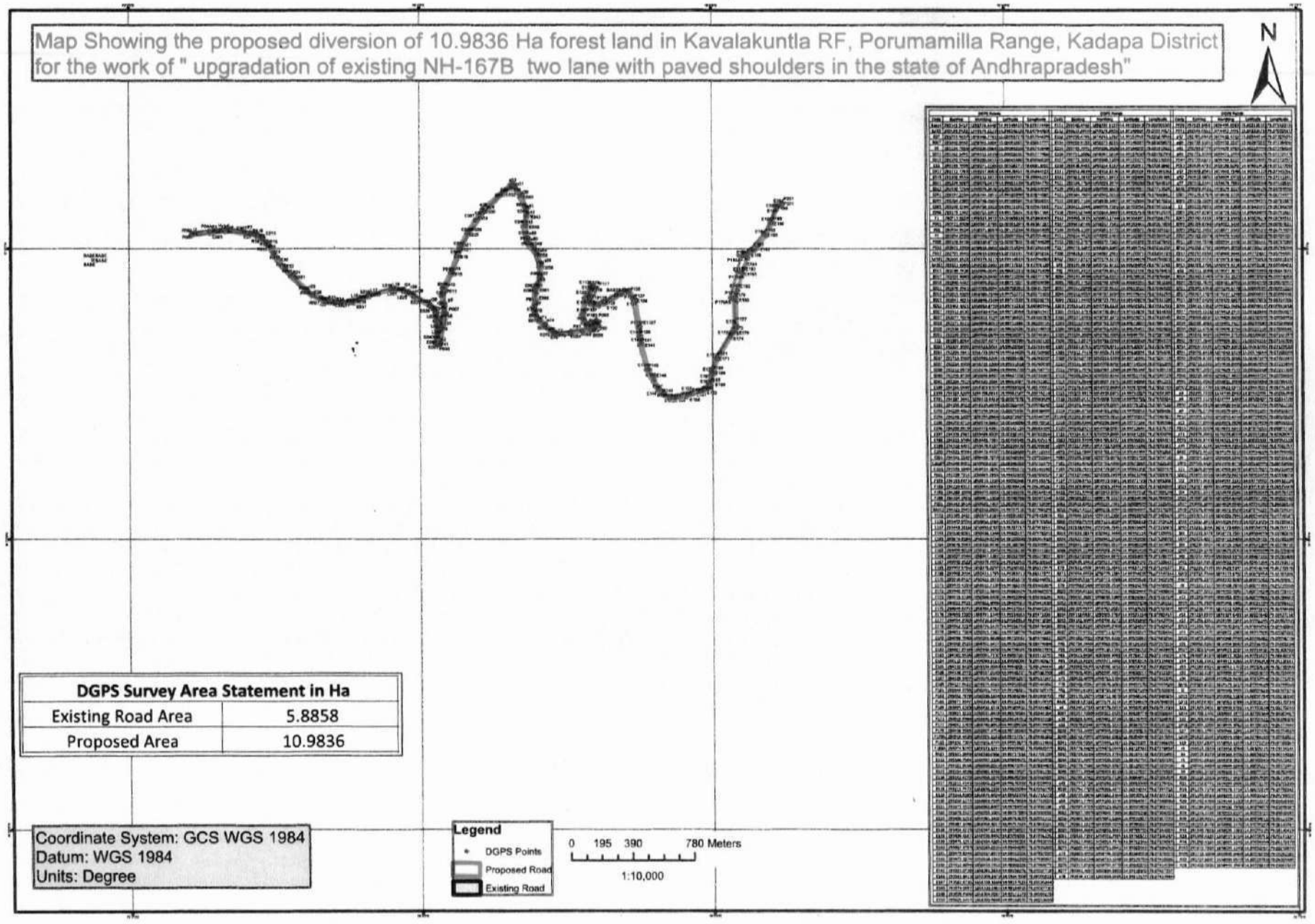
Divl. Forest Officer,
Proddatur.


Location of Proposed NH-167B Road
Tekuripet Village
1:60000
Legend
Tekuripet_Village
Proposed NH 167B Road
Dovision Bounadry
AP Forest Boundary

Annexure-2

Annexure-3

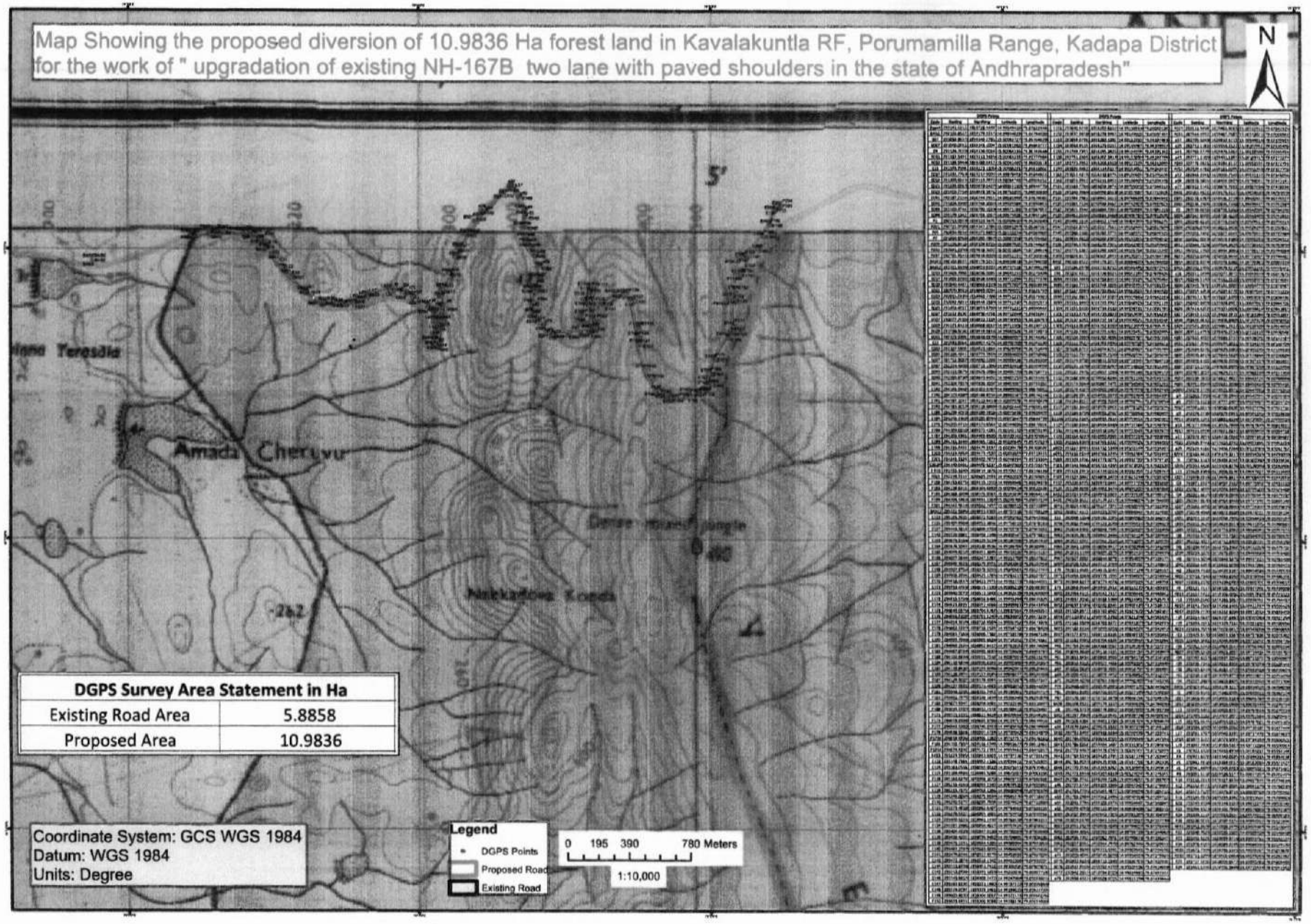
Map Showing the proposed diversion of 10.9836 Ha forest land in Kavalakuntla RF, Porumamilla Range, Kadapa District for the work of " upgradation of existing NH-167B two lane with paved shoulders in the state of Andhrapradesh"



