

**SITE INSPECTION REPORT AND RECOMMENDATION FOR REHABILITATION AND UP GRADATION OF  
NH-85 FROM MUNNAR- BODIMETTU ROAD OF DIVISIONAL FOREST OFFICER, MUNNAR**

**PROPOSAL NO. FP/KL/ROAD/38879/2019**

A proposal has been received in this office for Rehabilitation and upgradation of NH 85 from 119/017 to 161/300 (Design Chainage Km 119/017 to 160/800) Bodimettu to Munnar. The Asst. Executive Engineer NH Sub Division, Devikulam (User Agency) which requires diversion of 1.495 Ha of Forest land under FCA, 1980 for non-forestry purpose.

I have inspected the proposed diversion area from Signal Point near social forestry buildings to the Erachilpara (length - 1740 m) under Devikulam Fuel Reserve and near Gap Road (50 m) in Devikulam Forest range under KDH Reserve under Section 4 Notification of KFA.

In the Devikulam Fuel Reserve area, in total 1507 trees are to be felled, in which Eucalyptus Sp is 696, Melicope lunu-ankenda is 278, Alnus nepalensis is 36, and various other trees are present. And various shola trees (250 around) are also present in the proposed diversion area. These stretches are important elephant movement routes with elephants frequently crossing near more than 10 points. The area near Gap is also an important habitat connectivity of Nilgiri Tahar, an endangered species. On seeing the upgradation of NH works in the nearby chainages, it is understood that steep slopes might be formed in these area. Based on this following measures seems necessary:

I) To enable Elephants and other major fauna cross the road, various sign boards are to be kept in the entire stretch ( Atleast 10 in no along each side).

II) Minimum of 10 Ramps with slope not more than 30 degrees shall be made on either side as per the directions of the DFO/ACF/RFO along the strategic and crucial points in the site.

III) Side railings/side walls, if any, should not be continuous, and should be with gaps of as per the site specific directions of the DFO/ACF/RFO, so as to enable crossing of animals.

IV) Mid road barriers shall be not be built in this stretch so that animal crossing is facilitated.

V) To facilitate small animals to cross the road and to reduce road kills, atleast 20 horizontal tree ladders are to be provided at desirable height.

VI) The approach road to the camp office of ACF, Munnar, Devikulam Range office and also Aruvikkad Section Office will be rendered unusable after the cutting

of NH road, hence User agency should ensure a newly paved approach shall be made available for these offices.

VII) The paved shoulders shall not be abruptly ended in a steep wall, rather the paved shoulders should be sloped on either sides.

In the KDH Proposed area, in total 246 trees are to be felled in a stretch of 50 m for widening the NH at Gap. This forms an important habitat connectivity point, ie an important wildlife corridor for animals to move from the gap ridge in the East East North to the chokramudi ridge in West West South directions. The species of trees are mostly Shola trees with Eucalyptus (39 in number). Nilgiri Tahr (*Nilgiritragus hylocrius*) is an endangered Species native to the Western Ghats and in critical need for connecting habitat needs to utilise this animal corridor area. Also Bison movement, rarely elephant movement is seen in this area. It is understood that the widening of the road will lead to steep slopes in both the Gap ridge and Chokramudi Ridge sides of the road for atleast more than 200m on either side. So the following measures in this area seems necessary:

I) An Eco-Overbridge, over the widened NH, with stability to support movement of Nilgiri Tahr, Indian Bison, and Elephant, shall be done ensuring the quality of the overbridge and other National Highway rules.

II) Ramps shall be made as per direction of DFO/ACF/RFO on either side to facilitate smooth movement of animals.

III) Mid road barriers shall be not be built in this stretch so that animal crossing is facilitated.

IV) Side railings/side walls, if any, should not be continuous, and should be with gaps of as per the site specific directions of the DFO/ACF/RFO, so as to enable crossing of animals.

V) The paved shoulders shall not be abruptly ended in a steep wall, rather the paved shoulders should be sloped on either sides so that animals are able to climb through this patch to the ridges.

Apart from these areas which are under Reserved Forest Status, the NH widening is taking place from Munnar to Bodimettu, for a 42.5 Km Stretch which has the land status of Cardamom Hill Reserve, KDH Village Revenue land and Chinnakanal Unreserved land (Revenue). Since the entire Munnar Landscape is an Elephant Habitat Area and Cardamom Hill Reserve have many important corridor areas for Elephant Movement, the following measures are necessary for the rest of the area.

I) Ramps on the either side of the road to facilitate Elephants and other animals to climb up and climb down the steep areas on either side of the road.

II) In as many areas as possible, Side railings/side walls, if any, should not be continuous, and should be with gaps of as per the site specific directions of the DFO/ACF/RFO, so as to enable crossing of animals.

III) To facilitate small animals to cross the road and to reduce road kills, atleast 50 horizontal tree ladders are to be provided at desirable height and also few underground passageways to be constructed wherever possible.

IV) At various corridor locations as per site specific directions of DFO/ACF/RFO, Paved Shoulders should not end in abrupt steep slopes, it should be sloped.

Other Conditions:

I) Throughout the entire 42.5 Km stretch various signboards to be erected to create Awareness on Road kills, No Waste Disposal, No Feeding of Animals, and to reduce speed of the vehicles in corridor areas.

II) To Ensure stability of the Gap Ridge area and the forest areas above the gap road and other parts, suitable geo-textiles to be used, to avoid further landslides in the area.

III) For Compensatory Afforestation, equal area (1.495 Ha) of degraded land has been identified in Kottayam division. Apart from that equal area of non forest land is to be provided as CA land. If the non forest CA land is not having trees, plantation can be raised as part of future CA.

IV) The entire area is prone to human-animal conflict and as the project might increase the conflict as the traffic increases in the road, the Department would require further infrastructure to handle them. So it is required that a vehicle with 4x4 drive, Tata Hexa Safari edition, Tata Harrier 2020 or Mahindra XUV500 W8 shall be provided to the FDA.

Area proposed, i.e., 1.492 Ha is the minimum required for the proposed project. Hence it is recommended to divert 1.492 Ha of Forest land for the implementation of the project. The user agency should construct necessary retaining wall in the above said area for preventing soil erosion, land sliding etc, as per the above recommendation of Forest Department.



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