



भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार)

National Highways Authority of India

(Ministry of Road Transport & Highways, Govt. of India)

परियोजना कार्यान्वयन ईकाई-वसन्त विहार, (देहरादून)

Project Implementation Unit-Vasant Vihar (Dehradun)

मकान सं० 171, फेज- I, वसन्त विहार, देहरादून - 248006

House no.171, Phase-I, Vasant Vihar-Dehradun - 248006

दूरभाष/Phone : 0135-2760001
ई-मेल/E-mail : piuvasantvihar@nhai.org
वेबसाइट/Website : www.nhai.gov.in



सत्यमेव जयते

NHAI/PIU-VSNT-VHR/33011/Ponta-Ballupur/LA (DDN)/NH-72/2020/1856

Dt.25.02.2022

सेवा में,

प्रभागीय वनाधिकारी
कालसी, देहरादून
(उत्तराखण्ड)

विषय: जनपद-उत्तराखण्ड एवं हिमाचल प्रदेश राज्य के अन्तर्गत राष्ट्रीय राजमार्ग संख्या 72 (पांवटासाहिब-बल्लूपुर (देहरादून)) के कि. मी. 104.000 से कि. मी. 149.000 तक और 72 (पांवटासाहिब बाईपास) के कि. मी. 97.000 से कि. मी. 104.000 तक के चारलेन एवं चौड़ीकरण एवं सुदृढीकरण हेतु 24.1884 हे० वनभूमि का गैरवानिकी कार्य हेतु भारतीय राष्ट्रीय राजमार्ग प्राधिकरण (NHAI) विभाग को प्रत्यावर्तन। (online no. FP/UK/ROAD/121027/2021)

सन्दर्भ: Online EDS through PARIVESH portal dated 24.02.2022

Dear Sir,

With reference to above mentioned subject, we have received online EDS through PARIVESH portal for proposal No. FP/UK/ROAD/121027/2021 dated 24.02.2022. The point wise compliance is as below:

Compliance Report

Sl. No.	EDS raised by Forest Department	Compliance by User Agency																		
1	EDS reply for the query raised by RO, GoI dated 28-12-2021 received at your end dated 15-02-2022 (letter no. 2146/12-1), The reply for point no 1 and 2 is not correct as component wise breakup and cost benefit analysis is not found correctly mentioned / uploaded. Kindly upload/mentioned the sought information correctly in form A part-I	<p>1. उक्त बिन्दु की पालना में प्रयोक्ता अभिकरण द्वारा Component Wise Breakup पैरा बी 2.4 में प्रदर्शित कर दी गई है।</p> <table><thead><tr><th>Component</th><th>Forest Land (Ha.)</th><th>Non-Forest Land (Ha.)</th></tr></thead><tbody><tr><td>Road Works</td><td>- 20.8707</td><td>127.5028</td></tr><tr><td>Bridge Works</td><td>- 0.4473</td><td>5.4588</td></tr><tr><td>Hill Cutting</td><td>- 2.8704</td><td>0.0000</td></tr><tr><td>Muck Disposal</td><td>- 0.0000</td><td>0.0000</td></tr><tr><td>Total</td><td>- 24.1884</td><td>132.9616</td></tr></tbody></table> <p>उक्त बिन्दु की पालना में अवगत कराना है कि उक्त प्रस्ताव में कुल 8.16,478 Cum मलवा निकलेगा जबकि प्रस्ताव में 18,42,883 Cum मलवा/मिट्टी की आवश्यकता होगी अतः इस परियोजना में मक डिस्पोजल साइट की आवश्यकता नहीं है। हार्ड प्रतिलिपी संलग्न है।</p> <p>2. उक्त बिन्दु की पालना में संशोधित Cost Benefit Analysis online portal पर Part-I के para G पर अपलोड कर दिया गया है। हार्ड प्रतिलिपी संलग्न है।</p>	Component	Forest Land (Ha.)	Non-Forest Land (Ha.)	Road Works	- 20.8707	127.5028	Bridge Works	- 0.4473	5.4588	Hill Cutting	- 2.8704	0.0000	Muck Disposal	- 0.0000	0.0000	Total	- 24.1884	132.9616
Component	Forest Land (Ha.)	Non-Forest Land (Ha.)																		
Road Works	- 20.8707	127.5028																		
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Muck Disposal	- 0.0000	0.0000																		
Total	- 24.1884	132.9616																		