DGPS Survey Area Statement in Ha	
Existing Road Area	5.8858
Proposed Area	10.9836

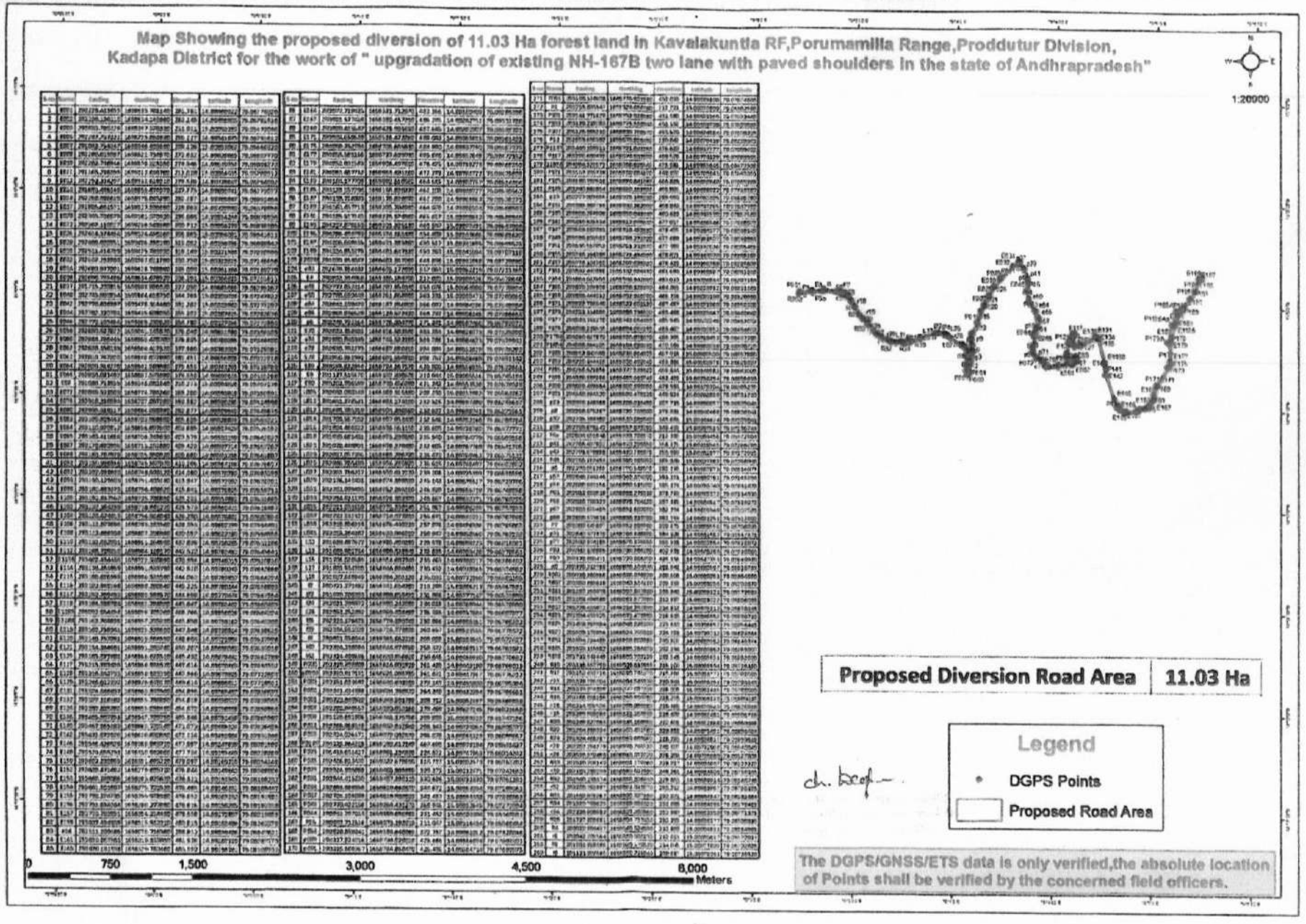
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Annexure-4


Map Showing the proposed diversion of 10.9836 Ha forest land in Kavalakuntla RF, Porumamilla Range, Kadapa District for the work of " upgradation of existing NH-167B two lane with paved shoulders in the state of Andhrapradesh"
N
Amadi Cheruvu
DGPS Survey Area Statement in Ha
Existing Road Area 5.8858
Proposed Area 10.9836
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Legend
DGPS Points
Proposed Road
Existing Road
0 195 390 780 Meters
1:10,000

Annexure-5

Map Showing the proposed diversion of 11.03 Ha forest land in Kavalakuntla RF,Porumamilla Range,Proddutur Division, Kadapa District for the work of " upgradation of existing NH-167B two lane with paved shoulders in the state of Andhrapradesh"



PROFORMA

Statement showing the abstract of enumeration of species and girth class wise in Kavalakuntla Reserve Forest of Tekurpeta Beat of Mallepalli Section of Porumamilla Range for NH – 167B from KM 51/000 to 56/500 i.e., Porumamilla TO Chandra Sekhara puram to two lanes.

