



गणेशमान चारनाथ नगरपालिका
Ganeshman Charnath Municipality
नगर कार्यपालिकाको कार्यालय
Office of the Municipal Executive



पत्र संख्या:- २०८०/८१

चलानी नं. (Ref No.): - ३२४

मधेश प्रदेश, नेपाल (Madhesh Province, Nepal)

मिति (Date): २०८०/०६/०८ (25th Sept 2023)

विषय : राय सुभाब पठाईएको सम्बन्धमा ।

श्री भौतिक पूर्वाधार तथा यातायात मन्त्रालय,
सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

उपरोक्त सम्बन्धमा तहाँ महाशाखाको प.सं. वि.सं. ९/२०८०-८१ च.नं. ४६ मिति २०८०/०४/१५ गतेको पत्रानुसार तहाँ महाशाखा अन्तर्गत अध्ययन भईरहेको पूर्व पश्चिम (महेन्द्र) राजमार्गको कमला-ढल्केवर-पथलैया सडक खण्डको १३० किमी लम्बाईलाई ४ लेन स्तरमा स्तरोन्नती कार्यमा वातावरणीय प्रभाव मूल्यांकन प्रतिवेदन तयारीको लागि वातावरण संरक्षण नियमावलि २०७७ नियम ७ बमोजिम देहाय बमोजिमको राय सुभाब पठाईएको व्यहोरा अनुरोध गरिन्छ ।

देहाय

सि.नं.	राय, सुभाब	कैफियत
१.	सडक स्तरोन्नती कार्यमा वातावरण संरक्षणको अवधारणा अवलम्बन गरी वनजंगल मास्ने कार्य कम गरिनुपर्ने,	
२.	४ लेनको मध्य भागमा अनिवार्य गार्डेनिंग गरिनुपर्ने,	
३.	पुलहरुको स्तरोन्नतीको कार्य गर्दा पैदल हिँड्ने, वन्यजन्तुको आवतजावतको लागि पुलसँगै वैकल्पिक लेन निर्माण गरिनुपर्ने,	
४.	बजार एरियामा सडक वारिपारी जानका लागि अभरहेड त्रिजको व्यवस्था हुनुपर्ने	
५.	वनजंगल क्षेत्र तथा दोपाया चौपाया चरण हुने क्षेत्रमा जनावरहरु वारपार हुनको लागि सडक मुनिवाट जाने बाटोको व्यवस्था गरिनुपर्ने	
६.	सडक स्तरोन्नती कार्यमा सम्भवतः स्थानीय जनशक्ति, श्रोत र साधनको प्रयोग गरिनुपर्ने	
७.	स्वीकृत नक्सा बमोजिम स्थानमा सडक स्तरोन्नती कार्य गरिनुपर्ने	

लखनदेव यादव

नि. प्रमुख प्रशासकीय अधिकृत

"आओं जुटौं एक साथ, बनाऔं समृद्ध र सवल नगर गणेशमान चारनाथ"

Email : ganeshmancharnath@gmail.com/ URL : - charnathmun.gov.np/ Tel: 041-427029

सम्पर्क: नगर प्रमुख: ९८५४०२९६५४, नगर उपप्रमुख: ९८५४०२९६५३, प्रमुख प्रशासकीय अधिकृत: ९८५४०५९१११



प.सं. :- ०८०१८१

च.नं. :- २६६

धनुषाधाम नगरपालिका

नगर कार्यपालिकाको कार्यालय

धनुषाधाम, धनुषा जिला
मधेश प्रदेश, नेपाल

कार्यालय प्रमुख :- ०४१-४१४००९
लेखा शाखा :- ०४१-४१४००९
प्रशासन शाखा :- ०४१-४१४००९
योजना शाखा :- ०४१-४१४००९
राजस्व शाखा :- ०४१-४१४००९

मिति :- २०८०/०८/१८

विषय: राय सुभाष सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग
विकाश सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

प्रस्तुत विषयमा भौतिक पुर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०२/०८ गतेको प्रकाशित सुचना र मिति २०८०/०२/०८ गतेको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड (१३० कि.मी.) को पूर्व स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसार वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

१) सकारात्मक प्रभाव

क) यात्रा अवधि घटनुका साथै यात्रामा सहजता हुने ।

ख) निर्माण कार्यमा संलग्न हुने कामदारको व्यवसायिक सिप अभिवृद्धि हुने ।

ग) व्यापार तथा पर्यटन व्यवसायमा वृद्धि हुने ।

२) नकारात्मक प्रभाव

क) धुँवा धुलो बढ्ने तथा ध्वनी प्रदूषण बढ्न सक्ने ।

ख) रुखहरुको कटान भई वातावरणलाई असर पुर्याउने ।

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्ताव प्रभाव बढि हुने देखिएकोले उल्लेखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरि पठाईएको व्यहोरा अनुरोध छ ।

विश्वसेन ढकाल

प्रमुख प्रशासकीय अधिकृत

विश्वसेन ढकाल
प्रमुख प्रशासकीय अधिकृत



मिथिला नगरपालिका नगर कार्यपालिकाको कार्यालय



पत्र सं. :- ०८०/०८१

चलानी नं. :- ६८०

मिति : २०८०/०८/२०

विषय : राय सझाव सहित सिफारिस सम्बन्धमा ।

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

प्रस्तुत विषयमा तहाँ विभागको विकास सहायता कार्यान्वयन महाशाखाको पत्र सं.वि.स.९/२०८०-८१ चलानी नं.४४ मिति २०८०/०४/१५ को पत्र अनुसार तहाँ विभागको मिति २०८०/०४/०३ प्रकाशित गरेको सूचना र मिति २०८०/०२/०८ देखी मिति २०८०/०२/११ सम्मको सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम राजमार्ग अन्तर्गत ढल्केवर-पथलैया सडकको १३० कि.मि.को स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्नानुसारको वातावरण प्रभाव पर्न सक्ने देखिन्छ ।

तपसील:

१. सकारात्मक प्रभाव

- (क) यात्रीहरूलाई सहज यात्रा तथा यात्रा अवधीमा कमी हुने देखिन्छ ।
- (ख) स्थानीय बजार प्रवर्द्धनमा सहयोग हुने ।
- (ग) स्थानीय रोजगारी श्रृजना हुने तथा कामदारहरूको व्यावसायिक सीप अभिवृद्धि हुने

२. नकारात्मक प्रभाव

- (क) सडक स्तरोन्नती संचालन हुने समयमा धुवा, धुलो बढ्ने तथा अन्य प्रदुषण बढ्न सक्ने ।
- (ख) सडक स्तरोन्नती संचालन हुने समयमा यात्रुहरूलाई समस्या हुने देखिन्छ ।

उल्लेखीत प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभावलाई न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखीत प्रभावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लेखीत प्रस्ताव कार्यान्वयन गर्नको लागि राय सझाव सहित सिफारिस गरिएको व्यहोरा अनुरोध छ ।


बसन्त न्यौपाने

प्रमुख प्रशासकीय अधिकृत

"हाम्रो मिथिला हाम्रो सान ; समृद्ध नगर हाम्रो अभियान"

वेब साइट : www.mithilamun.gov.np
इमेल : mithilamunicipality81@gmail.com

प्रमुख प्रशासकीय अधिकृत



बाँदेबास नगरपालिका
Bardibas Municipality

नगर कार्यपालिकाको कार्यालय
Office Of Municipal Executive

वर्द्धमान नगरपालिका
Bardibas Municipality
स्थानीय तह

मधेश प्रदेश
Madhesh Province

पत्र संख्या (Letter No.): २०८०।०८१

चलानी नम्बर (Dispatch No) १४१३

मिति :- २०८०।०८।२०

विषय :- राय सुझाव सहित सिफारिस सम्बन्धमा ।

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
जावलाखेल, ललितपुर ।

उपरोक्त सम्बन्धमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०२/०३ गते प्रभाव राष्ट्रिय दैनिक पत्रिकामा प्रकाशित सूचना र मिति २०८०/०२/०८ को सार्वजनिक सून्वाई कार्यक्रम अनुसार पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत (कमला-ढल्केवर-पथलैया) सडक खण्ड(१३० कि.मि.) सडक निर्माणको क्रममा वातावरणमा पर्ने समस्या र सडक निर्माणमा तपशिल बमोजिम सुझाव रहेको छ ।

तपशिल :-

समस्या :-

- क) निर्माण कार्य समयमा सम्पन्न नहुनाले आवत जावत व्यापार व्यावसायमा असर ।
- ख) धुलो धुवा, सडक क्षेत्रमा पर्ने रुखविरुवाको कटानले वातावरणीय असर ।

सुझावहरु :-

- क) चोक बजार एरियामा ६ लेन सडक, साईकल लेन, हरियाली पार्क सहितको डिभाईडर, पार्किङ लेन, फुटपाथ सहितको सडक निर्माण हुनु पर्ने ।
- ख) निर्माण कार्य निर्धारित समयमा सम्पन्न हुनु पर्ने, सडक पेटिमा हरियाली बढाउन वृक्षारोपण गर्नु पर्ने ।
- ग) सडक निर्माणको क्रममा आवत जावतको लागि वैकल्पिक मार्ग राख्नुको लागि किनार जनता स्कूल लच्का हुदै भन्सी खोलालाई वैकल्पिक मार्गको रूपमा प्रयोग गर्नु पर्ने सोका लागी उक्त सडक मर्मत र सम्भार गर्नु पर्ने ।
- घ) चोक वस्तीको सडक प्राथमिकताका साथ छिटो निर्माण सम्पन्न गर्नु पर्ने, साथै अन्य वैकल्पिक मार्गहरु समेत मर्मत गर्नु पर्ने, धुलो नियन्त्रणको लागी पानी छर्कने व्यवस्था गर्नु पर्ने ।

रेवती प्रसाद पारजुली
उप-सचिव
उपसचिव



गौशाला नगरपालिका

नगर कार्यपालिकाको कार्यालय

गौशाला, महोत्तरी

मधेश प्रदेश, नेपाल

फोन : ०४४-५५६१३९
फोन : ०४४-५५६१३९
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पत्र संख्या: २०८०।०८९

चलानी नं.: १९६



मिति : २०८०/०५/८

विषय : राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर।

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०४/०३ को प्रकाशित सूचना र मिति २०८०/०२/८ देखि २०८०/०२/११ सम्मको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम (महेन्द्र) राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड १३० कि.मि.को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

क) सकारात्मक प्रभाव

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने ;
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने;
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि;

ख) नकारात्मक प्रभाव

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदूषण बढ्न सक्ने ;
- वन विनास/ वर्षाको मात्रा कम हुन सक्ने

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरी पठाइएको व्यहोरा अनुरोध छ ।

विपिन आचार्य
(अधिकृत छैठौं)

अधिकृत छैठौं



ईश्वरपुर नगरपालिका
नगर कार्यपालिकाको कार्यालय

ईश्वरपुर, सर्लाही
मधेश प्रदेश



फोन नं. : ०४६-४७५००४
फ्याक्स नं. : ०४६-४७५००४
website: ishworpurmun.gov.np
Email: info@ishworpurmun.gov.np
ishworpur2071@gmail.com

प.सं. :- २०८०/०८१

च.नं. :- ९२४

श्री सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा
जवागल, ललितपुर।

मिति : २०८०/०८/२२

विषय : राय सुभाब सहित सिफारिस सम्बन्धमा।

प्रस्तुत विषयमा तहाँ विभागको विकास सहायता कार्यान्वयन महाशाखाको प.सं.वि.स. ९/२०८०/०८१, चलानी नं. ४४, मिति २०८०/०४/१५ को पत्रानुसार तहाँ विभागको मिति २०८०/०१/२८ गतेको प्रकाशित सुचना र मिति २०८०/०२/०९ गते भएको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम राजमार्ग अन्तर्गत ढल्केवर-पथलैया सडकको १३० कि.मि.को स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्नानुसारको वातावरण प्रभाव पर्न सक्ने देखिन्छ।

१. सकारात्मक प्रभाव

- (क) यात्रीहरूलाई सहज यात्रा तथा यात्रा अवधिमा कमी हुन आउने।
- (ख) स्थानीय बजार प्रवर्द्धनमा सहयोग हुने।
- (ग) स्थानीय रोजगारी श्रृजना हुने तथा कामदारहरूको व्यवसायिक सीप अभिवृद्धि हुने।
- (घ) सडक लेन प्रणाली लागू हुँदा दुर्घटनामा कमी आउने।

२. नकारात्मक प्रभाव

- (क) सडक स्तरोन्नती सञ्चालन हुने समयमा धुँवा, धुलो बढ्ने तथा अन्य प्रदूषण बढ्न सक्ने।
- (ख) सडक स्तरोन्नती सञ्चालन हुने समयमा यात्रुहरूलाई समस्या हुने।
- (ग) वनक्षेत्रमा वन्यजन्तुहरूको आवागमनमा अवरोध हुने।

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभावलाई न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा प्रभावको सकारात्मक पक्ष बढी हुने देखिएकोले प्रस्ताव कार्यान्वयनको लागि राय सुभाब सहित सिफारिस गरिएको व्यहोरा अनुरोध छ।

हरिकृष्ण श्रेष्ठ
०८/०८/२२

(हिराकाजी श्रेष्ठ)

प्रमुख प्रशासकीय अधिकृत
प्रमुख प्रशासकीय अधिकृत



लालबन्दीनगरपालिका
नगरकार्यपालिकाको कार्यालय

लालबन्दी, सर्लाही
मधेश प्रदेश, नेपाल



फोन नं - ०४६५०९१००
०४६५०९३३३
०४६५०९४४४
Email: mail@lalbandi@gmail.com
Web: lalbandimun.gov.np

प.सं. :- २०८०/०८९

च.नं. :- ६५६

मिति: २०८०/०८/१७

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

विषय: राय सुझाव सहित सिफारिस गरिएको बारे ।

उपरोक्त सम्बन्धमा तहाँ कार्यालयबाट मिति २०८०/०२/०९ गतेको प्रकाशित सूचना बमोजिम यस नगरपालिकामा २०८०/०२/०९ गते भएको सार्वजनिक सुनुवाई कार्यक्रम अनुसार पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत (कमला-ढल्केवर- पथलैया) सडक खण्ड (१३० कि.मि.) को पूर्व स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसार वातावरण प्रभाव पर्न जाने देखिन्छ ।

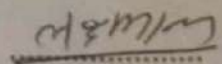
१. नकारात्मक प्रभाव

- क) धुवाँ धुलो बढ्न सक्ने तथा ध्वनी प्रदुषण बढ्न सक्ने, जसले गर्दा मानव स्वास्थ्यमा असर पुग्छ ।
ख) सडक स्तरोन्नती गर्दा यातायात संचालनमा कठिनाई हुने ।

२. समाधानका उपायहरू

- क) सडक पिच नभए सम्म नियमित पानी छर्कने व्यवस्था गर्ने ।
ख) खाली रहने जग्गामा वृक्षारोपणको व्यवस्था गर्ने ।
ग) वस्ति क्षेत्रको सडक निर्माण छिटो सक्ने गरी कार्य अघि बढाउने
घ) बैकल्पिक मार्गको रूपमा पुरानो राजमार्ग प्रयोग गर्ने व्यवस्था मिलाउने ।
ङ) परियोजनाले बैकल्पिक मार्गको मर्मत सम्भारको व्यवस्था गर्ने

उल्लिखित प्रभावको आधारमा नकारात्मक प्रभाव न्यून गर्ने प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिश गरिएको व्यहोरा अनुरोध छ



लक्ष्मी शिवाकोटी

नि. प्रमुख प्रशासकीय अधिकृत



हरिवन नगरपालिका नगर कार्यपालिकाको कार्यालय



हरिवन, सर्लाही
मधेश प्रदेश, नेपाल

२०७३

प.सं.: २०८०/०८१

च.नं.: ८६२



मिति : २०८०/०८/१७

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर।

विषय: राय सुझाव सहित सिफारिस गरिएको बारे।

उपरोक्त सम्बन्धमा तहाँ कार्यालयबाट मिति २०८०/०२/०१ गतेको प्रकाशित सूचना बमोजिम यस नगरपालिकामा २०८०/०२/०१ गते भएको सार्वजनिक सुनुवाई कार्यक्रम अनुसार पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत (कमला- ढल्केवर- पथलैया) सडक खण्ड (१३० कि.मि.) को पूर्व स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसार वातावरण प्रभाव पर्न जाने देखिन्छ।

१. नकारात्मक प्रभाव

- क) धुवाँ धुलो बढ्न सक्ने तथा ध्वनी प्रदुषण बढ्न सक्ने, जसले गर्दा मानव स्वास्थ्यमा असर पुऱ्याउने।
- ख) धुवाँ धुलोले वरपरको घर धुलाम्मे हुने।
- ग) रुखहरुको कटान भई वातावरणलाई असर पुऱ्याउने।

२. समाधानका उपायहरु

- क) सडक पिच नभए सम्म नियमित पानी छर्कने व्यवस्था गर्ने।
- ख) खाली रहने जग्गामा वृक्षारोपणको व्यवस्था गर्ने।
- ग) वस्ति क्षेत्रको सडक निर्माण छिटो सक्ने गरी कार्य अघि बढाउने।
- घ) बैकल्पिक मार्ग (नयाँ रोड- गणेश चौक र नयाँ रोड- घुक्रौली) को व्यवस्था मिलाउने।
- ङ) परियोजनाले बैकल्पिक मार्गको मर्मत सम्भारको व्यवस्था गर्ने।

उल्लिखित प्रभावको आधारमा नकारात्मक प्रभाव न्यून गर्ने प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरिएको बेहोरा अनुरोध छ।

(गोपाल नाथ श्रेष्ठ)

नि. प्रमुख प्रशासकीय अधिकृत



बागमती नगरपालिका नगर कार्यपालिकाको कार्यालय

कर्मैया, सर्लाही
मधेश प्रदेश, नेपाल



प.सं. : २०८०/८१

च.नं. : ८८

मिति : २०८०/०५/०७

विषय : राय सुभाष सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग,
विकाश सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

प्रास्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०४/०३ गतेको प्रकाशित सुचना र मिति २०८०/०२/०८ देखि २०८०/०२/११ सम्मको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड (१३० कि.मी.)को पूर्व स्तरोन्नती कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसार वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

१) सकारात्मक प्रभाव

- क) यात्रा अवधि घटनुका साथै यात्रामा सहजता हुने ।
- ख) निर्माण कार्यमा संलग्न हुने कामदारको व्यवसायिक सिप अभिवृद्धि हुने ।
- ग) व्यापार तथा पर्यटन व्यवसायमा वृद्धि हुने ।

२) नकारात्मक प्रभाव

- क) धुँवा धुलो बढ्ने तथा ध्वनी प्रदूषण बढ्न सक्ने ।

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्ताव प्रभाव बढि हुने देखिएकोले उल्लेखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरि पठाइएको व्यहोरा अनुरोध छ ।

मि. प्रसाद उपाध्याय

नि. प्रमुख प्रशासकीय अधिकृत



बृन्दावन नगरपालिका
नगर कार्यपालिकाको कार्यालय
(प्रशासन शाखा)

विश्रामपुर, रौतहट

(गण्डकी प्रदेश, नेपाल)

बृन्दावन नगरपालिकाको कार्यालय
विश्रामपुर, रौतहट
मधेश प्रदेश, नेपाल

पत्र संख्या :- ०८०/८९

चलानी नं. :- ६९९

मिति :- २०८०/०८/१७

विषय : राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग,

विकास सहायता कार्यान्वयन महाशाखा,

ज्वागल, ललितपुर ।

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०४/०३ को प्रकाशित सूचना र मिति २०८०/०२/१० को सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड १९३० कि.(मि.) को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

क) सकारात्मक प्रभाव

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने ;
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने;
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि;

ख) नकारात्मक प्रभाव

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदूषण बढ्न सक्ने ;

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरी पठाइएको व्यहोरा अनुरोध छ ।

Xivra (M) 411

2020/2196

रास नारायण पटेल

नि. प्रमुख प्रशासकीय अधिकृत



चन्द्रपुर नगरपालिका
नगर कार्यपालिकाको कार्यालय

चन्द्रनिगाहपुर, रौतहट

मधेश प्रदेश, नेपाल

फोन नं. ०५५५५४०२००

प.सं. : २०८०१०८१

च.नं. : ८६६

मिति: २०८०१०८१७

विषय : राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग,

विकास सहायता कार्यान्वयन महाशाखा,

जवागल, ललितपुर ।

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०४/०३ को प्रकाशित सूचना र मिति २०८०/०२/१० को सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम राजमार्ग अन्तर्गत कमला-ढल्केबर-पथलैया सडक खण्ड १३० कि.मि. को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

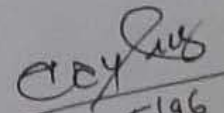
क) सकारात्मक प्रभाव

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने ;
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने;
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि;
- स्थानीय रोजगारीमा वृद्धि हुने;

ख) नकारात्मक प्रभाव

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदुषण बढ्न सक्ने ;

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने र सार्वजनिक सुनुवाई तथा अन्य सरोकारवालाहरु संगको छलफल मार्फत उल्लेख गरिएको विषयवस्तुहरुलाई सम्बोधन गरी तयार पारिएको वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरी पठाइएको व्यहोरा अनुरोध छ ।


८.१.१६
नि.प्रमुख प्रशासकीय अधिकृत



गुजरा नगरपालिका नगर कार्यपालिकाको कार्यालय

सिमरा भवानीपुर, रौतहट



प.स :- २०८०/८१

चलानी नं :- ४०८

मिति :- २०८०/०८/१४

विषय : राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग,
विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

प्रस्तुत विषयमा श्री भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको च.नं. ३५ मिति २०८०/०४/१५ को प्रत्र तथा मिति २०८०/०१/२८ मा “जनकपुर एक्सप्रेस” मा प्रकाशित सूचना अनुसार र मिति २०८०/०२/११ मा भएको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम (महेन्द्र) राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड (१३० कि.मि.) को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

क) सकारात्मक प्रभाव

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने ;
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने;
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि;

ख) नकारात्मक प्रभाव

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदुषण बढ्न सक्ने ;

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यान्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस गरी पठाइएको व्यहोरा अनुरोध छ ।

०८/०८/१४

श्रवण कुमार चौधरी
इन्जिनियर

श्रवण कुमार चौधरी
इन्जिनियर



निजगढ नगरपालिका नगर कार्यपालिकाको कार्यालय

निजगढ, बारा

मधेश प्रदेश, नेपाल।

पत्र संख्या: २०८०।०८१

च.नं.: ८४२



फोन नं: ०५३-५४०२००

मिति:- २०८०।०८।१५

विषय :- राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री विकास सहायता कार्यान्वयन महाशाखा,
ज्वागल, ललितपुर ।

उपर्युक्त विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको प.सं.०८०।०८१ च.नं. ३४ मिति २०८०।०४।१५ को पत्रानुसार आयोजना कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-ढल्केबर-पथलैया सडक खण्ड १३० कि.मि. स्तरोन्नति कार्यको लागि यस कार्यालयबाट देहायको राय सुझाव सहित प्रस्ताव कार्यान्वयनको लागि सिफारिस गरिएको व्यहोरा अनुरोध छ ।

१. बजार क्षेत्रमा निर्माण कार्य गर्दा धुलोको प्रभावकारी व्यवस्थापनका लागि दैनिक कम्तीमा ४ पटक पानी हाल्ने व्यवस्था मिलाउने ।
२. निर्माण कार्य गर्दा स्थानीय व्यक्तिहरुलाई रोजगारी सिर्जना हुने गरी कार्य अगाडी बढाउने ।
३. सडक सुरक्षालाई मध्यनजर गरी सुरक्षाका उपायहरु अवलम्बन गरी निर्माण कार्यलाई अगाडी बढाउने ।
४. पर्यावरणको संरक्षण र सुरक्षा अत्यन्तै महत्वपूर्ण भएकोले पर्यावरण (वन, जंगली जनावर आदि) को सुरक्षा तथा संरक्षण गरी निर्माण कार्य गर्ने ।
५. निजगढ नगरपालिका क्षेत्रभित्र मुख्य गरी बजार क्षेत्र (भमरा पुलदेखि बकैया पुलसम्म) व्यवस्थित रूपमा नालाको निर्माण गरी पानी निकास हुने व्यवस्था मिलाई निर्माण कार्य अगाडी बढाउने ।
६. बजार क्षेत्रमा निर्माण कार्य गर्दा स्थानीय व्यवसायीहरुलाई समस्या नपर्ने गरी निर्माण कार्य गर्ने ।
७. सर्वप्रथम आवादी क्षेत्रमा निर्माण कार्य सम्पन्न गर्ने व्यवस्था मिलाउने ।
८. कामदार शिविर तथा खाद्यान्न भण्डारण जस्ता पक्षहरुलाई निर्माण कार्य गर्दा नगरका बासिन्दाहरुलाई प्रतिकुल नहुने गरी योजना बनाई कार्य अगाडी बढाउनु पर्ने ।
९. ग्रिन बेल्ट निर्माण गरी कार्य अगाडी बढाउनु पर्ने ।
१०. शहिद चोकमा शहिद हिरालाल गौतमको शालिक निर्माण गर्नु पर्ने ।

राजमणि निरौला
प्रमुख प्रशासकीय अधिकृत
उपमहानिरीक्षक



निजगढ नगरपालिका नगर कार्यपालिकाको कार्यालय

निजगढ, बारा
मधेश प्रदेश, नेपाल
नगर कार्यपालिकाको कार्यालय
निजगढ, बारा
मधेश प्रदेश, नेपाल
२०७३

पत्र संख्या: २०८०।०८१

च.नं.:

फोन नं.: ०५३-५४०२००

११. उपयुक्त स्थानमा ओभर हेड ब्रिज निर्माण गर्नु पर्ने ।

१२. निर्माण कार्य गर्दा खानेपानी पाइप अवरुद्ध भई खानेपानी आपूर्तिमा समस्या आउन नदिनको लागि निजगढ खानेपानी तथा सरसफाई उपभोक्ता संस्थासंग आवश्यक समन्वय गर्नु पर्ने ।

राजमणि निरौला

प्रमुख प्रशासकीय अधिकृत

(उपसचिव)

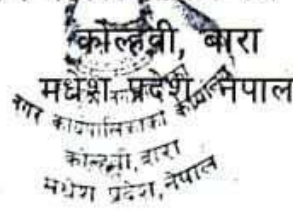
राजमणि निरौला

प्रमुख प्रशासकीय अधिकृत

उपसचिव



कोल्हवी नगरपालिका नगर कार्यपालिकाको कार्यालय



पत्र.सं :- २०८०/०८९
चलानी नं :- ६६०

मिति:- २०८०/०८/१८

विषय:- राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग, विकास सहायता कार्यान्वयन शाखा
ज्वागल, ललितपुर

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०८/१५ मा प्राप्त पत्र अनुसार कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-ढल्केवर पथलैया सडक खण्ड १३० कि. मि. को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

(क) सकारात्मक प्रभाव

- यात्रा सहज र समयानुकूल हुने ।
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि हुने ।
- सवारी दुर्घटनामा कमी आउनु ।

(ख) नकारात्मक प्रभाव

- बनजंगल मासिने ।
- धुवाँ धुलोमा वृद्धि भई वायु प्रदुषण बढ्ने ।
- जलवायु परिवर्तनमा नकारात्मक प्रभाव पार्ने तत्वहरूमा वृद्धि हुने ।

(ग) राय सुझावहरू

- लोकमार्गको स्तरोन्ती हुँदा हटाउने रुखहरूको संख्याको आधारमा कानूनमा व्यवस्था भए बमोजिम अन्य ठाउँमा वृक्षारोपण र सोको व्यवस्थापन गर्नुपर्ने ।
- धुलो धुवाँ कम गर्ने सरसफाइको राम्रो व्यवस्थापन गर्नुपर्ने ।
- लोकमार्गको दायाँ बायाँ ग्रीनबेल्टको व्यवस्था गर्नुपर्ने ।

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना बनाई कार्यान्वयन गर्दा एवं राय सुझावको बुँदाहरू समेटी व्यवस्थापन योजना कार्यान्वयन गर्दा योजना अझ फलदायी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यान्वयन गर्नको लागि सिफारिस साथ पठाइएको व्यहोरा अनुरोध छ ।

अनन्त प्रसाद यादव
प्रमुख प्रशासकीय अधिकृत



जीतपुरसिमरा उपमहानगरपालिका नगर कार्यपालिकाको कार्यालय

पत्र संख्या:- ०८०/०८९

चलानी नं.:- ०८४२

जीतपुर, बारा
मधेश प्रदेश, नेपाल

मिति २०८०/०८/१३

विषय : राय सुझाव सहित सिफारिस गरिएको बारे।

श्री वन तथा वातावरण मन्त्रालय,
सिंहदरबार, काठमाडौं।

प्रस्तुत विषयमा श्री भौतिक पूर्वाधार तथा यातायात मन्त्रालय, सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाको च. नं. ३२ मिति २०८०/०४/१५ को पत्र तथा मिति २०८०/०९/२८ मा "जनकपुर एक्सप्रेस" मा प्रकाशित सूचना अनुसार र मिति २०८०/०२/११ मा भएको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला - ढुल्केवार - पथलैया सडक खण्ड १३० कि.मि. को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ।

क) सकारात्मक प्रभाव:

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने,
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने,
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि,

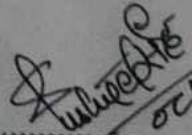
ख) नकारात्मक प्रभाव:

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदूषण बढ्न सक्ने,

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापनको योजना कार्यान्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले सो प्रस्तावको तांहाको नियमानुसार प्रारम्भिक वातावरणीय परिक्षण गर्न अनुमतिको लागि सिफारिस गरिएको व्यहोरा अनुरोध छ।

बोधार्थ:

श्री सडक विभाग, विकास सहायता कार्यान्वयन महाशाखाका, बबरमहल, काठमाडौं।


०८/१३

ई. पुष्पा सिंह

वातावरण तथा विपद् व्यवस्थापन शाखा प्रमुख



०५३-४१२१७३

jeetpursimarasubmetropolitan@gmail.com



मधेश प्रदेश सरकार
वन तथा वातावरण मन्त्रालय
प्रदेश वन निर्देशनालय
डिभिजन वन कार्यालय



पत्र संख्या:- ०८०/०८१

चलानी न:- ४६६



मिति:- २०८०/०८/१३

विषय:- राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग, विकास सहायता कार्यान्वयन शाखा
ज्वागल, ललितपुर

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०/०१/२८ को प्रकाशित सूचना र मिति २०८०/ ०५/०७ गतेको सार्वजनिक सुनुवाई अनुसार कार्यन्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-ढल्केवर-पथलैया सडक खण्ड १३० कि. मि. को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्न जाने देखिन्छ ।

(क) सकारात्मक प्रभाव

- ❖ यात्रा सहज र समयानुकूल हुने ।
- ❖ रोजगारीको श्रृजना भई कामदारहरुको व्यवसायिक सिप र आयमा अभिवृद्धि हुने ।
- ❖ व्यापार तथा पर्यटन व्यवसायमा वृद्धि हुने ।
- ❖ सवारी दुर्घटनामा कमी आउनु ।

(ख) नकारात्मक प्रभाव

- ❖ धुवाँ धुलोमा वृद्धि भई वायु प्रदुषण बढ्ने ।
- ❖ यो लोकमार्ग वन जंगल भएर जाने भएको हुदा वन्यजन्तुको आवागमनमा असहज हुने ।
- ❖ जलवायु परिवर्तनमा नकारात्मक प्रभाव पार्ने तत्वहरुमा वृद्धि हुने ।

(ग) राय सुझावहरु

- ❖ यो लोकमार्ग प्रायः जसो वन जंगल भएर जाने हुदा वन्यजन्तु (हात्ती, बाघ आदि) को आवागमनमा सहजता ल्याउन वन्यजन्तु मैत्री (ओभर पाथ, अण्डर पाथ, मंकी कैनोप्पी सहित) सडकको निर्माण हुनु पर्ने ।
- ❖ लोकमार्गको स्तरोन्ती हुदा हटाउने रुखहरुको संख्याको आधारमा कानूनमा व्यवस्था भए बमोजिम अन्य ठाउँमा वृक्षारोपण र सोको व्यवस्थापन गर्नु पर्ने ।
- ❖ लोकमार्गको दायाँ बायाँ ग्रीनबेल्टको व्यवस्था गर्नु पर्ने ।

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना बनाई कार्यन्वयन गर्दा एवं राय सुझावको बुँदाहरु समेटी व्यवस्थापन योजना कार्यान्वयन गर्दा योजना अझ फलदायी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यन्वयन गर्नको लागि सिफारिस साथ पठाइएको व्यहोरा अनुरोध छ ।

[Signature]
०८०८१२
बिजोद सिंह
डिभिजनल वन अधिकृत



मधेश प्रदेश सरकार
वन तथा पर्यावरण मन्त्रालय
पुष्प भवन, काठमाडौं



डिभिजन वन कार्यालय, रौतहट

प.सं. ०८०/०८१

च.नं. ५६१

मिति : २०८०/०८/२१

विषय : राय सुभाष सहित सिफारिस गरिएको बारे ।

श्री सडक विभाग, विकास सहायता कार्यान्वयन शाखा
ज्वागल ललितपुर

प्रस्तुत विषयमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, विकास सहायता कार्यान्वयन महाशाखाको वि.सं. १/२०८०-०८१ च.नं. ४८ मिति २०८०/०४/१५ गतेको पत्रानुसार पूर्व पश्चिम (महेन्द्र) राजमार्गको कमला-हुन्केवर-पथलैया सडक खण्डको १३० कि.मि. लम्बाईलाई हालको २ लेनबाट ४ लेन स्तरमा स्तरोन्नतीको साथै आवश्यकता अनुसार ७६ वटा साना तथा ठुला पुलहरूको स्तरोन्नति निर्माण गर्नको लागी वातावरणीय प्रभाव मूल्यान प्रतिवेदन तयारीको सिलसिलामा सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने गरी उक्त सडक खण्डको स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्ने जाने देखिन्छ ।