अतः उपरोक्त के क्रम में आवश्यक कार्यवाही हेतु प्रेषित है।
स-धन्यवाद।

संलग्नक: उपरोक्तानुसार।

भवदीय

(पंकज कुमार मौरी)
महाप्रबन्धक (तक०) सह
परियोजना निदेशक
पी०आई०यू०-वसन्त विहार (देहरादून)।

FORM - A

Form for seeking prior approval of Central Government under section 2 of the Forest(Conservation) Act,1980 for Diversion of fresh forest area

PART - I

(To be filled up by User Agency)

A. General Details**A-1. Project Details**

(i). Proposal No. : FP/UK/ROAD/121027/2021

(ii). Name of Project for which Forest Land is required : UP-gradation and 4-lanning of Paonta Saheb-Ballupur (Dehradun) Section of NH-72 (Km 104.00 to Km 149.00) in the state of Uttarakhand

(iii). Short narrative of the proposal and Project/scheme for which the forest land is required : UP-gradation and 4-lanning of Paonta Saheb-Ballupur (Dehradun) Section of NH-72 (Km 104.00 to Km 149.00) in the state of Uttarakhand

(iv). State : Uttarakhand

(v). Category of the Proposal : Road

(vi). Shape of forest land proposed to be diverted : Linear

(vii). Estimated cost of the Project(Rupees in lacs) : 80000

(viii). Area of forest land proposed for diversion(in ha.): 24.1884

(ix). Non-forest land required for this project(in ha.): 132.9616

(x). Total period for which the forest land is proposed to be diverted(in years): 99

A-2. Details of User Agency

(i). Name : NATIONAL HIGHWAY AUTHORITY OF INDIA, VASANT VIHAR, PIU, DEHRADUN

(ii). Address1 : House No 171, Phase 1, Vasant vihar, Dehradun

(iii). Address2 : NIL

(iv). State : Uttarakhand

(v). District : Dehradun

(vi). Pin : 248001

परियोजना निदेशक/Project Director
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
National Highways Authority of India
(सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
Ministry of Road Transport & Highways
प्लॉट नं० १७१-फेज १, वसन्त विहार, देहरादून

- (vii). Landmark : NIL
- (viii). Email address : piuvasantvihar.forest@gmail.com
- (ix). Landline Telephone No. : 0-
- (x). Fax No. : 0-
- (xi). Mobile No. : 7500209819
- (xii). Website (if any) : NIL
- (xiii). Legal status of User Agency : Central Government

A-3. Details of Person Making Application

- (i). First Name: Pankaj
- (ii). Middle Name: Kumar
- (iii). Last Name: Mourya
- (iv). Gender: Male
- (v). Designation: GeneralManager
- (vi). Address 1: Hosue No 171, Phase 1, Vasant vihar, Dehradun
- (vii). Address 2: NIL
- (viii). State: Uttarakhand
- (ix). District: Dehradun
- (x). Tehsil: Dehradun
- (xi). Pin: 248001
- (xii). Landmark: NIL
- (xiii). Email Address: piuvasantvihar.forest@gmail.com
- (xiv). Landline Telephone No.: 0-
- (xv). Fax No.: NIL
- (xvi). Mobile No.: 7500209819


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National Highways Authority of India
(सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
Ministry of Road Transport & Highways
पि०आइ०पू०-वसन्त विहार, देहरादून

(xvii). Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency: 

B. Details of land required for the Project

B-1. Details of proposal seeking prior approval of Central Government under the Act for diversion of forest land for the Project already submitted in the past

List of proposal submitted in Past							
S.no	Proposal Status.	Proposal No.	Moef File No.	Area Proposed for Diversion(Ha.)	Area Diverted(Ha.)	Date of In-Principle Approval	Date of Final Approval
NIL							

B-2. Details of forest land proposed to be diverted

B-2.1 Details of Divisions involved

Details of Divisions involved			
S.no	Division Name	Forest Land(ha.)	Non-Forest Land(ha.)
1.	Soil Conservation,Kalsi	24.1884	132.9616
Total		24.1884	132.9616