Annexure-6

Sl. No.	Local Name of Tree	Botanical name of type	No. of trees	0 to 30 Cms			31 to 45 Cms			46 to 60 Cms				61 to 90 cms				91 to 120 cms				Above 120 cms				Total Amount(7+10+14+18+22+26)	Fuel in cum (0.05 of Col.4)	Fuel Value	Total value in Rs. (27+29)	Remark if any
				No.of poles	Rate/pole	Value	No.of poles	Rate/pole	Value	No.of trees	Timber in cum	Rate/cum	Value	No.of trees	Timber in cum	Rate/cum	Value	No.of trees	Timber in cum	Rate/cum	Value	No.of trees	Timber in cum	Rate/cum	Value					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Are	Bauchinia racemosa	121	87	49.82	4334.34	29	80.09	2322.61	4	0.130	5203.62	676.471	1	0.105	6404.9	672.51									8005.93	6.05	7472.48	15478.41	
2	Balasa		2	2	49.82	99.64																				99.64	0.10	123.512	223.15	
3	Bikki	Gardenia gummifera	132	132	49.82	6576.24																				6576.24	6.60	8151.79	14728.03	
4	Billudu	Chlororoxylon swietenia	785	737	101.46	74776.02	45	149.48	6726.6	3	0.092	8407.01	773.445	0	0	0	0									82276.06	39.25	48478.5	130754.52	
5	Botikara		1	1	101.46	101.46				0	0	0	0													101.46	0.05	61.756	163.22	
6	Chilakaduddi	Uvaria cerosoides	60	59	49.82	2939.38				0	0	0	0	1	0.105	6404.9	672.51									3611.89	3.00	3705.36	7317.25	
7	Chindragi	Acacia sundra	9	7	49.82	348.74	2	80.09	160.18	0	0	0	0	0	0	0	0									508.92	0.45	555.804	1064.72	
8	Chindoga		12	7	49.82	348.74	5	80.09	400.45	0	0	0	0	0	0	0	0									749.19	0.60	741.072	1490.26	
9	Chinna kommi		7	6	49.82	298.92	1	80.09	80.09	0	0	0	0	0	0	0	0									379.01	0.35	432.292	811.30	
10	Dadara		51	49	49.82	2441.18	2	80.09	160.18																	2601.36	2.55	3149.56	5750.92	
11	Danti	Gymnosporia spinosa	168	164	49.82	8170.48	4	80.09	320.36																	8490.84	8.40	10375	18865.85	
12	Eppa	Madhuka longifolia	37	35	49.82	1743.7	2	80.09	160.18																	1903.88	1.85	2284.97	4188.85	
13	Gaditatta	Seccopetalum tomentosum	37	36	49.82	1793.52	1	80.09	80.09																	1873.61	1.85	2284.97	4158.58	
14	Gotika	Ziziphus xylopyrus	1619	1471	49.82	73285.22	140	80.09	11212.6	8	0.130	5203.62	676.47													85174.29	80.95	99983	185157.25	
15	Guggilam	Shorea robusta	164	132	49.82	6576.24	28	80.09	2242.52	8	0.130	5203.62	676.47	1	0.105	6404.9	672.51									10167.74	8.20	10128	20295.73	
16	Gumpena	Lannea coromandelica	294	235	49.82	11707.7	49	80.09	3924.41	7	0.130	5203.62	676.47	3	0.105	6404.9	672.51									16981.09	14.70	18156.3	35137.35	
17	Ipumaddi	Terminalia alata	3	2	140.59	281.18	1	199.30	199.3																	480.48	0.15	185.268	665.75	
18	Jarasoli		5	5	49.82	249.1																				249.10	0.25	308.78	557.88	
19	Jana	Moringa oleifera	491	482	49.82	24013.24	8	80.09	640.72																	24653.96	24.55	30322.2	54976.16	
20	Jivi	Ficus Mollis	3							3	0.720	12409.2	8934.68													8934.68	0.15	185.268	9119.95	
21	Kalivi	Carissa carandes	4	4	49.82	199.28																				199.28	0.20	247.024	446.30	
22	Kanuga	Derris indica	19	18	49.82	896.76	1	80.09	80.09																	976.85	0.95	1173.36	2150.21	
23	Kasaka	Corynocarpus laevigatus	102	95	49.82	4732.9	7	80.09	560.63																	5293.53	5.10	6299.11	11592.64	
24	Karthegi		199	176	49.82	8768.32	20	80.09	1601.8	2	0.032	5203.62	166.516	1	0.105	6404.9	672.51									11209.15	9.95	12289.4	23498.59	
25	Komui	Webera corymbosa	2	1	49.82	49.82	1	80.09	80.09																	129.91	0.10	123.512	253.42	