१) सकारात्मक प्रभाव

- समयानुकूल यात्रा सहज र सरल हुने ।
- रोजगारीको श्रृजना भई कामदारहरूको व्यवसायिक सिप र आयमा अभिवृद्धि हुने ।
- व्यापार तथा पर्यटन विकासमा बृद्धि हुने ।
- सवारी दुर्घटनामा कमि आउने ।

२) नकारात्मक प्रभाव

- धुवाँ धुलोमा बृद्धि भई वातावरण प्रदूषण हुने ।
- राजमार्ग वन जंगल भएर जाने भएकोले वन्यजन्तुहरूको आवागमनमा असहज तथा दुर्घटना हुने ।
- जलवायु परिवर्तनमा नकारात्मक प्रभाव पर्ने तत्वहरूमा बृद्धि हुने ।
- राजमार्ग वनजंगल भएर जाने भएकोले वनजंगलको हैसियतमा ह्रास हुने ।

३) राय सुभाषहरू

- यो राजमार्ग प्राय वनजंगल भएर जाने भएको हुदाँ वन्यजन्तु (हात्ति, बाघ आदी) को आवागमनमा सहजता ल्याउने वन्यजन्तु मैत्रि (ओभर पाथ, अण्डर पास सहित) सडकको निर्माण हुनुपर्ने ।
- राजमार्गको स्तरोन्नती हुदाँ हटाउने रुखहरूको संख्याको आधारमा कानूनमा व्यवस्था भए बमोजिम अन्य ठाउँमा वृक्षारोपण र सोको व्यवस्थापन गर्नुपर्ने ।
- राजमार्गको दायो बायाँ घिनचेन्टको व्यवस्था गर्नुपर्ने ।
- राजमार्ग बनाउने क्रममा वनजंगल क्षेत्रमा कुनैपनि कार्यहरू जस्तै : क्याम्प तथा अलकषा पोल्ने आदी नगर्ने नगराउने ।
- राजमार्ग बनाउने काममा अनावश्यक वनजंगलहरूमा बाटो नखन्याउने ।
- राजमार्ग स्तरोन्नतिको क्रममा धुवाँ ध्वनी कम भएको सवारीहरूको प्रयोग हुनुपर्ने ।
- वनजंगल भित्र जवाभावि सवारी साधन रोक्ने स्थलको निर्माण नगर्ने ।
- वनक्षेत्र प्रयोग गरेर वापत सडक कार्यालयले गर्ने वृक्षारोपण वनजंगलको खाती स्वतन्त्र नभई जग्गा खरिद गरी वृक्षारोपण गर्ने र सो वृक्षारोपण क्षेत्रको विरुवा हुर्काउने सम्पूर्ण जिम्मेवारी सडक कार्यालयले लिनुपर्ने ।
- राजमार्ग निर्माणको क्रममा वनजंगल क्षेत्रमा हुने फोहरहरूको व्यवस्थापन सडक कार्यालयले गर्नुपर्ने र सो सम्बन्धि होर्डिङबोर्डहरूको व्यवस्थापन गर्नुपर्ने ।

माथि उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना बनाई कार्यान्वयन गर्दा एवं राय सुभाषको बुझाई समेटी व्यवस्थापन योजना कार्यान्वयन गर्दा योजना अमल फलदायी हुने देखिएकोले उल्लेखित प्रस्ताव कार्यान्वयन गर्नको लागी सिफारिस साथ पठाइएको व्यहोरा अनुरोध छ ।

Shree
२०८०/०८/२१
शैलेन्द्र कुमार् मिश्रा
डिभिजनल वन अधिकृत



महेश प्रदेश सरकार
वन तथा वातावरण मन्त्रालय
प्रदेश वन निदेशनालय

डिभिजन वन कार्यालय, धनुषा
पुष्पवलपुर सब डिभिजन वन कार्यालय, धनुषा

पत्र संख्या : २०८०/०८१

चलानी नम्बर : १३५

सम्पर्क मोबाइल नं. ९८५४०२९६३९

मिति : २०८०/११/३० गते

विषय : राय सुझाव सहित सिफारिस गरिएको बारे ।

श्री डिभिजन वन कार्यालय,
जनकपुरधाम धनुषा ।

प्रस्तुत विषयमा, डिभिजन वन कार्यालय, धनुषाको ७२ मिति २०८०/०४/३० को प्राप्त पत्रानुसार वन तथा भू-संरक्षण मन्त्रालयको च.न. १५७० मिति २०८०/०३/२७ को पत्रानुसार सडक सिमाभित्र रहेका रुखहरु हटाउन सरकारी रुखहरु हटाउने मापदण्ड २०७१ को दफा १० बमोजिमको समितिको निर्णय सहित वन नियमावली २०७९ को नियम १०२ को उप नियम ३ अनुसार भौतिक पूर्वाधार तथा यातायात मन्त्रालय सडक, महाशाखा कार्यान्वयन सहायता विकास, विभागको मिति २०८०/०४/०३ को प्रकाशित सूचना र मिति २०८०/०२/८ देखि २०८०/०२/११ सम्मको सार्वजनिक सुनुवाई अनुसार कार्यन्वयन हुने पूर्व पश्चिम)महेन्द्र(राजमार्ग अन्तर्गत कमला-ढल्केबर-पथलैया सडक खण्ड)१३० कि (.मि.को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्ने जाने देखिन्छ ।

क) सकारात्मक प्रभाव

- यात्रा अवधि घट्नुका साथै यात्रामा सहजता हुने ;
- निर्माण कार्यमा संलग्न हुने कामदारको व्यावसायिक सीप अभिवृद्धि हुने;
- व्यापार तथा पर्यटन व्यवसायमा वृद्धि;

ख) नकारात्मक प्रभाव

- धुँवा धुलो बढ्ने तथा ध्वनि प्रदूषण बढ्न सक्ने ;

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने वातावरणीय व्यवस्थापन योजना कार्यन्वयन गर्दा उल्लेखित प्रस्तावको सकारात्मक प्रभाव बढी हुने देखिएकोले उल्लिखित प्रस्ताव कार्यन्वयन गर्नको लागि सिफारिस गरी पठाइएको व्यहोरा अनुरोध छ ।

राम युगल साह
२०८०/११/३०

राम युगल साह
व.अ.

राम युगल साह
अधिकृतस्थान



नेपाल सरकार
भौतिक पूर्वाधार तथा यातायात मन्त्रालय
सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा

फोन नं. : ९७७-०१४४४९६८६
: ९७७-०१४४४९६८७
फ्याक्स : ९७७-०१४४४२४३२
ईमेल : dorfcab@cor.gov.np

पत्र संख्या :
कालानी नं. :

पि.सु. : ९/२०८०-८९
४८



मिति: २०८०/०४/१५

श्री डिभिजन वन कार्यालय धनुषा
श्री डिभिजन वन कार्यालय महोत्तरी
श्री डिभिजन वन कार्यालय सर्लाही
श्री डिभिजन वन कार्यालय रौतहट
श्री डिभिजन वन कार्यालय बारा

विषय: राय सुभाब सहितको सिफारिस पत्र उपलब्ध गराइदिने सम्बन्धमा ।

यस महाशाखा अन्तर्गत अध्ययन भइरहेको पूर्व पश्चिम (महेन्द्र) राजमार्गको कमला-ढल्केवर-पथलैया सडक खण्डको १३० कि.मि. लम्बाईलाई हालको २ लेनबाट ४ लेन स्तरमा स्तरोन्नतिको साथै आवश्यकता अनुसार ७६ वटा साना तथा ठूला पुलहरूको स्तरोन्नति/निर्माण गर्नको लागि वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको सिलसिलामा सार्वजनिक सुनुवाई कार्यक्रम मिति २०८०-०२-०८ देखि २०८०-०२-११ सम्म सम्पन्न भएको व्यहोरा जानकारीका लागि अनुरोध छ । यसै सिलसिलामा मिति २०८०/०४/०३ मा प्रभाव राष्ट्रिय दैनिक पत्रिकामा प्रकाशित सुचनाको आधारमा वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको लागि वातावरण संरक्षण नियमावली २०७७ नियम ७ मुताबिक राय सुभाब सहितको सिफारिस पत्र आवश्यक भएकोले सात दिनभित्र लिखित राय सुभाब सहितको सिफारिस पत्र उपलब्ध गराइदिनुहुन अनुरोध छ ।

डा. विजय जैसी
उप-महानिर्देशक



ସମ୍ପାଦକ
8/22



नेपाल सरकार
भौतिक पूर्वाधार तथा यातायात मन्त्रालय
सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा

फोन नं. : ९७७-०१४४४९६८६
: ९७७-०१४४४९६८७
फ्याक्स : ९७७-०१४४४२४३२
ईमेल : dorfcab@cor.gov.np

पत्र संख्या :
कालानी नं. :

पि.सु. १/९/२०८०-८९
४८



मिति: २०८०/०४/१५

श्री डिभिजन वन कार्यालय धनुषा
श्री डिभिजन वन कार्यालय महोत्तरी
श्री डिभिजन वन कार्यालय सर्लाही
श्री डिभिजन वन कार्यालय रौतहट
श्री डिभिजन वन कार्यालय बारा

विषय: राय सुभाष सहितको सिफारिस पत्र उपलब्ध गराइदिने सम्बन्धमा ।

यस महाशाखा अन्तर्गत अध्ययन भइरहेको पूर्व पश्चिम (महेन्द्र) राजमार्गको कमला-ढल्केवर-पथलैया सडक खण्डको १३० कि.मि. लम्बाईलाई हालको २ लेनबाट ४ लेन स्तरमा स्तरोन्नतिको साथै आवश्यकता अनुसार ७६ वटा साना तथा ठूला पुलहरूको स्तरोन्नति/निर्माण गर्नको लागि वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको सिलसिलामा सार्वजनिक सुनुवाई कार्यक्रम मिति २०८०-०२-०८ देखि २०८०-०२-११ सम्म सम्पन्न भएको व्यहोरा जानकारीका लागि अनुरोध छ । यसै सिलसिलामा मिति २०८०/०४/०३ मा प्रभाव राष्ट्रिय दैनिक पत्रिकामा प्रकाशित सुचनाको आधारमा वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको लागि वातावरण संरक्षण नियमावली २०७७ नियम ७ मुताबिक राय सुभाष सहितको सिफारिस पत्र आवश्यक भएकोले सात दिनभित्र लिखित राय सुभाष सहितको सिफारिस पत्र उपलब्ध गराइदिनुहुन अनुरोध छ ।

डा. विजय जैसी
उप-महानिर्देशक

5-28029027

9/2/22
सोनाक्ष कुमार का

528029022

(D.f.o)



नेपाल सरकार
भौतिक पूर्वाधार तथा यातायात मन्त्रालय
सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा

फोन नं. : ९७७-०१५५ ४९६८६
९७७-०१५५ ४९६८७
फ्याक्स : ९७७-०१५५ ४९६८२
ईमेल : dorfcab@dor.gov.np

पत्र संख्या : फि.स. ९/२०८०-८९
चलानी नं. : ४९

नेपाल सरकार
भौतिक पूर्वाधार तथा यातायात मन्त्रालय
सडक विभाग
विकास सहायता कार्यान्वयन महाशाखा
जवागल, ललितपुर

मिति: २०८०/०४/१५

सागरनाथ वन विकास परियोजना
दस्तावेज नं. ३६
मिति: २०८०/४/१५

श्री सागरनाथ वन विकास परियोजना सर्लाही

विषय: राय सुभाब सहितको सिफारिस पत्र उपलब्ध गराइदिने सम्बन्धमा ।

यस महाशाखा अन्तर्गत अध्ययन भइरहेको पूर्व पश्चिम (महेन्द्र) राजमार्गको कमला-ढुल्केवर-पथलैया सडक खण्डको १३० कि.मि. लम्बाईलाई हालको २ लेनवाट ४ लेन स्तरमा स्तरोन्नतिको साथै आवश्यकता अनुसार ७६ वटा साना तथा ठूला पुलहरूको स्तरोन्नति/निर्माण गर्नको लागि वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको सिलसिलामा सार्वजनिक सुनुवाई कार्यक्रम मिति २०८०-०२-०८ देखि २०८०-०२-११ सम्म सम्पन्न भएको व्यहोरा जानकारीका लागि अनुरोध छ । यसै सिलसिलामा मिति २०८०/०४/०३ मा प्रभाव राष्ट्रिय दैनिक पत्रिकामा प्रकाशित सूचनाको आधारमा वातावरणीय प्रभाव मुल्याङ्कन प्रतिवेदन तयारीको लागि वातावरण संरक्षण नियमावली २०७७ नियम ७ मुताबिक राय सुभाब सहितको सिफारिस पत्र आवश्यक भएकोले सात दिनभित्र लिखित राय सुभाब सहितको सिफारिस पत्र उपलब्ध गराइदिनुहुन अनुरोध छ ।

डा. विजय जैसी
उप-महानिर्देशक



नेपाल सरकार
वन तथा वातावरण मन्त्रालय
वन पैदावार विकास समिति
सागरनाथ वन विकास परियोजना
सर्लाही

☎ ९८५४०२०३९९

email: sagarnathfdp@gmail.com

पत्र संख्या: (यो.०८०।०८९)

चलानी नम्बर:

३४९

मिति: २०८०/१२/२४

विषय :- राय सुम्भाव सहित सिफारीस गरिएको बारे ।

श्री सडक विभाग, विकास सहायता कार्यान्वयन शाखा

ज्वागल, जलितपुर ।

उपरोक्त सम्बन्धमा भौतिक पूर्वाधार तथा यातायात मन्त्रालय, विकास सहायता कार्यान्वयन महाशाखाको मिति २०८०।०४।०३ को प्रकाशित सूचना र मिति २०८०।०२।०८ देखि २०८०।०२।११ गते सम्मको सार्वजनिक सुनुवाई अनुसार कार्यान्वयन हुने पूर्व पश्चिम महेन्द्र राजमार्ग अन्तर्गत कमला-पथलैया सडक खण्ड १३० कि.मि.को स्तरोन्नति कार्यको प्रस्तावबाट यस क्षेत्रमा निम्न अनुसारको वातावरणीय प्रभाव पर्ने जाने देखिन्छ ।

(क) सकारात्मक प्रभाव :

- यात्रा सहज र समयानुकूल हुने ।
- रोजगारीको श्रृजना भई कामदारहरूको व्यवसायिक सिप र आयमा अभिवृद्धि हुने ।
- सवारी दुर्घटनामा कमी आउनु ।
- व्यापार, पर्यटन प्रवर्धन तथा व्यवसायमा वृद्धि हुने ।

(ख) नकारात्मक प्रभाव :

- धुवाँ धुलोमा वृद्धि भई वायु प्रदूषण बढ्ने ।
- यो लोकमार्ग वन जंगल भएर जाने भएको हुदा वन्यजन्तुको आवागमनमा असहज हुने ।
- यो लोकमार्ग वन जंगल भएर जाने भएको हुदा वन क्षेत्रको दायाँ बायाँ अतिक्रमण हुन सक्ने ।
- जलवायु परिवर्तनमा नकारात्मक प्रभाव पार्ने तत्वहरूमा वृद्धि हुने ।

(ग) राय सुम्भावहरू :

- यो लोकमार्ग प्रायः जसो वन जंगल क्षेत्र भएर जाने हुदा वन्यजन्तु (हात्ती, बाघ, चितुवा आदी) को आवागमनमा सहजता ल्याउन वन्यजन्तु मैत्री (ओभर पथ, अण्डर पथ, मंकी केनोप्ली सहित) सडकको निर्माण हुनु पर्ने ।
- लोकमार्गको स्तरोन्नति हुदा हटाउने रुखहरूको संख्याको आधारमा कानूनमा व्यवस्था भए बमोजिम अन्य ठाउँमा वृक्षारोपण र सोको व्यवस्थापन गर्नु पर्ने ।
- लोकमार्गको दायाँ बायाँ ग्रीनबेल्टको व्यवस्था गर्नु पर्ने ।


विकास योजना प्रमुख



नेपाल सरकार
वन तथा वन्यजन्तु मन्त्रालय
वन पैदावार विकास समिति

सागरनाथ वन विकास परियोजना

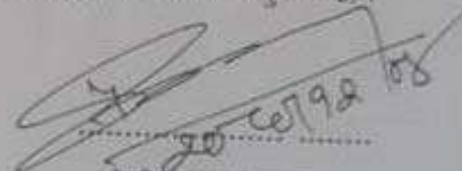
☎ ९८४४०२०३९९

email: sagatnathfdp@gmail.com

पत्र संख्या: (यो.०८०।०८९)

चलानी नम्बर:

उल्लेखित प्रभावको आधारमा सकारात्मक प्रभाव अभिवृद्धि गर्ने र नकारात्मक प्रभाव न्यून गर्ने बातावरणीय व्यवस्थापन योजना बनाई कार्यन्वयन गर्दा एवं राय सुझावको बुझाई समेटी व्यवस्थापन योजना कार्यान्वयन गर्दा योजना अझ फलदायी हुने देखिएकोले उल्लेखित प्रस्ताव कार्यन्वयन गर्नको लागि सिफारिस साथ पठाईएको व्यहोरा अनुरोध छ।


२०८०/१२/०८

प्रेमी लाल प्रसाद
नि. परियोजना प्रमुख
नि. परियोजना प्रमुख



नेपाल सरकार
वन तथा वातावरण मन्त्रालय
राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण विभाग

फोन नं. : ४२२०८४०
४२२०९१२
४२२७९२६
फ्याक्स नं. ४२२७६७५



पत्र संख्या :- २०७८/०७९ व्य. ६२६
चलानी नं :- २९६३



पो. ब. नं. - ८६०
बबरमहल, काठमाडौं
Email: info@dnppwc.gov.np
http://www.dnppwc.gov.np
मिति २०७९/२/१६

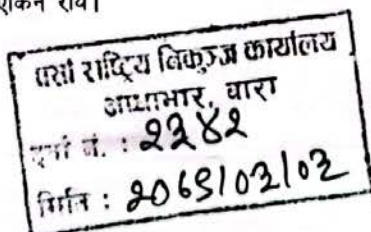
विषय : वातावरणीय अध्ययन सहमती सम्बन्धमा राय उपलब्ध गराउने।

श्री पर्सो राष्ट्रिय निकुञ्ज कार्यालय,
आधाभार, पर्सो।

१. प्रस्तुत विषयमा महेन्द्र राजमार्ग अन्तर्गत कमलाढल्केवर-पथलैया सडक खण्ड (१३०के.मी) को स्तरोन्नती गर्न वातावरणीय अध्ययन सहमती सम्बन्धमा सडक विभागको च.नं. ४२२, मिति २०७८/१२/१० को पत्र र सो साथ प्राप्त कागजात आयोजनाको सम्भाव्यता अध्ययन प्रतिवेदन थान २ यसै पत्र साथ सलग्न राखी पठाईएको छ।
२. विस्तृत व्यहोरा संलग्न कागजातहरूबाट बाट अवगत गर्नुभई र थप कागजात आवश्यक परेमा सम्बन्धित कम्पनी/समिति/कार्यालय संग माग गरी सो सम्बन्धमा देहायका विषयहरू खुलाई तहाँ कार्यालयको कार्यालय प्रमुखको यकिन राय प्रतिक्रियासहितको प्रतिवेदन उपलब्ध हुने व्यवस्थाको लागि आदेशानुसार अनुरोध छ।

तपश्चिलः

- क) प्रस्तावित आयोजनाको निर्माण तथा सञ्चालनको क्रममा प्रयोग हुने/असर पर्ने सरकारी वनक्षेत्र, निकुञ्ज तथा मध्यवर्ती क्षेत्र भएर जाने सडक खण्डको लम्बाई/चौडाई समेतको क्षेत्रफल विवरण, जग्गाको चार किल्ला को विवरण र कोर्डिनेट विन्दुसहितको वाउन्ड्री म्याप,
- ख) प्रस्तावित आयोजना सञ्चालनको क्रममा निर्माण हुने/भत्काईने सम्पूर्ण संरचनाहरूको GPS कोर्डिनेट सहित निकुञ्ज तथा मध्यवर्ती क्षेत्रको सिमाना देखिने गरी तयार गरिएको रङ्गिन संरचना नक्सा, यदि Linear खाले संरचना निर्माण हुने भएमा Google earth मा alignment देखिने गरी तयार गरिएको नक्सा
- ग) प्रस्तावित आयोजना सञ्चालनको क्रममा हटाउनुपर्ने रुख विरुवाहरूको नाप तालिका सहितको प्रजातिगत लगत र अनुमानित आयतन
- घ) प्रस्तावित आयोजना सञ्चालन गर्दा वन्यजन्तुको बासस्थान, ओहोरदोहर र विचरण, पारिस्थितिकीय प्रणालीमा पर्न सक्ने प्रभाव,
- ङ) यस सम्बन्धमा कार्यालयको आफ्नो एकिन राय।



२०६९/०२/१६

(गोपाल खनाल)

स. व्यवस्थापन अधिकृत

बोधार्थः

श्री सडक विभाग, विकास सहायता कार्यान्वयन शाखा
कुपन्डोल, ललितपुर।

२०६९/०२/०२

०५.११.६.७. ९४२

२०६९/११/२५

पञ्जीकरण पत्र सङ्ख्या मिति उल्लेखित हुन अपेक्षित छ ।



नेपाल सरकार

वन तथा वातावरण मन्त्रालय

वातावरण तथा जैविक विविधता महाशाखा

EX: पो.व.नं. : ३८८७

सिंहदरबार, काठमाण्डौ

पत्र संख्या - जैविक विविधता/२०७८/०७९

सन्तानी नं १६०६

प्राप्त पत्र सङ्ख्या र मिति :-

रा.मि. ४६४९
मिति २०६९/११/२५

मिति २०७९/१/२१

विषय: अध्ययन सहमति सम्बन्धमा ।

१६/०१/२०८०
स.वन.अ.क.

श्री राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण विभाग

बबरमहल, काठमाण्डौ ।

श्री वन तथा भू-संरक्षण विभाग

बबरमहल, काठमाण्डौ ।

प्रस्तुत विषयमा महेन्द्र राजमार्ग अन्तर्गत कमला-ढुल्लेवर-पथलैया सडक खण्डको स्तरोन्नति गर्न वातावरणीय अध्ययनको लागि सडक विभागको च.नं. ४२२ मिति २०७८/१२/१० को पत्रबाट अनुरोध भै आएको हुँदा उक्त पत्र र संलग्न कागजातहरु आवश्यक कारवाहीको लागि तहाँ विभागमा यसै पत्रसाथ पठाइएको व्यहोरा आदेशानुसार अनुरोध छ ।

११/०१/२०८०

११/२५

११/२५

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(ज्ञानेन्द्र कायस्थ)

स.वन अधिकृत

११/०१/२०८०

११/०१/२०८०

Annex 16: Legal Review

Table: Review of Relevant Policies, Acts, Rules, Guidelines and International Conventions

	Articles/rules/clauses, etc.	Related description
Constitution		
Constitution of Nepal	Article 30 (1)	Every person shall have the right to live in clean and healthy environment
	Article 30 (2)	The victim shall have the right to obtain compensation, in accordance with law, for any injury caused from environmental pollution or degradation
	Article 51	Mentions about pursuing policies to develop balanced, environment friendly, quality and sustainable physical infrastructures, while according priority to the regions lagging behind from development perspective. The article also mentions about sustainable development
Policy and Plan		
National Gender Equality Policy 2077	Section 6. Long Term Thought	Gender Equitable Nation Construction
	Section 7. Scenario of Thought	Ensuring substantive and meaningful participation of women in all sectors and maintaining gender equality through economic and social transformation
	Section 8. Target	To establish equality between women, men, gender and sexual minorities in legal and practical terms, including economic, social and political empowerment of women.
	Section 10. Strategy	Changing the tradition of gender-based division of labor and increasing women's participation in the labor market and assessing women's contribution to the economy
Fifteenth Plan (2076/77 – 2080/81)	Chapter 2, Long term Vision 2043, Section 2.10 Macroeconomic and Sectoral Vision (d) Infrastructure Sector	Assumes that the development of overall transport sector will create a strong and reliable foundation for the economic and social transformation of the country. Development and expansion of transport infrastructure and services will be carried forward in a planned manner to meet the long term needs of the transport sector.
	Section 3.4, Table 3.1, S.N. 3.1	Indicators of accessible, safe and modern transportation have been mentioned The status of 2075/76 and target for 2080/81 are mentioned
	Table 3.1 S.N. 7.2	Environmental balance and sustainable use
	Table 3.1 S.N. 7.3	Climate change adaptation

	Articles/rules/clauses, etc.	Related description
National Environmental Policy 2076	Section 6. Target	Ensuring citizens' right to live in a clean and healthy environment by pollution control, waste management and green promotion
	Section 7. Objectives	1. Prevention, control and reduction of all types of pollution including water, air, soil, sound, electromagnetic waves, chemical and radioactive 2. Managing waste generated from all sources including domestic, industrial and service sector 3. Mainstreaming environmental concerns in all dimensions of development
	Section 8. Policy, Section 8.2 Environmental mainstreaming	1. Based on the extent, magnitude and duration of the environmental impact, the approval process will be made transparent and simplified by the proponent before implementing the proposal. 2. Arrangements will be made to carry out the project by selecting suitable options so that there is a balance between environment and development. 3. Arrangements will be made to allocate the required funds by the proponent for reducing the adverse effects caused by the environmental impact and enhancing the adaptation effect while preparing the environmental study report.
	Section 8.5 Sustainable Development	1. Environment friendly structures will be built during the construction of physical infrastructures
National Climate Change Policy 2076	Section 7. Objectives	c. To promote green economy by adopting the concept of low carbon emission development f. Mainstreaming or internalizing climate change issues in policies, strategies, plans and programs at all levels and thematic areas of the nation.
	Section 8. Policy 8.2 Forest, Biodiversity and Watershed Conservation	d. An action plan will be formulated and implemented for protection of rare and endangered wildlife and flora and sensitive ecological systems that are at risk of climate change.
	Section 8.5 Industry, Transport and Physical Infrastructure	d. Climate related risk reduction measures will be adopted during design and construction of physical infrastructures
National Occupational Health	Section 8. Aim	To ensure the workplace safe through adoption of occupational health and safety standards and measures

	Articles/rules/clauses, etc.	Related description
and Safety Policy, 2076	Section 9. Objectives	a) To improve worker's safety, health and work environment b) To minimize occupational safety and health risks in workplace c) To establish a relationship between occupational safety and health and worker's productivity d) To increase production through proper provision of occupational safety and health
	Section 10. Strategies	This section mentions about different strategies to be followed for achieving aim and objectives as mentioned above
National Forest Policy, 2075	Section 6. Objectives	4.Conservation, restoration and sustainable use of forests, flora, fauna and biological diversity. 7.Restoring forests that have been damaged in various ways without reducing the current forest area.
	Section 8. Policy 8.1 Forest Land Tenure	Strategy and program: If there are no option to use forest to carry out projects of national priority or national pride, the federal government will plan to use forest area based on laws, guidelines and procedures, and in order to compensate the reduced forest area by using forest area, the federal government will also plant trees and restore the forest by coordinating with the provincial and local governments.
	8.4 Biodiversity Conservation	1. Protection and management of rare, endangered and protected wild animals and plants will be done
National Land Use Policy 2072	Section 5. Long term view	Achieving social, economic and environmental development and prosperity in a sustainable way by optimum utilization of available land and land resources
	Section 8. Policy and Strategy	2.3 (c) Maintaining balance between physical infrastructure development and environment 2.3 (g) Ensuring conservation and promotion of biological diversity 7.2 If forest land is to be used for implementation of national priority projects, then, arrangements for mandatory plantation in equal land without reducing will be done.

	Articles/rules/clauses, etc.	Related description
		9.3 Construction or expansion of roads that promote soil erosion, adversely affect arable land and endanger local settlements will be discouraged. 10.2 While implementing the development construction works, in order to maintain a balance between land, environment and development, the principle of sustainable development will be adopted along with considering the impact of climate change.
Land Acquisition, Resettlement, and Rehabilitation Policy for Infrastructure Development Project 2071	Section 7. Policy	7.1 To create a situation where there is no displacement of local people, families or communities or as little displacement as possible due to the implementation of the project. 7.2 In case of displacement due to the project, minimizing the adverse effects of the project provide opportunities for compensation and economic-social benefits to the affected person, family or community. 7.3 Make land acquisition, compensation, rehabilitation and evaluation work simple, easy, transparent and fair, creating an environment to complete the project within the stipulated time.
National Wetland Policy 2069	Section 11. Policy to Prohibit Wetlands Adverse Actions	3. Prohibition on dumping of chemical and household waste, industrial discharge, use of pesticides, use of electric waves and dumping of explosives in wetlands
National Child Policy 2069	Section 7. Major Objectives of Policy	7.1 Protecting children from all types of physical or mental violence, harm or abuse, neglect, exploitation and sexual abuse.
	Section 9. Strategy (Related with Objective 7.1)	As child labor can impact on long term physical and psychosocial development, for its redress monitoring mechanism to check whether any industries or enterprises are employing child labor or not should be made effective. If any employer is found using child labor, then immediate rescue of such child should be done and employer should be punished. Integrated relief facilities will be provided for rehabilitation of child.
National Transport Policy 2058	Section 5.8	Construction, improvement and management of the means of transport shall be done in harmony with the environmental effect

	Articles/rules/clauses, etc.	Related description
	Section 7.1.5	Manage the design, construction and maintenance of the roads with minimal environmental effects
Acts		
Environment Protection Act, 2076	Section 3: Preparation of Environmental Study Report	1. The proponent has to prepare the environmental study report as specified for the proposed proposal. 5. A public hearing should be held while preparing the environmental study report.
	Section 4: Detail Analysis of Alternatives	1. In the environmental study report, the proponent shall make a detailed analysis of the adverse effects that may occur on the environment during the implementation of such a proposal and the various options that can be adopted for its mitigation, and recommend the option that is suitable for the implementation of the proposal.
	Section 12: Environmental Audit	After completion of 2 years from the date of commencement of service of the proposal, within 6 months, the MoFE or designated agency shall carry out an environmental audit and keep the environmental audit up to date.
	Section 13: Prohibition	Anyone who implements a project without the approval of the environmental study report or in a manner contrary to the approved environmental study report can stop such project.
Forest Act 2076	Section 3 Land Tenure of National Forests	(1) The land ownership of the national forest area shall remain with the Government of Nepal. (2) Without the decision of the Cabinet of Ministers of Government of Nepal, it is not possible to change the use of the national forest area, to provide the right of use of the national forest to anyone, to transfer the right through mortgage or other means.
	Section 12 No settlement or resettlement within forest areas	(1) No forest area containing trees shall be used for settlement or resettlement.
	Section 41 Land use of forest areas shall not be changed	No part of the national forest shall be used in such a way as to change the land use of the forest area. However, this arrangement will not be applicable in the case of forest area provided to any project as per the decision of Nepal Government for infrastructure development

	Articles/rules/clauses, etc.	Related description
	Section 42 use of forest area	Regardless of what is written elsewhere in this Act, if there is no other option than to use the forest area to implement a national priority project, and if there is no significant adverse impact on the environment during the implementation of such project, the Government of Nepal may approve the use of any part of the national forest for such project.
Land Use Act 2076	Section 8 Land use shall not be changed	(1) According to Section 4, the land classified for one purpose cannot be changed to use it for another purpose. (7) Notwithstanding anything contained in sub-section (1), the Government of Nepal may change the existing land use of the following places: (b) Places to establish projects of national pride or priority development projects, industrial areas, special economic zones etc.
The Act Relating to Children, 2075	Section 66: Offences against the child	66. Offences against the child: (1) If any person does any act of violence referred to in sub-section (2) or sexual abuse referred to in sub-section (3), he or she shall be deemed to have committed the offence against the child under this Act. (2) If any person does any of the following acts against a child, he or she shall be deemed to have committed the act of violence against the child: (3) If any person does any of the following acts against a child, he or she shall be deemed to have committed child sexual abuse: www.lawcommission.gov.np 31 (a) To show, or cause to show, him or her an obscene picture, audiovisual recording or other material of similar kind or display, or cause to display, such expression or gesture that reflects obscene or sexual conduct or behaviour to him or her or display, or cause to display, child pornography, (b) To distribute, store or use any actual or fictitious obscene picture or audio-visual material of him or her, (c) To propose, lure, coerce or threaten him or her for sexual activity, (d) To use him or her in the production of an obscene act and material, (e) To touch, kiss, hold sensitive parts of body of him or her, embrace him or her with sexual intent or cause him or her to touch or hold sensitive parts of own body or

	Articles/rules/clauses, etc.	Related description
		body of another person or render him or her unconscious with sexual intent or display, or cause him or her to display sexual organs, (f) To use, or cause to use, him or her for stimulating sexual lust or sexual excitement, (g) To use, or cause to use, him or her for the purpose of sexual gratification, (h) To engage, or cause to engage, in child sexual exploitation, (i) To use, or cause to use, him or her with the intent of providing sexual services, (j) To use, or cause to use, him or her with the intent of engaging in sexual abuse, (k) To use him or her in prostitution or other sexual work. (4) Notwithstanding anything contained in sub-section (3), anything that is expressed by means of writing, speaking, gesturing or displaying any word, picture, audio, visual means and object or material on a sex related matter without displaying obscenity with the aim of imparting information and education or an act done in good faith in the course of making treatment of the child or saving the child from an accident or risk shall not be deemed to constitute an act of sexual abuse.
Local Government Operation Act 2074	Section 11 Rights of Rural Municipality and Municipality	(2) Without prejudice to the generality of subsection (1), the functions, duties and rights of rural municipalities and municipalities shall be as follows: d. Local Taxes, Service Charges and Duties g. Local level development projects j. Local market management, environmental protection and biodiversity t. Local roads, rural roads, agricultural roads and irrigation
Labour Act, 2074	Section 5 Child labor shall not be employed	No one should employ children in any work contrary to law.
	Section 6 Non-discrimination	(1) Employers shall not discriminate against workers on the basis of religion, race, sex, caste, origin, language or ideological belief or any other similar basis.
	Section 7 No discrimination in remuneration for equal work	(1) There should be no discrimination in remuneration for work of equal value between workers on the basis of gender.
	Section 68 To formulate safety and health policy	(1) Subject to this Act, the rules made under this Act and the instructions given in accordance with this Act or the rules made

	Articles/rules/clauses, etc.	Related description
		under this Act, the employer shall formulate and implement a policy related to the safety and health of workers and other persons at the workplace.
	Section 71 Duties of responsible persons	For work related to any workplace, equipment, material or substance, it will be the responsibility of the responsible person to ensure that it is safe and healthy.
	Section 74 Establishment of Safety and Health Committee	(1) In an organization employing twenty or more workers, the employer shall form a safety and health committee as specified in such a way that the workers are also represented.
	Section 76 Stopping work in case of immediate danger	(1) Any work if not stopped immediately can cause physical injury or danger to the worker or someone else, or if there is a serious impact on his health or there is unexpected damage or loss of any equipment, object or substance, the worker involved in such work shall inform the employer or responsible person according to section 71. (2) Upon receiving the information as per sub-section (1), the employer or the responsible person shall immediately give appropriate instructions in this regard. (3) If the employer or the responsible person is not immediately available to give the information as per sub-section (1), the worker himself can stop such work.
	Section 78: Special provisions relating to occupational safety and health	(1) The safety and health standards to be followed by the organization related to the following subjects shall be as prescribed.
	Section 80: Arrangements should be made for the control of infectious diseases	(1) The employer shall make appropriate arrangements for the prevention and control of infectious diseases at the workplace.
The Act Relating to Rights of Persons with Disabilities, 2074	Section 15. Right of access to services, facilities and justice	(1) The persons with disabilities shall have the right to have easy access to other services and facilities that are open or provided for the public, including educational institutes, housing, workplaces, buildings, roads, transportation, and electronic communication services.
	Section 18. Right to movement	The persons with disabilities shall have the right on an equal basis with others to make

	Articles/rules/clauses, etc.	Related description
		movement with their assistant materials and assistance of persons of their choice.
The National Civil (Code) Act, 2074	Chapter 14. Provision relating to wages	Clause 640 mentions any person who has attained at least fourteen years of age may be employed in a work with his or her consent. Similarly, as per clause 641 person who has not attained sixteen years of age shall not be employed in a hazardous business or work. Clause 642 mentions about provision of safety measures to be made and Clause 643 speaks on prohibition of employing for more than eight hours. In case of need to employ more than 8 hours, the consent shall be obtained from him/her.
Control of International Trade of Endangered Wild Fauna and Flora Act, 2073	Section 3. Prohibition on Trade or Transaction of Threatened or Vulnerable wild fauna or flora or specimen thereof	(1) No person shall purchase, sell, possess, use, plant, rear, captive breed, transport or import or export or cause to be done so a threatened or vulnerable wild fauna or flora or a specimen thereof.
The Sexual Harassment at Workplace (Prevention) act 2071 (Amendment 2075)	Section 3: Not to commit or cause to Commit Sexual Harassment	No person shall commit or cause to be committed sexual harassment in workspace.
	Section 4. To be considered as Sexual Harassment	(1) If anyone commits or causes to be committed, the following acts by abusing one's position, power or authority to any employee or customer in the workplace by creating any form of pressure, influence or enticement or by discouraging, it shall be considered that sexual harassment has been committed: - (a) To touch or attempt to touch any organ of the body with sexual intent, (b) To use or display word, picture, newspaper, audio, visual, other information technology, medium, object or material related to obscene and sexual activity, (c) To display or express obscene and sexual intent by writing, speaking or gesticulating, (d) To make an offer for sexual activity, (e) To tease or annoy with sexual intent (2) Notwithstanding anything contained in clauses (a), (b) or (c) of sub-section (1), anything done in course of educational, informative, research oriented, treatment or lifesaving activity shall not be considered to be a sexual harassment.

