

Title of the Proposal: Diversion of Forest Land for widening to Two/Four lane with paved shoulders from Km. 0.000 to Km. 101.400 (Maharashtra Border near Kamalnagar to Humnabad) Section of NH-50 on EPC Mode in the State of Karnataka (Job No. NH-50-KNT-2016-17-816&823).

COST-BENEFIT ANALYSIS

TABLE - A

| S. No. | Particulars | Applicability | Amount (Rs. Crores) |
|--------|--|--------------------|---|
| 01 | All category of proposals involving land less than 5 ha in Hills and less than 20 ha in Plain | Not Applicable | |
| 02 | Proposal for defence installation purposes and oil processing (Prospecting only) | Not Applicable | |
| 03 | Habitation, establishment of Industrial units tourist lodges/complex and other buildings constructions | Not Applicable | |
| 04 | All other proposals involving forest land more than 5 ha in Hills and more than 20 ha in Plain including roads, transmission lines, minor, medium, and major irrigation projects, hydel projects, mining activities, railway lines, locations specific installations micro-wave stations, auto repeater controls, towers, etc. | Applicable (Roads) | Diversion of 20.7687 Ha of Forest Land for widening to Two/Four lane with paved shoulders from Km. 0.000 to Km. 101.400 (Maharashtra Border near Kamalnagar to Humnabad) Section of NH-50 on EPC Mode in the State of Karnataka (Job No. NH-50-KNT-2016-17-816&823) |
| 05 | Total cost (Investment Incurred) | | |
| (a) | Civil Construction Cost of Project | | Approx. Rs 764.4 Cr |
| (b) | Alternative Plantation/Environment Cost/ Substitute | | Afforestation charges, Plantation work and its maintenance taken in DPR as 5.87 Cr |
| (c) | N.P.V. cost of 20.7687 Ha. Amount to be disposed @ 8.03 lakh/Hectare | | NPV cost 8.03 lacs/ha * 20.7687ha = 1.67Crore. |
| (d) | Loss of value of timber, fuel wood and minor forest produce on an annual basis including loss of man hours per annum of people who derived livelihood and wages from the harvest of these commodities | | Nos. of trees to be affected shall be accounted during joint inspection with Forest Dept. and Cost Benefit Analysis shall be updated accordingly. However, since the forest area is classified as Dry deciduous and |

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| | | | Shrub type vegetation, for estimation of loss at this stage of project, canopy density of 0.05 no. /sq. m has been considered as affected due to proposed development. Therefore, total values of trees @ average INR 1911 per tree = INR 1911 x 0.05 x 207687 = INR 1.98 Crore |
| 06 | Benefits (Construction of Two/Four Lane Road) | | Proposed upgradation of the project will result in smooth flow of traffic, reduction in traffic congestion, reduction in fuel consumption, low vehicle maintenance cost, improved transport facilities, control of air and noise pollution, reduction in road accidents, Improvement in tourismsector. |

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COST-BENEFIT ANALYSIS

TABLE - B

| S. No. | Parameters | Remarks |
|--------|--|---|
| 01 | Ecosystem services losses due to proposed Forest Diversion | 1. Diversion of Forest Land of 20.7687 Ha. 2. Economic value of loss of ecosystem services due to diversion of forest land = NPV of the forest land being diverted as Rs1.72 Crore. 3. Loss of value of timber = 1.98 Crore |
| 02 | Loss of Animals husbandry productivity including loss of fodder | NIL |
| 03 | Cost of human resettlement | NIL There will be no displacement due to the project, so resettlement is not required. |
| 04 | Loss of public facilities and administrative infrastructure (Roads, Buildings, Schools, Dispensaries, Electric Lines, Railways etc.) on which would require forest land if these facilitates were diverted due to the project. | No loss of public facilities and administrative interest occurs. |
| 05 | Possession value of forest land of Diverted Forest Land | Possession value of forest land will be 30 % of NPV as per circular issued by MOEFCC vide no 7-69/2011-FC (pt) dated 01/08/2017, Hence, it will be 30% of 1.67Crore =0.50Crore. |
| 06 | Suffering to Oustees | Nil |
| 07 | Habitant Pragamentation Cost | Nil |
| 08 | Environmental losses (Soil erosion, effect on hydrological cycle, wildlife habitat, micro climate upsetting of ecological balance) | The total area of forest land along the project road required for the proposed up-gradation is 20.7687 ha. The loss for density 1.0 is 126.74 Lacs per ha. As per Forest Conservation Act, 1980 for 50 years considering the density of the forest as 0.05, the total cost of environment losses per ha is Rs 6.337 Lacs for 50 years. 20.7687*6.337=131.61Lacs=say 1.32 Crores. |

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COST-BENEFIT ANALYSIS

Table - C

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|--------|---|---|
| 1. | Total Economic Benefits | Total revenue generation/economic benefit directly and indirectly by development of the project road over a period of 15 years shall be around Rs. 2100 Crores. |
| 2. | Increase in productivity attributable to the specification project. | Due to up-gradation of the existing highway to two lane paved shoulder/4-lane configuration, there will be overall development of the project area. There would be easy and fast movement of the traffic, so that it will save time, saving in fuel and maintenance cost of the vehicles. This will also result in reduction in accidents. Hence, widening of road will result in improved traffic condition, low maintenance cost of vehicles and saving in travel time will result in economic benefits. |
| 3. | Benefits to economy | <p>The project usually contributes the growth of local economy by increased commercial and agricultural and tourism activities due to improved highway.</p> <p>The economic benefits due to project are given below:</p> <ol style="list-style-type: none"> 1. Reduce pollution level due to better surface quality and traffic speed will be increased up to 80 kmph. 2. Fuel consumption is estimated to be reduced and saving travel time. 3. Provision of safety measures, road furniture along the road, truck lay bye, rest area and bus bays, necessary amenities provided and reduction in accidents. 4. Vehicles operating cost will be reduced due to better transportation. 5. Social economic growth will take place due to improved connectivity. 6. Fast and Safe Connectivity 7. Decongestion of traffic on the road 8. Savings in fuel, travel time and total |

| S. No. | Prameters | Remarks |
|--------|---|---|
| | | transportation cost of road users. 9. Reduction in road accidents. 10. Employment opportunity to people. 11. Development of tourism. 12. Development of local industry and handicrafts. 13. Quick transportation of agricultural produce, forest products and perishable goods. 14. Improved quality of life for people |
| 4. | No. of population benefited. | From the project stretch passing through Kamalnagar to Humnabad, approximately 500000 population shall be benefited. |
| 5. | Economic Benefites due to of direct and indirect employment due to project. | Due to Upgradation of the project road, about 1730 workers will get direct employment for duration of 3 years and 10000 indirect employment will also be generated during the construction of the project road. |
| 6. | Economic Benefits due to Compensatory Afforestation | The benefits of Compensatory Afforestation estimated as NPV. |

Cost of projects including forest/Environment loss etc. = 764.4 + loss of timber + environment loss = 764.4 + 1.67 + (1.98+1.32) = 769.37 Crore

Financial benefits of the project = 2100.00 Crore

Benefit Cost ratio: $2100.00/769.37 = 2.71 > 1$

Hence, Project is found viable

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