Sl. No.	Local Name of Tree	Botanical name of tree	No. of trees	0 to 30 Cms			31 to 45 Cms			46 to 60 Cms				61 to 90 cms				91 to 120 cms				Above 120 cms				Total Amount(7+10+14+18+22+26)	Fuel in cum (0.05 of Col.4)	Fuel Value	Total value in Rs. (27+29)	Remarks if any
				No.of poles	Rate/ pole	Value	No.of poles	Rate/pole	Value	No.of trees	Timber in cum	Rate/ cum	Value	No.of trees	Timber in cum	Rate/ cum	Value	No.of trees	Timber in cum	Rate/ cum	Value	No.of trees	Timber in cum	Rate/ cum	Value					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
26	Kondagogu	Decaschistia crotonifolia	12	12	49.82	597.84																				597.84	0.60	741.072	1338.91	
27	Kadenagu	Commiphora caudata	3	1	49.82	49.82	2	80.09	160.18																	210.00	0.15	185.268	395.27	
28	Kore		10	10	49.82	498.2																				498.20	0.55	617.56	1115.76	
29	Kukkamovi	Ochna beddomei	149	146	49.82	7273.72	1	80.09	80.09	2	0.033	5203.62	166.516													7520.33	7.45	9201.64	16721.97	
30	Lottabilld		31	31	49.82	1544.42																				1544.42	1.55	1914.64	3459.06	
31	Maddi	Terminalia arjuna	678	595	101.46	60368.7	81	181.00	14661	2	0.050	12409.2	620.464													75650.16	33.90	41870.6	117399.73	
32	Manga	Randai spinosa	23	23	49.82	1145.86																				1145.86	1.15	1420.39	2566.25	
33	Manumoddu.		88	87	49.82	4334.34	2	80.09	160.18																	4494.52	4.40	5434.53	9929.05	
34	Mukkapolika		2	2	49.82	99.64																				99.64	0.10	123.512	223.15	
35	Mushti	Strychnos nuxvomica	51	39	49.82	1942.98	12	80.09	961.08																	2904.05	2.55	3149.86	6053.92	
36	Nagoor		2	2	49.82	99.64																				99.64	0.10	123.512	223.15	
37	Nallabalusu	Canthium Dicoccum	4	2	49.82	99.64	2	80.09	160.18																	259.82	0.20	247.024	506.84	
38	Nalleturama		1	1	49.82	49.82																				49.82	0.05	61.756	111.58	
39	Nerayepi	Hardwickia binata	80	42	101.46	4261.32	27	149.48	4035.96	7	0.720	8407.01	6053.05	4	0.536	10208	5471.4	0	0	0	0					19821.77	4.00	4940.48	24762.25	
40	Neeruddi	Dolichandrone	430	395	49.82	19230.53	35	80.09	2803.15	8	0.680	8407.01	5716.61	1	0.101	10208	1031									28790.28	21.50	26535.1	55348.38	
41	Nemalladugu	Vitex pinnata	140	130	49.82	6476.6	10	80.09	800.9																	7277.50	7.00	8645.84	15923.34	
	Nemalimara		3	3	49.82	149.46																				149.46	0.15	185.268	334.73	
42	Odissey	Cleistanthus	730	710	49.82	35372.2	16	80.09	1281.44	3	0.280	8407.01	2353.96	1	0.101	10208	1031									40038.60	36.50	45081.9	85120.48	
43	Pachari	Dalbergia paniculata	275	206	49.82	10262.92	51	80.09	4084.39	16	0.950	5203.62	4943.44	2	0.233	6404.9	1492.3									20783.28	13.75	16982.9	37766.18	
44	Palabarika	Wrtia tinctoria	26	24	49.82	1195.68	2	80.09	160.18																	1355.86	1.30	1605.66	2961.52	
45	Palavareni		11	10	49.82	498.2	1	80.09	80.09																	578.29	0.55	679.316	1257.61	
46	Parlia	Mimosa Polynitra	18	15	49.82	747.3	3	80.09	240.27																	987.57	0.90	1111.61	2099.18	
47	Pedda Kommi		21	19	49.82	946.58	3	80.09	240.27																	1186.85	1.05	1296.88	2483.73	
48	Peddamogi		7	7	49.82	348.74																				348.74	0.35	432.292	781.08	
49	Polika		3	3	49.82	149.46																				149.46	0.15	185.268	334.73	
50	Ravi		6	5	49.82	249.1	1	80.09	80.09																	329.19	0.30	370.536	699.73	
51	Red Sander	Pterocarpus santalinus	2410	1774	366.03	649337.2	574	459.20	263581	31		569.70	28034.70	11	1.2	6404.9	7685.8									948638.53	120.50	148832	1097470.53	
52	Regi	Ziryphus jujube	1	1	49.82	49.82																				49.82	0.30	370.536	420.35	
53	Rela	Cassia fistula	4	3	49.82	149.46	1	80.09	80.09																	229.55	0.20	247.024	476.57	
54	Rudraganapu	Adina cordifolia	101	96	49.82	4782.72	5	80.09	400.45																	5183.17	5.05	6237.36	11420.53	
55	Sandra	Mimosa pralnlana	147	131	101.46	13291.26	15	149.48	2242.2	1	0.072	8407.01	605.305													16138.76	7.35	9078.13	25216.90	