	Articles/rules/clauses, etc.	Related description
Solid Waste Management Act, 2068	Section 4 Sub-section (1)	According to this Act, the responsibility for managing waste will be at the local level, but in sub-section (2) it is mentioned that the responsibility of processing and managing harmful waste, health institution waste, chemical waste or industrial waste subject to the prescribed standards shall be the responsibility of person or entity generating such waste
	Section 10 (1)	The local level will do the necessary work to encourage waste minimization, reuse and recycling and can create and implement the necessary guidelines for its effective implementation.
Human Trafficking and Transportation (Control) Act, 2064	Section 4: Acts considered as Human Trafficking and Transportation	Acts considered as Human Trafficking and Transportation: (1) If anyone commits any of the following acts, that shall be deemed to have committed human trafficking: (a) To sell or purchase a person for any purpose, (b) To use someone into prostitution, with or without any benefit, (c) To extract human organ except otherwise determined by law, (d) To go for in prostitution. (2) If anyone commits any of the following acts, that shall be deemed to have committed human transportation: (a) To take a person out of the country for the purpose of buying and selling, (b) To take anyone from his /her home, place of residence or from a person by any means such as enticement, inducement, misinformation, forgery, tricks, coercion, abduction, hostage, allurement, influence, threat, abuse of power and by means of inducement, fear, threat or co-ercion to the guardian or custodian and keep him/her into ones custody or take to any place within Nepal or abroad or handover him/her to somebody else for the purpose of prostitution and exploitation.
Child Labor (Prohibition and Regulation) Act, 2056	Section 3: Child shall not be employed	1. No one should employ a child under fourteen years of age as a laborer.
	Section 6: Consent to be obtained	1. If an organization has to employ a child, it must take the approval of the relevant labor office or any other body or official designated by that office and the father, mother or guardian of the child.
	Section 9: Timing of Employment	1. Children should not be employed after 6 pm to 6 am.

	Articles/rules/clauses, etc.	Related description
		2. Children should not be employed for more than 6 hours a day and thirty-six hours a week, with or without additional remuneration. 3. After working for three consecutive hours every day, the child should be given half an hour rest time and one day off every week.
	Section 10: Remuneration and Benefits	1. The Organization shall give equal wages and facilities for equal work to children working as laborers without any discrimination on the basis of gender, race, religion or caste.
Water Resource Act, 2049	Section 19. Water Resources not to be Polluted	(1) Government of Nepal may, by a notification published in the Nepal Gazette, prescribe the pollution tolerance limit for water resources. (2) No one shall pollute water resource by way of using or putting any litter, industrial wastes, poison, chemical or toxicant to the effect that the pollution tolerance limit of the water resource as prescribed pursuant to Sub-section (1) is exceeded. (3) The prescribed officer may, as required, examine or cause to examine to determine as to whether or not the water resource has been polluted or the quality standard as prescribed pursuant to Sub-section (1) of Section 18 has been maintained.
	Section 20. Not to Cause Substantial Adverse Effect on Environment	While utilizing water resources, it shall be done so in such a manner that no substantial adverse effect be made on environment by way of soil erosion, flood, landslide or similar other cause
Soil and Watershed Conservation Act, 2039	Section 10. Prohibited acts in land vulnerable or likely to be vulnerable to natural calamity	Points a, b, c, d, e, f of the legal provisions on prohibited activities on land where natural disasters occur or may occur
Land Acquisition Act, 2034	Section 3 Right of Government of Nepal to acquire land for public works	If the Government of Nepal deems it necessary to acquire any land for the purpose of any public work, the Government of Nepal may acquire any amount of land in any place by giving compensation in accordance with this Act.
	Section 4 Provisions related to the acquisition of land for the organization	If any organization requests the Nepal Government to acquire any land for the following works by paying compensation and all other expenses as per this Act, the Nepal

	Articles/rules/clauses, etc.	Related description
		Government may decide to acquire the land to such an organization.
	Section 7 Compensation for Damages	(1) In accordance with section 6, compensation will be given for the loss due to cutting or breaking down of crops, trees, walls etc. (2) The amount of compensation as per sub-section (1) shall be determined by the officer conducting the initial investigation and given to the concerned person.
	Ownership transfer of the acquired land	If any of the private lands need to transfer to the government, CDC will execute the deed transferring process simultaneously coordinating with the project
Public Road Act 2031	Section 3 Classification of Public Roads and Road Border Thereof	The Government of Nepal shall, by a notification in the Nepal Gazette, classify the public roads as (a) Highways, (b) Feeder roads, (c) District roads and (d) Urban roads and specify the road border not exceeding Thirty One meters on both right and left hand sides from the central line of such roads. The Government of Nepal may specify the required border also setting out the four boundaries: to limit speed or for the safety of a bridge or the river banks around the bridge.
	Section 3A Power to prohibit the making of building etc. within the prescribed distance	(1) The Government of Nepal may prohibit any person from building any kind of permanent structure or building within such distance by a Notification in the Nepal Gazette, as not exceeding Six meters from the road border where it has been specified pursuant to Section 3 and from the side of the public road where the road border has not been specified.
	Section 14 Power to Requisition other land in developing, expanding or improving roads	The Department of Roads may temporarily requisition any land for different specified purpose until the development, expansion or improvement of a public road is completed
	Section 15 Compensation of Land to be requisitioned and Fixation of Compensation	This section deals with different circumstances where compensation can be given and process of compensation. A Compensation Fixation Committee (CFC) determines compensation in case of loss of assets, business or production.
National Parks and Wildlife Conservation Act, 2029	Section 4. Restriction on entry into national park	No person shall be allowed to enter into a national park or reserve without obtaining an entry permit as prescribed or a written permission from the authorized official.

	Articles/rules/clauses, etc.	Related description
	Section 5. Prohibited actions within national park or reserve	This section mentions about different activities prohibited within national park or reserve without obtaining a written permission from the authorized official:
Ancient Monument Preservation Act 2013	Section 17 A. Preservation of Archaeological Object	(1) Except the one under private ownership, all archaeological objects found anywhere shall be under the custody of the Department of Archaeology. (2) The Department of Archaeology may, on taking surety at the recommendation of the Local Office-Chief, handover the archaeological object under its custody to perform some traditional fair, festival or ceremony for a fixed period of time.
Rules		
Forest Regulation 2079	Rule 3. Land use of national forest land not to be changed	(2) if land use of forest area is to be changed for national security, then GON can approve any part of the forest land for land use change. (3) as per sub rule (2) land use of the approved land should be used only for what it has been approved.
	Rule 4. Provision of providing area of National Forest	(1) As per rule 3 (2), GON can provide forest land whose land use change has been approved for concerned entity. This description of providing land along with approval of land use should be provided to Provincial Ministry and Directorate. (2) The concerned entity who gets land as per sub rule (1) should allocate budget for plantation and care for five years in the area assigned by Department or Division Forest Office.
	Rule 6. Provision on regulation of entering inside forest area	(1) Divisional Forest Officer can give permission to vehicles and people for movement within the forest area for certain time defining certain condition for implementation of development projects as mentioned in section 9 subsection 4 of the Forest Act.
	Paragraph 22. Provision for providing national forest land to development projects	Rule 87. deals with design of development projects without forest land as far as possible. If forest land is unavoidable, then report with all the alternatives should be prepared, environmental study should be done in coordination with concerned division forest office.

	Articles/rules/clauses, etc.	Related description
		Rule 88. deals with letter to be given/forwarded for use of forest land Rule 89. deals with description to be asked Rule 90. deals with approval by GON Rule 91. deals with land to be provided in place of forest land use Rule 92. deals with provision of formation of land attainment facilitation committee Rule 93. deals with amount to be deposited Rule 94. deals with agreement process
Land Use Regulation 2079		This regulation has divided the land into 10 zones based on its geological capacity, usage and features. The land has been categorised as agricultural zone, residential zone, commercial zone, industrial zone, area of mines and minerals, forest zone, public use zone, area of cultural and archaeological importance and others. The regulations prohibit commercial land plotting and its sale in areas except in classified areas for residential purposes The regulations have the provision that the federal level will deal with the land use mapping procedures across the country and hand it to the local level which can revise and update the mapping as per its needs and implement it.
Environment Protection Rule, 2077	Rule 3. Environmental Studies to be done	As per Environment Protection Act, section 3 subsection 1, the proponent has to conduct Brief Environmental Studies for proposals mentioned in schedule 1, Initial Environmental Examination for proposals mentioned in schedule 2 and Environmental Impact Assessment for proposals mentioned in schedule 3. As per schedule 3 pertaining to rule 3 of EPR 2077, EIA is required for upgradation of National Highways or Feeder Roads of more than 50 Km.
	Rule 4. Scoping to be done	Before conducting EIA, the proponent has to conduct scoping as per section 5 subsection 1 of Act.
	Rule 5. ToR to be prepared	For all the environmental studies, the proponent has to prepare Terms of References. For EIA, TOR has to be prepared in the format as provided in schedule 8

	Articles/rules/clauses, etc.	Related description
Disaster Risk Reduction and Management Regulations, 2076	Rule 9. Liability of Public Institutions and Commercial Organizations	1. Public or commercial organizations should fulfill their obligations to prevent disasters from happening 2. Public or commercial organizations should formulate and implement a business continuity plan to resume their business before a disaster, during a disaster, and after a disaster. 3. Public or commercial organizations should install fire control and disaster mitigation equipment
Control of International Trade of Endangered Wild Fauna and Flora Rule 2076	Rule 3. Application for a permit	b) To foster or keep specimens (produce, transport or use) of endangered wildlife c) To plant, grow or keep specimens, use, produce or transport endangered plants; e) To carry out controlled breeding of rare or endangered wild animals or plants
Labour Rule 2075	Rule 16.	Provisions relating to determination of working hours
	Rule 17.	Provisions relating to additional time for rest
	Rule 34.	Occupational Safety and related provisions
	Rule 35.	Provisions relating to employer's duties
	Rule 39.	Special provisions relating to occupational safety and health
	Rule 41	Provisions relating to adoption of protective measures
	Rule 42	Provisions on not lifting heavy stuffs
	Rule 44	Other provisions relating to occupational health and safety
Solid Waste Management Rule 2070	Rule 3. Segregation and Management of Solid Waste	(1) The Local Body shall, while fixing segregation at least of organic and non-organic solid waste at its source under Section 6, have to make management and segregation of harmful or chemical waste separately. If it is prescribed as above, the individual, organization or agency generating such solid waste, shall have to make segregation as prescribed. (2) The responsibility of managing the chemical or harmful solid waste under Sub-Rule (1) shall be of concerned generator.
Child (Prohibition Regulation) Labor and Rule 2062	Rule 4	Eligibility certificate to be submitted in order to employ the child
	Rule 5	If a child is to be employed, the employer must submit the child's details to the labor office and obtain permission

	Articles/rules/clauses, etc.	Related description
	Rule 25	Provisions to be made regarding the health and safety of children
Soil and Watershed Conservation Rule 2042	Rule 11. Approval to be taken	1) If there is a need to carry out any work on the land designated as a natural disaster or where there is a risk of such a work, permission must be obtained from the Watershed Protection Officer by giving reason for such works.
National Parks and Wildlife Conservation Rule 2030	Rule 3. Services to be operated in a National Parks or a Reserve	This rule describes process to be adopted for operating any services from anybody within National Park of Reserve area.
Guidelines		
Wildlife Friendly Infrastructure Construction Guidelines 2078		This guideline assists in constructing wildlife friendly infrastructure in linear nature projects to secure the movement of animals and reduce accidents and conflicts between human and wildlife. This guideline has suggested minimum guideline dimensions for underpass and overpass structures required for different categories of wildlife.
Environmental and Social Management Framework (ESMF), 2077, SRCTIP – Trade Component, MoICS/MoALD		This ESMF forms part of the comprehensive environmental and social management approach that is adopted for addressing potential environmental and social impacts from SRCTIP-trade component. In line with ES Requirements of GoN and applicable 9 out of 10 Environmental and Social Standards (ESS) of WB the ESMF defines (a) the approach for identifying the environmental and social issues associated with the SRCTIP-trade component activities, (b) the requirements for conducting environmental and social screening and environment and social assessment studies, and (c) measures to avoid, minimize, mitigate and manage adverse impacts and enhance positive ones. It includes an exclusion list and simplified tools to be used to determine types of environmental and social assessment required for proposed initiatives. A gender development framework and capacity building measures and a monitoring mechanism are also included in the ESMF.
Indigenous Peoples Planning Framework (IPPF), 2076,		This Indigenous Peoples Planning Framework (IPPF) outlines the policy, process and procedures to understand project

	Articles/rules/clauses, etc.	Related description
SRCTIP, Trade Facilitation Component, MoICS and MoALD		impacts on Indigenous Peoples (IPs) under the Strategic Road Connectivity and Trade Improvement Project (SRCTIP)-Trade Facilitation Component, to be implemented by the Ministry of the Industry Commerce and Supply (MoICS) and Ministry of the Agriculture and Livestock Development (MoALD), with financial support from the World Bank.
Labor Management Procedures (LMP), 2076, SRCTIP, DCID, DOR, MoPIT		The LMP is developed to manage labour and working conditions' risks, associated with improvement of Nagdhunga Naubise Mugling (NNM) & KDP Road and periodic maintenance of selected roads to meet World Bank Environment and Social Standards (ESSs), in particular ESS2 on Labour and Working Conditions and ESS4 on Community Health and Safety.
Resettlement Policy Framework (RPF), 2076, SRCTIP, DCID, DOR, MoPIT		This Resettlement Policy Framework (RPF) provides the resettlement policy, principles and organizational arrangements and design criteria to be applied to the SRCTIP specifically for the upgrading of the KDP road, under the regional connectivity improvement component of the project. The RPF is prepared according to the standards of GON legislation and policy including the Land Acquisition Act 1977, and according to World Bank's Environmental and Social Standard (ESS) 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
Stakeholder Engagement Plan (SEP), 2076, SRCTIP, DCID, DoR, MoPIT		This SEP includes details of stakeholders and activities carried out in the preparation phase of NNM road and in feasibility and planning stage of the KDP road. Detailed consultations for the KDP road upgrading will be carried out at the detailed design phase. The details of consultations for the periodic maintenance activities will be determined during project implementation.
Green Infrastructure Design for Transport Projects, A Road Map to Protecting Asia's Wildlife Biodiversity, 2075, ADB		This report discusses the impacts of transport projects on wildlife and biodiversity in Asia, and how to address them by integrating road ecology principles and green infrastructure to balance construction with environmental conservation.

	Articles/rules/clauses, etc.	Related description
Gender Equality and Social Inclusion (GESI) Operational Guidelines 2074, MoPIT	1.4 Objectives and Guidelines	The main objective of the guideline is to provide guidance on implementation of gender equality and social inclusion in all aspects of MoPIT policies, institutions and in its program/ project implementation processes in an integrated manner. The specific objectives are to: (1) ensure that a gender and social inclusion responsive approach is adopted and monitored in MoPIT to improve the access of women, poor and the excluded to resources, opportunities and benefits from the programs/ projects and services of the Ministry. (2) ensure GESI issues are addressed both in programmes and in institutions.
Forest Product Collection and Sale Distribution Guidelines 2073		This guideline assists general public in utilizing forest products. Paragraph 2 describes provision about license on pruning, cutting and collection of forest products, paragraph 4 describes about wood measurement and stocking and sales provision of erect and fallen trees.
Nature Conservation National Strategic Framework for Sustainable Development 2072		This Framework addresses topical questions, such as how to carry out conservation of heritage sites such as National Parks and sensitive watershed areas such as Churia, mitigation of water and air pollution and reduction in green gas emissions, while developing physical infrastructure that does not compromise the environment.
Accessible Physical Structure and Communication Service Directive for People with Disabilities 2069		This directive has stated mandatory provisions for making public places accessible for people with disabilities both physically and also in terms of communication. This directive has also stated the proper dimensions on making different structures accessible for people with disabilities.
Environmental and Social Management Framework (ESMF) GESU-DoR, GoN 2064		The framework contains public consultation framework and compendium of environmental and social impacts with mitigation measures that needs to be adopted during road design, construction and operation. Addendum is focused for bridge related cases.
Environmental Management		This guideline assists to integrate environmental consideration in each phase of

	Articles/rules/clauses, etc.	Related description
Guidelines, Geo Environmental Unit, DoR, 2053 (1997 AD)		project cycle. The guideline consists of environmental mitigation measures to be incorporated into Road projects, procedures for public participation, and socio-economic consideration.
National Environmental Impact Assessment Guidelines 2050		The guideline assists mechanisms for conducting Environmental Assessment. This guideline guides in project screening, scoping, identifying project impacts, adopting mitigation measures, monitoring, evaluating impacts, community participation, and report preparation.
Standards		
Tolerance limits for different industrial effluents discharged into Inland Surface Water, 2080		All the effluents from camps, batching plants, crusher plants etc. should meet this standard before discharging effluent to any inland surface water.
National Drinking Water Quality Standards, 2079		Government of Nepal has issued this notice of implementation of National Drinking Water Quality Standards, 2079 under the provision of Water Resources Act, 2049, Clause 18 and Sub Clause 1. Water used for drinking purpose within the project should meet this standard
Standards related with extraction sale and management of stone, aggregates and sand, 2077	Section 3, Determining area for extraction or collection	This section mentions about procedures to be adopted by municipalities and rural municipalities for determining area of extraction or collection of river bed and quarry materials
	Section 4, Collection, extraction and sale of river bed materials	This section mentions about procedures to be adopted by municipalities and rural municipalities for collection, extraction and sale of river bed materials
	Section 5, Arrangements for extraction of quarry materials	This section mentions about procedures to be adopted for collection and extraction of quarry materials
	Section 6, Arrangements regarding forest and chure area	This section mentions about procedures to be adopted for collection and extraction of stones, aggregates, sand and soil from forest and chure area
	Section 12, Special arrangements for big, transformative, national pride and priority projects	This section mentions about procedures to be adopted for collection and extraction of river bed materials for big, transformative, national pride and priority projects

	Articles/rules/clauses, etc.	Related description
Maximum Noise Level Standard at workplace, 2073		The permissible exposure limit (PEL) of noise for the workplace is 90 dBA for 8 hours, 95dBA for four hours, 100 dBA for two hours, 105 dBA for one hour, 110 dBA for 30 minutes, and 115 dBA for 15 minutes a day in the workplace.
Standards regarding removal of government trees 2071	Section 4	If road side trees are to be removed for road widening or any other reason than as per decision of DOR and recommendation from committee formed as per section 10 of this standard and approval from Department of Forest, Division Forest Office can give approval for removing those trees.
Nepal Road Standards 2070	Section 1. Introduction	a. Nepal Road Standards -2077 (Second Revision 2070), in short called NRS-2070, shall apply to all Strategic Roads in rural areas being constructed within Nepal. For non-strategic (Local Roads) and urban roads separate standards shall be considered.
National Ambient Air Quality Standards 2069	Section 3. Road Classification	Roads in Nepal are classified as follows: A. Administrative Classification: National Highways, Feeder Roads, District Roads and Urban Roads B. Technical/Functional Classification: Class I, Class II, Class III and Class IV
Noise Level Standard of Nepal 2069		Government of Nepal has formulated noise level standard for different area for day and night time. Project Activities should be within the prescribed limit of noise level. No equipment or activities exceeding limit is allowed.
Nepal vehicle mass emission standard 2069		All the vehicle in the use of the project should be followed the emission standard and limits for the stipulated parameter.
National Diesel Generator Emission Standard 2069		The GoN has introduced the National Diesel Generator Emission Standard (NDGES) for new and in-use diesel generators with a capacity of 8 kW-560 kW. The emissions limits are set for four major pollutants: CO, HC, NOx, and PM. Generators used for the project should comply with the emissions limit.
Nepal Bridge Standards 2067	Section 1.0 Introduction and Background	DOR has formulated these standards with a view to establish a common procedure for design and construction of road bridges in Nepal.

	Articles/rules/clauses, etc.	Related description
	Section 3.1 Design Life	All permanent bridges shall be designed for a design life of minimum 50 years. Traffic projections shall be made for a period of 30 years.
	Section 3.2 Design Discharge	All permanent bridges shall be designed for a discharge of 100 yrs. return period. For the calculation of design discharge empirical formulas especially developed for other catchments shall not be used.
Conventions/Agreements		
Paris Agreement under the United Nations Framework Convention on Climate Change, 2015 A.D.		The Paris Agreement is a legally binding international treaty on climate change. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.
SIACM (2006) A.D.		The achievement of the sound management of chemicals throughout their life cycles so that the chemicals used in ways that minimize significant adverse impacts on the environment and human health as appropriate, by stakeholders, according to their applicability.
Rio de Janeiro Convention on Biological Diversity (CBD, 1992 A.D.)		The Convention has three main goals including: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. In other words, its objective is to develop national strategies for the conservation and sustainable use of biological diversity.
Convention 182 on The Worst Forms of Child Labour, 1999		Convention 182 outlines the 5 worst forms of labour that must be eradicated in order to step up the fight against child labour. They are as follows: • Slavery or similar practices, such as the sale or trade of children or the use of children in debt bondage or serfdom; • Obligatory or forced work, including the compulsory recruitment of children for use in armed conflicts;

	Articles/rules/clauses, etc.	Related description
		• The recruitment, use or offer of a child for involvement in prostitution, pornographic material or pornographic shows; • The use, recruitment or offer of a child for illicit activities, notably in the production or trafficking of drugs, as defined in the specific international treaties; Work which, by its very nature or the conditions in which it is undertaken, is likely to jeopardise the health, safety or morality of children.
Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997 A.D.		The Kyoto Protocol operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. The Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically.
United Nations Framework Convention on Climate Change, 1992 A.D.		The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."
Indigenous and Tribal Peoples Convention 1989 (No. 169) ILO Convention 169		The convention has visionary instrument seeking to ensure that indigenous peoples enjoy human rights without discrimination, exercise control over their own development and participate in decision-making processes that affect their lives. The theme of this convention is the project activities should not harm or disturb any Indigenous and Tribal Peoples

	Articles/rules/clauses, etc.	Related description
Basel Convention on The Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989		The provisions of the Convention center around the following principal aims: the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal; the restriction of trans boundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and a regulatory system applying to cases where trans boundary movements are permissible.
Convention on International Trade in Endangered Species of wild Fauna and Flora (CITES 1973 A.D.)		It regulates international trade in endangered wild flora and fauna with the aim of reducing or eliminating trade in species whose numbers or conditions suggest that further removal from their natural habitat would lead to their extinction. It urges parties not to allow trade in specimen of species included in the CITES Appendices I, II and III with some exception. As the area holds some CITES listed species, this convention is attracted in case of their trade.
The Ramsar Convention 1971		The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat is an international treaty for the conservation and sustainable use of Ramsar sites (wetlands). It is also known as the Convention on Wetlands. As per article 3, the Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the list, and as far as possible the wise use of wetlands in their territory. Similarly, as per article 4, Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the list or not, and provide adequately for their wardening.

Annex 17: Summary Result and Lab Report of Air Quality

Table: Baseline Air Quality (24 hour averaging time)

Parameter s	NAQS ($\mu\text{g}/\text{m}^3$)	WHO 2021 ($\mu\text{g}/\text{m}^3$)	Results ($\mu\text{g}/\text{m}^3$)				
			Dhalkebar (Commercial)	Lalbandhi (Commercial)	Paurah i (Forest)	Nijgadh (Residential)	Dudhaura (Sensitive)
PM ₁₀	120	45	118	80	51	62	95
PM _{2.5}	40	15	34	26	18	21	32
TSPM	230	150	206	138	85	122	145
SO ₂	70	40	0.13	0.09	0.04	0.06	0.12
NO ₂	80	25	1.09	0.24	0.08	0.18	0.34

Source: Consultant Survey 2022



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AIR QUALITY MONITORING REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (s)
Collector:	Shrijana Neupane	Location:	Mithila M.-06, Dhalkebar, Dhanusha
Latitude:	26°55'47.1" N	Longitude:	85°57'25.0" E
Source:	Air	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Hours	2022/10/18-2022/10/19, 24 hrs.	Test Performance Date:	2022/10/31-2022/11/02
Receipt Date:	2022/10/23	Issued Date:	2022/11/03
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results ($\mu\text{g}/\text{m}^3$)	Tolerance Limit (National Air Quality Standard, Ministry of Forests and Environment, 2012) ($\mu\text{g}/\text{m}^3$)	Remarks
Particulate Matter (PM_{10})	118	120	Within the limit
Particulate Matter ($\text{PM}_{2.5}$)	34	40	Within the limit
Total Suspended Particulate Matter (TSPM)	206	230	Within the limit
Sulphur Dioxide (SO_2)	0.13	70	Within the limit
Nitrogen Dioxide (NO_2)	1.09	80	Within the limit

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.

Remarks: Particulate Matter (PM_{10}), Particulate Matter ($\text{PM}_{2.5}$), and Total Suspended Particles (TSP) are found within the limit of the National Air Quality Standard, Ministry of Forests, and Environment, 2012.

Analyzed and Checked By



Authorized By
Er. Lokesh Sapkota

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AIR QUALITY MONITORING REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (t)
Collector:	Shrijana Neupane	Location:	Lalbandi M.-06, Lalbandi, Sarlahi
Latitude:	27°03'06.7" N	Longitude:	85°38'14.8" E
Source:	Air	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Hours	2022/10/18-2022/10/19, 24 hrs.	Test Performance Date:	2022/10/31-2022/11/02
Receipt Date:	2022/10/23	Issued Date:	2022/11/03
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results ($\mu\text{g}/\text{m}^3$)	Tolerance Limit (National Air Quality Standard, Ministry of Forests and Environment, 2012) ($\mu\text{g}/\text{m}^3$)	Remarks
Particulate Matter (PM_{10})	80	120	Within the limit
Particulate Matter ($\text{PM}_{2.5}$)	26	40	Within the limit
Total Suspended Particulate Matter (TSPM)	138	230	Within the limit
Sulphur Dioxide (SO_2)	0.09	70	Within the limit
Nitrogen Dioxide (NO_2)	0.24	80	Within the limit

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.

Remarks: Particulate Matter (PM_{10}), Particulate Matter ($\text{PM}_{2.5}$), and Total Suspended Particles (TSP) are found within the limit of the National Air Quality Standard, Ministry of Forests, and Environment, 2012.

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AIR QUALITY MONITORING REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (u)
Collector:	Shrijana Neupane	Location:	Paurahi, Sarlahi
Latitude:	27°07'06.4" N	Longitude:	85°26'39.9" E
Source:	Air	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Hours	2022/10/19-2022/10/20, 24 hrs.	Test Performance Date:	2022/10/31-2022/11/02
Receipt Date:	2022/10/23	Issued Date:	2022/11/03
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results ($\mu\text{g}/\text{m}^3$)	Tolerance Limit (National Air Quality Standard, Ministry of Forests and Environment, 2012) ($\mu\text{g}/\text{m}^3$)	Remarks
Particulate Matter (PM_{10})	51	120	Within the limit
Particulate Matter ($\text{PM}_{2.5}$)	18	40	Within the limit
Total Suspended Particulate Matter (TSPM)	85	230	Within the limit
Sulphur Dioxide (SO_2)	0.04	70	Within the limit
Nitrogen Dioxide (NO_2)	0.08	80	Within the limit

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.

Remarks: Particulate Matter (PM_{10}), Particulate Matter ($\text{PM}_{2.5}$), and Total Suspended Particles (TSP) are found within the limit of the National Air Quality Standard, Ministry of Forests, and Environment, 2012.

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AIR QUALITY MONITORING REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (v)
Collector:	Shrijana Neupane	Location:	Thado Lane, Nijgad, Bara
Latitude:	27°10'19.5" N	Longitude:	85°12'06.6" E
Source:	Air	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Hours	2022/10/19-2022/10/20, 24 hrs.	Test Performance Date:	2022/10/31-2022/11/02
Receipt Date:	2022/10/23	Issued Date:	2022/11/03
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results ($\mu\text{g}/\text{m}^3$)	Tolerance Limit (National Air Quality Standard, Ministry of Forests and Environment, 2012) ($\mu\text{g}/\text{m}^3$)	Remarks
Particulate Matter (PM_{10})	62	120	Within the limit
Particulate Matter ($\text{PM}_{2.5}$)	21	40	Within the limit
Total Suspended Particulate Matter (TSPM)	122	230	Within the limit
Sulphur Dioxide (SO_2)	0.06	70	Within the limit
Nitrogen Dioxide (NO_2)	0.18	80	Within the limit

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.

Remarks: Particulate Matter (PM_{10}), Particulate Matter ($\text{PM}_{2.5}$), and Total Suspended Particles (TSP) are found within the limit of the National Air Quality Standard, Ministry of Forests, and Environment, 2012.