B-2.2 Details of Districts involved

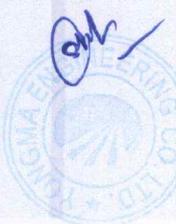
District wise breakup			
S.no	District Name	Forest Land(ha.)	Non-Forest Land(ha.)
1.	Dehradun	24.1884	132.9616
Total		24.1884	132.9616

B-2.3 Village wise breakup

Villages wise breakup			
S.no	Village	Forest Land(ha.)	Non-Forest Land(ha.)
1	Kulhal Matak	5.1125	1.554
2	Matka Majri	4.5	1.145
3	Kunja	2.7103	1.741
4	Kunjagrnt	3.9394	1.9546
5	Aduwala	3.6232	1.152
6	Shahpur Kalyanpur	3.1811	1.556
7	Dharmawala	1.1219	1.689
8	Prateetpur Kalyanpur	0	5.075
9	Badripur	0	5.85
10	Mednipur Badripur	0	7.515
11	Majri	0	2.8
12	Jatowala	0	4.455
13	Tiparpur	0	3.85



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 Ministry of Road Transport & Highways
 नं०आदे०१००-दस्तावेज विभाग, देहरादून



14	Shabhawala	0	13.95
15	Kalyanpur	0	3.64
16	Hasanpur	0	10.17
17	Sherpur	0	7.35
18	Shisambada	0	10.115
19	East Hope Town	0	24.12
20	Arcadia Grant	0	5.04
21	Mithi Behadi	0	1.96
22	Shahpur Santor	0	7.38
23	Panditwadi	0	2.275
24	Dhartawala Mafi	0	1.845
25	Bajawala	0	1.98
26	Kanwali	0	2.8
Total		24.1884	132.9616

B-2.4 Component wise breakup

Component wise breakup			
S.no	Component	Forest Land(ha.)	Non-Forest Land(ha.)
1	Road	20.8707	127.5028
2	Bridge Section	0.4473	5.4588
3	Hill Cutting	2.8704	0
4	Muck Disposal Area	0	0
Total		24.1884	132.9616

C. Maps of forest land proposed to be diverted

Division 1. : Soil Conservation, Kalsi			
(i). Area of forest land proposed to be diverted(in ha.) : 24.1884			
(ii). Nature of the Project: Linear			
(b). No. of Segments : One			
Segment wise details			
Segments	Segment Area(in ha.)	Kml File of Segments (To view KML file on google the same may be downloaded and then open if in google earth install in your computer).	
1.	24.1884		View File
(iii). Copy of Survey of India Toposheet indicating boundary of forest land proposed to be diverted: 			
(iv). Scanned copy of the Geo-referenced map of the forest land proposed to be diverted prepared by using GPS or Total Station: 			

D.

Justification for locating the Project in forest land and details of alternatives examined:

(i). Copy of note containing justification for locating the Project in forest land: 

(ii). Whether a copy of map indicating location of alternative examine is required to be provided:
Yes

(a). Copy of map indicating location of alternative examined: 

E. Employment likely to be generated

(i). Whether the Project is likely to generate employment?: Yes

(ii). Permanent/Regular Employment(Number of persons): 0

(iii). Temporary Employment(Number of person-days): 187200

F. Displacement of People due to the Project, if any

(i). Whether Project involves displacement?: No

G. Details of Cost-Benefit analysis for the Project

(i). Whether the Project requires Cost-Benefit analysis?: Yes

(a). Copy of Cost-Benefit analysis: 

H. Status of Environmental Clearance

(i). Whether the Project requires Clearance under the Environment (Protection) Act 1986?: No

I. Status of Wildelife Clearance

(i). Whether the Project or a part thereof is located in any Protected Area or their Eco sensitive zone?: No

J. Applicability of special provisions governing Scheduled Areas

(i). Whether the Project or a part thereof is located in a Scheduled Area?: No

K. Status of settlement of rights under the Forest Rights Act, 2006 on the forest land proposed to be diverted

(i). Whether the process for settlement of Rights under the Forest Rights Acts 2006 on the forest land proposed to be diverted has been completed?: Yes


