

## COST BENEFIT ANALYSIS

Full Title of the proposal:- Additional Forest Land requirement for four laning of NH-05 from Shakral Village to Dhalli section (Shimla Bypass Package II from Km 146+300 to Km 156+560 and Shimla Connectivity from Km 0+000 to Km 0+725 for Design length – 10.985 Km) in already approved FCA case of the entire section from Kaithlighat to Dhalli (Chainage from Km. 129.050 to Km. 156.507) of NH-22 (New NH-05) for 40.3 Ha in the State of Himachal Pradesh

File No. : FP/HP/ROAD/154923/2022

Date of Proposal: 27 April 2022

## SHIMLA FOREST DIVISION

Table-A: Cases under which Cost-Benefit Analysis for Forest Diversion are required

Sl.no	Nature of Proposal	Applicable / Not Applicable	Remarks
1	All categories of proposals involving forest land upto 20 hectares in plains and upto 5 hectares in hills	Not Applicable	These proposals may be considered in a case to case basis and value judgement
2	Proposal for defence installation purposes and oil prospecting (prospecting only)	Not Applicable	In view of national priority accorded to these sectors, the proposals would be critically assessed to help ascertain that the utmost minimum forest land is diverted for non-forest use
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction	Not Applicable	These activities being detrimental to protection and conservation of forest, as a matter of policy, such proposals would be rarely entertained.
4	All other proposals involving forest land more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydroprojects, mining activity, railway lines, location specific installations like microwave stations, auto repeater centres, TV towers etc.	Applicable	These are cases where a cost - benefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest

Table B: Estimation of Cost of Forest Diversion

Sl.no	Parameters	Remarks	Description	Amount in lakh Rs
1	Ecosystem services losses due to proposed forest diversion	Economic value of loss of ecosystem services due to diversion of forest shall be the net present value (NPV) of the forest land being diverted as prescribed by the Central Government (MoEF&CC). Note : In case of National Parks the NPV shall be ten (10) times the normal NPV and in case of Wildlife Sanctuary the NPV shall be five (5) times the normal NPV or otherwise prescribed by the Ministry or any other competent authority.	19.1788 ha (19.1712 ha + 0.0076 ha) of forest land to be diverted. NPV Cost of the forest area (19.1788 X 10.69470 lakh/ha) for 50 years. NPV obtained from HP Forest Department website as per revised rates by MoEF&CC vide letter dated 6.01.2022 for Class VI open forest.	205.11
2	Loss of animal husbandry productivity, including loss of fodder	To be quantified and expressed in monetary terms or 10% of NPV applicable whichever is maximum	10% of NPV = 10% x 205.11 lakhs	20.51
3	Cost of human resettlement	To be quantified in monetary terms as per approved R&R plan	No Resettlement in the forest land proposed for diversion of the project	0.00
4	Loss of public facilities and administrative infrastructure (roads, building, schools, dispensary, electric lines, railways etc) on forest land, which would require forest land if these facilities were diverted due to the project	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	Nil	0.00
5	Possession value of forest land diverted	30% of environmental costs (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is maximum	30% of NPV = 30% x 205.11 lakhs	61.53
6	Cost of suffering to oustees	The social cost of rehabilitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be worked out as 1.5 times of what oustees should have earned in two years had he not been shifted	Nil	0.00


Sl.no	Parameters	Remarks	Description	Amount in lakh Rs
7	Habitat fragmentation cost	While the relationship between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as thumb rule.	50% of NPV = 50% x 205.11 lakhs	102.56
8	Compensatory Afforestation and soil and moisture conservation cost	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value	CA cost provided by the Forest Department as per CA Scheme	400
<b>Total Estimated Cost</b>				<b>789.71</b>

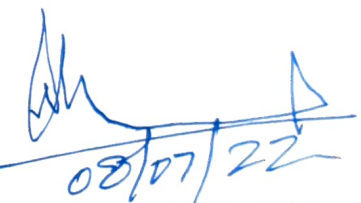
**Table C- Existing guidelines for estimating benefits of forest diversion in CBA**

Sl.no	Parameters	Remarks	Description
1	Increase in productivity attributed to the specific project	To be quantified and expressed in monetary terms avoiding double counting	Benefits of the project to the Economy are in terms of increase in Economic Activity around the Project Area, increase in Per capita income around the Project Influence Area, etc.
2	Benefits to economy due to the specific project	The incremental economic benefit in monetary terms due to the activities attributed to the specific project	14068.335
3	No. of Population benefited due to the specific project	As per Detailed project report	Direct Benefits (Shimla District) 8.14 Lakhs Indirect Benefit (HP state) 68.64 Lakhs
4	Economic benefits due to direct and indirect employment due to the project	As per Detailed project report	Around 200 persons will be employed during the construction period, which is 3 years.
5	Economic benefits due to the compensatory afforestation	Benefits from such Compensatory Afforestation accruing over next 50 years monetised and discounted to the present value should be included as benefits of compensatory afforestation. *For benefits of CA the guideline of the Ministry for NPV estimation may be consulted	
<b>Total Estimated Benefits</b>			<b>14068.34</b>
<b>Ratio of Cost and Benefit</b>			<b>1:17.8</b>

**As such after considering the above figures of Cost of the diversion of forest land and the benefits to the economy, the benefits are much more than the cost incurred which makes the Project viable**

CS   
**Divisional Forest Officer**  
**Shimla Forest Division (Urban)**  
**Shimla-2**

CS   
**Divisional Forest Officer**  
**Shimla Forest Division**  
**SHIMLA**

  
 08/07/22  
**महाप्रबंधक (तकनीकी) / GM(T.)**  
**एवं परियोजना निदेशक / & Project Director**  
**भारारा.प्रा. / N.H.A.I.**  
**प.का.ई. - शिमला (हि०प्र०) / PIU-Shimla (H.P.)**