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AIR QUALITY MONITORING REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (w)
Collector:	Shrijana Neupane	Location:	Bara (Near Dudhaura River Bridge)
Latitude:	27°11'19.1" N	Longitude:	85°00'39.9" E
Source:	Air	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Hours	2022/10/20-2022/10/21, 24 hrs.	Test Performance Date:	2022/10/31-2022/11/02
Receipt Date:	2022/10/23	Issued Date:	2022/11/03
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results ($\mu\text{g}/\text{m}^3$)	Tolerance Limit (National Air Quality Standard, Ministry of Forests and Environment, 2012) ($\mu\text{g}/\text{m}^3$)	Remarks
Particulate Matter (PM_{10})	95	120	Within the limit
Particulate Matter ($\text{PM}_{2.5}$)	32	40	Within the limit
Total Suspended Particulate Matter (TSPM)	145	230	Within the limit
Sulphur Dioxide (SO_2)	0.12	70	Within the limit
Nitrogen Dioxide (NO_2)	0.34	80	Within the limit

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.

Remarks: Particulate Matter (PM_{10}), Particulate Matter ($\text{PM}_{2.5}$), and Total Suspended Particles (TSP) are found within the limit of the National Air Quality Standard, Ministry of Forests, and Environment, 2012.

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Annex 18: Summary Result of Noise Level

Table: Noise Level within Project Area

Locations	Results				
	Dhalkebar	Lalbandhi	Paurahi	Nijgadh	Dudhaura
Equivalent Noise Level Day (LeqD)	65.32	64.42	55.48	62.05	50.38
Equivalent Noise Level Night (LeqN)	61.31	60.39	50.14	55.88	46.11

Source: Consultant Survey 2022

Table: National Ambient Sound Quality Standard

S.N.	Area/Zone	NASQS limit (dBA)	
		Day	Night
1	Commercial	75	70
2	Residential	65	55

Table: Receptors Land Use and Respective Day and Night Noise Standards

Receptors	Land use	Day-Noise Standard in dB(A)	Night-Noise Standard in dB(A)
NQ1 (Dhalkebar on Kamal-Dhalkeba)	Commercial Industrial	63.0	55.0
NQ2 Lalbandhi on Bardibas-Nawalpur)	Commercial	63.0	55.0
NQ3 (Paurahi on Nawalpur-Chapur)	Silent Zone	50.0	40.0
NQ4 (Naijgadh on Chapur-Nijgadh)	Urban Residential	55.0	50.0
NQ5 (Dudhaura on Nijgadh – Pathlaiya)	Silent Zone	50.0	40.0

Table: Predicted day (L_D), night(L_N) & day-night (L_{DN}) at wildlife crossing sections

Section	L_D Predicted dB(A)	L_N Predicted dB(A)	L_{DN} Predicted dB(A)
Bardibas-Nawalpur	66.9	67.5	70.2
Nawalpur-Chapur	67.1	67.6	70.4
Chapur-Nijgadh	67.2	67.7	70.5
Nijgadh-Pathlaiaya	69.3	69.8	72.6

Annex 19: Summary Result and Lab Report Water Quality

Table: Drinking Water Quality within Project Area

Parameters	Unit	NDWQS	Locations						
			Dhalkebar	Bardibas	Lalbandhi	Chandranighapur	Bagmati	Nijgadh	Pathlailiya
Physical									
Color	TCU	5 (10)	5	5	0	5	0	5	10
Electrical Conductivity	µS/cm	1500 (max)	180	80	180	410	360	280	130
pH	-	6.5-8.5	7.4	7.3	6.9	7.5	7.8	7.6	6.9
Taste and Odour	-	Not Objectionable	Not Objectionable	Not Objectionable	Not Objectionable	Not Objectionable	Not Objectionable	Not Objectionable	Not Objectionable
Total Dissolved Solids	mg/L	1000	118	240	160	182	216	170	82
Total Suspended Solids	mg/L	2000	4	8	2	2	4	8	8
Turbidity	NTU	5 (15)	<0.1	1.54	<0.1	0.15	0.27	<0.1	<0.01
Chemical									
Ammonia	mg/L	1.5	0.03	0.02	0.03	<0.02	<0.02	<0.02	0.03
Arsenic	mg/L	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloride	mg/L	250	7.99	10.99	3.99	3.99	8.99	4.99	4.99
Iron	mg/L	0.3 (3)	<0.01	<0.01	0.07	<0.01	<0.01	<0.01	0.21
Nitrate	mg/L	50	13.84	<0.04	1.24	1.59	7.16	1.99	0.56
Total Alkalinity	mg/L	-	76	34	100	86	154	138	68
Total Hardness	mg/L as CaCO ₃	500	54	20	66	156	182	124	86
Calcium	mg/L	200	16.03	9.61	19.24	24.05	48.09	40.08	19.23
Calcium Hardness	mg/L	-	40	20	48	60	120	100	48
Magnesium	mg/L		3.4	0.97	4.37	23.33	15.06	5.83	9.23
Magnesium	mg/L	-	13	3	16	94	61	23	47

Parameters	Unit	NDWQS	Locations						
			Dhalkebar	Bardibas	Lalbandhi	Chandranighapur	Bagmati	Nijgadh	Pathlailaya
Hardness									
Residual Chlorine	mg/L	0.1-0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Sulphate	mg/L	250	2.09	5.09	4.26	12.22	10.87	8.26	0.6
Manganese	mg/L	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	mg/L	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoride	mg/L	0.5-1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Microbiology									
E.coli	CFU/100 mL	0	10	12	3	15	0	2	0

Source: Consultant Survey 2022

Table: Surface Water Quality within Project Area

Paramet ers	Unit	NDWQS	Results					
			Kamala River	Ratu Khola	Bagmati River	Wetland	Pond	Bakaiya
Physical								
Appeara nce	-	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Tempera ture	°C	20-25	20	19.8	19	20.7	22.2	21
Color	TCU	5 (10)	5	5	10	15	15	5
Electrica l Conducti vity	μS/cm	1500 (max)	290	70	250	540	30	230
pH	-	6.5-8.5	8.2	7.6	7.6	7.7	7.8	8.1
Dissolve d Oxygen	mg/L	-	5.2	6.3	7.8	8.0	7.3	6.8
Taste and Ordour	-	Not Objection able	Not Objection able	Not Objection able	Not Objection able	Not Objection able	Not Objection able	Not Objection able
Total Dissolve d Solids	mg/L	1000	186	10	160	266	10	66
Total Suspend ed Solids	mg/L	2000	26	6	74	10	4	6
Turbidity	NTU	5 (15)	19.29	1.37	0.43	7.11	4.71	6.38
Chemical								
Ammoni a	mg/L	1.5	0.04	0.02	0.05	0.05	0.09	<0.02

Parameters	Unit	NDWQS	Results					
			Kamala River	Ratu Khola	Bagmati River	Wetland	Pond	Bakaiya
Biological Oxygen Demand	mg/L	2-500	11.3	9.4	11.6	8.6	11.2	10.2
Chloride	mg/L	250	2.99	7.99	9.99	2.99	14.99	1.99
Iron	mg/L	0.3 (3)	<0.01	<0.01	<0.01	<0.01	0.05	<0.01
Nitrate	mg/L	50	0.14	<0.04	10.19	<0.04	<0.04	<0.04
Total Alkalinity	mg/L	-	166	30	154	282	2	138
Total Hardness	mg/L as CaCO ₃	500	130	18	38	160	<1	128
Calcium	mg/L	200	36.87	8.02	30.46	12.82	<1	32.06
Residual Chlorine	mg/L	0.1-0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Phosphate	mg/L	3	<0.02	0.35	0.17	<0.02	<0.02	0.13
Manganese	mg/L	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	mg/L	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoride	mg/L	0.5-1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Microbiology								
Total Coliform	CFU/100 mL	0	1	29	0	28	2	38

Source: Consultant Survey 2022



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (a)
Collector:	Shrijana Neupane	Location:	Bandipur
Source:	Water (Kamala River) (Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	20	°C	20-25	2550 B. APHA 23 rd edition
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	290	µS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	8.2	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	5.2	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	186	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	26	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	19.29	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.04	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	11.3	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	2.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	0.14	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	166	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	130	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition

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Parameters	Results	Unit	NDWQS	Method
Calcium	36.87	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	<0.02	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	1	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

NDWQS=National Drinking Water Quality Standard (2062)

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis.

*These parameters are not within the scope of Nepal Standard

**These parameters are outsourced to another Laboratory.

***These values show lower and upper limits

Remarks:

Except for Turbidity and Total Coliform, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (b)
Collector:	Shrijana Neupane	Location:	Dhakebar Chowk, Dhanusha
Source:	Water (Dhakebar D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	180	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	7.4	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	118	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	4	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	<0.1	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.03	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	7.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	13.84	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	76	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	54	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	16.03	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	40	mg/L	-	-
Magnesium	3.4	mg/L	-	-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	13	mg/L		-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	2.09	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	10	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

NDWQS=National Drinking Water Quality Standard (2062)

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***These values show lower and upper limits

Remarks: Except for *E. coli*, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (c)
Collector:	Shrijana Neupane	Location:	Bardibas Chowk, Mahottari
Source:	Water (Bardibas D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	80	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	7.3	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	240	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	8	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	1.54	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	10.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	<0.04	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	34	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	20	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	9.61	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	20	mg/L	-	-
Magnesium	0.97	mg/L	-	-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	3	mg/L	-	-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	5.09	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	12	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

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Remarks: Except for *E. coli*, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (d)
Collector:	Shrijana Neupane	Location:	Bardibas, Mahottari
Source:	Water (Ratu Khola)(Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	19.8	°C	20-25	2550 B. APHA 23 rd edition
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	70	µS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	7.6	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	6.3	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	10	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	6	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	1.37	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	9.4	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	7.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	<0.04	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	30	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	18	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition

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Parameters	Results	Unit	NDWQS	Method
Calcium	8.02	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	0.35	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	29	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

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Remarks:

Except for Total Coliform, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (e)
Collector:	Shrijana Neupane	Location:	Chandranigahapur Chowk, Rautahat
Source:	Water (Chandranigahapur D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	410	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	7.5	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	182	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	2	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	0.15	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	<0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	3.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	1.59	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	86	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	156	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	24.05	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	60	mg/L		-

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Parameters	Results	Unit	NDWQS	Method
Magnesium	23.33	mg/L		-
Magnesium Hardness	94	mg/L		-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	12.22	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	15	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

NDWQS=National Drinking Water Quality Standard (2062)

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Remarks: Except for *E. coli*, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (f)
Collector:	Shrijana Neupane	Location:	Lalbandi, Sarlahi
Source:	Water (Lalbandi D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	0	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	180	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	6.9	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	160	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	2	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	<0.1	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.03	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	3.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	0.07	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	1.24	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	100	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	66	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	19.24	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	48	mg/L	-	-
Magnesium	4.37	mg/L	-	-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	16	mg/L	-	-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	4.26	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	3	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

NDWQS=National Drinking Water Quality Standard (2062)

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis.

*These parameters are not within the scope of Nepal Standard

**These parameters are outsourced to another Laboratory.

***These values show lower and upper limits

Remarks: Except for *E. coli*, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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Soil Water and Air Testing Laboratories Pvt. Ltd.
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PO Box: 25752, Kathmandu, Nepal
Sisir Marga 11, Babarmahal, Kathmandu, Nepal

WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (g)
Collector:	Shrijana Neupane	Location:	Sarlahi
Source:	Water (Bagmati River Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	19	°C	20-25	2550 B. APHA 23 rd edition
Color	10	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	250	µS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	7.6	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	7.8	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	160	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	74	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	0.43	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.05	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	11.6	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	9.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	10.19	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	154	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	38	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition

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Parameters	Results	Unit	NDWQS	Method
Calcium	30.46	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	0.17	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	0	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

NDWQS=National Drinking Water Quality Standard (2062)

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis.

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***These values show lower and upper limits

Remarks: Except for Color, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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Sisir Marga 11, Babarmahal, Kathmandu, Nepal



WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (h)
Collector:	Shrijana Neupane	Location:	Sarlahi
Source:	Water (Bagmati Sichai D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	0	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	360	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	7.8	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	216	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	4	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	0.27	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	<0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	8.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	7.16	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	154	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	182	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	48.09	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	120	mg/L	-	-
Magnesium	15.06	mg/L	-	-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	61	mg/L	-	-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	10.87	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	0	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

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Remarks: All the observed values of tested parameters are found to be within the limit of NDWQS 2062.



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (i)
Collector:	Shrijana Neupane	Location:	Bara
Source:	Water (Nijgad D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	280	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	7.6	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	170	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	8	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	<0.1	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	<0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	4.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	1.99	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	138	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	124	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	40.08	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	100	mg/L	-	-
Magnesium	5.83	mg/L	-	-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	23	mg/L	-	-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	8.62	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	2	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

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***These values show lower and upper limits

Remarks: Except for *E. coli*, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (j)
Collector:	Shrijana Neupane	Location:	Chandranigahapur, Rautahat
Source:	Water (Wetland Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	20.7	°C	20-25	2550 B. APHA 23 rd edition
Color	15	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	540	µS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	7.7	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	8.0	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	266	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	10	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	7.11	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.05	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	8.6	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	2.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	<0.04	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	282	mg/L	-	2320 B. APHA 21 st edition

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Parameters	Results	Unit	NDWQS	Method
Total Hardness	160	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	12.82	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	<0.02	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	28	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

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***These values show lower and upper limits

Remarks:

Except for Color, Turbidity, and Total Coliform, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (k)
Collector:	Shrijana Neupane	Location:	Chandranigahapur, Rautahat
Source:	Water (Pond Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	22.2	°C	20-25	2550 B. APHA 23 rd edition
Color	15	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	30	μS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	7.8	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	7.3	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	10	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	4	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	4.71	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.09	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	11.2	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	14.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	0.05	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	<0.04	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	2	mg/L	-	2320 B. APHA 21 st edition

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Parameters	Results	Unit	NDWQS	Method
Total Hardness	<1	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	<1	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	<0.02	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	2	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

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Remarks:

Except for Color and Total Coliform, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062



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WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (I)
Collector:	Shrijana Neupane	Location:	Bara
Source:	Water (Bakaiya Khola Surface Water)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Appearance	Clear	-	Clear	-
Temperature	21	°C	20-25	2550 B. APHA 23 rd edition
Color	5	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	230	µS/cm	1500 (max)	2510 B. APHA 23 rd edition
pH	8.1	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Dissolved Oxygen	6.8	mg/L	-	4500-0 B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	66	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	6	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	6.38	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	<0.02	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Biological Oxygen Demand	10.2	mg/L	2-500	5210 B. APHA 23 rd edition
Chloride	1.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	<0.01	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	<0.04	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	138	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	128	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition

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Parameters	Results	Unit	NDWQS	Method
Calcium	32.06	mg/L	200	3500-D. APHA 23 rd edition
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-B. APHA 23 rd edition
Phosphate	0.13	mg/L	3	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111-B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111-B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
Total Coliform*	38	CFU/100 mL	0	9222 B. Standard Total Coliform Membrane Filter Procedure, APHA 23 rd edition

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***These values show lower and upper limits

Remarks:

Except for Turbidity, and Total Coliform, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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Sisir Marga 11, Babarmahal, Kathmandu, Nepal

WATER ANALYSIS REPORT

Name of Client:	CEG-CIAS-JV	Lab Code:	22/10-831 (m)
Collector:	Shrijana Neupane	Location:	Bara
Source:	Water (Patlaiya D.W.)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date/Time:	2022/10/21	Test Performance Date:	2022/10/31-2022/11/03
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

Parameters	Results	Unit	NDWQS	Method
Physical				
Color	10	TCU	5 (10)	2120 B. APHA 23 rd edition
Electrical Conductivity	130	$\mu\text{S}/\text{cm}$	1500 (max)	2510 B. APHA 23 rd edition
pH	6.9	-	6.5-8.5	4500 H+ B. APHA 23 rd edition
Taste and Odour	Not Objectionable	-	Not Objectionable	-
Total Dissolved Solids	82	mg/L	1000	2540 C. APHA 23 rd edition
Total Suspended Solids	8	mg/L	2000	2540 D. APHA 23 rd edition
Turbidity	<0.1	NTU	5 (15)	2130 B. APHA 23 rd edition
Chemical				
Ammonia	0.03	mg/L	1.5	4500 NH ₃ F. APHA 23 rd edition
Arsenic*	<0.005	mg/L	0.05	
Chloride	4.99	mg/L	250	4500-Cl- B. APHA 23 rd edition
Iron	0.21	mg/L	0.3 (3)	3500-Fe B. APHA 23 rd edition
Nitrate	0.56	mg/L	50	4500 NO ₃ ⁻ B. APHA 23 rd edition
Total Alkalinity	68	mg/L	-	2320 B. APHA 21 st edition
Total Hardness	86	mg/L as CaCO ₃	500	2340 C. APHA 23 rd edition
Calcium	19.23	mg/L	200	3500-Ca D. APHA 23 rd edition
Calcium Hardness	48	mg/L		-
Magnesium	9.23	mg/L		-

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Parameters	Results	Unit	NDWQS	Method
Magnesium Hardness	47	mg/L		-
Residual Chlorine	<0.04	mg/L	0.1-0.2***	4500-Cl B. APHA 23 rd edition
Sulphate	0.6	mg/L	250	4500-E. APHA 23 rd edition
Manganese**	<0.05	mg/L	0.2	3111B. APHA 23 rd edition
Chromium**	<0.01	mg/L	0.05	3111B. APHA 23 rd edition
Fluoride**	<0.05	mg/L	0.5-1.5***	4500 F-D. APHA 23 rd edition
Microbiology				
<i>E. coli</i> *	0	CFU/100 mL	0	Eosin Methylene Blue Agar for Rapid Direct Count of <i>E. coli</i> AJPH, 2011

NDWQS=National Drinking Water Quality Standard (2062)

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis.

*These parameters are not within the scope of Nepal Standard

**These parameters are outsourced to another Laboratory.

***These values show lower and upper limits

Remarks: Except for Color, all the observed values of other tested parameters are found to be within the limit of NDWQS 2062.



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Annex 20: Summary Result and Lab Report Soil Quality

Table: Soil Quality within Project Area

S.N.	Parameters	Unit	Results				
			241+000 (Kamala)	266+000 (Bardibas)	291+000 (Raniganj)	311+000 (Bagmati)	344+000 (Nijgadh)
1	pH	-	5.72	5.21	5.6	6.72	6.48
2	Moisture Content	%	11.85	3.62	12.04	19.18	13.23
3	Soil Organic Matter	%	6.2	2.21	3.4	5.21	5.21
4	Total Kjeldahl Nitrogen	%	0.17	0.18	0.15	0.21	0.19
5	Available Phosphorus	mg/kg	71.22	11.03	29.75	20.76	75.65
6	Total Potassium	mg/kg	1309.23	1802.3	1718.2	1725.21	2171.66
7	Sodium	mg/kg	71.23	55.21	86.1	96.47	85.62
8	Oil and Grease	%	0.09	0.10	0.11	0.08	0.08

Source: Consultant Survey 2022



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SOIL ANALYSIS REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831(o)
Collection By:	Shrijana Neupane	Location:	Near Kamala Khola
Source:	Soil Sample (S1)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/04
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

S.N.	Parameters	Results	Unit
1	pH	5.72	-
2.	Moisture Content	11.85	%
3.	Soil Organic Matter	6.2	%
4.	Total Kjeldahl Nitrogen	0.17	%
5.	Available Phosphorus	71.22	mg/kg
6.	Total Potassium	1309.23	mg/kg
7.	Sodium	71.23	mg/kg
8.	Oil and Grease	0.09	%

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.



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SOIL ANALYSIS REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831(p)
Collection By:	Shrijana Neupane	Location:	Bardibas, Mahottari
Source:	Soil Sample (S2)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/04
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

S.N.	Parameters	Results	Unit
1	pH	5.21	-
2.	Moisture Content	3.62	%
3.	Soil Organic Matter	2.21	%
4.	Total Kjeldahl Nitrogen	0.18	%
5.	Available Phosphorus	11.03	mg/kg
6.	Total Potassium	1802.3	mg/kg
7.	Sodium	55.21	mg/kg
8.	Oil and Grease	0.10	%

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.



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SOIL ANALYSIS REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831(a)
Collection By:	Shrijana Neupane	Location:	Ganeshmaan Charnath M.-07, Dhanusha
Source:	Soil Sample (Raniganj S3)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/04
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

S.N.	Parameters	Results	Unit
1	pH	5.6	-
2.	Moisture Content	12.04	%
3.	Soil Organic Matter	3.4	%
4.	Total Kjeldahl Nitrogen	0.15	%
5.	Available Phosphorus	29.75	mg/kg
6.	Total Potassium	1718.2	mg/kg
7.	Sodium	86.1	mg/kg
8.	Oil and Grease	0.11	%

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.



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SOIL ANALYSIS REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831(q)
Collection By:	Shrijana Neupane	Location:	Bagmati Saptari
Source:	Soil Sample (S4)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date:	2022/10/19	Test Performance Date:	2022/10/31-2022/11/04
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

S.N.	Parameters	Results	Unit
1	pH	6.72	-
2.	Moisture Content	19.18	%
3.	Soil Organic Matter	5.21	%
4.	Total Kjeldahl Nitrogen	0.21	%
5.	Available Phosphorus	20.76	mg/kg
6.	Total Potassium	1725.21	mg/kg
7.	Sodium	96.47	mg/kg
8.	Oil and Grease	0.08	%

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.



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SOIL ANALYSIS REPORT

Name of the Client:	CEG-CIAS-JV	Lab Code:	22/10-831(r)
Collection By:	Shrijana Neupane	Location:	Nijgad, Bara
Source:	Soil Sample (S5)	Sampled By:	Aalekh Bhattarai Suman Basnet
Sampling Date:	2022/10/20	Test Performance Date:	2022/10/31-2022/11/04
Receipt Date:	2022/10/23	Issued Date:	2022/11/04
Project Name:	Kamala Dhalkebar Patlaiya Road Upgradation Project		

S.N.	Parameters	Results	Unit
1	pH	6.48	-
2.	Moisture Content	13.23	%
3.	Soil Organic Matter	5.21	%
4.	Total Kjeldahl Nitrogen	0.19	%
5.	Available Phosphorus	75.65	mg/kg
6.	Total Potassium	2171.66	mg/kg
7.	Sodium	85.62	mg/kg
8.	Oil and Grease	0.08	%

Note: The integrity of the sample and results are dependent on the quality of sampling. The results refer only to the parameters tested of the samples provided/collected for analysis. Statements of conformity have been made without taking Measurement Uncertainty into account except when specifically requested by the customer.



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Annex 21: Geotechnical Findings

Table: General Findings from Geotechnical Investigations

Name of River	Chainage	Soil Type as per USCS	d ₅₀ (mm)	Angle of Friction (°)	Cohesion (KN/m ²)	Ground Water Table Depth (m)
Kamala River	237+022	SP, ML and GP	0.18	31	0	0-10
Kamala Chanel	238+105	SP, CL and GP	0.015	25-30	12	9
CharnathKhola	241+744	SP, CL and GP	0.02	30	3	4-5.5
BaluwaKhola	245+228	SP and CL	8.0	33	0	1.2
Jagadav Branch	250+760	SP and GP	2	31	1.9	6
JagadavKhola	251+090	SP, CL and GP	0.8	33	0	3.5
JaladKhola	252+478	SP, CL and GP	4.5	31	0	9-12
AurahiKhola	254+663	SP, GP and CL	10	35	1.4	4-8.5
BasaiKhola	256+186	SP, CL and GP	2.5	33	1	3.5
SukhjorKhola	258+735	SP, ML, CL and GP	2	32	0.5	NA
BarahariKhola	260+921	SP, CL and GP	5	33	0	15
Ratu Khola	265+345	SP and GP	2.8	32	21	10
BhapsiKhola	268+310	SP, CL and GP	2.5	32	0	NA
AtabbeKhola	269+373	SP, CL and GP	3.5	32	1	6
Janga-1 Khola	270+871	SP and GP	2.8	32	0	10
Janga-2 Khola	271+145	SP and GP	3.5	31	0	10
GadhaghantaKhola	271+514	SP and GP	1.86	32	0	11
Belgachhi (Dhungre) Khola	274+925	SP, CL and GP	2.5	32	0	NA
Tuteshwor-1 Khola	275+618	SP and GP	1	31	0	NA
Tuteshwor-2 Khola	275+845	SP and GP	2	32	0	NA
MarahaKhola	277+266	SP and GP	0.75	30	0	13
BatuwaKhola	281+978	SP and GP	1.5	31	0	16
MarahaKholsi	278+345	SP and GP	7	31	1.44	NA
DholanKhola	278+913	SP and GP	2.2	31	0	NA
JarlahiKhola	280+560	SP and GP	10	32	0	NA
BankheKhola	282+748	SP and GP	1.9	32	0	12
AmuwaKhola	285+712	SP, ML and GP	3.5	31	0.5	12
PhuljorKhola	290+205	SP, CL and GP	5.5	33	0	3-8.5
Kalinjor-1 Khola	291+855	SP and GP	5.5	35	0	3
Kalinjor-2 Khola	292+695	SP, CL and GP	0.012	28	9.1	3-4
DumdumeKhola	295+372	SP, CL, ML and GP	12	33	0	4.5
LakhandehiKhola	300+454	SP, CL and GP	1.2	32	0	3.5
Bagmati River	313+090	SP and GP	2.8	32	0	13-18.5
DhansarKhola	339+317	SP and GP	2.5	32	0	10
LamopulKhola	342+241	SP and GP	2.5	32	0	12
BhamaraKhola	343+557	SP and GP	8	31	0	NA
RampulKhola	344+067	SP, CL and GP	1.8	31	0	NA
Bakaiya River	347+180	SP, ML and GP	2.5	32	0	7
UnashiKhola	348+967	SP, ML and GP	1	31	0	8
PasahaKhola	357+196	SP, CL, ML and GP	0.5	29	9	1
Pasaha Branch	357+418	ML and CL	0.1	29	6.6	6-7
BangadiKhola	358+447	SP, CL and GP	3.9	32	0	7
BalgangaKhola	360+840	SP, CL and GP	2.8	32	0	6
BaijuraKhola	362+852	SP, MLL and GP	1.2	31	0	10.5
Dhungre-1 Khola	364+427	SP and GP	0.13	28	5.5	4.5
Dhungre-2 Khola	364+682	SP	0.12	32	0	4.5
Tin Number Bridge	365+695	SP, GP, CL and ML	1.2	31	0	NA

Annex 22: Species wise list of Trees to be Cut Down

Number of Saplings (diameter 4.0425 cm to 14.56 cm) to be affected

S. No.	Name of Tree Species	Nos to be felled	S. No.	Name of Tree Species	Nos to be felled
1	Amala	1	31	Khair	152
2	Amba	1	32	Khasru	1
3	Ashare	8	33	Khirro	23
4	Ashoka	3	34	Koiralo	1
5	Asna	2	35	Kusum	2
6	Aule	8	36	Kyamuna	86
7	Badkaule	4	37	Litchi	2
8	Bakaino	2	38	Mango	6
9	Ban Peepal	1	39	Neem	2
10	Banjhi	92	40	Padke	15
11	Barro	2	41	Padke siris	2
12	Bhalayo	237	42	Peepal	2
13	Bhalukath	2	43	Phalame	2
14	Bhellar	8	44	Pithari	17
15	Bhorla	3	45	Pyari	11
16	Botdhairo	621	46	Rajbrikshya	6
17	Chamre	1	47	Rohini	1022
18	Chilaune	2	48	Sadhan	2
19	Dabdabe	4	49	Sahijan	1
20	Datrung	163	50	Sal	1875
21	Dudhe	12	51	Sarifa	2
22	Eucalyptus	53	52	SatiSal	7
23	Galka	3	53	Simal	2
24	Gulmohar	1	54	Sindure	219
25	Ipil ipil	2	55	Siris	3
26	Jamun	2	56	Sissoo	5
27	Kadam	160	57	Tanki	1
28	Kalikath	15	58	Tatari	1
29	Kapashi	7	59	Teak	21
30	Karma	3		Total	4914

Number of Poles and Trees to be affected

[illegible]

Annex 23: Quadrat Analysis

Quadrat No.	Side and Distance from CL	Coordinates		Trees Species	Hight	Diameter	Quality	Herbs/ Shrubs	Samplings
		X	y						
1	Right : 200 Mtrs	414121	2973260	Khair	16	109	A	Siru	
				Khair	17	107	A		
				Khair	14	113	A		
2	Right : 500 Mtrs	402579	2978101	Sal	21	132	A	Siru	
				Sal	19	98	A	Kush	
				Sal	21	112	A	Banmara	
				Sal	21	99	A		
3	Left : 500 Mtrs	388421	2985909	Hade	14	100	A	Siru	
				Hade	16	95	A		
4	Right : 200 Mtrs	387640	2986871	Haldu	11	94	C	Banmara	
				Pyari	13	94	C		
				jamun	15	107	B		
				Pyari	12	100	B		
5	Left : 200 Mtrs	386485	2986826	Sal	14	120	A		
				Bhalayo	96	102	B		
				Asna	18	145	A		
				Sal	17	115	A		
6	Right : 100 Mtrs	385764	2987489	Khair	11	94	A		
				Pyari	9	93	C		
				Asna	12	94	B		
7	Left : 200 Mtrs	383599	2987312	khiro	16	107	C		
				kusum	14	102	C		
8	Right : 500 Mtrs	382718	29879	Datringo	12	93	C		
				Sindure	9	112	C		
				Datringo	13	96	C		
9	Leftside : (200 Mtrs)	381635	2987449	Amaro	13	111	B		
				Botdhamero	15	93	B		
				Botdhamero	16	94	C		
10	Rightside : (200 Mtrs)	370935	2987670	khiro	16	129	C		
				Pyari	8	98	B		
				Pyari	11	96	B		
				Kusum	11	109	B		
11	left side : (500 Mtrs)	370930	2989190	Eucalyphis	17	97	A		
				Eucalyphis	16	95	A		
				Eucalyphis	17	95	A		
				Eucalyphis	17	94	A		
				Eucalyphis	17	96	A		
12	left side : (500 Mtrs)	374277	2988655	Eucalyphis	15	94	A		
				Eucalyphis	17	96	A		
				Eucalyphis	17	95	A		
				Eucalyphis	17	57	A		
				Eucalyphis	16	94	A		
13	Right side : (200 Mtrs)	373196	2989687	Kalikath	8	94	C		
				Sindure	12	94	C		
				Sal	11	148	A		
14	Right side : (200 Mtrs)	370130	2990126	Kusum	14	107	B		
				Sindure	12	99	C		
				Satisal	11	94	A		
				Sindure	14	96	B		
15	Right side : (200 Mtrs)	368689	2990221	Eucalyphis	17	101	A		
				Eucalyphis	16	98	A		
				Eucalyphis	17	94	A		
				Eucalyphis	16	97	A		
16	Right side : (200 Mtrs)	361498	2994230	Datringo	11	94	C		
				Sal	19	128	A		

Quadrat No.	Side and Distance from CL	Coordinates		Trees Species	Hight	Diameter	Quality	Herbs/ Shrubs	Samplings
		X	y						
				Sal	21	127	A		
17	Right side : (200 Mtrs)	368895	2990734	Datringo	15	114	B		
				khirro	14	99	C		
				Aule	13	93	C		
				Pithari	12	102	C		
18	left side : (500 Mtrs)	310816	3005786	Sal	19	178	A	Siru	Bhalayo-1
				Harro	19	94	A	Kush	Rohini-2
				Sal	17	126	A		
				Sal	17	113	A		
19	Right side : (200 Mtrs)	310234	3006392	Sal	17	98	A		Sal-6
				Botdhamero	17	119	A	Banmara	Rohini-2
20	Left side : (200 Mtrs)	313443	3006530	Teak	17	110	A	Siru	Khumbi-1
				Teak	17	96	A	Kush	Botdhamero-1
				Teak	12	113	A		
				Botdhamero	17	95	B		
				Asna	20	97	A		
21	Left side : (500 Mtrs)	313443	3006530	Botdhamero	17	169	A	Siru	
				Sal	17	102	A	Kush	
				Jamun	17	113	A		
22	Left side : (500 Mtrs)	314919	3006739	Sal	19	163	A	Siru	Shrub-3, Rohini-1
				Asna	18	104	A	Jibre	
				Sal	21	141	A	Grass	
23	Left side : (500 Mtrs)	317233	3008082	Sal	19	122	A	Niuro	
				Harro	19	104	A	Syaula	
				Sal	19	99	A	Siru	
				Sal	19	94	A		
24	Left side : (200 Mtrs)	315536	3007261	Sal	19	186	A	New Thulo Pat	Rohini-3
				Asna	19	106	A		Kadam-2
				Sal	19	139	A		
				Rohini	13	96	B		
25	Right side : (200 Mtrs)	322612	3006689	Sal	17	143	A	Siru	Sal-3
				Jamun	14	106	A	Syaula	Rohini-Ward 3
				Barro	15	97	A		
26	Right side : (200 Mtrs)	318231	3007244	Kadam	19	186	A	Kathipala	Rohini Ward-1
				Botdhamero	20	157	A	Uniu	Datringo-1
									Jhinkar-1
27	Leftside : (200 Mtrs)	323340	3005632	Bhalayo	9	95	B	Kush	Sal-6
				Sal	19	205	A	Niuro	Rohini- Ward 4
				Bhalayo	14	110	B		Botdhamero-3
28	Rightside : (200 Mtrs)	322612	3006689	Sal	17	143	A	Siru	Sal -3
				Jamun	14	106	A	Syaula	Rohini- Ward 3
				Barro	15	97	A		
29	Leftside : (200 Mtrs)	318231	3007244	kadam	19	186	A	kathipala	Rohini- 1
				Botdhemero	20	157	A	Uniu	Datringo-1
									Jhinkar-1
30	Leftside : (200 Mtrs)	323340	3005632	Bhalayo	9	95	B	Kush	Sal-6
				Sal	19	205	A	Niuro	Botdhamero-3
				Bhalayo	14	110	B		
31	Rightside : (500 Mtrs)	329606	3005129	Sal	14	94	A	Siru	Sal-10
				Sal	17	110	A		Bhalayo-2
				Datringo	10	93	B		Khair-2
									Bhalayo-3
32	Leftside : (500 Mtrs)	325674	3005350	Rajbrikshya	17	97	A	Jibre	Sal-2
				Halude	14	106	B	Shiru	Rohini-3
								wan	
								Aduwa	