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National Highways Authority of India
(सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
Ministry of Road Transport & Highways
प०आई०यू०-वस्तु विहार, देहरादून

(a). Copy of documentary evidence in support of settlement of rights under the Forest Rights Act, 2006 on the forest land proposed to be diverted: 

L. Details of land identified for Compensatory Afforestation

(i). Whether non-forest or Revenue forest land is required to be provided by User Agency?: Not Applicable

(ii). Whether the area of non-forest land or Revenue forest land required to be provided by User Agency for raising Compensatory Afforestation is less than area of forest land proposed to be diverted?: Not Applicable

(iii) . Reason for not providing Non-Forest Land: Not Applicable

Additional information Details

Documents		
S.No	Documents	Remarks
1		MoM NHA1.
2		EDS Reply Letter Dated 05_03_2021 with Annexures.
3		EDS Reply Compliance Letter Dated 21_06_2021.
4		Compliance Report of EDS raised by Letter no 572_12 dated 27_08_2021.
5		Form A Online Part 1 Field by user Agency.
6		Prativedan.
7		Fact Sheet.
8		Form prescribed by the Government of India Format 2 Part I.
9		Form prescribed by the Government of India Part II.
10		Joint Site inspection Report.
11		Alternative Route Alignment report.
12		Justification for Land Format 11.
13		Details for optional land Format 13.
14		Certificate for Minimum Forest Land Format 14.
15		Land Schedule Format 15.
16		Certificate for Banj Tree Falling Details Format 16.
17		Cross Section.
18		Bar Chart Status.



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 National Highways Authority of India
 (सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
 Ministry of Road Transport & Highways
 प्लॉट आई०यू०-वस्तु विहार, देहरादून

19		Undertaking for No work started.
20		Details of Affected Trees Format 19.
21		Undertaking for Banj Tree Falling Details Format 22.
22		Certificate for Affected Tree Format 23.
23		Undertaking for minimum Tree Falling Format 24.
24		Certificate for Not Being Part of Wildlife Sanctuary Format 25.
25		Certificate for distance from National Park Format 26.
26		Certificate for Wildlife Permission Format 27.
27		Cert for Agreement bw LO And UA Format 48.
28		Certificate for Availability of Kerosin and other Format 39.
29		Certificate for CA Land Availability with Maps.
30		Certificate for following Geologist recommendation Format 34.
31		Certificate for NPV Calculation Format 42.
32		Certificate for NPV Format 51.
33		Check list of documents information required for proposal for diversion of forest land.
34		Gazette Notification.
35		Government of India FRA Circular.
36		Manak Sharte Format 36.
37		Muck disposal Plan Format 49_1.
38		NOC of landowner Format 47.
39		On both sides of the roadway and at the vacant places plantation work Format 46.
40		Task Force Certificate Format 35.
41		Undertaking for Benifted Village Format 40.
42		Undertaking for CA land.
43		Undertaking for Dharmik Pauranik Place Format 37.
44		Undertaking for No damage for Forest Foundation and Flowera Format 38.
45		Undertaking for Submiting Layout plan for building construction Format 32.

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 National Highways Authority of India
 सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
 Ministry of Road Transport & Highways
 प्लॉट नं. 10/200-वसन्त विहार, देहरादून

46		Village Wise Area Calculation Sheet.
47		Segment Wise Area Calculation Sheet.
48		Geo Referenced Digital Map with Coordinates prepared by Forest Department.
49		Georeferenced Toposheet Map prepared by Forest Department.
50		EDS Reply Letter Dated 05_03_2021.
51		Undertaking for Various Component Format 31.
52		Cost Benefit Analysis Report.
53		Muck Disposal Plan.
54		EDS Reply Letter dated 28_12_2021 with Enclosures.
55		Geological Report.
56		FRA Certificate with Annxures.
57		Sub Divisional Level Committee Meeting proceedings for FRA.
58		Village Level Committee Meeting proceedings for FRA.
59		Administrative and Financial Approval.
60		CA Land Maps for Compensatory Afforestation.



