Form C-1: Monitoring Form during Planning/Design Stage for NH40

Monitoring Period From : 01.06.2019
To : 01.09.2019

S.N	Item	Check Point	Frequency	Evaluation or Mitigation status Y: Good /Yes N: Poor/No	Remarks	Signature by checker
1	Social Impact	Check notification	Monthly/ Quarterly/ Bi-annually	Y	Social Impact Assesment Report Prepared & Approved by the State Govt on recommendation of Expert Appraisal Committee as per RFCT LARR Act 2013	
		Check Payment records	Monthly/ Quarterly/ Bi-annually	-	Final LA Award is yet to be approved by the State Govt.	
2	Crops and vegetation	Interview with local residents will also help in this matter	Before commencement date	Y	Interview with locals were done during finalisation of DPR & process of SIA/LA.	
3	Impact on ROW design	Check final design drawing and original plan	Before commencement of Construction activities	-	The proposal for PIB approval submitted to MoRTH. Bids for civil works yet to be invited. However, the Design & Drawing submitted by DPR Consultant has been checked and found satisfactory.	
4	Noise and vibration	Determination of critical sites and methods of mitigation during the construction period.	Monthly/ As necessary	Y	The details of critical sites and method of mitigation have been incorporated by DPR Consultant in their Environmental Impact Assesment Report & Environmental Management Plan and the same has been verified and found satisfactory.	
5	Water Quality	Check final planning and approve if proposal is suitable	Before commencement of Construction activities	-	The proposal for PIB approval submitted to MoRTH. Bids for civil works yet to be invited. However, the water quality aspect has been considered in Material Report of the DPR.	
6	Land Slide and soil erosion	Visit Site and check land plans, alignment	Site Visits once after monsoon	Y	No landslide and soil erosion found along the project Highway.	
7	Loss of or damage to Religious places and eco-senstive areas.	Check encroachment on religious areas	Before and during Construction Period	Y	Boundary Wall of Church at Km 70.40 may have to be demolished but actal damage can be commented upon finalization of Plan & Profile during Construction Period	
		Check eco-sensitive areas	Before Construction Phase	Y	There are no eco-sensitive areas along the project Highway.	

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Attachment C2: Monitoring Form for NH51

Monitoring during Supervision

Observation of the construction/operation works to ensure mitigation actions will be conducted during site inspections as routine supervision of the work. This work will be conducted as part of general operation working/maintenance progress including daily work. Draft monitoring forms for each stage of the project are shown below.

Form C2-1: Monitoring Form during Planning/Design Stage

Monitoring Period From Date 15 Month 09 Year 2018

To Date 31 Month 03 Year 2019

S/N	Items	Check Point	Frequency	Evaluation or Mitigation status (Good/Yes, Fair/Poor/No)	Remark and Signature of Checker
1	Social Impact	- Check notification	□Monthly/ □Quarterly/ □Bi-annually	□Y /☑N	Signature by inspector
		- Check payment record	□Monthly/ □Quarterly/ □Bi-annually	□Y /☑N	
2	Crops and vegetation	- Interviews with local residents will also help in this matter.	□Before commencement date	☑Y / □N	Assessed during construction. Bivek Joshi
3	Impacts on ROW design	- Check final design drawing and original plan	□Before the commencement of construction activities	☑Y / □N	Checked at site Bivek Joshi
4	Noise and vibration	- Determination of critical sites and methods of mitigation during the construction period	□Monthly/ □As necessary	□Y /☑N	
5	Water quality	- Check final planning and approve if proposal is suitable	□Before the commencement of construction activities	☑Y / □N	Checked & found suitable Bivek Joshi
6	Land slide and soil erosion	- Visit site and check land plans, alignment	□Site visits □once after monsoon	☑Y / □N	Checked & incorporated in design. Bivek Joshi
7	Loss of or damage to Religious places and eco-sensitive areas.	- Check encroachment on religious areas	□Before and during construction phase	☑Y / □N	No loss. Bivek Joshi

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		- Check eco-sensitive areas	□Before construction phase	☑Y / □N	No eco sensitive areas Bruti Joshi
Total				Yes 6, No 3	

Form C2-2: Monitoring Form during Construction Stage

Type of work: WIDENING OF TUKA-DAW ROAD.