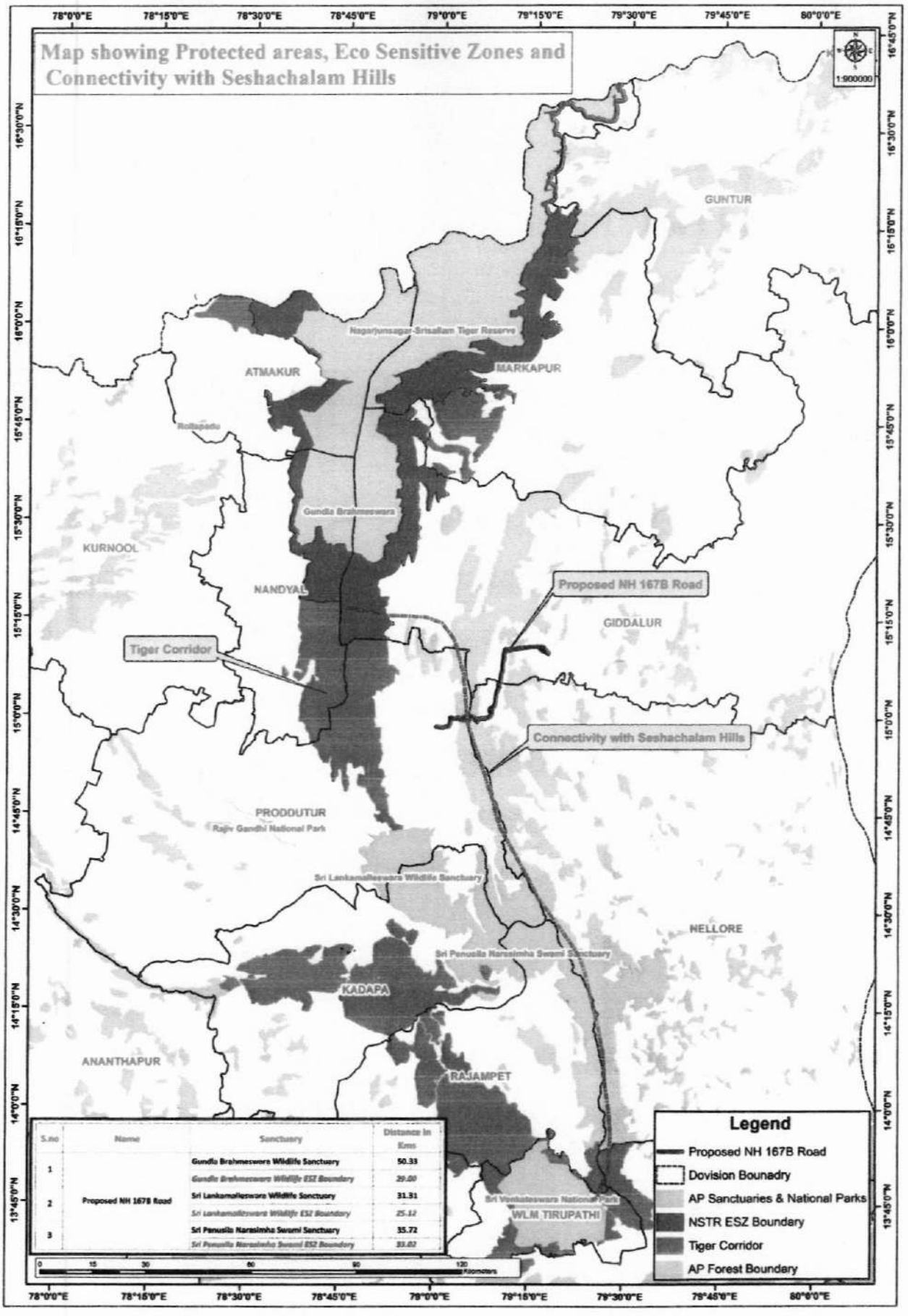
Sl. No.	Local Name of Tree	Botanical name of tree	No. of trees	0 to 30 Cms			31 to 45 Cms			46 to 60 Cms				61 to 90 cms				91 to 120 cms				Above 120 cms				Total Amount(7+10+14+18+22+26)	Fuel in cmm (0.05 of Col.4)	Fuel Value	Total value in Rs. (27+28)	Remarks if any
				No.of poles	Rate/ pole	Value	No.of poles	Rate/p ole	Value	No.of trees	Timber in cmm	Rate/ cmm	Value	No.of trees	Timber in cmm	Rate/ cmm	Value	No.of trees	Timber in cmm	Rate/ cmm	Value	No.of trees	Timber in cmm	Rate/ cmm	Value					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
56	Sara	Buchanania axillaris	99	60	49.82	2989.2	23	80.09	1842.07	16	0.023	5203.62	119.683													4950.95	4.65	5743.31	10694.26	
57	Silla		112	105	49.82	5231.1	7	80.09	560.63																	5791.73	5.60	6916.67	12708.40	
58	Somi	soymida febrifuga	188	155	101.46	15726.3	29	149.48	4334.92	4	0.129	8407.01	1084.5													21143.72	9.40	11610.1	32735.85	
59	Teak	Tectona grandis	15	13	201.17	2615.21	2	306.14	612.28																	3227.49	0.75	926.34	4153.83	
60	Tellamaddi		1	1	49.82	49.82																				49.82	0.05	61.756	111.58	
61	Tellatumma	Prosopis juliflora	22	12	49.82	597.84	9	80.09	720.81	1	0.015	5203.62	78.0543													1396.70	1.10	1338.63	2735.34	
62	Thapassi		1	1	49.82	49.82																				49.82	0.05	61.756	111.58	
63	Ulindra	Diospyros	226	174	49.82	8668.68	45	80.09	3604.05	7	0.260	5203.62	1300.91													13573.64	11.30	13956.9	27530.49	
64	Usiri	Phyllanthus emblica	51	50	49.82	2491	1	80.09	80.09																	2571.09	2.55	3149.56	5720.65	
65	Velaga	Limonia acidissima	17	12	49.82	597.84	4	80.09	320.36	1	0.025	5203.62	130.091													1048.29	0.85	1049.85	2098.14	
66	Vepa	Azadirachta indica	20	14	49.82	697.48	2	80.09	160.18	3	0.120	5203.62	624.434	1	0.078	6404.9	499.58									1981.67	1.00	1235.12	3216.79	
67	Yelama	Anogeissus latifolia	1797	1747	101.46	177250.6	45	149.48	6726.6	3	0.337	8407.01	2833.16	2	0.23	10206	2347.8									189158.20	89.85	110976	300133.73	
68	Yerra babulu		40	35	49.82	1793.52	4	80.09	320.36																	2113.88	2.00	2470.24	4584.12	
69	Yerra Bikki	Randia candolleana	12	11	49.82	548.02	1	80.09	80.09																	628.11	0.60	741.072	1369.18	
70	Yerra silla		31	30	49.82	1494.6	1	80.09	80.09																	1574.69	1.55	1914.44	3489.13	
71	Yerrapolliki	Sterculia urens	2	2	49.82	99.64																				99.64	0.15	185.268	284.91	
		Total	12428	10882		3291236	1363		346689	155	5.17		58254	29	3.00		23823	0	0.00		0	0	0		0	1719101	621.4	767804	2486904	

G.V Ramana
Forest Beat Officer
Tekurpeta

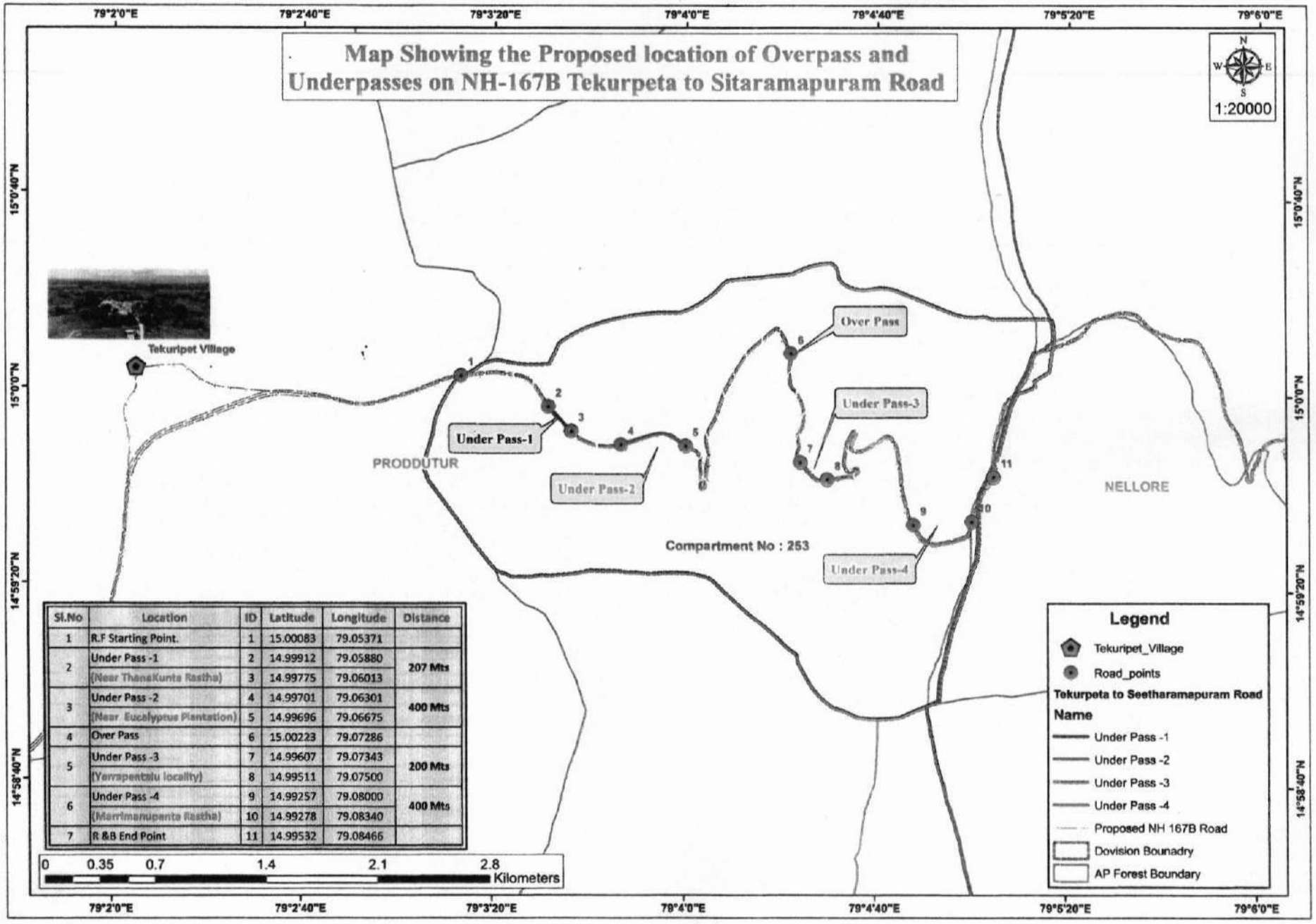
P.
Forest Section Officer
Mallepalli Section

