

COST BENEFIT ANALYSIS

NAME OF THE PROJECT :	Widening and improvement of Package- V of Imphal-Jiribam Road Section of NH-37 (NH-53) into two laning of existing 103.557 km from Sangrung (Khongsang) village to 134.821 km near Pulton (Kambiron) Village in the State of Manipur by NHIDCL
NATURE OF PROPOSAL :	Diversion of Forest Land under FCA, 1980 for road widening.
PURPOSE:	This Cost Benefit Analysis is being undertaken for Proposed Diversion of Forest Land being affected due to Widening and improvement of Package- V of Imphal-Jiribam Road Section of NH-37 (NH-53) into two laning of existing 103.557 km from Sangrung (Khongsang) village to 134.821 km near Pulton (Kambiron) Village in the State of Manipur by NHIDCL

TABLE - A: ESTIMATION OF COST OF FOREST DIVERSION				
Sl.	Parameters	Description		
1	Eco-system Services Losses due to Proposed Forest Diversion	Rs. 546.960 Lakhs		
		1) Propose Area to be diverted 74.926 Ha 2) Crown density of the proposed area 0-60 % 3) Forest Cover Area Area in Hectare (i) Very Dense Forest 0.000 (ii) Moderately Dense Forest 0.000 (iii) Open Forest 74.926 (iv) Scrub 0.000 Total Forest Diversion Area = 74.926 4) As per Supreme Court's Order dated 28.03.2008 in W(P)C No. 202/1995 (i) Forest type of the proposed diversion area : Eco-Class I (ii) Net Present Value :		
		Forest Class	Area (Ha)	Rate (Lakhs/Ha) Amount (Lakhs)
		(a) Very Dense Forest	0.00	10.43 0.00
		(b) Moderately Dense Forest	0.00	9.39 0.00
		(c) Open Forest	74.926	7.30 546.96
		(d) Scrub	0.00	0.00 0.00
		Total = 546.960		
2	Loss of animal husbandry productivity, including loss of fodder	10% of NPV = 10% of Rs. 546.9598 Lakhs =		
		54.696 Lakhs		
3	Cost of human Resettlement.	Nil		
4	Loss of public facilities and administrative infrastructure (Roads, buildings School, dispensaries, electric lines, railways etc) on forest land, or which would require forest land if these facilities were diverted due to the project	The cost of Human Resettlement for diversion of Forest Land is Nil. 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 CRSs have been considered.		
5	Possession Value of Forest Land Diverted	30% of NPV = 30% of Rs. 546.9598 Lakhs =		
		164.088 Lakhs		
6	Suffering to oustees	Nil		
		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	50% of NPV = 50% of Rs. 546.9598 Lakhs =		
		273.480 Lakhs		
8	Compensatory Afforestation and Soil & Moisture Conservation Cost	Compensatory Afforestation cost of 149.852 Ha land for 74.926 Ha proposed Forest Land Diversion = Rs.299.7 Lakhs (including Rs.29.97 Lakhs as soil & moisture conservation cost which is 10% of CA item work cost for a maintenance period of 8 years)		
		299.704 Lakhs		
TOTAL (TABLE - A: COST OF FOREST DIVERSION)				1,838.928 Lakhs

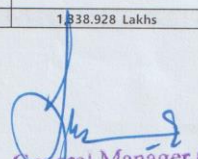


General Manager (P),
NHIDCL, PMU-Money

TABLE - B: ESTIMATION OF BENEFITS OF FOREST DIVERSION																																																							
Sl.	Parameters	Description																																																					
1	Increase in Productivity and Economy	$\frac{[(18000 \times (1.05)^5) \times (2.71/30) \times ((10\% \times 5 + 5\% \times 10 + 2\% \times 15))] \times (\text{Package Length} / \text{Road Length})}{}$ <p>Economic Improvement in the Project District (Churachandpur) considering enhanced growth in the GDP against normal growth rate due to the project. This benefit will be for 5 years at enhanced rate of 10%, 10 years for enhanced 5% rate & 15 years for enhanced rate of 2% (Current GDP of the state @ 18,000 Crore / annum in 2014-15, Population of Manipur is 30 Lacs and Noney District is</p>																																																					
2	Benefits on vehicle operation & maintenance cost due to improvement of the project Road	5790 Lakhs per year x 30 years for Saving in VOC			392.934 Lakhs																																																		
3	No. of Population benefited due to specific project	Population along NH-37 Noney District shall be benefited from the project. In addition, the project will boost the agricultural and Industrial development of the surrounding area which will eventually boost the economic growth.																																																					
4	Economic benefits due to direct and indirect employment due to the project	<div>1. Employment Potential – Construction</div> <table><thead><tr><th>Type</th><th>No.</th><th>Rate / Day</th><th>Years</th><th>Amt (Lakhs)</th></tr></thead><tbody><tr><td>Skilled</td><td>50</td><td>600</td><td>3</td><td>328.500</td></tr><tr><td>Semi Skilled</td><td>16</td><td>350</td><td>3</td><td>61.320</td></tr><tr><td>Technical</td><td>3</td><td>2,500</td><td>3</td><td>82.125</td></tr><tr><td colspan="4"></td><td>471.945</td></tr></tbody></table> <div>2. Employment Potential – Maintenance</div> <table><thead><tr><th>Type</th><th>No.</th><th>Rate / Day</th><th>Years</th><th>Amt (Lakhs)</th></tr></thead><tbody><tr><td>Skilled</td><td>3</td><td>600</td><td>30</td><td>197.100</td></tr><tr><td>Semi Skilled</td><td>2</td><td>350</td><td>30</td><td>76.650</td></tr><tr><td>Technical</td><td>1</td><td>2,500</td><td>30</td><td>273.750</td></tr><tr><td colspan="4"></td><td>547.500</td></tr></tbody></table> <div>Total Employment Potential = 1,019.45 Lakhs</div>				Type	No.	Rate / Day	Years	Amt (Lakhs)	Skilled	50	600	3	328.500	Semi Skilled	16	350	3	61.320	Technical	3	2,500	3	82.125					471.945	Type	No.	Rate / Day	Years	Amt (Lakhs)	Skilled	3	600	30	197.100	Semi Skilled	2	350	30	76.650	Technical	1	2,500	30	273.750					547.500
Type	No.	Rate / Day	Years	Amt (Lakhs)																																																			
Skilled	50	600	3	328.500																																																			
Semi Skilled	16	350	3	61.320																																																			
Technical	3	2,500	3	82.125																																																			
				471.945																																																			
Type	No.	Rate / Day	Years	Amt (Lakhs)																																																			
Skilled	3	600	30	197.100																																																			
Semi Skilled	2	350	30	76.650																																																			
Technical	1	2,500	30	273.750																																																			
				547.500																																																			
5	Benefit from Compensatory Afforestation	71929 Mandays as per prevailing wage rate for a maintenance period of 8 years of @ present wage rate Rs. 225 Mday =			161.840 Lakhs																																																		
TOTAL (TABLE - B: BENEFIT OF FOREST DIVERSION)				175,274.219 Lakhs																																																			


General Manager (P)
NHIDCL, PMU - Noney