Monitoring Season: ☑Pre-monsoon / ☑Post-monsoon / ☑Winter

Monitoring Period From Date 31 Month 03 Year 2019

To Date 30 Month 11 Year 2019

S.N	Items	Check Point	Frequency	Evaluation of Mitigation Status Y:Good/Yes N:Poor/No	Remark or Signature by Checker
1	Social Impact	- Check if the community has brought the problem to the notice of the Consultant and Client	□Monthly	□Y / ☑N	Signature by Inspector
2	Air pollution	- Check watering as per the frequency given in the EMP.	□Weekly	☑Y / □N	Not adequate Bruti Joshi
		- Proper implementation can be achieved by site inspection along with interviews with local residents.	□Weekly	☑Y / □N	Not adequate Bruti Joshi
		- Seasonal monitoring	□Seasonal	As per Form C1-4	
3	Noise and vibration	- Check that the Contractor is performing mitigation measures.	□Monthly	□Y ☑N	
		- This can be achieved by interviewing the locals and site inspection. - Seasonal monitoring	□Monthly □Seasonal	□Y ☑N As per Form C1-5	
4	Water quality	- Visit site and check drain provision/ functioning - Seasonal monitoring	□Weekly □Seasonal	☑Y / □N As per Form C1-6, 7	Kutcha drains are present Bruti Joshi

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S.N	Items	Check Point	Frequency	Evaluation or Mitigation Status Y:Good/Yes N:Poor/No	Remark and Signature by Checker
5	Oil spills and hazardous wastes	- Check the mitigation measures.	□One check	☑Y / □N	Not happened Bivek Joshi
		- A fortnightly inspection is necessary until the completion of the project.	□One check	☑Y / □N	Not yet occured Bivek Joshi
6	Spoil disposal	- A monthly inspection of the disposal sites along with the review of the design plan is a better way of assessment.	□Weekly	☑Y / □N	Sites checked & agreement done with owner for Spoil disposal Bivek Joshi
7	Construction waste disposal	- Interviews with local residents will also give a proper assessment of the issue.	□Weekly	□Y / ☑N	
8	Land slide and soil erosion	- A site inspection along with the review of the design plans is necessary.	□During rainy seasons	☑Y / □N	Disputed & incorporated in design. Bivek Joshi
9	Earthworks operation	- Ensure the contractor performs detailed design and instability checks	□Before commencement date of construction	☑Y / □N	Design checks done Bivek Joshi
		- Check if erosion or instabilities were observed.	□Before commencement date of construction	☑Y / □N	checked & incorporated in design. Bivek Joshi
		- The conditions at the site can be observed by a site inspection along with review of the design plan.	□Before commencement date of construction	☑Y / □N	checked & incorporated in design. Bivek Joshi
10	Traffic safety	- Checking the traffic problems at the construction site.	□Monthly	☑Y / □N	Not adequate as per site Bivek Joshi
11	Disturbance to flora	- Inspect ROW boundary and adjacent area	□Weekly / □Monthly	□Y / ☑N	
12	Disturbance to fauna	- Visit site and check the proposed alignment and construction area	□Monthly	□Y / ☑N	
13	Loss or damage of cultural sites or religious	- Interviews with local residents will also give a proper assessment of the issue.	□Once in six months.	☑Y / □N	No damage Bivek Joshi