Forest Range Officer
Parumamilla

Annexure-7

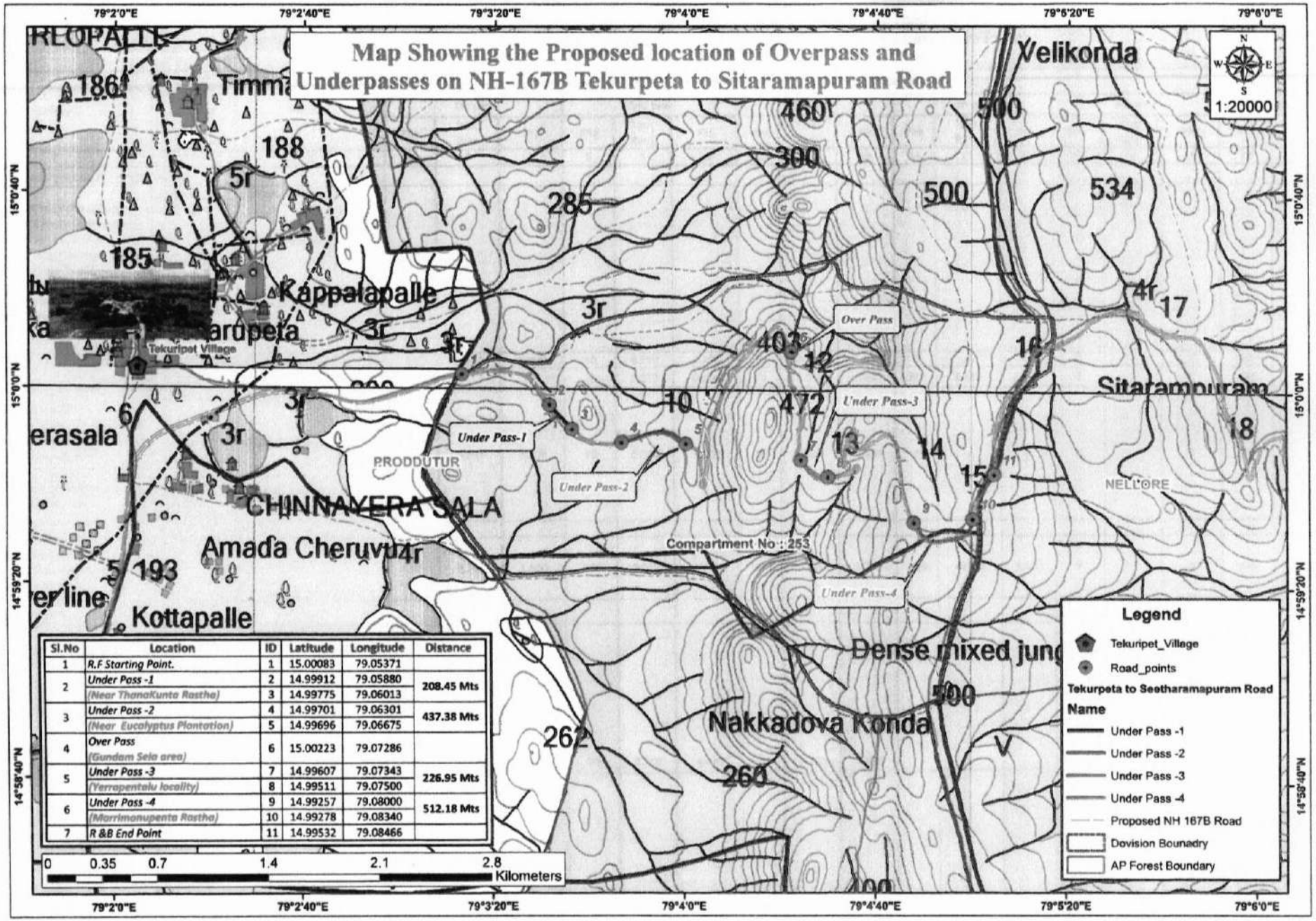


S.no	Name	Sanctuary	Distance in Kms
1	Proposed NH 167B Road	Gundla Brahmeswara Wildlife Sanctuary	50.33
		Gundla Brahmeswara Wildlife ESZ Boundary	*29.00*
2		Sri Lankamalleswara Wildlife Sanctuary	31.91
		Sri Lankamalleswara Wildlife ESZ Boundary	*25.12*
3		Sri Penusila Narasimha Swami Sanctuary	35.72
		Sri Penusila Narasimha Swami ESZ Boundary	*33.02*



Sl.No	Location	ID	Latitude	Longitude	Distance
1	R.F Starting Point.	1	15.00083	79.05371	
2	Under Pass -1	2	14.99912	79.05880	207 Mts
	(Near ThanaKunta Rastha)	3	14.99775	79.06013	
3	Under Pass -2	4	14.99701	79.06301	400 Mts
	(Near Eucalyptus Plantation)	5	14.99696	79.06675	
4	Over Pass	6	15.00223	79.07286	
5	Under Pass -3	7	14.99607	79.07343	200 Mts
	(Yerrapentalu locality)	8	14.99511	79.07500	
6	Under Pass -4	9	14.99257	79.08000	400 Mts
	(Merrimanupenta Rastha)	10	14.99278	79.08340	
7	R &B End Point	11	14.99532	79.08466	

Annexure-8



Sl.No	Location	ID	Latitude	Longitude	Distance
1	R.F Starting Point.	1	15.00083	79.05371	
2	Under Pass -1	2	14.99912	79.05880	208.45 Mts
	(Near ThanaKunta Rastha)	3	14.99775	79.06013	
3	Under Pass -2	4	14.99701	79.06301	437.38 Mts
	(Near Eucalyptus Plantation)	5	14.99696	79.06675	
4	Over Pass (Gundam Sela area)	6	15.00223	79.07286	
5	Under Pass -3	7	14.99607	79.07343	226.95 Mts
	(Yerrapentalu locality)	8	14.99511	79.07500	
6	Under Pass -4	9	14.99257	79.08000	512.18 Mts
	(Marrimonupenta Rastha)	10	14.99278	79.08340	
7	R &B End Point	11	14.99532	79.08466	