Print


परियोजना निदेशक /Project Director
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
 National Highways Authority of India
 (सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
 Ministry of Road Transport & Highways
 प्लॉ०आई०यू०-वसन्त विहार, देहली

COST BENEFIT ANALYSIS FOR DIVERSION OF FOREST LAND

Name of Proposal-“UP-gradation and 4-lanning of Paonta Saheb-Ballupur (Dehradun) Section of NH-72 (Km 104.000 to Km 149.000) in the State of Uttarakhand.”

Nature of Proposal: Diversion of 24.1884 Ha. of Reserve Forest Land of Shivalik Forest Division under FCA, 1980 for UP-gradation and 4-lanning of Paonta Saheb-Ballupur (Dehradun) Section.

Total Length of the Project road in/along forest area = 9.568 km

Total No. of District through which proposed project road alignment traverse – 01, Dehradun

Total forest area (RF) proposed for diversion = 24.1884 Ha.

Purpose: The Cost Benefit Analysis is being undertaken for proposed diversion of Forest Land for widening (4-laning) of existing road for above said project.

Cost Benefit Analysis as per MoEF&CC Guideline for Forest Land Diversion – August 2017

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 proposal 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 purpose 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 lodge complex and other building construction.	Not applicable	These activities being detrimental to protection and conservation of proposals would be rarely entertained.

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 Ministry of Road Transport & Highways
 पी०आइ०एन०-बसन्त विहार, देहरादून



Sl.No.	Nature of Proposal	Applicable / not applicable	Remarks
4	All other proposal involving forestland more than 20 hectare in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity, railway line, location specific installations like micro-wave stations, auto repeater centres, TV towers etc.	Applicable	These are cases where a costbenefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest.

Since the proposal is for diversion of forest area measuring more than 20 hectare in plains area and more than 5 hectare in hills for road project, cost benefit analysis report is applicable.

Table -B : Estimation of cost of forest diversion

SL	Parameters	Given Guideline	Evaluation
1	Ecosystem services losses due to proposed forest diversion	<p>Economic value of loss of eco-system services due to diversion of forests shall be the net present value (NPV) of the forest land being diverted as prescribed by Central Government (MoEF& CC).</p> <p>Note: In case of National parks the NPV shall be ten (10) times the normal NPV and in case Wildlife sanctuary the NPV shall be five (5) times the normal NPV or otherwise prescribed by the ministry or any other competent authority.</p> <p>Note-1: Net Present Value (NPV) of environment and ecosystem services loss:- The concept of Net Present Value of the forest land diverted is a scientific method of calculating the environmental cost and other losses caused due to diversion of forest land for non-forestry</p>	<p>Forest land Proposed for diversion is falls under the Eco-Class III (Dense Forest). Since the reserve forest land is of Eco class-III (Tropical Dry Deciduous) Forests having density 0.6 (Dense Forest), therefore Per hectare NPV Rate as per MoEF& CC circular No. 5-3/2011-FC (Vol-I) dated 6th January 2022 is considered Rs. 12, 28, 590/- Per ha.</p> <p>So NPV for 24.1884 hectare forest land will be = Rs. 12,28,590 x 24.1884 hectare = Rs. 2,97,17,626 or Rs. 297.18 lakhs.</p>

SL	Parameters	Given Guideline	Evaluation
		purposes. The NPV represents the net value of various ecosystem services and other environmental services in monetary terms which the forest would have provided if the forest would not have been diverted.	
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.	Loss of animal husbandry due to proposed diversion is very moderate and calculated below; Gross loss @ 5 ton/Ha./year, @ Rs. 100/- per ton. Therefore, loss of fodder as estimated for 24.1884 hectare will be $24.1884 \times 5 \times 100 = \text{Rs.}12094.2/\text{yr.} \times 50 \text{ years} = \text{Rs.} 6,04,710/-$ or Rs.6.04lakhs. Further considering 10% of NPV it will be = Rs. 297.18 lakh (NPV) x0.1 = Rs.29.72 lakh So considered amount (maximum one) is Rs. 29.72 lakh.
3	Cost of human resettlement	To be quantified and expressed in monetary terms on actual terms as per approved R&R plan.	Nil. as no human resettlement is required.
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railway, 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	No loss of public infrastructure like Roads, hospital etc. are investigated. However, there will be some utility shifting like, electricity pole, telephone line, OFC cable etc. from proposed ROW located in forest land. The likely cost of these utility shifting is estimated Rs. 232.22 lakhs
5	Possession value of forest land diverted	30% of environmental cost (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 forestland whichever is maximum. Note 2:- Possession value of	Possession Value of forest land will be (considering 30% of NPV) = $0.3 \times \text{Rs.} 297.18 = \text{Rs.}89.15 \text{ lakh.}$ Average per hectare land rate along the project highway in district Dehradun is Rs. 180 lakh per hectare of non-commercial area (as per Circle rate 2020).It is to be noted that along the project road