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S.No	Items	Check Point	Frequency	Evaluation or Mitigation Status: Y-Good /Yes N-Poor /No	Remark And Signature by Checker
	places				
14	Construction labour force and its impacts	- Check if the Contractors are following the mitigation measures	□Weekly	□Y /☒N	
		- Check with the communities and construction staff if any conflict has occurred; if yes find out reason.	□Weekly	☒Y / □N	Checked for conflict if any Bimla Joshi
		- This can be achieved by regular site inspections. The frequency should be once in fifteen days.	□Weekly	□Y /☒N	
15	Work camp operation	- During construction and after completion of the works. The inspection should be planned once every two months throughout the project period	□Monthly	☒Y / □N	Camp operation checked Bimla Joshi
Total				Yes 14, No 8	

Form C2-3: Monitoring Form during Operation Stage

Operation Stage: NO PROJECTS IN OPERATION / NOT APPLICABLE

Monitoring Season: □ Pre-monsoon / □ Post-monsoon / □ Winter

Monitoring Period From Date Month Year

To Date Month Year

S.N	Items		Frequency	Evaluation or Mitigation Status: Y-Good /Yes N-Poor /No	Remark And Signature by Checker
1	Noise and vibration	- Visit site and compare with Normal situation	Periodical	□Y / □N	Signature by Inspector
		- Seasonal monitoring	Periodical	As per Form C1-5	
2	Air Quality	- Seasonal monitoring	Periodical	As per Form	

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				C1-4	
3	Water Quality	- Seasonal monioring	Periodical	As per Form C1-6, 7	
4	Plantation	- The number of trees surviving during each visit shall be compared with the number of sapling plant	Assess growth every year for initial five years □1st/□2nd/ □3rd /□4th /□5th	□Y / □N	
		- Record the growth of plantation	Assess growth every year for initial five years □1st/□2nd/ □3rd /□4th /□5th	□Y / □N	
Total				Yes___,No __	

Monitoring of Impacts and Mitigation Measures

Environmental and social impact/mitigation monitoring shall be conducted to determine the actual and social impacts. Draft monitoring forms are shown in below.

Form C2-4: Monitoring of Air Quality

Type of work: WIDENING OF TULA-DALU ROAD

Monitoring Season: □ Pre-monsoon / □ Post-monsoon / □ Winter

Monitoring Period From Date Month Year

To Date Month Year

	Item / Unit	Date	Time	1 PM10 µg/m³	2 PM2.5 µg/m³	3 CO ppm	4 SO2 µg/m³	5 NO µg/m³	6 Lead µg/m³	Remark
No. 1	(Detail of Location)		Max							NOT YET MONITORED
			Ave							
			Min							
No. 2	(Detail of Location)		Max							
			Ave							
			Min							
No.	(Detail of Location)		Max							
			Ave							

3										
			Min							
			Max							
			Ave							
			Min							
NEQS				100	60	04µg/m³	80	80	1	
WHO Standards				150-230	70	30	400	100-150		
Duration				24hours	24hours	24hours	24hours	24hours	24hours	

Form C2-5: Monitoring of Noise and Vibration

Type of work: WIDENING OF TUKA-DALU ROAD

Monitoring Frequency: □ 1st / □ 2nd / □ 3 rd

Monitoring Period From Date Month Year

To Date Month Year

		Item		Unit	Date1 DD/MM/YY	Date2 DD/MM/YY	Date3 DD/MM/YY	Remark (Date)
NEQS		Noise	Residential Area Day Time (6:00-22:00); 55 dB(A) Night Time(22:00-6:00);50dB(A) Silent Area Day Time (6:00-22:00); 45 dB(A) Night Time(22:00-6:00);40dB(A)					NOT YET DONE
No. 1	(Detail of Location)	Noise-1	L_{eq}	dB(A)				
		Noise-2	L_{min}	dB(A)				
		Noise-3	L_{max}	dB(A)				
		Vib-1	L_{10}	dB				
No. 2	(Detail of Location)	Noise-1	L_{eq}	dB(A)				
		Noise-2	L_{min}	dB(A)				
		Noise-3	L_{max}	dB(A)				
		Vib-1	L_{10}	dB				
No. 3	(Detail of Location)	Noise-1	L_{eq}	dB(A)				
		Noise-2	L_{min}	dB(A)				
		Noise-3	L_{max}	dB(A)				
		Vib-1	L_{10}	dB				
	(Detail of Location)	Noise-1	L_{eq}	dB(A)				
		Noise-2	L_{min}	dB(A)				
		Noise-3	L_{max}	dB(A)				
		Vib-1	L_{10}	dB				

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Form C2-6: Monitoring of Surface Water Quality

Type of work: WIDENING OF TURA-DALU ROAD.