Quadrat No.	Side and Distance from CL	Coordinates		Trees Species	Hight	Diameter	Quality	Herbs/ Shrubs	Samplings
		X	y						
33	Lefttside : (200 Mtrs)	336973	3000928	Sal	16	117		Siru	Rohini-2
				Bhorla	18	149		kush	Sal-3
									Bhalayo-2
34	Rightside : (200 Mtrs)	330630	3004527	Datringo	16	117	B	Siru	Rohini-3
				Dabdabe	18	149	A	Koiralo	Sindure-1
				Rohini	12	94	B	Kush	
35	Rightside : (200 Mtrs)	306369	3007265	Sindure	14	98	B		
				Aaule	12	94	B		
				Aaule	12	97	B		
				Sindure	15	104	A		
				Sindure	12	102	B		
36	Lefttside : (200 Mtrs)	304531	3008047	Teak	20	160	A		
				Teak	20	158	A		
				Teak	20	165	A		
				Teak	20	142	A		
				Teak	20	159	A		
37	Lefttside : (500 Mtrs)	308028	3006483	Aule	8	94	C		
				Bunji	14	97	C		
				Sindure	15	102	B		
38	Lefttside : (200 Mtrs)	303304	3008536	Sindure	12	101	C		
				Sindure	14	107	C		
				Sindure	14	104	A		
				Bajhi	16	97	B		
39	Lefttside : (500 Mtrs)	302574	3008769	Barro	14	100	A		
				Asna	17	108	A		
				Asna	17	97	A		
40	Rightside : (200 Mtrs)	301989	3009554	Sal	17	135	A		
				Sal	18	146	A		
				Banjhi	18	127	A		
				Sal	16	152	A		
41	Lefttside : (500 Mtrs)	300912	3009106	Karma	17	115	A		
				Sindure	16	105	A		
				karma	14	164	A		
				Banjhi	15	176	A		

S.N	Name of Species	Number of Species in each Quadrat																																Total No of Trees	Density (No/Ha)	Frequency of Occurrence											
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32				Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41		
1	Sal		4			2							1				2			3	1		1	2	3	2	1		1	1												3		31	75.61	41.46	
2	Masala										5		5		4																														14	34.15	7.32
3	Sindure							1					1	2																						3		1	3					12	29.27	17.07	
4	Teak																				3																5							8	19.51	4.88	
5	Asna					1	1														1					1														2			7	17.07	14.63		
6	Botdhayero								2									1	1	1							1																	6	14.63	12.20	
7	Dhatngro																																												5	12.20	4.88
8	Khair	4					1																																						5	12.20	7.32
9	Pvari					2	1																																						5	12.20	7.32
10	Bhalayo					1																																							5	12.20	7.32
11	Jamun					1															1					1																		4	9.76	9.76	
12	Aule																	1																		2		1						4	9.76	7.32	
13	Banjhi																																												4	9.76	9.76
14	Khirro									1								1																										3	7.32	7.32	
15	Kusum									1				1																															3	7.32	7.32
16	Barro																																												3	7.32	7.32
17	Hade																																												2	4.88	2.44
18	Harro																		1																										2	4.88	4.88
19	Rohini																																												2	4.88	4.88
20	Kadam																																												2	4.88	4.88
21	Karma																																												2	4.88	2.44
22	Haldu																																												1	2.44	2.44
23	Amaro																																												1	2.44	2.44
24	Kalikath																																												1	2.44	2.44
25	Satsal																																												1	2.44	2.44
26	Pithari																		1																										1	2.44	2.44
27	Rajbrikshya																								</																						

Annex 24: Screening List of Critical Species

Wildlife Screening List from IBAT:

Summary of Critical Habitat-Qualifying biodiversity Assessment in the Project area

Species	Critical Habitat criterion qualified					Justification
	1	2	3	4	5	
						✓ attracting Criterion/ Criteria ✕ not attracting Criterion/ Criteria Criterion as per IFC PF 6: 1. Habitat of significant importance to Critically Endangered and/or Endangered species. 2. Habitat of significant importance to endemic and/or restricted range species. 3. Habitat supporting globally significant concentrations of migratory species and/or congregatory species. 4. Habitat Highly threatened and/or unique ecosystems. 5. Areas associated with key evolutionary processes.
						IUCN Red List Category: Critically Endangered. Global Population: A river turtle restricted to mainly to river habitat. Known with certainty only from the Ganga basin of India and Bangladesh. Global Population: is estimated around 500 individuals in Bangladesh (Rashid and Khan 2000) Local Population: Conservation near Kamali River lowlands in western Nepal (more than 50 km distance from the project road). No scientific details were available on local population. Asper the IUCN range distribution map, nearest location of Red-crowned Roofed Turtle is more than 50 km from project area. https://www.iucnredlist.org/species/10949/152043133 No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the species.
Red-crowned Roofed Turtle	✓	X	X	X	X	
						IUCN Red List Category: Critically Endangered. A river turtle restricted to river habitat. Known with certainty only from the Ganga basin of India and Bangladesh. Global Population: Overall the population continues to decline, often through entanglement in fishing nets (S. Singh pers. comm. 2018). Local Population: No scientific details were available on the status of local population. Asper the IUCN range distribution map, Three-striped Roofed Turtle is distributed near the project area.
Three-striped Roofed Turtle	✓	X	X	X	X	

					https://www.iucnredlist.org/species/10953/152042542 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species.
Spotted Pond Turtle	✓	X	X	X	IUCN Red List Category: Endangered. <i>This species</i> inhabits the lowlands of the Indus, Ganga and Brahmaputra River basins of Pakistan, India, Bangladesh and Nepal Global Population: The species common in the Brahmaputra floodplains and rare else where, and rated its population as apparently stable in India (Choudhury <i>et al.</i> 2000). Population decline in the past 20 years in Bangladesh (Rashid and Khan 2000) Local Population: No scientific details were available on local population. As per the IUCN range distribution map, Spotted Pond Turtle is distributed near the project area. https://www.iucnredlist.org/species/9029/152050337 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Crowned River Turtle	✓	X	X	X	IUCN Red List Category: Endangered. A river turtle restricted to mainly to river habitat. Known with certainty Ganga-Brahmaputra basin of northern India and Bangladesh, and the Indus basin of Pakistan, no confirmed records exist from Nepal Global Population: There were good populations across terai 30 years ago, but it is now localized to a few rivers and wetlands and has arguably declined by 80% (Shai pers. comm. 2017). Recent (unpublished) data indicate estimated population declines of about 50–75% overall. Local Population: No scientific details were available on local population. As per the IUCN range distribution map, Crowned River Turtle is distributed near the project area. https://www.iucnredlist.org/species/9696/3152073 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as

						a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
						IUCN Red List Category: Endangered. A river turtle occurs widely throughout the Bangladesh, and southern Nepal at elevations of between 10 to 100 m above sea level. Global Population: In Bangladesh it was considered uncommon, and populations in decline, by 1999 (Rashid and Swingland 1997, Rashid and Khan 2000). There is a very good subpopulation in the Pilibhit Tiger Reserve in Uttar Pradesh, India (S. Singh pers. comm. 2018). Local Population: Only a single record exists from Nepal (Schleich and Kästle, 2002). As per the IUCN range distribution map, Indian Eyed Turtle is distributed near the project area https://www.iucnredlist.org/species/13874/544248 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Indian Eyed Turtle	✓	X	X	X	X	
						IUCN Red List Category: Endangered. A turtle occurs widely throughout the drainages of Bangladesh, India, Nepal, Pakistan and Afghanistan (Schneider and Djalal 1970) Global Population: Considered the species common throughout its range in India, but possibly in decline (Choudhury <i>et al.</i> 2000) Local Population: No data available As per the IUCN range distribution map, Indian Soft-shell Turtle is distributed near the project area https://www.iucnredlist.org/species/39618/2930943 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Indian Soft-shell Turtle	✓	X	X	X	X	

Indian Peacock Softshell Turtle	X	✓	X	X	X	IUCN Red List Category: Endangered. A turtle occurs throughout the drainages of Bangladesh, northern India, southern Nepal and Pakistan (Iverson 1992, Das 1995, Prashag and Gemel 2002, Das <i>et al.</i> 2010). Global Population: Pakistan, found 69 individuals and considered the population of Indian Peacock Softshell Turtle to be in good condition (Safi and Khan 2014). However, it is rare in Sindh, southern Pakistan (Khan <i>et al.</i> 2015). Local Population: The records from Nepal are from the western, central, and Terai regions (Mitchell and Rhodin 1996; Schleich and Kastle 2002). As per the IUCN range distribution map, Indian Peacock Softshell Turtle is distributed near the project area https://www.iucnredlist.org/species/39619/2931203 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Elongated Tortoise	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. It is widely distributed across South and Southeast Asia. It has localised occurrences in northern and eastern India, Nepal and Bangladesh, Bhutan and much of Myanmar, Thailand and Cambodia. Global Population: A 50-70% decline in population is believed to have occurred in the India/Bangladesh part of the range in the past 20 years (S. Singh pers. comm. 2018). in Bhutan's Royal Manus National Park but abundance is low (Wangyal <i>et al.</i> 2012). Local Population: Jhapa in eastern Nepal (Tapil <i>et al.</i> 2021) As per the IUCN range distribution map, Elongated Tortoise is distributed near the project area https://www.iucnredlist.org/species/10824/152051190 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.

Dark Sitana	✓	✓	X	X	X	IUCN Red List Category: Critically Endangered. This species is known only from its type locality in central Nepal, Ghauri Dhara Road Camp 0.8 km north of the road Janakpur-Bardibas (Kastle <i>et al.</i> 2013). Population: There are no data on population size and trends for this species. After the discovery of the species, intensive surveys in the area were not able to find it (Kastle <i>et al.</i> 2013). As per the IUCN range distribution map, Dark Sitana is more than 50 km from project area. https://www.iucnredlist.org/species/127901942/219116426 No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road, Areas that regularly hold $\geq 10\%$ of the global population size AND ≥ 10 reproductive units of a species. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Tricarinate Hill Turtle	✓	X	X	X	X	IUCN Red List Category: Endangered. Species distributed in the Himalayan foothill of northern and northeastern India and southern Nepal Global Population: study found 48 specimens in two years India (Choudhury <i>et al.</i> 2000; Das 2009) Local Population: surveys at a protected area in the terai resulted in 36 specimens found in a 3-month survey effort (Participants Red List Workshop Singapore 2011). As per the IUCN range distribution map, Tricarinate Hill Turtle is distributed near the project area https://www.iucnredlist.org/species/13038/511526 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Yellow Monitor	✓	X	X	X	X	IUCN Red List Category: Endangered. This species confined to northern India, Nepal, south central Bhutan, and Bangladesh. Its distribution mainly follows the major river systems of the Indus, Ganges and Brahmaputra (Visser 2004). Population: There are no current data on population size and trends for this species. It is uncommon compared with the other monitor lizards in its range. As per the IUCN range distribution map, Tricarinate Hill Turtle is distributed near the project area https://www.iucnredlist.org/species/22872/127899602

						However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Baer's Pochard	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. The species breeds from the Amur and Ussuri basins in Russia southwards to the central and lower Yangtze floodplain in central-eastern China. Global Population: in Bangladesh recent maximum winter total of only 17 individuals, down from 1,000–2,000 individuals (Chowdhury <i>et al.</i> 2012) Local Population: Only one confirmed location in Nepal (Tordoff, 2007) As per the IUCN range distribution map, Baer's Pochard is distributed near the project area https://www.iucnredlist.org/species/22680384/154436811 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Yellow-breasted Bunting	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. This species breed across the northern Palaearctic. Also winter visitor to the South and South East Asia, which includes Nepal and India. Global Population: The European population is estimated to just 120-600 mature individuals (Bird Life International 2015). Local Population: No data available As per the IUCN range distribution map, Yellow-breasted Bunting is distributed near the project area https://www.iucnredlist.org/species/22720966/119335690 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.

Black-bellied Tern	✓	X	X	X	X	IUCN Red List Category: Endangered. This species majority of its range in India where it remains widespread but in decline. Also distributed in Pakistan, Nepal and Bangladesh Global Population: It is widespread in India but population drastically declining. Only not more than 30 individuals recorded from Pakistan and Bangladesh (Zockler <i>et al.</i> 2020) Local Population: with likely no more than 30 individuals in Nepal (Zockler <i>et al.</i> 2020) As per the IUCN range distribution map, Black-bellied Tern is distributed in the project area https://www.iucnredlist.org/species/22694711/207933556 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Pallas's Fish-eagle	✓	X	X	X	X	IUCN Red List Category: Endangered. The species may breed only in northern India (apparent strongholds in Assam and Uttarakhand), Bangladesh and Myanmar, with very small numbers in Bhutan. Global Population: Based on surveys and available data from across the species's extant distribution, the population is estimated to fall well below 2,500 mature individuals (M. Steele and M. Gilbert <i>in litt.</i> 2016). Local Population: No data available As per the IUCN range distribution map, Pallas's Fish-eagle is distributed near the project area https://www.iucnredlist.org/species/22695130/199521572 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Egyptian Vulture	✓	X	X	X	X	IUCN Red List Category: Endangered. Egyptian vultures are widely distributed across the Old World with their breeding range from southern Europe to northern Africa east to western and southern Asia.

						Global population: 3,000-4,500 pairs are estimated in Europe (BirdLife International <i>in prep</i>), < 2,000 pairs in central Asia, just a few thousand pairs now in the Indian Subcontinent, ~ 1,000 pairs in the Middle East, and ~ 1,000-2,000 pairs in Africa (Thiollay 1989, I. Angelov <i>in litt.</i> 2012). Local Population: No data available As per the IUCN range distribution map, Egyptian Vulture is distributed near the project area https://www.iucnredlist.org/species/22695180/205187871 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Saker Falcon	✓	X	X	X	X	IUCN Red List Category: Endangered. Saker Falcon occurs in a wide range across the Palearctic region from eastern Europe to western China Global Population: The global population was estimated at c.6, 100-14,900 pairs (median c.10, 500) in 2013. Local Population: No data available As per the IUCN range distribution map, Saker Falcon is distributed near the project area https://www.iucnredlist.org/species/22696495/204182473 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Greater Adjutant	✓	X	X	X	X	IUCN Red List Category: Endangered. Greater Adjutant prefer forest, grassland, wetlands, also previously widespread and common across much of South and continental South-East Asia (Birdlife International 2001) Global Population: is estimated to number 800-1,200 mature individuals, roughly equivalent to 1,200-1,800 individuals in total. Kamrup District in Assam is known to be a stronghold for the species. Local Population: is not known properly, according to IUCN range distribution map, Greater Adjutant is extinct near the project area https://www.iucnredlist.org/species/22697721/93633471 However, as per the site investigation studies conducted along the water bodies associated with project road, the

						species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Bengal Florican	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. Bengal Florican prefers grasslands (Artificial/Terrestrial). The species has two disjunct populations, one in the Indian Subcontinent, the other in South-East Asia (BirdLife International 2001). Global Population: The population in Cambodia was estimated only 432 individuals (95% CI 312-550) (C. Packman <i>in litt.</i> 2013, Packman <i>et al.</i> 2014). Local Population: Only 75-96 individuals remain in Nepal (Baral <i>et al.</i> 2013). As per the IUCN range distribution map, Bengal Florican is distributed (Possible extinct) near the project area https://www.iucnredlist.org/species/22692015/130184896 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Lesser Florican	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. Lesser Florican prefers grasslands (Artificial/Terrestrial). Breeds in India and Nepal. Global Population: The total population has been calculated from a recent survey over most of the range which estimated 340 displaying males (95% CI 162–597, Dutta <i>et al.</i> 2018). Local Population: rare summer visitor to the terai of Nepal, less than <10 birds estimated (Inskipp <i>et al.</i> 2016, C. Inskipp and H. S. Baral <i>in litt.</i> 2012). As per the IUCN range distribution map, Lesser Florican is distributed near the project area https://www.iucnredlist.org/species/22692024/199959007 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species in not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.

Sociable Lapwing	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. Sociable Lapwing is mostly occurs in grasslands, wetlands and deserts. Global Population: The European population is estimated at 0-10 pairs, which equates to 0-20 mature individuals (BirdLife International 2015). Local Population: No data available As per the IUCN range distribution map, Sociable Lapwing is distributed near the project area also probably extinct. https://www.iucnredlist.org/species/22694053/155545788 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
White-rumped Vulture	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. White-rumped Vulture preferring habitat of forest, savanna, shrubland, grassland. Occurs in globally occurs in Pakistan, India, Bangladesh, Nepal, Bhutan. Global Population: There are now an estimated c.6, 000 individuals in India (Prakash <i>et al.</i> 2019). The total population is therefore estimated to be c. 6,000-9,000 individuals, equating to 4,000-6,000 mature individuals. Local Population: total of <2,000 individuals recorded in Nepal (DNPWC 2015). As per the IUCN range distribution map, White-rumped Vulture is distributed (probably extinct.) near the project area. https://www.iucnredlist.org/species/22695194/204618615 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Red-headed Vulture	✓	X	X	X	X	IUCN Red List Category: Critically Endangered. Red-headed Vulture preferring habitat of forest, savanna, shrubland, grassland. Global Population: Total of 3,500-15,000 individuals estimated globally. Local Population: still widespread, but has declined significantly such that it is virtually absent from most areas east of Kathmandu (Inskipp <i>et al.</i> 2016) As per the IUCN range distribution map, Red-headed Vulture is distributed near the project area.

					https://www.iucnredlist.org/species/22695254/205031246 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Slender-billed Vulture	✓	X	X	X	IUCN Red List Category: Critically Endangered. Slender-billed Vulture preferring habitat of forest, savanna, shrubland, grassland. Global Population: The total population is therefore thought to be c.1,100-1,300 individuals, roughly equating to 730-870 mature individuals. Local Population: The total population in Nepal fewer than 50 individuals (DNPWC 2015) As per the IUCN range distribution map, Slender-billed Vulture is distributed near the project area https://www.iucnredlist.org/species/22729460/204781113 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Indian Vulture	✓	X	X	X	IUCN Red List Category: Critically Endangered. Indian Vulture preferring habitat of forest, savanna, shrubland, grassland and Rocky areas (inland cliffs, mountain peaks) Global Population: breeds in India and south-east Pakistan. Roughly 5,000-15,000 mature individuals are estimated. Local Population: The species was first recorded in Nepal in 2011 (Subedi and DeCandido 2013). As per the IUCN range distribution map, Indian Vulture is distributed (possible extinct) near the project area https://www.iucnredlist.org/species/22729731/204672586 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.

Steppe Eagle	✓	X	X	X	X	IUCN Red List Category: Endangered Steppe Eagle preferring habitat of forest, savanna, shrubland, grassland Global Population: Total 50000-75000 individuals are estimated Local Population: Total of 6,166 individuals recorded in 2014 at Thoolakharka, Nepal (Subedi 2014). As per the IUCN range distribution map, Steppe Eagle is distributed near the project area https://www.iucnredlist.org/species/22696038/205452572 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Hog Deer	X	✓	X	X	X	IUCN Red List Category: Endangered Hog Deer preferring habitat of forest, savanna, shrubland, grassland. Distributed in India and Nepal - and perhaps Pakistan and Bhutan No data available related to local and global population As per the IUCN range distribution map, Hog Deer is distributed near the project area. https://www.iucnredlist.org/species/41784/22157664 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Chinese Pangolin	✓	X	X	X	X	IUCN Red List Category: Critically Endangered Chinese Pangolin occurs in forests, shrub lands and grasslands. Distributed Himalayan foothills of Nepal, southern Bhutan, north and north-eastern India. No data available related to local and global population As per the IUCN range distribution map, Chinese Pangolin is distributed near the project area. https://www.iucnredlist.org/species/12764/45222544 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project

						road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
						IUCN Red List Category: Endangered Red Panda preferring habitats such as forest and shrub lands. Distributed in Nepal, China, Myanmar, India and Bhutan Global Population declined by 50% over the last three generations (estimated at 18 years). No data available related to local and global population number As per the IUCN range distribution map, Red Panda is distributed far the project area more than 30 km from the project road. https://www.iucnredlist.org/species/714/110023718 No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 & 2 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Red Panda	✓	✓	X	X	X	IUCN Red List Category: Endangered Hispid Hare preferring habitats such as Grasslands and Wetlands (Inlands). Distributed in Bangladesh, India, Nepal, and Bhutan No data available related to local and global population number As per the IUCN range distribution map, Hispid Hare is distributed in the project area https://www.iucnredlist.org/species/3833/45176688 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 & 2 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Hispid Hare	✓	✓	X	X	X	IUCN Red List Category: Endangered Dhole preferring habitats such as Grasslands and Shrublands. Historically, Dholes occurred throughout South and East Asia, to as far north as the southern parts of the Russian Federation. Global Population: likely 949-2215 matured individuals are there globally Local Population: Dhole sightings in Nepal are not common hence species occurred in Rara and Khaptad National Parks, Dhorpatan Hunting Reserve of Nepal. As per the IUCN range distribution map, Dhole is distributed in near the project area
Dhole	✓	X	X	X	X	

					https://www.iucnredlist.org/species/5953/72477893 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 & 2 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Asian Elephant	✓	X	X	X	IUCN Red List Category: Endangered Asian Elephant prefers habitat such as Forest, Grasslands and Shrublands. Distributed in West Asia along the Iranian coast to Indian subcontinent. The Asian elephant is distributed across 13 range countries with a population of about 41,000 to 52,000 (Sukumar 2006; Williams et al. 2020). The number of Nepal's resident elephants is estimated in 227 individuals. Number of elephants known to be present near the project road ranges from 4-8 individuals, however during monsoon season it will be increase from 12-18 individuals. Therefore, the area can be considered as a refuge habitat of the Asian elephant. Nevertheless, prior precautionary measures will be taken to avoid any disturbance to the Asian elephant in the project area. https://www.iucnredlist.org/species/7140/45818198 Number of elephants known to be present near the project road ranges from 4-8 individuals, however during monsoon season it will be increase from 12-18 individuals. Therefore, the area can be considered as a refuge habitat of the Asian elephant. From Km 130-100, it was noticed that the elephant movement is mostly seasonal during the larger trans-border migratory herds 12-18 individuals from the Chitwan National Park. From Km 100-50, it was noticed that the elephant movement is mostly due to the Small and isolated populations of wild elephants' number ranging from 4-7 individuals. As per the site investigation studies conducted along reserve forest areas, the water bodies associated with project road, the species encountered at several location. Technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is qualifying as a criterion 1 species. Therefore, it is identified that the project area is a critical habitat for the particular species.
Indian Pangolin	✓	X	X	X	IUCN Red List Category: Endangered Indian Pangolin occurs in Forest, Savanna, Shrubland, Grassland. Distributed in South Asia from northern and southeastern Pakistan through much of India south of the Himalayas.

					There is very limited information or data on population of this species at any level, and generally there is a lack of research on abundance. There are no quantitative population data available for Nepal. As per the IUCN range distribution map, Indian Pangolin is distributed near the project area https://www.iucnredlist.org/species/12761/123583998 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Himalayan Muskdeer	✓	✓	X	X	IUCN Red List Category: Endangered Himalayan Muskdeer is prefers the Forest, Shrubland and Grassland. Distributed in Himalayas of Bhutan, northern India (including Sikkim), Nepal, and China (southwest Xizang) (Groves <i>et al.</i> 1995, Grubb 2005). Little is known of the species' current status. There are very few in China, reflecting the small range there (Yang <i>et al.</i> 2003). As per the IUCN range distribution map, Himalayan Muskdeer is distributed in more than 50 km distance away from the project area https://www.iucnredlist.org/species/13901/61977764 However, as per the site investigation studies conducted along the water bodies associated with project road, the species was not encountered nor secondary evidences were recorded. No technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is not qualifying as a criterion 1 & 2 species. Therefore, it is concluded that the project area is not a critical habitat for the particular species.
Royal Bengal Tiger	✓	X	X	X	IUCN Red List Category: Endangered The Tiger is a keystone species, crucial in maintaining the integrity of the ecosystems in which it thrives. Based on the most recent national estimates, the global Tiger population numbers between 3,726 and 5,578 individuals and is restricted to ten countries. Current surveys estimate a population of 235 tigers in Nepal (July 2022). https://www.iucnredlist.org/species/15955/214862019

					With reference to the project road, as per the recent tiger census, it was noticed that range distribution of two Tigers namely FT-79 & FT-78 were reported part of the project road. These locations were identified between the km 333+100 to 327+700, this section is outside the Parsa National Park. As per the site investigation studies conducted along reserve forest areas, the water bodies associated with project road, the species encountered at several location. Technical studies were available to prove the area that regularly hold $\geq 0.5\%$ of the global population and ≥ 5 reproductive units near the project road. Hence the species is qualifying as a criterion 1 species. Therefore, it is identified that the project area is a critical habitat for the particular species.

Annex 25: Wildlife Distribution along KDP Road Alignment

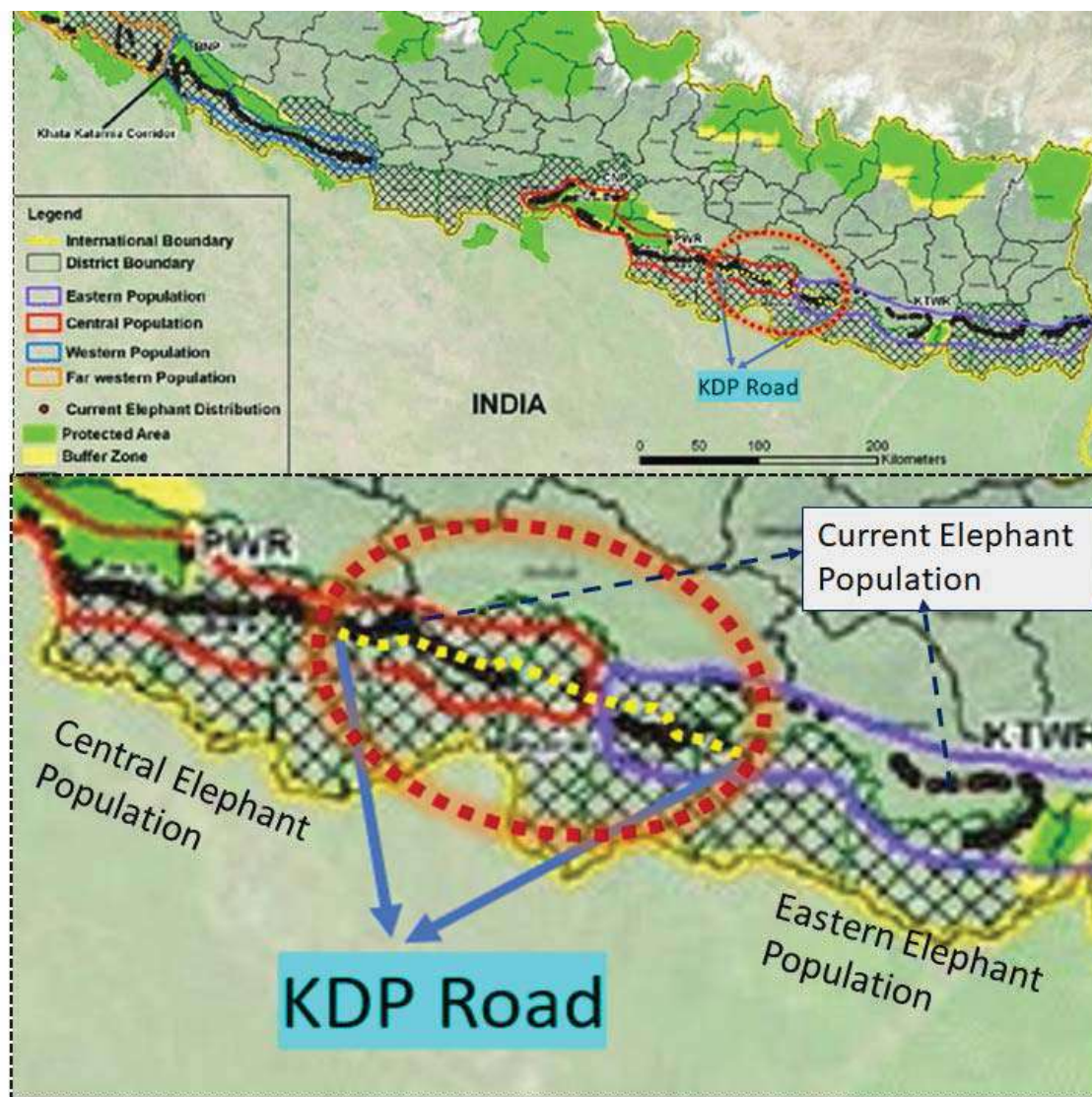
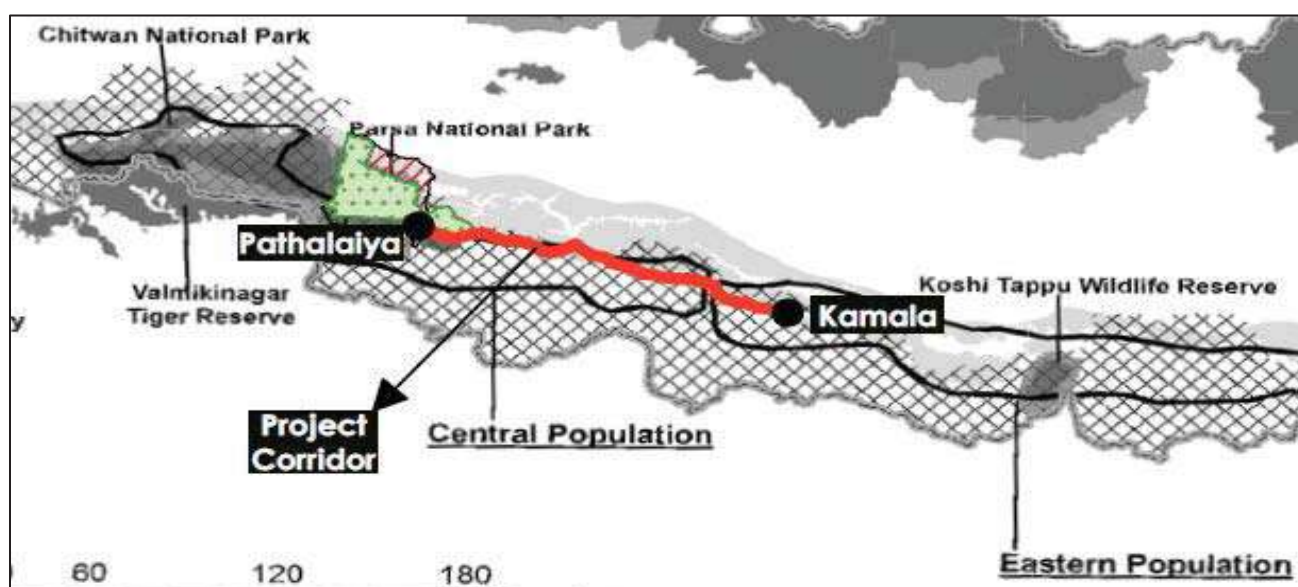