SL	Parameters	Given Guideline	Evaluation
		forest land diverted: - The forest land diverted for the project such as irrigation, hydropower, railways, roads, wind and transmission lines and mining etc are unlikely to be returned and remains in possession of the user agencies. Therefore 30% of the net present value (NPV) of forest land diverted or market rate of adjoining area in the district should be added as a cost component as "possession value of forest land" in addition to the environmental cost due to loss of forests.	section there is agricultural land. So, possession value of forest land (as per average circle rate) = 24.1884 hectare x 180lakh = 4353.91 lakh So considered amount (maximum one) is Rs. 4353.91lakh.
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, no resettlement & Rehabilitation is identified or required in forest land which is proposed to be diverted. Also, the community residing along the project road is not dependent on forest or forest produce. There will not be any losses on this account as diversion of the forest land to this project will not affect any house or structure in protected/reserved forest area.
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 a thumb rule.	Habitat fragmentation cost is 50% of NPV that is Rs. 297.18 x 0.5 = Rs.148.59 lakh.
8	Compensatory afforestation and soil & moisture conservation cost	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value	CA cost per hectare is considered Rs. 3.71 lakh per hectare for estimation purpose. It may be updated as per actual CA estimate prepared and provided by Forest Department. So, CA cost = 24.1884 hectare x 2 x Rs. 3.71 lakh = Rs.179.48 lakh.

Table – C- Existing guideline for estimating benefit of forest diversion in CBA

SL	Parameter	Given Guideline	Evaluation
1	Increase in productively attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting	<p>The proposed project for which diversion of forest land is sought is for widening of Existing Road. The project road will improve accessibility to the region. This will help in both economic & social development in the region.</p> <p>The project will enable smooth accessibility in the region by which people of the region will be directly benefited. This will accelerate industrialization/commercialization in region and the same will directly generate maximum employment opportunities in these areas and boosting up the economy of the region and state.</p> <p>Again, directly the project will have the potential for temporary employment generation for 300 local people for 2 years generating 187200 mandays during construction period. (26 Man-days in month x 24 month x 300 worker = 187200 Mandays.)</p> <p>Due to up-gradation of the existing highway, there will be overall development of the project area including capital city Dehradun in terms of transportation of agriculture produces, easy access to education, health, market etc.</p> <p>Project road is to be developed as 4-lane road to provide smooth, reduced time, connectivity to State capital and other adjoining places.</p>
2	Benefits to economy due to specific project	The incremental economic benefits in monetary terms due to the activities attributed to the specific project	<p>Economic benefit in terms of increase in trade, tourism, saving in vehicular operation and maintenance cost, better connectivity, safer journey to commuter and saving of travel time.</p> <p>Improved road connectivity helps in better implementation and management of government schemes. It will provide fast and economical transport of goods. After completion, the local people and industries situated in the area will be</p>



SL	Parameter	Given Guideline	Evaluation
			<p>greatly benefited. The widening of project road will provide safe, fast, economical and environment friendly transportation to the State which in term will accelerate the rate of growth in this area.</p> <p>In addition to that there are several other benefits that may accrue due to saving in fuel, reduction in carbon emission and man animal conflict. However, they have not been quantified, as it will be a function of various govt. policy variables. Exact quantification of the value is not possible as it is time and policy dependent.</p>
3	No of population benefited due to specific project	As per the Detailed project report	<p>The proposed road section in Uttarakhand which is part of NH-72, traverses in district Dehradun.</p> <p>While overall the populations of Uttarakhand State (100.86 Lakhs) will benefit from the project. Specifically, the projected population of district, Dehradun (16.98 Lakhs) through which the alignment passes will benefit largely in addition to lakhs of neighbour district commuters as well as long distance travellers and fright. (Source: Census 2011)</p>
4	Economic benefits due to of direct and indirect employment due to the project.	As per the detailed project report.	<p>Direct employment to 300 people for 2-year during construction period (accordingly 26 Man-days in month x 24-month x 300 worker = 187200 Mandays) and substantial indirect employment as a result of development of infrastructure, and tourism industries will also provide direct benefit to small scale industrial units in the area.</p>