Monitoring Times : ☑ 1st / ☐ 2nd / ☐ 3rd

Monitoring Period From Date 15 Month 09 Year 2018

To Date 10 Month 02 Year 2019

No.	Name of River	Location	1 Temp	2 pH	3 EC	4 TSS	5 TDS	6 Turbidity	7 T. Hardness	8 DO	9 BOD	10 COD	11 Nitrate	12 Ammonia	13 T.Coli
Unit			°C	-	µS/cm	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MPN/100 ml
1		Upstream	27.2	7.2	—	42	—	—	—	—	32	—	—	—	—
		Down Stream													
2		Upstream													
		Down Stream													
3		Upstream													
		Down Stream													
4		Upstream													
		Down Stream													
5		Upstream													
		Down Stream													

No.	Name of River	Location	14 F.coli	15 Flow-Velocity	16 Chloride	17 Sulphate	18 Calcium	19 Magnesium	20 Fluoride	21 O&G	22 Zinc	23 Manganese	24 Iron	25 Copper
Unit			MPN/100 ml	m/s	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
1		Upstream	—	—	44.82	29	—	—	—	—	—	—	—	—
		Down Stream												
2		Upstream												
		Down Stream												
3		Upstream												
		Down Stream												
4		Upstream												
		Down Stream												
5		Upstream												
		Down Stream												

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Form C2-7: Monitoring of Groundwater / Community Water Tank Quality

Type of work: WIDENING OF TURA - DALU ROAD.

Monitoring Times : ☑ 1st / ☐ 2nd / ☐ 3rd

Monitoring Frequency : ☐ Daily / ☐ Weekly / ☐ Monthly ☑ Seasonal

Monitoring Period From Date 15 Month 09 Year 2018

To Date 10 Month 02 Year 2019.

Construction Stage : ☐ Pre-Construction / ☑ Construction / ☐ Post-Construction

Date	Measure Point					
	No.1 (Detail of Location)	No.2	No.3	No.4	No.5	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10	NAPPALNANGKRE					
11	SITE CAMP.					
12	CH: 119+300					
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
31						

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Form C2-8: Monitoring of Land Slide and Soil Erosion

Detail of location: ALONG TURA-DALU ROAD.

Type of work: WIDENING OF TURA-DALU ROAD.

Monitoring Times: ☑ 1st / ☐ 2nd / ☐ 3rd

Monitoring Period From Date 01 Month 06 Year 2019

To Date 30 Month 09 Year 2019

S.N.	Items	Unit	Detail	Remark
1	Current land use		RESIDENTIAL	
2	Size of land slide/soil erosion	Km x Km.	6 X 0.008	
3	Reason of land slide/soil erosion		RAINFALL	
4	Past record	DD/MM/YY	NOT AVAILABLE	
5	Nearest water source (If any)	Nos., kind	NIL	

Form C2-9: Monitoring of Plantation

Type of work: WIDENING OF TURA-DALU ROAD.

Monitoring Times: ☑ 1st / ☐ 2nd / ☐ 3rd

Monitoring Period From Date 01 Month 07 Year 2019

To Date 30 Month 09 Year 2019.