Figure: Elephant Distribution (brown dots) as in 2011 near the KDP Road Section

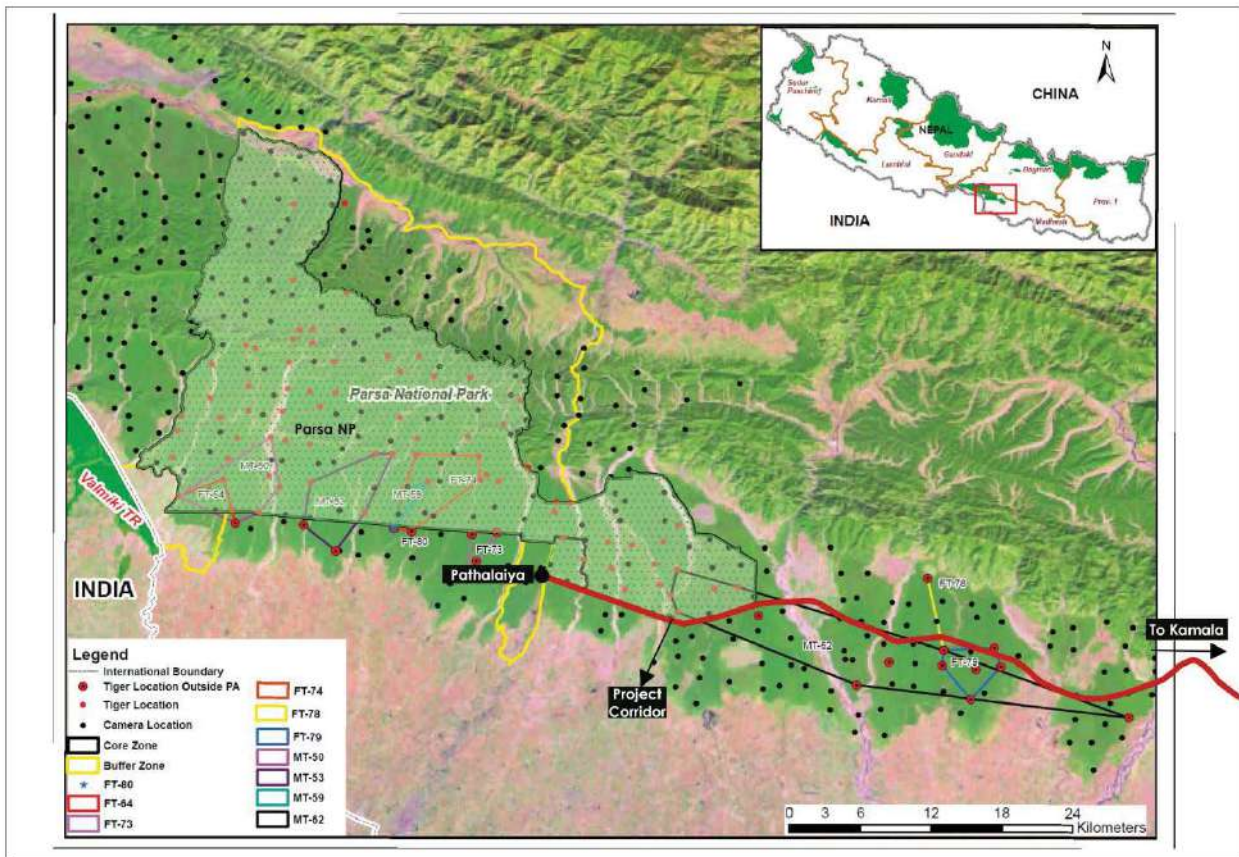


Source: <https://doi.org/10.1371/journal.pone.0216504.g002>

Figure: Elephant Distribution Range near KDP Road Primary Data

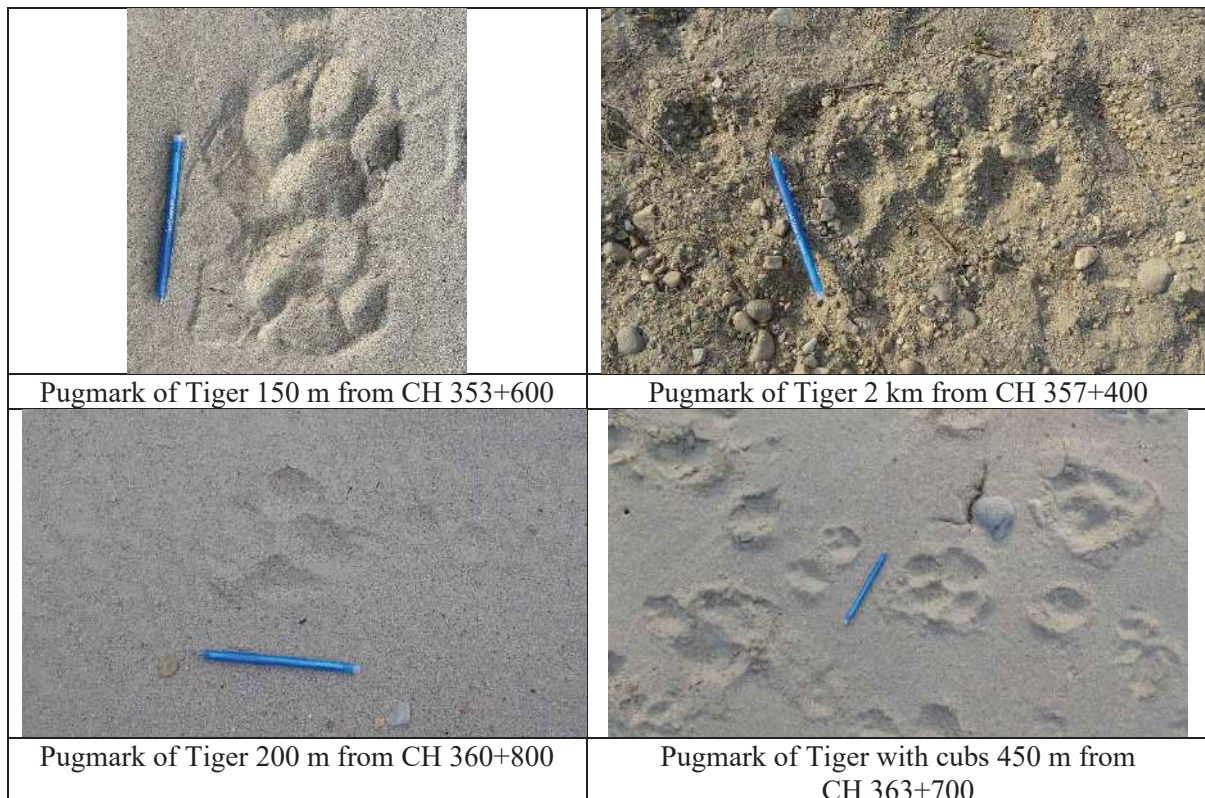
	
Pugmark of Elephant 250 m from CH:363+100	Elephant movement 250 m from CH:363+500
	
Elephant Dung 400 m from CH:339+400	Elephant movement 300 m from CH:360+800 photo captured by local grazer captured in Feb.2023
	
Elephant Dung 150 m from CH:353+500	Elephant Dung 10 m from CH:334+400

Figure: Evidence of Elephants along the project during Primary Survey



Source: Nepal Tiger census, 2022

Figure: Maps illustrating movement of tigers near the project road



	
Pugmark of Tiger 3 km from CH 357+200	Pugmark of Tiger 110 m from CH 334+500
	
Pugmark of Tiger 250 m from CH 325+100	Pugmark of Leopard 500 m from CH 317+700
	
Pugmark of Leopard 1.5 km from CH 300+600	Pugmark of Leopard 300 m from CH 292+700

Figure: Evidence of Tiger and Leopards during Primary Survey

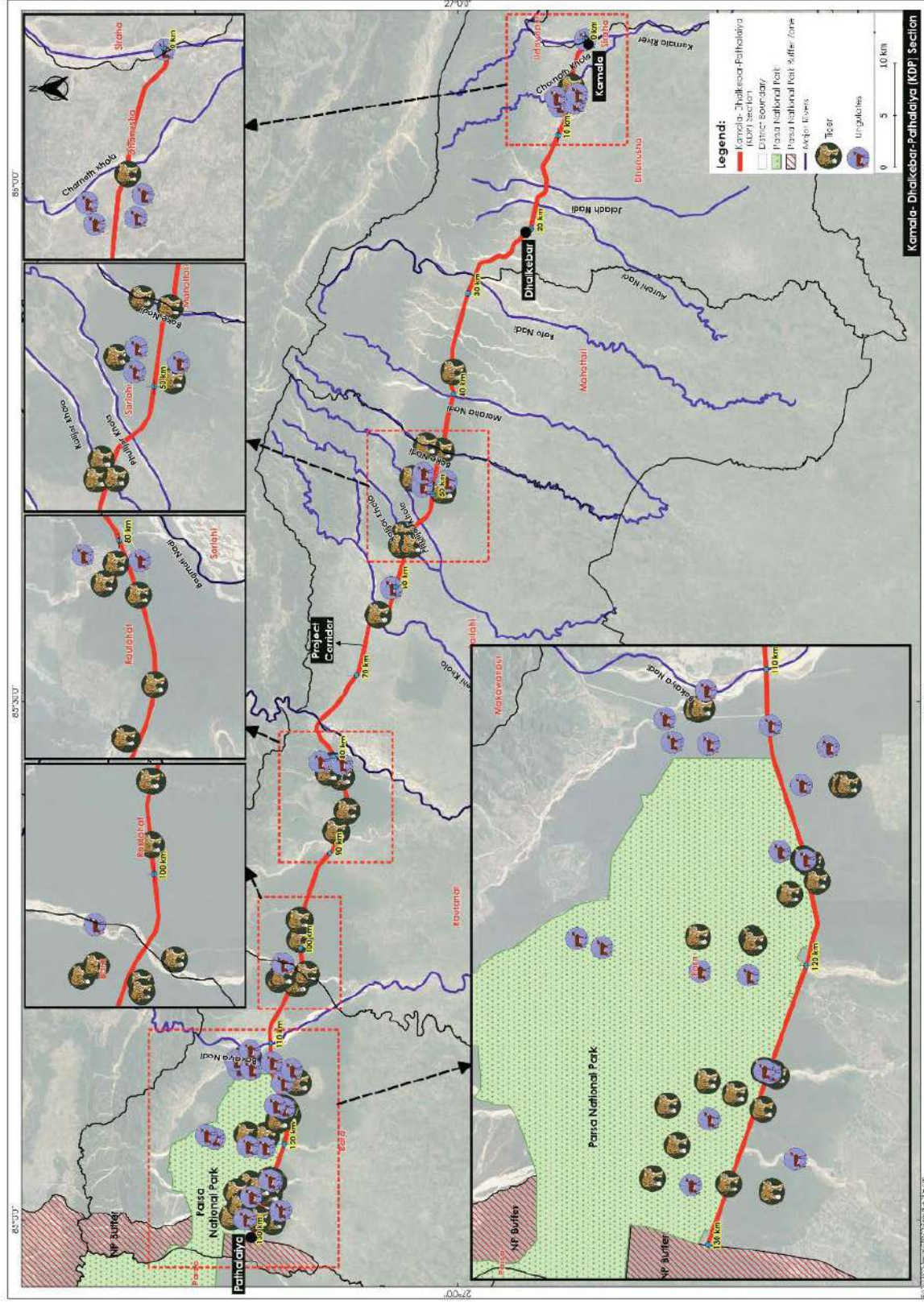


Figure: Distribution of Tiger and Prey Animals along the Project Corridor

	
Spotted deer 1.8 km from CH 363+300	Nepal Grey Langur at multiple location
	
Rhesus macaque at CH:364+200, CH:357+500, CH:349+200, CH:340+900, CH:336+400, CH:330+700	Nilgai Juvenile near CH 236+500

Figure: Prey Animal Directing Sightings along the Project Road



Figure: Himalayan Griffon Vulture, located 350 m North from Chainage 292+700



Figure: Location of Himalayan Griffon Vulture (North of Puljor river)

	
Consultation with wildlife conflict Piluwa village 300 m from CH 357+800	Elephant roaming areas near banana plants 430 m from CH 339+400
	
Consultation with Forest Stakeholders CH 331+300	Consultation with local dwellers near livestock markets Hariyon CH 302+700
	
Consultation with WWF, Nepal	Consultation with ground staff of Parsa National Park 250 m from CH:363+100

Figure: Consultation with stakeholders regarding wildlife movement

Annex 26: Data Tables for Socio-economic Status within DIA

Table 1: Project District, Municipality, Wards, and Settlements along the KDP Road

District	Municipality/ Wards	Settlements in the Project Area
Danusha	GaneshmanCharnath (Ward 1, 4, 6, 7 & 8)	Portaha, Bhorleni, Godaar, BirendraBazaa, TalloGodar
	Dhanusadham (Ward 6, 8 & 9)	Bhimwan, Kanchibazaar, Dharapaani, Pushpabalpur, Saraswatipur
	Mithila (Ward 3, 4, 5, 6, 7, 8, 9 & 10)	Shripur, Hariharpur, Dhalkebar, Lalbhitti, Jamunibas, Laalgadh
Mahottari	Bardibas (Ward 1 & 14)	Adhikari Tol, Bardibas Bazaar, Bardibas Chowk, Subham Basti Bardibas, Sugam Tol, Sukumbashi Basti Tol
Sarlahi	Lalbandi (Ward 1, 6, 7, 9 & 17)	Bastipur, Laalbandi, Nawalpur, Ranigunj
	Ishworpur (Ward 5)	Fuljor, Ishworpur
	Harion (Ward 4, 9, 10 & 11)	Nayaroad Chowk, Hariyon Bazaar, Sukepokhari
	Bagmati (Ward 1, 4, 11 & 12)	Aadarsha Chowk, Milchowk, Paanitanki Chowk, ,PuranoChauki, Putali Chowk, Raimajhi Chowk, Shanti Tol
Rautahat	Chandrapur (Ward 1, 4 & 5)	Bagmati, Canteen Bazaar, MangalpurPurano Basti, Chapur, Srijana Tol, Thada Tol
Bara	Nijgadh (Ward 7, 8 & 9)	Bagiya, Buddha Chowk, Chauki Tol, Hulak Tol, Ismritinagar, Bhamara, Nijgadh Bazar, Rampul Tol, Lachka, Sahid Chowk, Shanti Tol, Yojana Tol
	Jeetpur Simara(Ward 1 & 4)	Dudhaura, Pathlaiya, Thanimai Mandir (Purba Tol)

Source: Field Survey 2022

Table 2: Household and Population within Project Affected Municipalities

Municipality	Number of Households	Population			Average Household Size	Sex Ratio
		Total	Male	Female		
Karjanha	8289	38557	18649	19908	4.7	93.68
GaneshmanCharnath	9167	44082	21425	22657	4.8	94.56
Dhanushadham	10588	52024	25185	26839	4.9	93.84
Mithila	10656	48676	24314	24362	4.6	99.80
Bardibas	16824	74361	36711	37650	4.4	97.51
Lalbandi	14446	66419	32883	33536	4.5	98.05
Gaushala	14873	72481	36250	36231	5.0	100.05
Ishwarpur	10740	68377	33808	34569	5.1	97.80
Harion	10768	49988	24405	25583	4.7	95.40
Bagmati	13521	47106	23015	24091	4.4	95.53
Brindaban	16820	49742	24894	24848	6.1	100.19
Chandrapur	9575	81807	40304	41503	4.9	97.11
Gujara	8142	54033	26396	27637	5.6	95.51
Nijgadh	8424	37687	18446	19241	4.5	95.87
Kolhabi	10561	51182	24862	26320	4.8	94.46
Jitpursimara	25650	127307	63927	63380	5.0	100.86
Total	199,044	963,829	475,474	488,355	4.8	96.89

Source: Population Census/CBS 2021

Table 3:Population by Age Group within Surveyed Household

Municipality	0-4 yrs	5-14 yrs	15-59 yrs	60 yrs and above	Total
GaneshmanCharnath	48	111	384	35	578
Dhanusadham	17	55	248	40	360
Mithila	84	193	779	111	1167
Bardibas	19	66	301	54	440
Lalbandi	48	120	560	116	844
Ishworpur	3	11	54	8	76
Harion	27	49	246	48	370
Bagmati	8	20	122	17	167
Chandrapur	32	63	257	43	395
Nijgadh	25	63	253	58	399
Jeetpursimara	5	19	92	17	133
Total	316	770	3296	547	4,929
Percent (%)	6.4	15.6	66.9	11.1	100

Source: Household Survey 2022

Table 4:Population by Occupation Status in the Surveyed Household

Municipality	Economically Active Population	Occupation						Student	Unemployed
		Agriculture and Livestock	Trade and Business	Job/Service	Household work	Wage Labor	Foreign Employment		
GaneshmanCharnath	384	31	106	16	82	36	35	59	19
Dhanusadham	248	41	50	16	44	8	21	56	12
Mithila	779	108	169	82	146	25	32	185	32
Bardibas	301	13	84	46	43	7	9	83	16
Lalbandi	560	57	131	70	117	9	30	139	7
Ishworpur	54	6	8	6	12	5	3	12	2
Harion	246	13	76	17	53	2	16	63	6
Bagmati	122	17	22	21	24		8	28	2
Chandrapur	257	20	65	39	65	12	6	46	4
Nijgadh	253	29	72	37	47	2	10	49	7
Jeetpursimara	92	2	21	12	32	2	4	18	1
Total	3296	337	804	362	665	108	174	738	108
Percent	100	10.2	24.4	11.0	20.2	3.3	5.3	22.4	3.3

Source: Household Survey 2022

Table 5: Literacy Status of Population by Sex within Surveyed Household

Municipality	Total Survey Popn.	Infant Popn. (<5 years)	Popn. 5 yrs and above	Illiterate Popn.	Literate Population					
					Total		Male		Female	
					Population	Literate Population (%)	Population	Literate (%)	Population	Literate (%)
GaneshmanCharnath	578	48	530	5	525	90.8	277	90.2	248	91.5
Dhanusadham	360	17	343	3	340	94.4	183	93.4	157	95.7
Mithila	1167	84	1083	10	1073	91.9	575	91.4	498	92.6

Municipality	Total Survey Popn.	Infant Popn. (<5 years)	Popn. 5 yrs and above	Illiterate Popn.	Literate Population					
					Total		Male		Female	
					Population	Literate Population (%)	Population	Literate (%)	Population	Literate (%)
Bardibas	440	19	421	3	418	95.0	213	95.1	205	94.9
Lalbandi	844	48	796	3	793	94.0	403	92.6	390	95.4
Ishworpur	76	3	73	1	72	94.7	34	89.5	38	100.0
Harion	370	27	343	0	343	92.7	171	93.4	172	92.0
Bagmati	167	8	159	1	158	94.6	82	93.2	76	96.2
Chandrapur	395	32	363	4	359	90.9	174	89.2	185	92.5
Nijgadh	399	25	374	1	373	93.5	188	93.1	185	93.9
Jeetpursimara	133	5	128	0	128	96.2	64	97.0	64	95.5
Total	4,929	316	4613	31	4582	93.0	2364	92.2	2218	93.7

Source: Household Survey 2022

Table 6: Religion of the Surveyed Households

SN	Municipality	Hindu	Buddhist	Christian	Muslim/ Islam	Total
1	GaneshmanCharnath	89	3		1	93
2	Dhanusadham	45	16		3	64
3	Mithila	184	13			197
4	Bardiba	75	4	2		81
5	Lalbandi	135	13	1	4	153
6	Ishworpur	7	7			14
7	Harion	59	6		1	66
8	Bagmati	27	4			31
9	Chandrapur	63	6		1	70
10	Nijgadh	60	5			65
11	Jeetpursimara	16	7	1		24
	Total	760	84	4	10	858
	Percent (%)	88.6	9.8	0.5	1.2	100

Source: Household Survey 2022

Table 5-7: Ethnic Composition of the Surveyed Household Population

SN	Municipality	Braman	Chettri	Janjati	Dalit	Tarai Caste groups	Muslim an	Total
1	GaneshmanCharnath	17	40	94	138	283	6	578
2	Dhanusadham	8	21	122	74	115	20	360
3	Mithila	133	78	231	332	393		1167
4	Bardiba	73	114	115	89	49		440
5	Lalbandi	264	132	180	63	181	24	844
6	Ishworpur	12	9	45	0	10		76
7	Harion	38	87	79	62	97	7	370
8	Bagmati	36	55	67	0	9		167
9	Chandrapur	115	63	99	44	68	6	395
10	Nijgadh	223	40	128	4	4		399
11	Jeetpursimara	53	26	45	9			133
	Total	972	665	1205	815	1209	63	4,929
	Percent (%)	19.7	13.5	24.4	16.5	24.5	1.3	100

Source: Household Survey 2022

Table 8: Number of HH and Population of IPs by NEFIN classification

SN	Classification of IPs by NEFIN	Surveyed IPs in the KDP Road Corridor	No of Surveyed HHs	Population
1	Endangered-10 (Bankariya, Hayu, Kisan, Kusbadiya, Kusunda, Lepcha, Meche, Raji, Raute, Sural)	--	--	--
2	Highly Marginalized-12 (Bote, Baramu, Chepang, Danuwar, Dhanuk, Jhagar, Majhi, Santhal, Shiyar, Shingsawa, Thami, Thudam)	Danuwar	1	6
3	Marginalized-20 Bhote, Bhujel, Darai, Dhimal, Dolpo, Dura, Gangai, Kumal, Larke, Lhopa, Mugal, Pahari, Phree, Rajbansi, Sunuwar, Tajpuriya, Tamang, Tharu, Topkegola, Walung	Tharu, Bhujel, Tamang	117	651
4	Disadvantaged-15 (BaragauleThakali, Byansi, Chhantyal, Chhairotan, Gurung, Jirel, Limbu, Magar, MarphaliThakali, Rai, Sherpa, Tangbe, TingauleThakali, Yakkha, Yolmo)	Gurung, Magar, Rai, Limbu	45	235
5	Advanced-2 (Thakali, Newar)	Newar	59	313
	Total-59		222	1205

Source: Adopted from NEFIN Classification 2005 & Household Survey 2022

Table 9: Mother Tongue/Language Spoken by Household Respondents

Municipality	Nepali	Maithali	Hindi	Tharu	Rai	Newari	Magar	Tamang	Bhojpuri	Urdu	Total
GaneshmanCharnath	12	79		1						1	93
Dhanusadham	31	23			1	1	3	2		3	64
Mithila	66	116	2			3	5	5			197
Bardiba	60	17				2	1	1			81
Lalbandi	116	28		1		1	1	2		4	153
Ishworpur	13	1									14
Harion	40	20				2		2	1	1	66
Bagmati	28	1				1		1			31
Chandrapur	47	9		1		2	2	3	5	1	70
Nijgadh	60	1	1	1		1	1				65
Jeetpursimara	23						1				24
Total	496	295	3	4	1	13	14	16	6	10	858
Percentage	57.8	34.4	0.3	0.5	0.1	1.5	1.6	1.9	0.7	1.2	100

Source: Household Survey 2022

Table 10: Land Holding Status of the Surveyed HHs

Municipality	Households		
	Having both Agriculture land and Structure	Having Built up Area Only	Total
GaneshmanCharnath	60	33	93
Dhanusadham	51	13	64
Mithila	166	31	197
Bardibas	65	16	81
Lalbandi	134	19	153
Ishworpur	10	4	14
Harion	61	5	66
Bagmati	27	4	31

Municipality	Households		
	Having both Agriculture land and Structure	Having Built up Area Only	Total
Chandrapur	56	14	70
Nijgadh	59	6	65
Jeetpursimara	16	8	24
Total HHs	705	153	858
Per cent (%)	82.2	17.8	100

Source: Household Survey 2022

Table 11: Type of Land of the Surveyed HHs (in ha)

District	Municipality	Agricultural Land		Commercial land/ Ghaderi	River Flood Plain/ Barren Land	Total (ha)
		Khet	Bari			
Danusha	GaneshmanCharnath	35.7	2.6	8	1.9	48.2
	Dhanusadham	16.6	0.3	12.1		29.0
	Mithila	70.4	9.7	23.8	0.7	104.6
Mahottari	Bardibas	18.2	4.4	7.4	0.2	30.1
Sarlahi	Lalbandi	48.7	4.0	11.9	0.7	65.3
	Ishworpur	0.2	1.0	0.5		1.7
	Harion	23.1		26.1	1.4	27.5
	Bagmati	15.4	0.2	16.3		16.5
Rautahat	Chandrapur	25.4	0.4	28	0.1	28.6
Bara	Nijgadh	34.9	1.7	12.3	0.5	49.3
	Jeetpursimara	0.3	0.2	5.8		6.3
Total Land Area (ha)		289.00	24.36	88.33	5.35	407.04
Number of HHs having land		415	31	507	8	705
Average Land (ha)		0.7	0.8	0.5	0.7	0.6
Percent (%)		71.00	5.98	21.7	1.31	100.00

Source: Household Survey 2022

Table 12: Landholding Size (Area) of Survey Households in the Project Area

Municipality	< 0.5 Ha.	0.5-1 Ha.	>1-2 Ha.	>2-5 Ha.	> 5 Ha.	Total Surveyed HHs having Extra Land
GaneshmanCharnath	36	9	11	2	2	60
Dhanusadham	34	7	6	3	1	51
Mithila	88	46	21	10	1	166
Bardibas	49	5	5	6		65
Lalbandi	100	23	5	5	1	134
Ishworpur	9		1			10
Harion	47	5	5	4		61
Bagmati	18	4	3	2		27
Chandrapur	44	6	4	1	1	56
Nijgadh	32	17	6	1	3	59
Jeetpursimara	15				1	16
Total	472	122	67	34	10	705
Per cent (%)	67.0	17.3	9.5	4.8	1.4	-

Source: Household Survey 2022

Table 13: Number of Surveyed Households having Domestic Animals

Municipality	Total Number of Households Having Animals					Total
	Cow/Ox	Buffalo	Goat	Pig	Poultry	
GaneshmanCharnath	14	10	19	1	1	45
Dhanusadham	4	13	21	1	1	40
Mithila	24	32	37	2	9	104

Municipality	Total Number of Households Having Animals					Total
	Cow/Ox	Buffalo	Goat	Pig	Poultry	
Bardibas	9	5	11	0	3	28
Lalbandi	10	13	23	3	3	52
Ishworpur	0	0	4	0	2	6
Harion	3	1	6	0	0	10
Bagmati	4	6	10	0	3	23
Chandrapur	5	5	16	0	0	26
Nijgadh	8	7	7	0	1	23
Jeetpursimara	3	1	2	0	1	7
Total HHs Having Animals	84	93	156	7	24	364
Total Animals	136	186	682	28	262	1293
Average Number of Animal per Household	2	2	4	4	11	4

Source: Household Survey 2022

Table 14: Detail information of Hat Bazaars along the KDP alignment

Municipality	Name of Settlement	Name of Hat Bazar	No. of Event per week	Supporting agency for Hat Bazar
GaneshmanCharnath	Godar	Godar	1	Hat Bazar Management Committee of each Bazar
	Birendra Bazar	Birendra Bazar	2	
Mithila	Dhalkebar	Dhalkebar	3	
	Badahari	Badahari	2	
Bardibas	Bardibas	Bardibas	2	
Lalbandi	Lalbandi	Lalbandi	2	
Harion	Harion	Harion	2	
Chandrapur	Mangalpur	Mangalpur	2	
Nijgadh	Nijgadh	Nijgadh	2	

Source: Field Survey/Focus Group Discussion 2022

Table 15: Ongoing and Future Projects near the KDP alignment

No	Project/Program	Line Department	Description of Project	Location	Situation
1	Mechi- Mahakali Electrified Railway Link Railway to Simra to Birganj. This Link Railways starts from Chocha (Near Nijgad)	Department of Railways, Nepal.	Runs parallel with the KDP Road section and crosses near Nijgad Bazar	Near Nijgad Bazar	Preparation of DPR within our section
2	Kathmandu- Birgunj Railway, Electrified Railway	Department of Railways, Nepal	Route not finalized but will be close to Nijgad area of KDP Project.	Starting from Birganj, goes to Simra and then turn towards east side that Nijgad and finally reach Kathmandu.	Feasibility Study
3	Kathmandu-Nijgad Fast track Road(Express Way)	Nepal Army	Joins KDP road near Nijgad	Near Nijgad (western side of Nijgad) and perpendicular to KDP.	Under construction
4	Nijgad Airport	Civil Aviation Authority of Nepal	Though supreme court has cancelled the project; it is still under study by modifying design/area	Near Nijgad (South-West side of Nijgad Town/Bazar)	Presently Rejected by Supreme court and alternatives under study.

N o	Project/Program	Line Departmen t	Description of Project	Location	Situation
5	Transmission Line Project: Dhalkebar to Loharpatti 132 KVA	Nepal Electricity Authority	Upgradation of Dhalkebar Substation	Dhalkebar	Under Desgin
	Hetauda- Dhalkebar-Duhabi 400 KV Transmission Line Project		New TL of 400 KV	Somewhat Parallel of KDP	Under Construction
	Labandhi-Saenpur 132 KVA transmission line		New TL of 132 KV	Joining KDP road at Lalbandhi	Design complete
	Nijgad-Harnaya 400 KVA transmission line		New TL of 400 KV	Joining KDP road at Njigadh	Under Design
6	Nawalpur-Sub Station		New Substation	Nearby KDP road at Nawalpur	Design Completed
7	Adjoining Roads and Major junctions	Department of Roads/Provincial and Local Roads	Major Junctions of Strategic roads joining KDP with district headquarters and major cities	Joining with KDP road	Operation and under Periodic Upgradation/maintenance

Source: Focus Group Discussion and KII/Field Survey 2022

Historical and Cultural Heritage within Project Area:

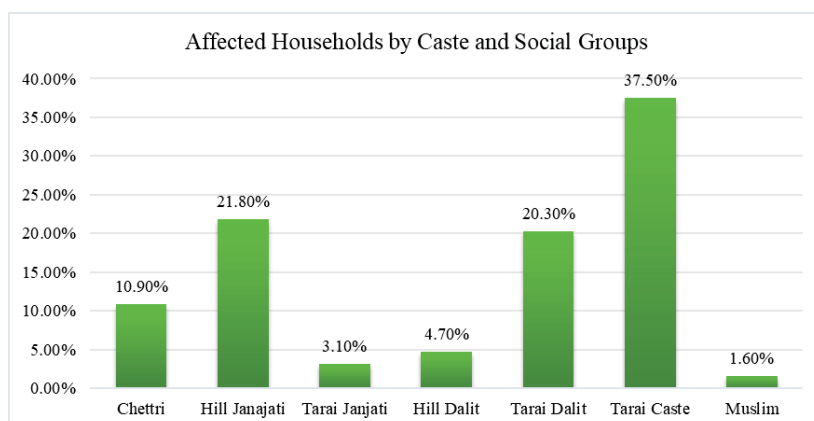
- Shiva Mandir (temple), Kali Mandir, Hanuman Mandir and Radhakrishna Mandir are main religious places in Dhalkebar area.
- Park situated at Dhalkebar chowk also has an aesthetic value. Since its construction during of Mahendra Highway, people have been visiting and taking photographs of the park.
- Kamalamai is the place where people come to take religious bath in Teej and Maghesakranti festivals from remote areas which can be taken as religious and tourism site.
- Bharat Tal of Bagmati Municipality which is in area of 121 bigha land has become a new tourist destination for boating, fishing and scenery /sight-seen for natural beauty.
- Horticulture center at Lalbandi is one of the sites which has aesthetic value and can attract tourist for beautiful scenario. Many people visit to buy fruits like mango and *leecchi* in the season.
- Bagmati River, Dam of Bagmati irrigation project, and park close to irrigation dam are the religious and attraction center for national and international tourists.
- Aurahi Baba Kuti of Mithila Municipality is also the religiously important place which can be utilized for internal tourism.
- Sagarnath Forest Project is important site for environmental perspectives in the project area.
- Different temples and other sites are helpful to promote internal tourism in small scale in every settlement as Madhesh province has rich culture and tradition.