Annexure-9

Annexure-10

Revised Wildlife Mitigation Plan for Diversion of 11.03 ha of forest land in Compartment no. 253 of Kavalakuntla Extn., A & B (R.F) in Porumamilla Range of Proddatur WL Division for upgradation and widening of the existing road to two lane paved configuration of NH - 167B from Km 51 / 000 to Km 58 / 500 i.e., from Porumamilla to Chandrasekhara Puram

Sl No.	Activity	Lat Longs	Location	Year wise projections																
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	**Habitat Improvement & Conservation**																			
a	Development of Natural grass lands over an area of 5 Ha. In various bits of Kavalakuntla Extn., A & B RF of Tekurpeta Beat in Porumamilla Range If necessary fencing also may be proposed depending on site specific conditions. Estimates may be prepared basing on FSR & Data of that specific area.	1)14.99652 79.06285 2)15.03136 79.08082 3)15.00471 79.08282	1)Sobanala bodu 2)Yenamalapenta 3)Chintamanupenta																	
	a) Creation			10	0.200	2.000	10	0.220	2.200	10	0.240	2.400	0	–	0	0	–	0	30	6.600
	b) Maintenance			0	–	0	10	0.050	0.500	20	0.050	1.000	30	0.050	1.500	0	–	0	60	3.000
b	Dibbling pre-sprouted / treated seed of forest fruit plants and forest flowering plants @ 5 kgs/ ha in identified suitable patches in Kavalakuntla Extn., A & B Reserve Forests over an area of 40 Ha for 2 years . (Average cost of seed per kg is taken as Rs. 200 / Kg.)	1)14.99129 79.08188 2)15.03136 79.08082 3) 15.00602 79.05941	1)Marrimanupenta 2)Yenamalapenta 3)Thanakunta Locality	20	0.050	1.000	20	0.050	1.000	20	0.05	1.000	0	–	0	0	–	0	60	3.000
c	Cost of Salt licks @ Rs. 1000 / 1 No for 3 year i.e., 15 Nos (including cost of transport and fixing at site).			100	0.010	1.000	100	0.010	1.000	100	0.010	1.000	100	0.010	1.000	0	–	0	400	4.000
2	**Water Resources**																			
a	Consturction of Saucer Pits in Reserved Forests of Kavalakuntla Extn. A & B Reserve Forest @ 20,000/-	1)15.00258 79.08146 2)14.99129 79.08188 3)14.99032 79.08197 4) 15.00285 79.06174 5)14.99533 79.06449 6) 14.99479 79.079402	1)Kanamrastha (Surrounding area 10 Nos) 2) Marrimanupenta (surounding area 10 Nos) 3) Yerrapentalu (Surrounding area 10 Nos) 4)Thanakunta (surrounding ara 10 Nos) 5)Sobanala Sela (surrounding Area 10 Nos) 6)Yerrapetu penta (surrounding Area 10 Nos)	20	0.200	4.000	20	0.200	4.000	20	0.200	4.000							60	12.000

Sl No.	Activity	Lat Longs	Location	Year wise projections																
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	Improvement of track / path for filling the saucers in the forest to facilitate the movement of the Tractor cum trailor.				Ls or Kms	1.250		Ls or Kms	1.250		Ls or Kms	1.250							Ls	3.750
b	Digging of Borewell in Kavalakuntla Extn. A & B Reserved Forests and installation of Solar panels and Motor Rs. 10,00,000/-.	1)15.00258 79.08146 2)14.98209 79.08190	1)Kammarenirastha 2)Marrimanupenta	2	10.000	20.000	0	--	0	0	--	0	0	--	0	0	--	0	2	20.000
c	Formation / Improvement of Percolation Tank	1)14.98951 79.06778 2)15.00917 79.06539 3)15.00400 79.06615 4) 14.99286 79.06020 5)14.00245 79.08256 6) 14.98941 79.08127	1)Sobanala Sela 2)Gadidlabodu 3) Yeguvapentalapadi 4) Addagarugulu 5) Ramadandu padi 6) Yerrapentalu	1	3.000	3.000	2	3.000	6.000	1	3.000	3.000	2	3.000	6.000	0	--	0	6	18.000
	Formation of mini percolation tanks	1)14.99331 79.06488 2)15.00309 79.06397 3)15.00285 79.06580 4)15.00035 79.06285 5)15.00010 79.05874 6)14.99980 79.05919	1)Addagarugu 2) Kapparamanupadi 3)Thanakunta vagu start 4)Thaanakunta near 5)Addagarugu 6)Addagarugu	2	0.500	1.000	2	0.500	1.000	2	0.500	1.000							6	3.000
	Repairs to tanks and improvement of perennial water resources in the study area.	15.00272 79.06014	Thanakunta	LS																2.000

Sl No.	Activity	Lat Longs	Location	Year wise projections																
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
d	Construction of Check dams in Kavalakuntla Extn. A & B Reserved Forests @ 4.000 lakhs each	1)15.00293 79.06399 2)14.99769 79.05267 3)15.00547 79.05629 4)15.00548 79.06209 5) 14.99904 79.06589 6)14.99174 79.06484 7)14.99734 79.05240 8)15.00200 79.05542 9)15.00562 79.06481	1)Thanakunta vagu 2)Gundamvagu 3)Gundamvagu 4)Gundamvagu 5)Thanakunta Vagu 6)Sobanala Sela 7)Pudonibavi vanka 8)Thummonipadi 9) Gundamvagu	3	4.000	12.000	2	4.000	8.000	3	4.000	12.000	1.000	4.000	4.000	0	--	0	9	36.000
3	**Infrastructure Development**																			
a	Construction of watch tower (Nos)	1)15.00258 79.08146 2)14.98209 79.08190	1)Kammarenirastha 2)Marrimanupenta	1	10.000	10.000	1	10.000	10.000	0	0	0	0	--	0	0	--	0	2	20.000
b	Construction of semi permanent structure for base camp (Nos)	1)15.00258 79.08146 2)14.98209 79.08190	1)Kammarenirastha 2)Marrimanupenta	0	--	0	1	12.000	12.000	1	12.000	12.000	0	--	0	0	--	0	2	24.000
c	Improvement of forest roads for extinguishing of fires (Km)	start 1) 14.99493 79.08435 End 15.03967 79.08235 Start 2)14.99151 79.08078 End 14.91511 79.09976	1)Kammarenirastha 2) Marrimanupenta Rastha	10	1.000	10.000	10	1.000	10	0	--	0	0	--	0	0	--	0	20	20.000
d	Improvement of office infrastructure such as Rest House, Range office, Front line staff quarters, strengthning of Forest check post Tekuripet.	15.01065 78.98818	Forest Range complex, Porumamilla	6	3.000	18.000	0	--	0	0	--	0	0	--	0	0	--	0		18.000