S.N	Location	Block	Species	Number of trees	Height of trees in Max/Average	BHD	Growth Excellent/ Good/ Poor	Remark
1.	RONGDENGGRE WEST GARO HILLS	—	MANGO, GUAVA,	40	1.25m	—	GOOD	

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Table H2-2 RAP Monitoring Form(During RAP Implementation) For NH-51

Grivance Redress Mechanism

Indicator	Unit (Stander Value)	Year 1				Year 2				Year 3				Comments
		1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr	
Grivance submitted by the stakeholders	No. Os Cases	82	247	159	74	55								
Grivence Resolve	No. Os Cases(%)	98%	93%	93%	100%	84%								
Conflict with host community	No. Os Cases	2	4	1	0	0								
Other claim/ criticism	No. Os Cases	1	0	0	2	1								
Relocation and Compansation														
Relocated Households	Number(%)	10	32	121	298	127								
Compensation completed	No. Of Cases(%)	0	0	0	214	196								
Relocated Households owning land	Number(%)	0	0	12	0	0								
Relocated household owning domicile	Number(%)	10	32	121	298	127								
Relocated household renting land	Number(%)	0	0	0	0	0								
Relocated household renting domicile	Number(%)	0	0	0	0	0								
Operation of social infrastructure														
Community Water Tanks/ Wells	Number(%)	100%	100%	100%	100%	100%								
Hospitals	Number(%)	100%	100%	100%	100%	100%								
Primary School	Number(%)	100%	100%	100%	100%	100%								
Other Public Common Resource	Number(%)	100%	100%	100%	100%	100%								
Public health and safety(Number per 1000 people/month)														
Traffic accidents in resettlement site	No. Of cases(National average)	NA	NA	NA	NA	NA								
Incidence of diarrhoea	No. Of cases(National average)	NA	NA	NA	NA	NA								
Incidence of upper respiratory infection	No. Of cases(National average)	NA	NA	NA	NA	NA								
Incidence of tuberculosis	No. Of cases(National average)	NA	NA	NA	NA	NA								
Incidence of malaria	No. Of cases(National average)	NA	NA	NA	NA	NA								
HIV infection	No. Of cases(National average)	NA	NA	NA	NA	NA								
Other epidemics	No. Of cases(National average)	NA	NA	NA	NA	NA								
Child Diseases	No. Of cases(National average)	NA	NA	NA	NA	NA								

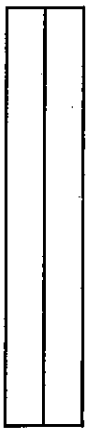

Table H2-2 RAP Monitoring Form(During RAP Implementation) For NH-51

Indicator	Unit (Stander Value)	Year 1				Year 2				Year 3				Comments
		1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr	
Economic														
Project affected household that lacks the source of income	Number(%)	0	0	0	6	18								
Project affected household with reduced monthly income	Number(%)			4	11	23								
Employment: Male wage earners	No. Of PAPs (%)	0	0	0										
Employment: Female wage earners	No. Of PAPs (%)													
Avarage household Income (Annual)	Local currency					78,000								
Avarage household expenditure (Annual)	Local currency					76,000								
income generation : Employment of project affected peoples(PAPs) on construction site														
Employment of project affected peoples (age over 16) by the project	No. Of PAPs (%)	12	12	12	28	52								
Employment of female PAPs (age over 16) by the project	No. Of PAPs (%)	2	2	2	5	18								
Child labour	No. Of childrens	0	0	0	0	0								
Provision of protective equipment (PPE)	PAPs provided with PPE(100%)	9	9	9	21	39								
Labour accident	No. Of cases													
Livelihood Restroration														
job training conducted	No. Of courses	0	0	0	0	0								
PAPs (age over 16) that received job training	Number(%)	0	0	0	0	0								
Compensation /relocated structure for business(e.g.- shop, garage, etc)	Number(%)	0	0	0	0	0								
allocation of subtitute farmland	Area(%)	0	0	0	0	0								
Subtitute farmland being utilized	Area(%)	0	0	0	0	0								
Income restroration proceses	Number(%)	14	14	14	33	70								