**Annex 27: Data Tables for Socio-economic Status of Project Affected
Households**

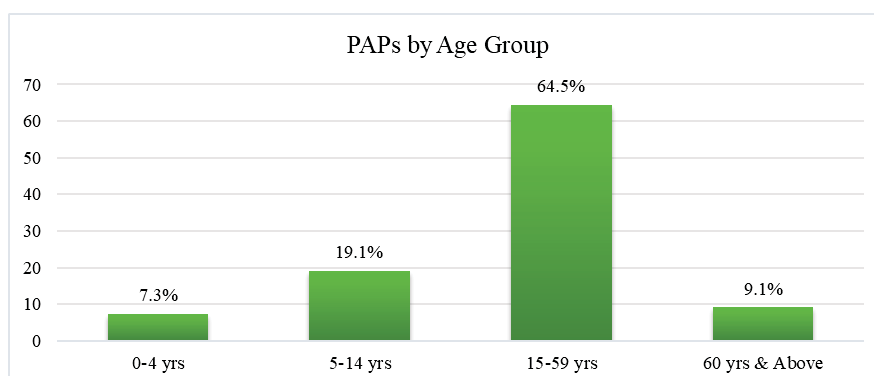
Table 1: Population Distribution of the project affected surveyed HHs

District	Municipality	Household	Population			Family Size
			Male	Female	Total	
Danusha	Ganeshman Charanath Municipality	17	59	52	111	6.5
	Dhanusadham Municipality	2	3	5	8	4
	Mithila Municipality	20	58	46	104	5.2
	Bardibas Municipality	7	21	15	36	5.1
Mahottari	Gaushala Municipality	6	15	8	23	2.9
	Ishworpur Municipality	3	4	7	11	3.7
Sarlahi	Hariwon Municipality	3	5	6	11	2.8
	Bagmati Municipality	3	8	6	14	3.5
Rautahat	Chandrapur Municipality	2	3	5	8	4
Bara	Nijgadh Municipality	1	1	3	4	4
Total		64	177	153	330	5.1
Percentage			53.6	46.4	100	

Source: Census Survey 2022

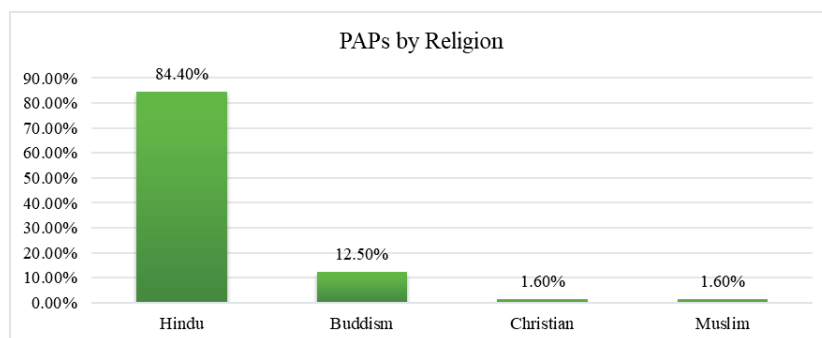


Source: Census Survey September, 2022

Figure 1: Distribution of project affected households by caste and social groups

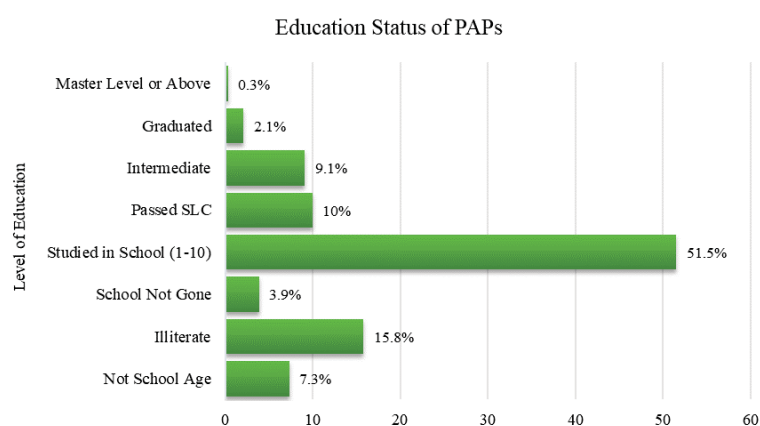
Source: Census Survey September, 2022

Figure 2: Distribution of the project affected Population by Aged group



Source: Census Survey September, 2022

Figure 3: Distribution of PAPs by Religion



Source: Census Survey September 2022

Figure 4: Educational Status

Table 2: Distribution of Occupation

District	Municipality	Agriculture	Trade and Business	Service	Student	Household work	Inactive (Child and	Labour	Foreign Employment	Pension	Total
Danusha	Ganeshman Charanath	5	23	3	9	14	7	7	8	1	77
	Dhanusadham Municipality		2	3	1						6
	Mithila Municipality	4	30		20	10	5	4	4		77
Mahottari	Bardibas Municipality		13	1	2	2	3	4	2		27
	Gaushala Municipality		12		1			4	1	1	19
Sarlahi	Ishworpur Municipality		3		3			2			8
	Hariyon Municipality		1	1		3		3			8
	Bagmati	2	3		2	3	2	1		1	14

	Municipality										
Rautahat	Chandrapur Municipality		2			2					4
Bara	Nijgadh Municipality		1				2				3
Total Population		11	90	8	38	34	19	25	15	3	243
Percentage		4.5	37.0	3.3	15.6	13.9	7.8	10.2	6.1	1.2	100

Source: Census Survey September, 2022

Table 3: Income level of the Households

Municipality	156532	156533 to 200000	200001 to 300000	300001 to 400000	400001 to 500000	>500001	Total
Ganeshman Charanath M.			4	4	2	7	17
Dhanusadham M.				1		1	2
Mithila M.	2	2	3	3	3	7	20
Bardibas M.	1	1	1	2	1	1	7
Gaushala M.	1		3	1	1		6
Ishworpur M.	1		1	1			3
Hariwon M.		1	1			1	3
Bagmati M.	1			2			3
Chandrapur M.			2				2
Nijgadh M.	1						1
Total	7	4	15	14	7	17	64

Source: Census Survey September, 2022

Annex 28: Proposed Road Improvement Infrastructures

List of Proposed Vehicular Underpass / Pedestrian Underpass

Sl. No.	Chainage (Center of Structure) m	Location	Proposed Opening Size for VUP (m)	Proposed Arrangement for PUP (m)	Width of structure (m)
1	243+640	Birendra Bazar	20m (W) x 5.5m (H)	8m (W)x 2.5m (H)	25.9
2	294+900	Lalbandi Bazar	20m (W) x 5.5m (H)	8m (W)x 2.5m (H)	25.9
3	299+545	Nawalpur Junction	20m (W) x 5.5m (H)	8m (W)x 2.5m (H)	25.9
4	304+190	Hariwan Bazar	20m (W) x 5.5m (H)	8m (W)x 2.5m (H)	25.9
5	307+050	Naya Road Junction	20m (W) x 5.5m (H)	8m (W)x 2.5m (H)	25.9

List of Major Junctions Proposed for Development

S.N.	Location	Chainage	Intersection Type
1	Goddar Bazar	239+740	Four Legged
2	Birendra Bazar-1	243+640	VUP+2PUP
3	Bhiman Chowk	246+250	Four Legged
4	Dharapani Chowk	247+650	Four Legged
5	Kanxi Bazar	248+730	Four Legged
6	Puspapur Chowk	252+050	Four Legged
7	Laalbhati Chowk	254+000	Four Legged
8	Shreepur Chowk	255+100	Four Legged
9	Dhalkebar	257+250	Roundabout
10	Dhalkebar 400KV Substation Road	258+180	Four Legged
11	Jamunibaas Bus Stop	259+800	Four Legged
12	Bardibas	267+100 to 267+300	At Grade
13	Ranigunj Chowk	291+300	Four Legged
14	Laalbandi Chowk-1	294+200	VUP+2PUP
15	Nawalpur Chowk	299+540	VUP+2PUP
16	Hariwan	303+000	Four Legged
17	Hariwan Bazar	304+190	VUP+2PUP
18	Naya Road	307+050	VUP+2PUP
19	Karmaiya Road Junction	311+900	Four Legged
20	Bagmati River Bridge	313+400	Four Legged
21	Chapur	326+560	At Grade
22	Nijgadh	345+000	Four Legged
23	Nijgadh-1	345+300	At Grade
24	Nijgadh-2	346+050	Four Legged
25	Fast Track Junction	348+600	Interchange
26	Dhansar	357+850	T-Junction
27	Pathlaiya Junction	367+000	Roundabout

In addition, the Trumpet Interchange is being separately designed at Merging of Kathmandu – Terai Fast Track (KTFT) with the Project Road near Nijgadh by the Consultant appointed by Nepal Army.

List of Proposed Bus Shelter with or without Bay

S. No.	Chainage (m)	Side of Road	Bus Bay/ Bus Shelter
1	238+200	Left	
2	239+600	Left	
3	239+900	Right	
4	243+300	Left	
5	243+350	Right	
6	246+350	Right	Bhiman chowk
7	246+200	Left	Bhiman chowk
8	247+550	Right	
9	247+750	Left	
10	253+800	Left	
11	256+900	Left	
12	257+900	Right	
13	259+750	Left	Jamunibas
14	259+950	Right	
15	261+050	Left	
16	264+900	Left	
17	265+100	Right	
18	266+850	Left	
19	267+400	Right	
20	271+350	Left	Jungle
21	279+300	Right	Jungle
22	279+950	Left	Jungle
23	283+200	Left	Jungle
24	290+000	Right	
25	291+200	Left	
26	291+450	Right	
27	294+800	Left	
28	295+050	Right	
29	299+450	Left	
30	299+700	Right	
31	304+100	Left	
32	304+300	Right	
33	307+000	Left	
34	307+200	Right	
35	308+000	Left	
36	309+300	Right	
37	312+800	Left	
38	313+600	Right	
39	314+600	Left	
40	326+500	Left	
41	326+700	Right	
42	339+100	Left	Jungle
43	345+500	Right	
44	345+700	Left	
45	353+150	Left	Jungle
46	354+000	Left	Jungle
47	357+800	Left	Jungle
48	366+500	Left	
49	366+600	Right	

List of Proposed Truck Lay byes

S.N.	Chainage	Sides	Reason for Truck-Layby
1	268+700	Left	Survey and Past trend of parking
2	324+300	Right	
3	327+800	Left	
4	347+800	Right	
5	366+300	Right	

Location of Service Roads

S.N.	Location	Full Width SR Chainage		Service Road Length (m)	Side of Service Road	Total Service Road Length (m)
		From	To			
1	Goddar	239+400	239+900	500	Both	1000
2	Birendra Bazzar	243+000	244+100	1100	Both	2200
3	Dharapaani	247+500	247+800	300	Both	600
4	Dhalkebar	256+440	258+300	1860	Both	3720
5	Bardibas	266+400	268+100	1700	Both	3400
6	Lalbandi	294+150	296+300	2150	Both	4300
7	Nawalpur	299+100	300+050	950	Both	1900
8	Harion	303+600	304+800	1200	Both	2400
9	Naya Road	306+600	307+500	900	Both	1800
10	Karmaiya	311+850	312+300	450	Both	900
11	Bagmati East	312+300	312+625	325	Left side	325
12		312+625	312+785	160	Both	320
13		312+785	313+450	665	Left side	665
14	Bagmati West	313+450	313+650	200	Both	400
15		313+650	313+870	220	Left side	665
16	Chapur	325+350	327+300	1950	Both	3900
17	Nijgadh	344+250	346+800	2550	Both	5100
18	Unasi bridge Left Approach	348+870	349+060	190	Both	380
19	Pathlaiya	366+300	366+687	587	Both	1174
			Total Length	17957		34704

List of Proposed Elephant Crossing Locations

S. N.	Topo Chainage (Bridge Center)	Existing Structure			Proposed Structure			
		Bridge Name/ Structure	Nos of Span (in no)	Span Arrangement/ Length (in m)	Total Length (in m)	No of Span (in no)	Span Arrangement (in m)	Total Length (in m)
1	329+752	Amu - 1	3	11.34	34.02	1	25	25
2	333+733	Lamaha	2	33	66	2	33	66
3	339+342	Dhansar	8	20.5	164	4	41	164
4	347+209	Bakeya	16	22.2	355.2	4	12.6+82.5+165+82.5+12.6	352
5	353+628	Terhakilo	4	11.4	45.6	1	35	35
6	357+227	Pasaha	5	33	165	5	33	165
7	360+869	Balganga	3	22	66	3	22	66
8	363+585	Dudhaura	2	45.25	90.5			

List of Proposed Medium Size Animal Crossings

S. No	Topo Chainage (Bridge Center)	Existing Bridge/ Causeway				Proposed Structure for MAC		
		Name of Bridge/ Structure Type	Nos of Span	Span Arrangement/ Length (in m)	Total Length (in m)	No of Span	Span Arrangement (in m)	Total Length (in m)
1	271+514	Gadhanta	5	12.5	62.5	3	25	75
2	274+925	Belgachhi (DhungreKhola)	4	9.5	38	2	20	40
3	275+630	Tuteshwor-1	2	9.5	19	1	20	20
4	277+266	Maraha	8	15+2*18+2*15+2*18+15	132	5	33	165
5	278+913	Dholan	4	9.5	38	1	38	38
6	282+758	Bankhe	6	15+4*18+15	102	3	33+36+33	102
7	285+721	Amuwa	2	9.5	19	1	25	25
8	292+703	Kalinjor - 2	3	22	66	3	22	66
9	317+698	Paurahi	3	22	66	3	22	66
10	322+553	Causeway	1	160	160	1	8	8

List of Proposed Tractor and Cart Crossing

S. N	Topo Chainage (Bridge Center)	Name of Bridge/ Structure	Existing Structure			Proposed Structure		
			No of Span	Span Arrangement/ Length	Total Length	No of Span	Span Arrangement/ Length	Total Length
1	237+022	Kamala	24	26.65	639.6	4	114+206+206+114	640
2	241+744	Charnath	15	21.4	321	15	21.4	321
3	245+228	Baluwa	7	16	112	4	32+32+32+16	112
4	252+478	Jalad	10	26.6	266	10	26.6	266
5	254+663	Aurahi	12	26.6	319.2	12	26.6	319.2
6	256+186	Basai	4	21.5+2*26.5+21.5	96	4	21.5+2*26.5+21.5	96
7	258+735	Sukhajor	2	22	44	2	22	44
8	260+921	Barahari	3	23.5+28+23.5	75	3	23.5+28+23.5	75
9	265+345	Ratu	6	38.5+4*33+38.5	209	6	38.5+4*33+38.5	209
10	268+310	Bhapsi	4	12.5	50	2	25	50
11	290+215	Phuljor	7	12.5	87.5	3	30	90
12	291+868	Kalinjor - 1	3	9.5	28.5	1	28.5	28.5
13	300+466	Lakhandei	12	15+4*18+2*15+4*18+15	204	6	33+36+2*33+36+33	204
14	307+753	Rai Bridge	4	9.5	38	1	38	38
15	313+121	Bagmati	11	33	363	4	99+165+99	363
16	314+170	Gairi	3	11.4	34.2	1	22	22
17	325+067	Chandi	5	33	165	5	33	165
18	343+584	Bhamara	1	33	33	1	33	33

Annex 29: List of Private Structures to be Compensated

S.N	Chainage	District	Name of owner	Type of Structure	Damage Area (sqf)
1	237+355	Dhanusha	Ram Sudhar Paswan	Mud mortar house with jasta	224
2	238+025	Dhanusha	Raj Kumar Paswan	Bamboo and jasta Tahara	90
3	238+060	Dhanusha	Bindi Yadav	Mud mortar Tahara	200
4	238+375	Dhanusha	Pradip Kumar Sah	Mud and hay house	350
5	238+375	Dhanusha	Pradip Kumar Sah	RCC	240
6	238+465	Dhanusha	Dhiraj Gautam	Bamboo and Zink Sheet wall	224
7	238+540	Dhanusha	Aasha mali bhandari	Mud and jasta house	225
8	238+550	Dhanusha	Sagari Devi Mahara	Bamboo and Zink Sheet	357
9	239+470	Dhanusha	Mina devi		80
10	251+560	Dhanusha	Santi devi mahato	Mud house	180
11	251+865	Dhanusha	Rudra Bahadur Ale Magar	Mud and Stone wall with Zink and Slate	220
12	26.8787223 , 86.1305675 7	Dhanusha	Bina Kumari Pasawan	Bamboo and Zink Sheet	216
13	26.9280555 , 85.9632945 7	Dhanusha	Bijay Mahato	Mud and Stone wall with Zink and Slate	104
14	26.8871599 , 86.1158101 5	Dhanusha	Ranjita Devi Saha	Bamboo and Zink Sheet wall	160
15	26.8953973 , 86.0733852 7	Dhanusha	Shanti Devi Haluwai	Bamboo and Zink Sheet wall	160
16	26.9054836 , 86.0415914 2	Dhanusha	Indu Kumari	Bamboo and Zink Sheet wall	286
17	26.9143973 , 86.0039615 6	Dhanusha	Lakhan Sah	Mud and Stone wall with Zink and Slate	128
18	26.9146615 , 86.0013840 7	Dhanusha	Bijay Mahato Koiri	Mud and Stone wall with Zink and Slate	100
19	26.9292373 , 85.9561047 8	Dhanusha	Bijay Shah	Bamboo and Zink Sheet wall	320
20	26.9304145 , 85.9541467 9	Dhanusha	Birendra Yadav	RCC	120
21	26.8786938 , 86.1305758 9	Dhanusha	Ramchandra Sah	Bamboo and Zink Sheet wall	325
22	26.8871212 , 86.1156002 1	Dhanusha	Sunil Kumar Kalwar	Bamboo and Zink Sheet wall	280
23	26.8877353 , 86.1152160 6	Dhanusha	Kishor Kumar Shah	Stone and Mud with cement plaster in outer part	260
24	26.8786983 , 86.1306333	Dhanusha	Kamal Mahato	Stone and Mud with cement plaster in outer part	144
25	26.8797117 , 86.1269706 7	Dhanusha	Santosh Mahato	Mud and Stone wall with Hatch and Zink roof	660
26	26.88746, 86.11534	Dhanusha	Gulab Devi Thakur	Bamboo and Zink Sheet wall	450
27	26.887435, 86.11552	Dhanusha	Pappu Purwe	RCC	240

S.N	Chainage	District	Name of owner	Type of Structure	Damage Area (sqf)
28	252+135	Dhanusha	Ganga Sah	Mud and Stone wall with Zink and Slate	625
29	252+135	Dhanusha	Ganga Sah	Stone and Mud with cement plaster in outer part	300
30	253+935	Dhanusha	Mandira Lama	Mud and Stone wall with Zink and Slate	140
31	254+030	Dhanusha	Bittu jha	Bamboo house	180
32	255+335	Dhanusha	suv narayan sah	Mud and Stone wall with Hatch and Zink roof	432
33	256+090	Dhanusha	urmila mahato	Mud and Stone wall with Zink and Slate	216
34	26.9280555 , 85.9632945 7	Dhanusha	Binay Mahato	Mud and Stone wall with Hatch and Zink roof	100
35	256+105	Dhanusha	jagjeevan mahato	Mud and Stone wall with Hatch and Zink roof	216
36	256+920	Dhanusha	raneshwor sha	Brick wall with jasta hotel	160
37	257+020	Dhanusha	Manti Devi	Mud and Stone wall with Zink and Slate	150
38	257+135	Dhanusha	ram avtar sha	Mud and Stone wall with Hatch and Zink roof	494
39	257+350	Dhanusha	Binamaya Moktan	Bamboo and Zink Sheet wall	169
40	257+430	Dhanusha	Laxman	Mud and Stone wall with Hatch and Zink roof	880
41	258+200	Dhanusha	Bechan Sah	Bamboo and Zink Sheet wall	216
42	258+605	Dhanusha	Jinati Devi Mahato	Bamboo and Zink Sheet wall	216
43	259+875	Dhanusha	Birendra Sah	Mud and Stone wall with Hatch and Zink roof	140
44	271+305	mahottari	Dipak chhetri	Mud and Stone wall with Hatch and Zink roof	150
45	271+335	mahottari	Bhoj raj basnet	Mud and Stone wall with Hatch and Zink roof	374
46	271+340	mahottari	Rekha Devi chaudhari	Bamboo and Zink Sheet wall	322
47	271+360	mahottari	Nawa raj Basnet	Mud and Stone wall with Hatch and Zink roof	645
48	275+270	mahottari	sarwan Kumar mahato	Mud and Stone wall with Zink and Slate	210
49	275+290	mahottari	mukunda mahato	Mud and Stone wall with Hatch and Zink roof	180
50	275+300	mahottari	Sunila Mahato	Mud and Stone wall with Hatch and Zink roof	144
51	279+910	mahottari	Prakash Sarki	Mud and Stone wall with Hatch and Zink roof	247
52	279+930	mahottari	Akabar Tamang	Bamboo and Zink Sheet wall	400
53	279+935	mahottari	Suraj Kumar Ghising	Mud and Stone wall with Zink and Slate	195
54	279+945	mahottari	Yogendra Prasad Sah	Mud and Stone wall with Hatch and Zink roof	672
55	279+965	mahottari	Shyam Kumari Bal	Bamboo and Zink Sheet wall	560
56	283+195	Sarlahi	Kumari Lama	Mud and Stone wall with Hatch and Zink roof	864
57	289+950	Sarlahi	Sanu Maya Thapa	Mud and Stone wall with Zink and Slate	638
58	301+260	Sarlahi	Lamu Maya Syangtan	Mud and Stone wall with Hatch and Zink roof	420
59	303+545	Sarlahi	Sambhu malli	Mud and Stone wall with Zink and Slate	651
60	308+490	Sarlahi	Surya Bahadur Balampaki	Mud and Stone wall with Hatch and Zink roof	150
61	312+660	Sarlahi	nen kumari mahato	Mud and Stone wall with Zink and Slate	224
62	313+885	Rautahat	lalbabu shah	Mud and Stone wall with Hatch and Zink roof	300
63	313+285	Rautahat	sabita pariyar	Bamboo and Zink Sheet wall	864
64	27.1316333 , 85.4818583	Rautahat	Sonam Tamang	Mud and Stone wall with Hatch and Zink roof	425
65	325+640	Rautahat	Suresh Kami/ khursed ali	Bamboo and Zink Sheet wall	414
66	346+015	Bara	Indira thakuri	Brick wall with Zink roof	411
				Total	

Annex 30: List of Community and Public Structures to be Relocated

S.N	Chainage	District Name	Type of Structure	Affected area (sqf)
1	239+500, 239+515	Dhanusha	RCC Bus stand , Godar bazar	120
2	243+150	Dhanusha	RCC Bus stop	100
3	6	Dhanusha	RCC Golaghar	210
4	246+180	Dhanusha	Bamboo waiting shed	144
5	247+530	Dhanusha	RCC Bus stop	90
6	256+575	Dhanusha	RCC Bus stand	210
7	256+915	Dhanusha	RCC Bus stand	100
8	257+000	Dhanusha	RCC Bus stand	600
9	261+020	Dhanusha	RCC Bus stand	150
10	261+060	Dhanusha	Bamboo Bus stand	250
11	262+350	Dhanusha	RCC Bus stand	300
12	263+665	Dhanusha	RCC Bus stand	460
13	263+785	Dhanusha	Concrete Waiting shed	300
14	263+825	Dhanusha	Iron Waiting shed	60
15	263+895	Dhanusha	Iron Waiting shed	60
16	264+730	Dhanusha	RCC Waiting shed	200
17	271+360	Mohattari	Waiting shed wooden columns and covering	130
18	271+390	Mohattari	Wooden Waiting shed	140
19	275+230	Mohattari	Dharmasala with jasta covering and wooden columns	320
20	283+195	Sarlahi	Waiting shed wooden roofs and posts)	105
21	289+930	Sarlahi	Waiting shed(hay roof)	210
22	289+960	Sarlahi	RCC Waiting shed	90
23	290+070	Sarlahi	RCC Waiting shed	110
24	290+575	Sarlahi	RCC Waiting shed	120
25	290+650	Sarlahi	Waiting shed	160
26	291+175	Sarlahi	RCC Waiting shed	100
27	291+300	Sarlahi	Waiting shed	110
28	291+415	Sarlahi	RCC Waiting shed	90
29	294+615	Sarlahi	Waiting shed	80
30	295+055	Sarlahi	Waiting shed	90
31	296+075	Sarlahi	Waiting shed concrete columns and roof	130
32	300+800	Sarlahi	Mortar mixed Waiting shed with jasta covering	210
33	301+585	Sarlahi	Waiting shed with brickwall and jasta covering	160
34	302+505	Sarlahi	Waiting Shed	215
35	302+945	Sarlahi	Waiting Shed with wooden bars and jasta covering	210
36	303+245	Sarlahi	Concrete Waiting Shed and jasta covering	210
37	303+380	Sarlahi	RCC Waiting Shed	210
38	304+505	Sarlahi	RCC Waiting Shed	60
39	305+235	Sarlahi	RCC Tree with Waiting Shed	130
40	306+070	Sarlahi	RCC Waiting Shed	215
41	306+930	Sarlahi	RCC Waiting Shed	110
42	307+095	Sarlahi	RCC Waiting Shed	90
43	307+960	Sarlahi	RCC Waiting Shed	130
44	308+475	Sarlahi	RCC Waiting Shed	200
45	308+750	Sarlahi	RCC Waiting Shed	300
46	309+230	Sarlahi	RCC Waiting Shed	215
47	309+360	Sarlahi	RCC Waiting Shed	105
48	309+395	Sarlahi	RCC Waiting Shed	120
49	310+350	Sarlahi	RCC Waiting Shed	160
50	310+380	Sarlahi	RCC Waiting Shed	180
51	311+110	Sarlahi	Rcc Waiting Shed	205
52	311+880	Sarlahi	Rcc Waiting Shed	180
53	312+360	Sarlahi	Rcc Waiting Shed	105
54	312+505	Sarlahi	Waiting Shed	105
55	313+875	Rautahat	Waiting Shed	180
56	313+410	Rautahat	Waiting Shed	200
57	313+850	Rautahat	Waiting Shed	200
58	314+560	Rautahat	Waiting Shed	160
59	315+055	Rautahat	Waiting Shed	175
60	315+410	Rautahat	Waiting Shed	210

S.N	Chainage	District Name	Type of Structure	Affected area (sqf)
61	325+440	Rautahat	Waiting Shed	130
62	326+445	Rautahat	Waiting Shed	230
63	327+600	Rautahat	Waiting Shed	120
64	344+430	Bara	Waiting Shed	130
65	345+065	Bara	Waiting Shed	230
66	345+370	Bara	Wooden Waiting Shed	210
67	345+595	Bara	Rcc Waiting Shed	210
68	345+930	Bara	Rcc Waiting Shed	120
69	346+335	Bara	Rcc Waiting Shed	300
		69		11969

S.N	Chainage	District Name	Type of Structure	Within FW
1.	238+025, 238+055	Dhanusha	RCC Temple	No
2.	238+170	Dhanusha	RCC Shiva mandir	Yes
3.	239+565	Dhanusha	RCC Hanuman mandir	Yes
4.	240+385	Dhanusha	RCC Temple	Yes
5.	240+390	Dhanusha	RCC Temple	No
6.	254+070	Dhanusha	RCC Temple	No
7.	255+295	Dhanusha	RCC Temple and pipal tree	No
8.	257+075	Dhanusha	RCC Temple	No
9.	257+110	Dhanusha	RCC Temple	Yes
10.	261+005	Dhanusha	Brick structure Temple	Yes
11.	261+015	Dhanusha	Brick Temple	No
12.	261+040	Dhanusha	RCC Temple	No
13.	262+365	Dhanusha	RCC Temple and pipal chautara	No
14.	264+335	Dhanusha	RCC Temple with pipal tree	No
15.	266+900	Mohattari	RCC Temple	Yes
16.	275+265	Mohattari	RCC Temple	No
17.	290+575	Sarlahi	RCC Temple	Yes
18.	295+320	Sarlahi	Temple with pipal chautara	No
19.	295+325	Sarlahi	RCC Temple with pond	No
20.	295+710	Sarlahi	RCC Temple	Yes
21.	299+210	Sarlahi	Pipal chautara	No
22.	299+280	Sarlahi	RCC Temple	Yes
23.	301+250	Sarlahi	Temple	Yes
24.	301+555	Sarlahi	Temple with pipal tree	No
25.	301+645	Sarlahi	RCC Temple	No
26.	303+440	Sarlahi	RCC Temple	Yes
27.	304+170	Sarlahi	RCC constructed Krishna Temple	Yes
28.	304+840	Sarlahi	RCC Temple	No
29.	305+900	Sarlahi	RCC Temple	No
31.	306+990	Sarlahi	RCC Tree with temple	Yes
32.	308+605	Sarlahi	RCC Temple	Yes
33.	308+955	Sarlahi	RCC Temple	Yes
34.	326+985	Rautahat	Durga Temple Verandah	Yes
35.	327+010	Rautahat	Hanuman Temple	Yes
36.	327+545	Rautahat	Shiv Temple	Yes
37.	346+980	Bara	Rcc Durga Temple	No
		36		Total

S.N	Chainage	District Name	Type of Structure
1	239+665	Dhanusha	Well
2	239+685	Dhanusha	Brick masonry Well
3	243+130	Dhanusha	Well
4	244+785	Dhanusha	Well
5	258+020	Dhanusha	Well
6	258+265	Dhanusha	Well
7	260+950	Dhanusha	Well
8	271+325	Mohattari	Cement concrete Public well

S.N	Chainage	District Name	Type of Structure	Affected Area (sqf)
1	238+025	Dhanusha	Pipal Chautara	410
2	238+170	Dhanusha	Pipal Tree	above 2500
3	238+410	Dhanusha	Pipal Tree	above 2500
4	240+355	Dhanusha	Pipal Tree	below 2500
5	246+280	Dhanusha	Brick work Chautara	260
6	248+720	Dhanusha	Pipal Tree	300
7	248+730	Dhanusha	Pipal Tree	above 2500
8	255+075	Dhanusha	Bar Pipal Tree	680
9	255+090	Dhanusha	Bamboo Tea Stall	above 2500
10	255+100	Dhanusha	Bar Tree	above 2500
11	255+295	Dhanusha	RCC Temple and pipal tree	below 2500
12	256+395	Dhanusha	Pipal tree	below 2500
13	258+160	Dhanusha	Chautara	210
14	259+820	Dhanusha	Pipal Chautara	300
15	260+990	Dhanusha	Baar tree	210
16	261+010	Dhanusha	Pipal tree	210
17	261+515	Dhanusha	Pipal tree	410
18	263+900	Dhanusha	sami chautara	300
19	263+910	Dhanusha	Temple and pipal tree	above 2500
20	264+150	Dhanusha	Pipal tree	below 2500
21	264+185	Dhanusha	Stone masonry chautara	130
22	264+825	Dhanusha	Stone pitched Pipal Chautara	210
23	266+510	Mohattari	Pipal Chautara	130
24	266+510	Mohattari	Pipal Chautara	130
25	266+735	Mohattari	Pipal tree	210
26	266+745	Mohattari	Bar tree	130
27	266+805	Mohattari	Pipal tree	below 2500
28	266+810	Mohattari	Bar tree	below 2500
29	266+910	Mohattari	Bar tree	above 2500
30	266+915	Mohattari	Pipal tree	below 2500
31	267+285	Mohattari	Pipal Chautara	410
32	267+365	Mohattari	Pipal Chautara	130
33	267+385	Mohattari	Stone Mortar and Bar tree	140
34	289+920	Sarlahi	Pipal Chautara	120
35	289+965	Sarlahi	Cement masonry Bar tree Chautara	210
36	293+710	Sarlahi	Police station, pipal tree with chautara	130
37	294+220	Sarlahi	Waiting shed with pipal tree	210
38	295+320	Sarlahi	Temple with pipal chautara	210
39	295+715	Sarlahi	Chautara with concrete base	210
40	299+190	Sarlahi	Pipal Chautara	300
41	299+545	Sarlahi	Chautara	1100
42	300+760	Sarlahi	Pipal Chautara	270
43	301+255	Sarlahi	Pipal Chautara	210
44	301+620	Sarlahi	Temple with pipal tree	above 2500
45	303+950	Sarlahi	Cement Cocrete Chautara	410
46	303+620	Sarlahi	Chautara	410
47	304+175	Sarlahi	Chautara	above 2500
48	304+210	Sarlahi	Brick masonry Chautara with bar Tree	210
49	304+815	Sarlahi	Brick masonry Chautara	210
50	304+815	Sarlahi	Brick masonry Chautara	210
51	305+200	Sarlahi	Tree	410
52	305+230	Sarlahi	Brick masonry Tree	130

S.N	Chainage	District Name	Type of Structure	Affected Area (sqf)
53	306+940	Sarlahi	Brick masonry Chautara	120
54	307+680	Sarlahi	Brick masonry Pipal Chautara	210
55	308+585	Sarlahi	RCC Chautara	410
56	310+360	Sarlahi	RCC chautara with Tree	130
57	310+385	Sarlahi	Rcc Chautara and Bar Tree	130
58	311+095	Sarlahi	RCC Pipal Chautara	210
59	312+280	Sarlahi	RCC Chautara	670
60	313+855	Sarlahi	Bar Tree	410
61	312+895	Sarlahi	Tree	210
62	312+900	Sarlahi	Bar Tree	210
63	313+275	Rautahat	Chautara	410
64	313+380	Rautahat	Chautara	130
65	313+430	Rautahat	Tree with ticket counter	below 2500
66	313+530	Rautahat	Chautara	130
67	325+115	Rautahat	Tree	130
68	326+545	Rautahat	Park	900
69	326+915	Rautahat	Bar Chautara	below 2500
70	327+600	Rautahat	tree	130
71	344+465	Bara	Chautara	300
72	346+005	Bara	Brick masonry Chautara	410
73	365+965	Bara	Bar tree Chautara	410

Annex 31: Environmental Management Plan

Table: Environmental Management Plan (General and Road)

S.N	Beneficial Impacts Enhancement Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
Construction Phase								
Socio-economic and Cultural Environment								
1	Employment Generation	Prioritize local human resources for labor-based technology research and non-labor, especially local poor, at-risk and socially disadvantaged people (ethnic, Dalit) and women without gender-based employment	Construction Sites	Consultation with Local level for identifying such worker	Continuously during construction	Contractor	To be managed by Contractor, no extra cost required	DCID/DOR
2	Skill Development	Facilitate opportunities for locals/ labor hands-on skills gain in civil works; Locals involved in the construction activities, bioengineering and others	Construction Sites	On the job learning,	Continuously during construction	Contractor	To be managed by Contractor, no extra cost required	DCID/DOR
3	Increase in Income of Local People	No Augmentation Measures Proposed						
4	Income from Rented Land and Houses	No Augmentation Measures Proposed						
5	Outside Exposure and Women Empowerment	Marginalized and female workers will be promoted during the work phase	Construction Sites	Consultation with Local level for identifying such worker	Continuously during construction	Contractor	To be managed by Contractor, no extra cost required	DCID/DOR
Operation Phase								
Socio-economic and Cultural Environment								
1	Improved Road Infrastructure	Regular maintenance of road	Throughout the road alignment	Under Periodic Maintenance of DOR	Continuously during operation	DRO	To be allocated regularly by DRO	DRO/DOR
2	Improvement of Trade	Local government to facilitate local people in increasing local products	Settlement along the road alignment	Coordination with local government	Continuously during operation	Local government	To be managed by local government	Respective Municipalities / DOR
3	Tourism Development	Regular maintenance of road	Throughout the road alignment	Under Periodic Maintenance of DOR	Continuously during operation	DRO	To be allocated regularly by DRO	DRO/DOR