Sl No.	Activity	Lat Longs	Location	Year wise projections																
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
4	**Man - Animal Conflict Mitigation**																			
a	Payment of compensation, crop damages including preventive steps to reduce man-animal conflict and other issues			LS		1.000	LS		1.000	LS		1.000	LS		1.000	LS		1.000	LS	5.000
b	Fencing with Chainlink mesh on either side of the road to avoid wild animal crosing the road (in Kms) Chainlink mesh of 8mm x 8mm with anuglars duly fixed with CC bed. The fencing will be done except than underpasses, over passes and retention wall areas.	14.99448 79.06747	Road side Kavalakuntla R.F	3	5.000	15.000	3	5.000	15.000	0	--	0	0	--	0	0	--	0	6	30.000
5	**Procurement of Water Tanker & Tractor and Maintenance**																			
a	Cost of tractor cum trailer mounted with a water tank.			1	15.000	15.000	0	--	0	0	--	0	0	--	0	0	--	0	1	15.000
b	Wages to the tractor driver and one assistant for filling of water in the sacure pits. Driver wage @ Rs. 22000/ month for 3 year. Wages to assistant @ Rs. 15000 / pm for a period of 5 years. Calculated for (6) months per year.			2	0.370 per month	2.220	2	0.370 per month	2.220	2	0.370 per month	2.220	2	0.370 per month	2.220	2	0.370 per month	2.220	2	11.100
c	Fuel charges and maintenance for the tractor @ Rs. 1,20,000/- per (6) months for a period of 5 years.			1	0.200 per month	1.200	1	0.200 per month	1.200	1	0.200 per month	1.200	1	0.200 per month	1.200	1	0.200 per month	1.200	1	6.000
6	**Fire Protection Measures**																			
a	Creation of firelines to a width of 5 Mts (Kms)	14.99743 79.06803	Addagarugu	10	0.120 per Km	1.200	10	0.132 per Km	1.320	10	0.145 per Km	1.450	10	0.159 per month	1.590	10	0.174 per month	1.740	50	7.300
b	Maintenance of firelines (Sq. Mts)	14.99643 79.07306	Yerragoiguntalu			0	10000	0.014 per 1000 Sqmt	0.140	10000	0.015 per 1000 Sqmt	0.150	10000	0.016 per 1000 Sqmt	0.160	10000	0.017 per 1000 Sqmt	0.170	40000	0.620
c	Procurement of fire fighting equipments			LS	LS	1.000	LS		1.500	LS		1.500	LS		1.000	LS		1.000	LS	6.000

Sl No.	Activity	Lat Longs	Location	Year wise projections															
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
7	**Awareness Programmes**																			
a	Awareness activities to be carried out in surrounding villages involving the Vana Samarakshana Samithies . The awareness programs include display of posters, celebration of Wildlife Week, Van mahotsava and other important days related to conservation of wildlife, organizing nature camps involving schools, colleges in the respected area regarding the wildlife conservation etc.			4	0.250	1.000	4	0.250	1.000	4	0.250	1.000	4	0.250	1.000	4	0.250	1.000	20	5.000
b	Publicity material preparation like Brouchures, Pampheltes, Posters, Calenders etc.			LS		1.000	LS		1.000	LS		1.000	LS		1.000	LS		1.000	LS	5.000
c	Erection of display boards at important places, giving message of Conservation and penal provisons of Wildlife (Protection) Act 1972	15.00110 79.05459	Kavalakuntla R.F Road NH Road Sides	LS		3.000	LS		3.000			3.000	LS		3.000	LS		3.000	LS	15.000
8	**Monitoring of Wildlife by installing camera traps**																			
a	Procurement of Camera Traps (Nos)			30	0.250 per No.	7.500	20	0.250 per No.	5.000	0	--	0	0	--	0	0	--	0	50	12.500
b	Maintenance of Camera Traps (Nos) using personnel and maintaining data (includes the cost of Computors and data resources)				Ls	3.000	LS	Ls	2.000		Ls or Kms	2.000	0	Ls or Kms	2.000	0	Ls or Kms	2.000		11.000
9	**Improvement of Communication Network such as Installation of Wireless equipment and maintenance etc.**	15.01065 78.98818	FRO, complex , Porumamilla	LS	--	5.000	LS	--	5.000	LS	--	4.000	LS	--	3.000	LS	--	3.000	LS	20.000

Sl No.	Activity	Lat Longs	Location	Year wise projections																
				1st year			2nd year			3rd year			4th year			5th year			Total	
				Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Unit Rate	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
10	**Administrative Cost**																			
a	Engaging of Data Entry Operators @ Rs. 25000 per Month			1	0.250 per month	3.000	1	0.250 per month	3.000	1	0.250 per month	3.000	1	0.250 per month	3.000	1	0.250 per month	3.000	1	15.000
b	Procurrement and Maintenance of Computer Peripherals					0.750			0.750			0.750			0.750			0.750		3.750
c	Monitoring and Evaluvation					0			0.400			0.400			0.400			0.400		1.600
d	Unforeseen & Miscelleaneous expenditure (Electricity Bills, Stationery Bills etc.)					0.820			0.820			0.720			0.710			0.710		3.780
	TOTAL					**144.940**			**101.300**			**62.040**			**34.530**			**22.190**		**367.000**

Abstract		
1	Habitat improvement and conservation	16.600
2	Water resources	94.750
3	Infrastructure development	82.000
4	Man animal conflict	35.000
5	Procurement of Water tanker with Tractor & maintenance	32.100
6	Fire protection	13.920
7	Awareness programme	25.000
8	Monitoring of Wildlife by installing camera traps	23.500
9	Improvement of Communication Network such as Installation of Wireless equipment and maintenance etc.,	20.000
10	Adminstrative Cost	24.130
	Total	367.000

Divisional Forest Officer
Proddatur (WL) Division

Courtesy Signed

Conservator of Forests,
Kurnool Circle, KURNOOL

Wildlife Mitigation & Conservation Plan

For

Diversion of 1.1.03 Ha Forest land for up-gradation and widening the existing road into two lanes with paved configuration of NH 167B from 51/000 to 58/500 from Porumamilla to Chandrasekharapuram in the State of Andhra Pradesh.

Divisional Forest Officer (WLM)
Proddatur