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SL	Parameter	Given Guideline	Evaluation
5	Economic benefit due to Compensatory afforestation	Benefit 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 benefit of CA the guideline of the Ministry for NPV estimation may be consulted.	In lieu of total trees to be removed from Proposed PROW in Reserve/protected forest land along the project road, it is proposed to undertake at compensatory plantation of least twice of the affected/diverted forest area as per Forest (Conservation) Act. So, the net productivity will increase. The compensatory afforestation will be taken up in about $24.1884 \times 2 = 48.3768$ hectare of Degraded Forest land which is at least two times of the area proposed to be diverted. The compensatory afforestation will be done on 48.3768 hectare of degraded forest land, which is down the line would be having a density of minimum 0.7. The ecological value for a 50 years period for the density of 1.0 is INR 126.74 lakhs per hectare (As per Forest Conservation Act 1980). By considering minimum 0.7 density the ecological gain for this project would be Rs.4291.89 lakh.

Summary of Cost Benefit Analysis for the Project.

Sl. No.	Total cost / Loss (in Lakhs)	Benefit (in Lakhs)
1	Ecosystem services losses Rs. 297.18 Lakhs	Ecological gain from compensatory afforestation on 48.3768 (atleast) hectare on degeraded land would be Rs. 4291.89 lakh
2	Loss of animal husbandry productivity, including loss of fodder = Rs. 29.72 Lakhs	Approx. 187200 Man days will be generated for unskilled/semi skilled worker in terms of Salary and wages @ Rs. 500/day (average) = Rs. 936.00 lakh (# Minimum wages in Uttarakhand is Rs. 10520/month (or Rs. 350/day, but for considering actual practical wages including lodging the average cost per day for semiskilled/labourer is approx.. Rs. 500 per day.) Basic living amenities including alternative fuel (LPG, Solar Cooker etc) will be supplied to labours/workers. Construction period – 2 years Number of labours at peak time – 300 Approx. 20 % labour assume to be local Per head cost of fuel - Rs. 20/ per day for

		rest 240 labours Total cost = Rs. 20x240 labours x 730 days = Rs. 35,04,000/- or Rs. 35.04 lakhs
3	Loss of public facilities = 232.22 lakhs	
4	Possession Value of Forest land diverted = 4353.91Lakhs	
5	Habitat fragmentation cost = 148.59 laksh	
6	Compensatory afforestation and soil & moisture conservation cost = 179.48 lakhs	
	Total Cost/Loss = Rs. 297.18 Lakhs + Rs. 29.72 Lakhs + Rs. 232.22 Lakhs + Rs. 4353.91 Lakhs + Rs. 148.59 Lakhs + 179.48 Lakhs = 5241.10 Lakhs	Total gain/benefit from project = Rs. 4291.89Lakhs + Rs. 936.00Lakhs + Rs. 35.04Lakhs = 5262.93 Lakhs.

Cost Benefit Ratio = Total benefit /Total cost = 5262.93/5241.10 = 1.0042 which is >1, so project is found viable based on given/above described criteria.

Date: 25.02.2022

Place: Dehradun

Project Director

NHAI, PIU, Vasant Vihar, Dehradun

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Ministry of Road Transport & Highways
पी००३३०००-वसन्त विहार, देहरादून



Muck Disposal Plan

Name of Project:-“ UP-gradation and 4-lanning of Paonta Saheb-Ballupur (Dehradun) Section of NH-72 (Km 104.000 to Km 149.000) in the State of Uttarakhand.”

