

**OFFICE OF THE EXECUTIVE ENGINEER,
NATIONAL HIGHWAY DIVISION, GULZARBAGH, PATNA**

(Email ID : eenhgulzarbagh@gmail.com Mob. No.-9470001312)

Near Telephone Bhawan, R. Block, Patna

Cost Benefit Analysis as per Guidelines for forest land diversion -2017

Project:- Diversion of 97.3934 Ha. Of forest land for Improvement of Two Lane with Paved Shoulder of NH-122 B starting from junction of NH-22 near Hajipur to junction of NH-122 near Bachwara via Mahnar, MohiuddinNagar in Bihar.

Table-A : Cases under which a 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 hectare in hills.	Not applicable	These proposals may be considered on 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 forestland more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity, railway lines, location specific installations like micro-wave stations, auto repeater centres, TV towers etc.	Applicable (Roads)	Diversion of 97.3934 Ha PF land for Up-gradation Widening and strengthening work of existing Two Laning with paved shoulder of stretch from Junction of NH-22 near Hazipur to junction of NH-122 at Bachhwara via Mahanar and Mohiuddin Nagar of NH- 122 B (Ch. 0.000 to Ch 72.950) in the state of Bihar.

kar
11.03.23

R.P.
11/3/2023

R-P.
11/03/2023
Executive Engineer
NH Division Gulzarbagh
Patna

Table-B : Estimation of Cost of forest Diversion

S.No.	Parameters	Quantity (Ha.)	Rate (Rs.)	Amount (Rs. Lakh.)	Remarks
1	Eco-system Services Losses Due to proposed forest Diversion	97.3934	957780	932.81	APCCF(Campa)-cum-Nodal Officer (Forest Conservation) letter No. 1075 dt. 15.12.2022
2	Loss of animal husbandry productivity, including loss of fodder			93.281	To be Quantified and expressed in monetary terms or 10% of NPV applicable whichever is maximum
3	Cost of human resettlement.			0	The cost of Human resettlement for diversion of forest land is Nil.
4	Loss of public facilities and administrative infrastructure (Roads, building School, dispensaries, electric lines, Railways etc.) on forest land, or which would require forest land if these facilities were diverted due to the project.			1171.01	Electric lines & poles, Water pipe lines, Water Tank etc. public facilities which are being affected have been considered in the budget. Also the budgets for affected CPRs have been considered.
5	Possession Value of forest Land Diverted	97.3934	287334	279.84	30% of Npv
6	Suffering to oustees			0	The Widening and strengthening of the project road is to be undertaken on the adjoining land of the existing road. So there are no sufferings to oustees
7	Habitat Fragmentation Cost			466.405	Taken as 50% of NPV
8	Compensatory Afforestation	194.7868	-	450.99	APCCF(Campa)-cum-Nodal Officer (Forest Conservation) letter No. 1075 dt. 15.12.2022
9	Project Civil Cost (Rs. 340.83+148.49)Cr.			489.32	
Total				523.26	Crore

11.03.23

11/03/2023

12-P.
11/03/2023
Executive Engineer
NH Division Gulzarbagh
Patna

Table C :- Parameters for Evaluation of benefits notwithstanding loss of forests.

Benefits					
Sl	Parameters	Quantity (Ha.)	Rate (Rs. in Lakh)	Amount (Rs.Cr.)	Remark
1	Increase in Productivity and Economics			780.00	Due to Upgradation of existing highway to two lane with paved shoulder 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 save fuel and maintenance cost of the vehicle. This will also result in reduction in congestion on road, saving in travel time and reduction in accident. I assume that due to widening of road will result in improved traffic condition and saving in travel time will result in economic benefit of Rs.780 crore.
2	Benefits to economy due to the specific project			85.96	<p>The project usually contributes the growth of local economy by increased commercial, agricultural and tourist activities due to improvement of highway. Following economic benefit due to project are enlisted below :</p> <ol style="list-style-type: none"> 1. Reduce pollution level due to better surface quality and traffic speed will be increased 80 Km/Hr. 2. Fuel Consumption is estimated to be reduced and saving in travel time 3. Provision of safety measures, Road furniture's along the road and truck lay by and bus bays, necessary amenities provide reduction in accident 4. Vehicle operation cost will be reduced due to better transportation 5. Social economic growth of people unconnected in remote areas will take place <p>Based on the economic analysis of the project, Economic Internal Rate of Return (EIRR) is as follows 2 times of NPV = 2 x 42.93 = 85.96 Cr</p>
3	No. of Population benefitted due to specific project	No. of Population = 1,07,11,182			This road project directly benefits the people of Vaishali, Samastipur and Begusarai District is 10711182 (as per census 2011) .
4	Economic Benefits due to direct and indirect employment due to the project			4.06	Permanent employment of 20 people and temporary employment of 120 people for project duration of 548 days. (20x548xRs.1000 per day) + (120x548xRs.450 per day) = 4.06 crore.
5	Benefit from Compensatory Afforestation	194.7868	450.99	878.47	APCCF(Campa)-cum-Nodal Officer (Forest Conservation) letter No. 1075 dt. 15.12.2022
Total (780+85.96+4.06+878.47)cr. = 1748.49 Crore					

Cost Benefit Ratio (CBA Ratio) = $\frac{\text{Benefit/Cost}}{\text{Benefit/Cost}}$

= $\frac{1748.49 \text{ cr.}}{523.26 \text{ cr.}} = 3.34$

CBA Ratio = 1:3.34

40-
11.03.23

11/03/2023

R.P.
11/03/2023
Executive Engineer
NH Division Gulzarbagh
Patna