INTRODUCTION

Muck generation is considered a significant impact on land environment and the excavation shall result in large quantity of excavated material i.e. muck which shall have to be excavated and disposed of in a planned manner so that it takes a least possible space and is not hazardous to the environment. The muck disposal sites cause increased sedimentation in the rivers (though insignificant compared to natural sedimentation) and totally spoils the visual aesthetics of the area. It is of prime importance that these sites will have to be rehabilitated as soon as the disposal sites are full.

QUANTITY OF MUCK TO BE GENERATED

In the forest portion of the project highway, the hillside cutting is involved in the widening of the road. The cutting material comprises soil, boulders, rock and vegetation. It is observed that the volume of cutting is very small as compared to the volume of earth required in the construction of the embankment. Thus entire earth in cutting will be utilised in embankment construction for the same project, partly in the forest portion and partly outside the forest. The boulders will be used in slope pitching as erosion control, and as bed protection work for culverts and bridges. The vegetation cover generated will be stored and used for reapplication on earthen slopes. Thus the entire quantity of excavated material will be utilised in the construction of the project road and no dumping site is required for muck. The details are as under.

MCUK GENERATION FROM PROJECT COMPONENTS AND UTILIZATION

Sl. No.	Project Component	Muck Generation Quantity (Cum)	Project Component	Muck utilization Quantity (Cum)
1	Road widening / Hill cutting		Road widening and raising	
a	Forest section	284,068		333,105
b	Non-Forest Section	532,410		1509,888
	Total	816,478		1842,883
	Excess Quantity required to Disposed		(-) 1026,515	

The total quantity of generated muck to be disposed of is nil.

DISPOSAL OF MUCK

As detailed above total quantity of muck likely to be generated is 816,478 Cum. The entire quantity will be utilized in the project work itself.

As muck is property of the Forest Department royalty will be paid as per prevailing norms.

Sl. No.	Particulars	Remarks
1	Calculation of muck to be generated. Swell factor to be applied.	Total quantity of generated muck is 816,478 Cum
2	Quantity of muck to be utilized in the project activities	1842,883Cum
3	Balance quantity of muck which requires disposal/management plan.	Nil
4	Carriage of muck from the muck generation site to the dumping site.	As per contract conditions muck will be carried by contractors at their own cost which will be included in the civil cost.
5	Ownership of land and the consent of landowners in case muck disposal is proposed on non-forest land.	Since entire muck generated will be utilised in the road construction on the acquired land, no consent of land owners is required.
6	Carrying capacity of proposed dumping site (Muck disposal site)	No dumping site is required.
7	Development of dumping site construction of retaining walls and other structure as per requirement of the site. The objective is to completely stop rolling down of the muck.	Not applicable, due to the reasons given against item 5 and 6.
8	Rehabilitation of dumping site like levelling, planting of grass, shrubs and tree species.	Not applicable, due to the reasons given against item 5 and 6.

Note: Cost to be incurred on the above activities has to be given component-wise under civil cost. Details of dumping site including length, width, and height of structures to be erected must be mentioned – **The cost is included in civil cost in Bill No. 1, 2, 3, 5, 6, 7 and 8.**

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Bill No.	Description	Item Price (Rupees)		
		Package-1	Package 2	Total
1	Site Clearance	6,924,257	4,425,223	11,349,480
2	Earthworks	88,316,803	52,254,625	940,571,428
3	Sub-base and Base Courses	444,134,887	63,899,347	1,208,034,234
4	Flexible Pavement	303,661,097	99,975,589	903,636,686
4A	Rigid Pavement	29,225,338	-	29,225,338
5	Culverts	157,850,910	61,508,120	319,359,030
6	Bridges and grade separated structures	1,956,024,542	57,811,290	2,913,835,832
7	RE Wall	163,241,636	66,513,824	629,755,460
8	Drainage and protection works	365,950,240	37,908,567	803,858,807

Undertaking by user agency has to be given to the effect that:

1. Muck management plan will be implemented by user agency and in case of implementation of plan, they will be liable to penalty/action at their cost – **Agreed**
2. The proposed dumping site is located away from river/stream/Nala – **No dumping site is required.**

Date: 25.02.2022

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Project Director

NHAI, PIU, Vasant Vihar, Dehradun

Place: Dehradun

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