S.N	Beneficial Impacts Enhancement Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
4	Appreciation of Land Value	No Augmentation Measures Proposed						
Physical Environment								
1	Carbon Emission Savings/Reduction in GHG emission in Transportation	Periodic maintenance of Pavement and structures, Recommendations for fuel efficient machinery, Carbon offset by planting trees, prevent activities that increase GHG emissions.	Throughout the road alignment	Under Periodic Maintenance of DOR	Continuously during operation	DRO	To be allocated regularly by DRO	DRO/DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
Construction Phase								
Physical Environment								
1	Reduce impact due to Change in Land use	Confining vegetation clearance only within formation width or only where necessary, Maintenance of greenery along road embankment	Throughout the road alignment	Using man power and machinery equipment, under supervision of Environmental Expert	Continuously during construction period.	Contractor	Included in BOQ 18,205,646.55 for avenue tree plantation and maintaining greenery along median	DCID/ DOR
2	Collecting and Preserving Productive Top Soil	Collecting and preserving the topsoil that is to be disturbed during site clearance for construction and later reuse it during turfing/bioengineering along road embankment and maintaining greenery along median and site restoration	Agricultural and forest section of Road Alignment	Using man power and machinery equipment, under supervision of Environmental Expert	During Site Clearance	Contractor	1,000,000	DCID/ DOR
3	Air pollution Control	Construction materials will be transported in well covered vehicles,	Within construction area	Using man power and machinery equipment,	Throughout the	Contractor	Embedded in BOQ,	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Covering the construction stockpile with a tarpaulin sheet, Sprinkling water on working area at-least two times a day during dry season, Stockpiled sand and soil will be wetted before loading specially during windy condition, Regular check, maintenance of vehicles, machinery and equipment operating on site; Contractors will be encouraged to use emission test passed vehicles for construction works;		under supervision of Environmental Expert	construction Period		To be managed by Contractor	
4	Noise and Vibration Control	Discourage the use of horns in settlement areas, schools, hospitals and forest areas; Strict adherence to day working hours if nearby is sensitive receptors, settlement areas and forest area by the contractor; Instruction to be given to construction truck drivers to switch off vehicle engines while offloading and on loading the construction materials; Construction machinery and vehicles will be kept in good condition with proper routine maintenance; Compulsory use of wearing ear muffler by worker in high noise exposure areas; Heavy equipment operators will be instructed to operate the heavy equipment with care;	Major settlement area and Dense Forest Areas	Manage as proposed under supervision of Environmental Expert	Throughout the construction Period	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
5	Water pollution Control	An instruction will be given to all equipment operators, drivers and warehouse personnel given on immediate response for spill contamination and eventual clean up; Prohibition on mixing of soil, solid waste and other waste directly into the river. Sanitary facility will be provided with provision of portable chemical toilets with a connection to a	Labour camps, construction camps and construction sites as mentioned in section 2.2.7	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	Throughout the construction Period	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		sewer if possible or separate septic tank to prohibit open defecation and disposal of waste, sludge and other waste directly into water bodies; Campsite will be equipped with bathing and washing areas to avoid washing clothes, vehicles, dishes near water bodies						
6	Solid waste generation	Garbage generated from construction of labour camps will be segregated at the source and the degradable waste will be managed in its own pit and non-biodegradable waste and construction waste will be collected and stored in a separate garbage collection centre; Recyclable and reusable portion of solid waste is stored in a separate storage area and sold to scrap vendors; Non-biodegradable waste will be transported to the nearest landfill site in coordination with the local government; Burning of the garbage will be strictly prohibited.	Labour camps, construction camps and construction sites as mentioned in section 2.2.7	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	Throughout the construction Period	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
7	River Bank Instability	Excavation works will be halted during rainy season. During road improvement, only required vegetation will be cleared and all high embankment, eroded bare slopes will be re-vegetated. Road embankment protections and bridge and river side slope protection will be done by applying bio-engineering technique (Grass plantation, Brush layering, and Tree/Shrub plantation) with combination of civil structures. Further, soil erosion will be stabilized by applying engineering as well as bioengineering techniques.	Bridge and culvert construction sites	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	Throughout the construction Period	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Excess spoil material during excavation of bridges will stockpile in designated location for filling purposes, River water flow will not be disturbed during construction						
8	Operation of Quarries and Borrow Pits	Obtain approval from concern authorities of government and private land owners for quarry sites Water spray system will be developed to check the flying of dust from quarrying and crushing activities. Proper storage space at the extraction sites will be established. Storing or piling the sediments nearby the road or paths or any agricultural lands will not be done. Restore the site after use	Quarry sites as mentioned in section 2.2.6, table 2-8	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	Throughout the construction Period	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
9	Spoil Generation	Most of the cut material will be used as fill material for embankment construction backfilling for retaining structures and road material will be used as the base or subbase.	Excavation areas and Road embankments	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During construction period mainly during excavation	Contractor	1,000,000	DCID/ DOR
10	Stockpiling and transportation of construction materials	Stockpiling will be covered by a tarpaulin sheet specially during the rainy and windy season; Proper drainage will be arranged around the stockpile area; Floodways, natural drainage paths, water bodies will be avoided for stockpiling the construction materials, Stockpiling of the construction aggregates will be done above the high flood level of the river;	Stockpiling yards as mentioned in section 2.2.7	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During construction period mainly during excavation	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Stockpiling of the cement and other materials in shaded structures above the ground on wooden plank to avoid the moisture contact within the construction camp will be made; Restore the site after use						
11	Operation of Crushing Plants, Batching Plants and Asphalt Plants	Obtain permission from local stakeholders, Municipality, DCC as appropriate. Stone crushing equipment / cement batching plants will be fitted with dust control devices and operated as per Manufacturer's Specification. Locate plant site away from population centers, drinking water sources, cultivated lands and water bodies. Water sprinkle will be done to crusher running materials during operation to minimize dust, make siltation pond to manage waste water, The plant will be operated during day time only. Restore the site after use.	Construction Camps as mentioned in section 2.2.7	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During construction period mainly during excavation	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Chemical Environment								
1	Impacts due to Hazardous and Toxic Chemicals	Construction workers will be oriented on safety rules for proper handling, storage and disposal of hazardous substances like fuel and bitumen; Hazardous or toxic substances will be in leak-proof containers labelled with details of composition, properties and handling information; Chemicals and oil will be stored in a well-ventilated room away from water bodies. The storage area will be paved covered, paved with interceptor drains, and oil/ water separator; Collected fuels and contaminated materials will be re- use, stored and disposed safely; Fire extinguisher will be installed in such chemical storage area and training will be provided to related staff for its use.	Stockpiling yards, construction camps and construction sites	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
2	Use of Bitumen	Fuel wood and tires shall be strictly prohibited for heating bitumen; Heating of bitumen near water bodies and disposal of bitumen in water bodies will be avoided; Automated asphalt plants will be used, Bitumen drums will be stored in a secure place within the construction and camp site and at least 500m from any water bodies. Bitumen mixing plant should have inbuilt mechanisms for the absorption of gases. Compulsory use of PPEs by the operator while operating bitumen distributor If bitumen is accidentally spread over then the area will be immediately cleared; Bitumen related works will not be carried out in rainy days and windy days.	Hot Mix Plants, Bitumen heating sites and construction sites	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During Construction (while blacktopping the road)	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Biological Environment								
1	Loss of Vegetation/Trees	Compensatory Plantation for felled trees in the ration 1:10 and care for 5 years (around 281,200 trees will be planted) Avoid or minimize clearing of shrubs and bushes as far as possible; Contractor will prevent illegal felling of trees by labor force and who's ever found guilty will also be liable for penalties; The Project will closely coordinate with division forest office, community forest group and its outlet to control illegal trade of forest resources;	Plantation in areas as proposed by DFO Forest sections along the road alignment	Manage as proposed under supervision of Environmental Expert and coordination with DFO and respective community forest users' groups	During site clearance	Contractor	183,751,596.98 for felling of trees and 389,510,482.76 for compensatory plantation	DCID/ DOR
2	Use of Forest Products by Construction Workers	Contractor will provide alternative fuel like LPG to discourage the use of firewoods. Contractor will prevent illegal cutting of forest wood by labor force and who's ever found guilty will also be liable for penalties;	Forest Sections along the road alignment	Manage as proposed under supervision of Environmental Expert and coordination with DFO and respective	During site clearance	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		The Project will closely coordinate with forest office, community/collaborative forest and its outlet to control illegal trade of forest resources; No workers will be allowed to enter the forest area and will be confined only within ROW of KDP road that too during construction time only. The contractor should carefully monitor the activities of the workers who are doing their work in the forest area; Smoking will be prohibited while working in areas adjoining to forest patches Project officials, labor force, contractors, consultants and other stakeholders will abide the forest act and its regulation.		community forest users' groups				
3	Forest Fires	Smoking will be restricted in the construction site near forest area; Burning of waste will be restricted; Labor camp will not be established near or within the forest premises; Firefighting equipment (fire extinguishers) will be provided at the camps site and construction sites to control if fire break out and spread of fire; Awareness on forest fire management will be provided to the construction crews in coordination with CFUG, DFO. Implement effective anti-fire strategies as per BMP	Forest Sections along the road alignment	Manage as proposed under supervision of Environmental Expert and coordination with DFO and respective community forest users' groups	During site clearance	Contractor	Embedded in BOQ, To be managed by Contractor 390,000 for implementing anti-fire strategies	DCID/ DOR
4	Loss of Protected Species of Flora	Compensatory plantation will be given priority as per conservation (Such as Sal, Satisal and other indigenous species).	Plantation in areas as proposed by DFO Forest sections along the	Manage as proposed under supervision of Environmental Expert and coordination with DFO and respective community forest users' groups	During site clearance and Compensatory Plantation	Contractor	Included in compensatory plantation cost	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
			road alignment					
5	Disturbance to wildlife and wildlife movement	For reducing the impact in wildlife movement across KDP road alignment, 8 bridges will be modified as underpasses for elephants and 9 bridges and one culvert will be modified as underpass for medium size animals to meet the statutory requirement and same has been addressed in design. All these underpasses will be assisted with guiding fences and annual maintenance of river/stream bed level and banks for facilitating animal movement. Arboreal mammal canopy bridges at six locations (Ch: 364+200, Ch: 357+500, Ch: 349+200, Ch: 340+900, Ch: 336+400 and Ch: 330+700) will be installed.	Proposed bridge and culverts	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During Construction (while constructing bridges and culverts)	Contractor	2,987,865,368.38 for underpasses, 85737600.00 for noise barriers in 8 locations proposed for large animal underpass, 900,000 for installation of canopy bridges at 6 locations all included in BOQ, 4,158,000 for wildlife monitoring through camera traps	DCID/ DOR
6	Hunting and poaching of wildlife	Preparation of code of conduct and proper implementation among the construction crew about these issues, instructions and orientation to workers; Awareness programs about the importance of conservation as well as legal punishment to the construction crew and locals in coordination with CFUG, DFO.	Forest sections along the road alignment (mainly road adjoining to Parsa	Manage as proposed under supervision of Environmental Expert and coordination with DFO and respective community forest users' groups	During site clearance and Compensatory Plantation	Contractor	Embedded in BOQ, To be managed by Contractor 8,541,000 for setting up rapid response wildlife	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		None of the workers will be allowed to enter inside the forest.	National Park)				management unit and 300,000 for training and capacity building	
7	Impact in Aquatic Habitat	Excavation work, construction of bridges and culverts will be carried out in dry season; Construction waste or material will not be disposed in the water bodies or in valley; The construction camps will be located sufficiently away (at least 100 m distance) from the water bodies; Open field defecation will be avoided by providing sanitation facilities at construction camps; Activities like washing clothes, washing vehicles near water bodies will be avoided; Careful attention will be taken to erosion control techniques near watercourses	Rivers crossing road (mainly Kamala, Janga Pul-1, Kalinjar – 2, Dumdume, Chapani, Rai Bridge, Bagmati, Lamaha, Kali Khola, Bakeya and Pasaha)	Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Socio-Economic and Cultural Environment								
1	Acquisition of Private Structures	Cash compensation will be provided to affected households	Location with affected structures	Through formation of CDC	Just before construction	DCID	31,952,628 allocated in RAP prepared for the project for Compensation to Project Affected Private Structures, Displacement and Shifting Assistance,	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
							Livelihood Support Trainings	
2	Impact on Community and Private Structures	All affected structures will be relocated	Location with affected structures	Coordinating affected communities and local government, DWSS, NEA etc.	Just before construction	DCID	100,056,054.40 for rehabilitation of community structures, 80,000,000 for rehabilitation of water supply pipelines, shifting electric poles and relocation of water supply pipelines along with other utilities are Embedded in BOQ	DCID/ DOR
3	Conflicts and social tension, spread of communicable diseases	Awareness campaign will be implemented at the beginning of the construction phase to provide awareness to workers about social behaviors of local peoples, raising awareness and implementing a Code of Conduct for the workers. Adopt a Worker Code of Conduct that establishes how workers should interact with local communities. Construction camps will be built in the designated areas, located away from the local settlements. Community awareness programs on construction-related hazards, including awareness programs in schools, construction activities such as excavation,	Labour Camps as mentioned in section 2.2.7 and adjoining settlements	Coordinating with local people and workers Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor 500,000 for awareness to workers and local people	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		bridge foundation particularly and the areas, may pose safety risks to the nearby people. The awareness campaign with local people and the construction workforce, including the spreading of sexually transmitted diseases such as HIV/AIDS. COVID-19 protocol measures will be adopted. Promote health seeking behaviors. Strengthening and collaboration with the local health facility and onsite primary health care facility or surveillances Regular monitoring of camp sites and construction sites will be done by the contractor and proponent Adopt a Grievance Mechanism to allow local residents to file complaints.						
4	Operation of Labour Camps	Site selection criteria will be followed (away from settlement, school, health posts, hospital); To the extent possible, existing houses which are in good living conditions and not affected by the earthquakes will be used for lodging; Orientation on waste management to the construction staff and labors. Separate waste bins (for waste segregation) will be provided at labor camps, construction camps, bio-degradable wastes will be converted into compost manure, recyclable wastes will be sold to scrap vendors and remaining wastes will be disposed to the landfill site of local government with coordination to the municipality; Sanitation and hygiene of the labor camp will be maintained; Sanitation facilities (toilets, septic tank) will be provided and open defecation will be prohibited. Separate toilets will be made for male and female workers. Bathrooms will also be established in the campsite;	Labour Camps as mentioned in section 2.2.7	Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Bed and bedding will be provided to the workers. Separate lodging arrangements will be made for the husband and wife among the labors. Net will be provided within the campsite for the protection against mosquitoes and insects. Safe drinking water, gas for cooking, proper ventilation, communication and lighting in labor site will be managed by the contractor. For the means of recreation contractor will provide means of entertainment like caromboards, ludo etc. First aid facilities will be made available at camp sites. In addition to this, collaboration with health/sub-health posts for major injury cases including a contingency plan for emergency cases will be prepared; Fire extinguisher will be installed and training for using fire extinguisher will be provided to the staffs;						
5	Child Labour, Forced Labour and Trafficking in Persons	Community awareness and sensitization with emphasis to women and young girls. Training and awareness regarding trafficking Coordination with organizations working on anti-trafficking within project area Vigilance from law enforcement authority and compliance with the labour laws. Display of hoarding boards about anti trafficking Strictly avoid use of child labors below 16 years old as the construction works is categorized as risky jobs; Discourage the use of forced and bonded labors.	Labour Camps as mentioned in section 2.2.7 and adjoining settlements	Coordinating with local people and workers By providing training and awareness	During Construction	DCID	500,000 for community awareness and sensitization	DCID/ DOR
6	Gender discrimination and caste discrimination	The project will make provision in the contract document to provide equal wages despite of gender for same nature of work.	Labour Camps as mentioned in section 2.2.7,	Coordinating with local people and workers	During Construction	DCID	To be managed by contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		The contractor and proponent will provide awareness on gender discrimination, sexual harassment, gender-based violence, sexual exploitation in labor camp. Contractor will monitor the camp area and activity of the labor. Establishing the well-functioning Grievance Hearing Mechanism to address the issues of Gender Based Violence (GBV), Sexual Exploitation and Sexual Harassment.	construction sites and adjoining settlements	By providing training and awareness				
7	Occupational health and safety	Compliance of OSH Guidelines of World Bank, DOR and ILO Life and accidental insurance of labors and staffs Orientation and awareness about the OSH to the construction crew Preparation and approval of Emergency Preparedness and Response Plan (EPRP) by the contractor. Provision of well-equipped first aid boxes at the construction sites. Provision of first aid training to the staffs. Compulsory uses of PPEs in the construction area by construction crews and staffs. Provision of proper safety signs at construction site to avoid fatal accidents with moving and stationary equipment;	Construction Camps and Construction Sites	Manage as proposed under supervision of Health and Safety Expert	During Construction	DCID	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
8	Impacts on community health and hygiene	Sprinkle water to control dust at least two times a day; Schedule and inform the construction activities timely to the sensitive receptor (health posts, schools, temples); Campsite with provision of sanitation facilities, waste disposal sites, washing areas, etc.;	Labour Camps, Construction Camps and Construction Sites	Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor Awareness program to be arranged from above	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Awareness program on the spread of diseases due to haphazard waste disposal by the proponent.						
9	Traffic Management	For Community Safety: Preparation and approval of Traffic Management Plan (TMP) by the contractor prior to the construction works. Safety signs like Men at Work, Construction works in Progress etc. and use of caution tape in risky areas to avoid the traffic accidents. Well maintained Traffic diversions will be provided in necessary places. Speed limit will be defined in sensitive receptors area (like school, health post). Monitoring and maintenance of the construction vehicle will be done in regular basis. Awareness to the drivers of construction vehicles and equipment about the speed limits and traffic rules by the contractor. For Workers Safety: Establishment of work zones to separate workers from traffic, Closure of lanes and diversion of traffic to the remaining lanes if the road is wide enough (e.g.re-routing of all traffic to one side of a multi-lane highway), Where worker exposure to traffic cannot be completely eliminated, use of protective barriers to shield worker from traffic barrels) to delineate the work zone, Regulation of traffic flow by warning lights, use of flaggers if possible, Install warning sign such as reduction of maximum vehicle speeds in work zones,	Construction Camps and Construction Sites	Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		Training of workers in safety issues related to their activities, safe practices for work at night and in other low-visibility conditions, including use of high-visibility safety apparel and proper illumination for the work space.						
Operation Phase								
Physical Environment								
1	Air and Noise pollution	Air pollution by dust will be controlled with provision of paved shoulders and regular maintenance especially in the sensitive/built up areas. Periodic and routine monitoring and maintenance of road, bridges and culverts will be done by the contractor during DLP and PBM period; Awareness to the local communities will be given on maintaining greenery along the road corridor by planting fodder, fuel wood and fruit trees including flowering plants in coordination with DFO.	Major settlement area	Adopting measures in design and construction and DLP and PBM period	Construction and Operation phase	Contractor Awareness to be organized by Project	Embedded in BOQ, To be managed by Contractor Awareness to be organized by Project	DCID/ DOR
2	Water pollution	Soil, sludge, and other wastes will generate from maintenance of road, drain and cross drainage. Directly disposal into water bodies will be avoided by using designated spoil disposal locations; Prohibition of activities likes washings - near water bodies.	Water bodies within the road alignment	Adopting measures during road maintenance	Continuously during Operation phase	DRO	To be managed under maintenance cost	DRO/ DOR
3	Increase in Road Accidents	Provision of road safety and pedestrian- friendly design features in the road design like, bus bays, traffic signs, speed limits signboards, especially at school and settlements; Provision of reflecting paint on level surface, reflectorizing glass beads on bituminous surface, road marker; Provision of road maintenance sign at construction site to avoid fatal accidents with moving and	Throughout the road alignment	Adopting Road Safety measures in design and constructing road accordingly, raising awareness among road users and traffic police	During construction and just after construction	Contractor for constructing road safety measures, DCID for awareness just after construction	Embedded in BOQ, To be managed by Contractor Awareness to be organized by Project	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		stationary construction equipment and construction material during the road maintenance period; Provision of road safety awareness campaigns to communities by proponent along road corridor targeting pedestrians, drivers, parents, school children, professional drivers by the proponent; Regular monitoring and maintenance of drainage system through-out the alignment will be done; Monitoring and supervision along the road corridor by the local government and traffic police.						
4	Road Embankment Instability and Blockage of Cross Drainage causing Inundation and Flooding	Routine and recurrent maintenance of roads like cleaning of cross drainage, drains and additional embankment protection structures will be done along with road maintenance. Soil conservation activities through plantation will be promoted in the right of way and embankment slopes. The size of the drainage structures is designed to accommodate increasing volumes of water. All pipe culverts will be replaced by box culvert to minimize flooding, inundation, and maintain natural flow. Deposition of sediment will be regularly removed and river channelization will be done in case of heavy sedimentation.	Throughout the road alignment	Proposed structures to be adopted in design and constructed accordingly, Other measures to be done as routine maintenance during operation	Structures to be constructed during construction and maintenance during operation	Construction of structures through contractor, Routine maintenance through DRO	Structure construction cost embedded in BOQ, others to be managed under maintenance cost	DCID/ DOR DRO
5	Impacts from Climate Change	All the drainage and cross drainage structures have been designed considering increased precipitation due to climate change (10% incremental) Further, during road design phase sustainable pavement design and management has been adopted to prevent early cracks and bleeding. Local people will be encouraged to maintain road side greenery to reduce climate change impacts.	Throughout the road alignment	Proposed structures to be adopted in design and constructed accordingly	During Construction	Construction of structures through contractor	Structure construction cost embedded in BOQ	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
Biological Environment								
1	Pressure in Forest Resources	To make the local people aware of the existing laws and policies related to road rights and forest and biodiversity. Encourage and support local community for controlling illegal harvesting of forest resources. Traffic signs and board with a message on “Importance of forest” will be placed near the forest boundaries. Awareness will be provided to locals for plantation and maintenance of the forest resources to address the climate change effect and they can earn money from it in coordination with DFO; Awareness will be provided to the locals that intensive cattle grazing will destroy the forest in coordination with DFO;	Settlements near the forest	Through awareness	Regularly during operation	DRO in coordination with DFO and CFUGs	To be managed by DRO	DRO/ DOR
2	Disturbance to Wildlife Movement, Loss of Wildlife	Regular cleaning and maintenance of all wildlife crossing structures (modified bridges and culverts for animal crossings) to reduce the chances of blocking and facilitating animal movement. Workshops for awareness-raising on forest fire, wildlife protection such as prevention of waste dumping from vehicles, speed limit, and potential collision with animals. Regular inspection and maintenance of water sources/pond, fencing installed in the forest areas. Install cameras for regular monitoring of wildlife crossing; Monitoring of wetland enhancement activities, improve movement corridors, reduce sound and unwanted structures etc.	Forest sections along the road alignment	Regular maintenance of road, inspection and monitoring, awareness to local people	Regularly during operation	DRO in coordination with DFO and CFUGs	To be managed by DRO	DRO/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
Socio-economic and Cultural Environment								
1	Controlling Ribbon Settlement along the Road and RoW encroachment	Project/DRO will conduct awareness to local about ROW encroachment. With coordination of local government, enforcement of law discourages such settlements adjacent to the road, plantation of trees. Combined efforts of various governmental agencies and substantial public information and awareness activities. Enforcement mechanisms need to be in place that can carefully tackle the problem of removing encroachers while taking into full account.	Settlements along the road alignment	Coordinating with different stakeholders	Regularly during operation	DRO in coordination with Local Government	To be managed by DRO	DRO/ DOR
2	Maintaining Road Safety	So as to avoid accidents and mishaps, proper road safety has been considered in design and road will be constructed accordingly. For this, establishment of traffic signals, speed control mechanisms such as zebra cross, speed breakers, speed limits etc. at crowded places have been proposed. GPS tracking and CC cameras for speed control for public buses plying the highway. Vehicle maintenance and inspection. Control loud horns to avoid sound pollution. Training related to first-aid in the case of accident. Road safety awareness trainings to general public. Capacity enhancement for traffic police and locals.	Throughout the road alignment	Road safety measures to be adopted in design and constructed accordingly, Other measures to be done during operation through traffic police	Construction of road safety measures during construction phase and others during operation	Construction of road safety measures by contractor Implementation by Traffic Police	Structure construction cost embedded in BOQ, others to be managed by Traffic Police	DRO/DOR DRO/ Traffic Police

Table: Environmental Management Plan (Bridges)

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
Construction Phase								
Physical Environment								
1	River diversion for creating working space and for foundation works leading to change in river regime and affecting aquatic ecology	Avoid totally channelizing natural flow from one side of river to another, construct temporary vented causeway and spread water flow without major obstruction to natural course, create localized island for foundation work or any appropriate approaches which could adverse damaging affects to aquatic ecology, remove of such river diversion before monsoon and reinstate the natural water course and similarly after completion of works	Perennial Rivers (mainly Kamala, Janga Pul-1, Kalinjar – 2, Dumdume, Chapani, Rai Bridge, Bagmati, Lamaha, Kali Khola, Bakeya and Pasaha)	Using man power and machinery equipment, under supervision of Environmental Expert	Continuously during construction period.	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
2	Dredge during foundation works can lead to changing river regime and affecting aquatic ecology	Dredging will be confined to design with minimum damages to existing river regime and aquatic life, disposed materials will not divert the water flow within the river bed causing uncontrolled deposition and scouring, spoil material will be deposited in designated sites and detail disposal plan will be prepared by Contractor before commencing of bridge foundation works	Perennial Rivers	Using man power and machinery equipment, under supervision of Environmental Expert	Continuously during construction period.	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
3	Sediment load in river water causing impacts on the river and its biota by increased turbidity	Immediate clearance of the river path in case of blockade, Minimal cut and fill approach, Safe pumping out of mud slurry.	All Bridges, especially perennial ones	Using man power and machinery equipment, under supervision of Environmental Expert	Continuously during construction period.	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
4	Spoil/Muck generation during excavation of foundation for bridges	Balancing cut and fill approach; Excavated materials will be used for filling and river training works.	All Bridges	Using man power and machinery equipment, under supervision of	During excavation of foundation	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
				Environmental Expert				
5	Spoil/Muck generation, emission of dust during dismantling of bridges	Bridges will be dismantled by making wet so as to reduce dust. All the dismantled parts will be collected and stored and reutilized in filling.	Bridges to be dismantled	Using man power and machinery equipment, under supervision of Environmental Expert	During dismantling of bridges	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
6	Bank instability and chances of bank failure	Due consideration of existing slope and minimal excavation Construction of river training works with gabion to minimize bank cutting	All Bridges	Using man power and machinery equipment, under supervision of Environmental Expert	During excavation of foundation	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
7	Mixing of pollutants like turbidity, fecal contamination, oil and grease and other inorganic and organic wastes resulting pollution of water body	Disposal of the soil, sludge and the other wastes directly into the water body will be avoided, Prohibition of the open urination and defecation by workers. Restriction of the vehicle washing in the river and Safe storage and the wise use of the chemicals.	All Bridges (mainly perennial ones)	Using man power and machinery equipment, under supervision of Environmental Expert	During excavation of foundation	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Biological Environment								
1	Disturbance to wildlife and wildlife movement	For reducing the impact in wildlife movement across KDP road alignment, 8 bridges (Amu – 1, Lamaha, Dhansar, Bakeya, Terhakilo, Pasaha, Balganga and Dudhaura) will be modified as underpasses for elephants and 9 bridges (Gadhanta, Belgachhi, Tuteshwor-1, Maraha, Dholan, Bankhe, Amuwa, Kalinjor – 2 and Paurahi) and one culvert at chainage 322+553 will be modified as underpass for medium size animals and same has been addressed in design.	Proposed bridge and culverts	Manage as proposed under supervision of Environmental Expert Using man power and machinery where required	During Construction (while constructing bridges and culverts)	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
		All these underpasses will be assisted with guiding fences and annual maintenance of river/stream bed level and banks for facilitating animal movement.						
2	Impact in Aquatic Habitat	Excavation work, construction of bridges and culverts will be carried out in dry season; Construction waste or material will not be disposed in the water bodies or in valley; The construction camps will be located sufficiently away (at least 100 m distance) from the water bodies; Open field defecation will be avoided by providing sanitation facilities at construction camps; Activities like washing clothes, washing vehicles near water bodies will be avoided; Careful attention will be taken to erosion control techniques near watercourses	Rivers crossing road (mainly perennial ones)	Manage as proposed under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Socio-Economic and Cultural Environment								
1	Impact in access to banks and temples of religious rivers – mainly Kamala and Bagmati	Assess to banks and temples will be maintained	Kamala and Bagmati river banks	Using man power and machinery equipment, under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
2	Traffic Management	In case of dismantling bridges and new bridges to be constructed, bridges will be dismantled only after construction of new bridges so that no extra diversion is required.	Bridges to be dismantled	Using man power and machinery equipment, under supervision of Environmental Expert	During Construction	Contractor	Embedded in BOQ, To be managed by Contractor	DCID/ DOR
Operation Phase								
Physical Environment								
1	Bank instability and cutting; Foundation	Bank stabilization using appropriate structure and bioengineering measures;	All bridges	Proposed structures to be adopted in	Structures to be	Construction of	Structure construction	DCID/ DOR DRO

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
	excavation by changed river flow; Flood and safety of bridge	Enforcement of protective provision through Road and Bridge User Committee. River training works		design and constructed accordingly, other measures to be done as routine maintenance during operation	construction during construction and maintenance during operation	structures through contractor, Routine maintenance through DRO	cost embedded in BOQ, others to be managed under maintenance cost	
2	Blockage of Drainage and Cross Drainage causing Inundation and Flooding	Cleaning of cross drainage, drains and additional embankment protection structures will be done along with road maintenance. The size of the drainage structures is designed to accommodate increasing volumes of water. All pipe culverts will be replaced by box culvert to minimize flooding, inundation, and maintain natural flow. Deposition of sediment will be regularly removed and river channelization will be done in case of heavy sedimentation.	Throughout the road alignment	Proposed structures to be adopted in design and constructed accordingly, Other measures to be done as routine maintenance during operation	Structures to be construction during construction and maintenance during operation	Construction of structures through contractor, Routine maintenance through DRO	Structure construction cost embedded in BOQ, others to be managed under maintenance cost	DCID/ DOR DRO
3	Impacts from Climate Change	All the drainage and cross drainage structures have been designed considering increased precipitation due to climate change (10% incremental)	Drainage and cross drainage structures	Proposed structures to be adopted in design and constructed accordingly	During construction	Construction of structures through contractor	Structure construction cost embedded in BOQ	DCID/ DOR
Biological Environment								
1	Disturbance to Wildlife Movement, Loss of Wildlife	Regular cleaning and maintenance of all wildlife crossing structures (modified bridges and culverts for animal crossings) to reduce the chances of blocking and facilitating animal movement.	Bridges used as underpasses	Manage as proposed under supervision of Environmental Expert	Regularly during operation	DRO in coordination with DFO and CFUGs	To be managed by DRO	DRO/ DOR
Socio-economic and Cultural Environment								
1	Bridges within urban sections can be areas of	Installation of hoarding boards with message of prohibition of throwing wastes and other awareness regarding waste management	Bridges within urban section	Installing hoarding boards	During and/or just after completion of	Contractor	Embedded in BOQ,	DCID/ DOR

S.N	Adverse Impacts Mitigation Activities	What to do	Where to do	How to do	When to do	Who will do	Human Resource, Estimated Budget and Time	Monitoring and Evaluation
	throwing wastes to river bodies				construction works		To be managed by Contractor	
2	Chances of road accidents in the turnings of the Bridges and Loss of life and property	Awareness by signboards and traffic signs at critical places & bridge sites; Safety trainings to drivers; Adopting 3Es: Engineering, Enforcement and Education.	Bridges mainly at Badahari, Hariwon and Bagmati	Proposed road safety structures to be adopted in design and constructed accordingly	During construction	Constructi on of structures through contractor	Structure construction cost embedded in BOQ	DCID/ DOR

**Annex 32: List of Educational and Health Institutions adjoining to Road
Alignment**

District	Settlement	Educational Institutions	Health Institutions
Siraha	Bandipur	Oxford English Boarding School	Sarpadansa Upachar Kendra
		Aryan Adarsha Pathsala	
Dhanusha	Godar	Shree Janata Jaiswal H.S. School	
		Shubha Oxford Boading School	
	Birendra Bazar	Navasanti Bidhya Ashram H.S. School	Hari Om Health Care Pvt. Ltd.
	Dharapani	Creative Secondary English School	Panchmukhi Nagarik Hospital Pvt. Ltd.
		Dhrapani High School	
		Supersense Secondary English School	Health Post
	Pushpalpur		Pushpalpur Health Care Pvt. Ltd.
	Dhalkebar	Binayak English Boarding H. S. School	
		Janak International Academy	
		Children's Garden Secondary E. B. School	
		Mahendra Secondary School, Dhalkebar	
		Shatkona Montessori Pre-School, Dhalkebar	
	Januniya	Osis Academy School, Jamuniya	Om Laxmi Health Care Center
		Jamunibas Basic School	Lalgadh Model Hospital Pvt. Ltd.
	Badahari	New Horizon English Boarding School	Lalgadh Leprosy Hospital Service Center
		Nava Kshitiz Secondary Boarding School	
		Shree Adarsha Rastriya Madhyamik	
Mahottari	Bardibas	Janata Higher Secondary School	
		Shree Deurali Secondary School	DNB Medicare Center
		Ecverest Boarding School	Bal Maitri Hospital
		Bardibas Boarding School	
		Nobel Academy	
		Sapta Kabindra Shiksyas Niketan	
		Nava Kshitiz College, Bardibas	
Sarlahi	Lalbandi	Community Welfair English School	
		Rockvale Secondary Academy	
		Everest Secondary Academy	
		Oxford Academy	
		Janajyoti Bahumukhi Campus, Lalbandi	
	Nawalpur	Shree Navajeewan Higher Secondary School	Nawalpur Sarpadansa Upachar Kendra
		Peace Zone English Boarding School	Sarlahi Lifeline Health Center
	Harion	Chaturbhujeshwor Janata Multiple Campus	Sasapur Health Post
		Mahadev Janta Higher S.School	Harion Health Post
		Samata School	Model Hospital Harion Pvt. Ltd. Harion Hospital Pvt.Ltd.
	Nayaroad	Gyan Jyoti Awashiya Vidhyalaya	Dayanti Hospital Private Ltd.
	Bagmati (East)	Elite English Boarding School	
Rautahat	Bagmati (West)	Namuna Primary Boarding School	Nunthar Hospital
	Chndrapur	Shree Bashanta Panchami Lower Secondary School	Eye and Ear Care Center, Chapin
		Moonlight Academy Higher Secondary School	
		Shree Durga Secondary School	Chandrapur Hospital Pvt. Ltd.
Bara	Nijgadh	Vidhya Sagar E. Boarding School	Primary Health Center
		Shree Bakaiya Thakur Madhyamik Bidhyalaya	
		Gaurishanker Campus, Nijgadh	
		Shree Gauri Sanker Higher Secondary School	Tilganga Eye Hospital, Nijgadh
		Bidhya Sagar English Boarding School	
	Pathlaiya	Sheer Nepal Higher Secondary School	Central Medical Store
Total Numbers		47	23

Annex 33: Traffic Management Plan

Traffic Management Plan

For efficient traffic management, construction zones will be divided into different components like: Traffic Control Zone, Transition Zone, Working Zone, Terminal Transition Zone etc. The guiding principles for safety in road construction zones are to:

1. Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.
2. Warn the road user clearly and sufficiently in advance;
3. Provide safe and clearly marked lanes for guiding the road users;
4. Provide safe and clearly marked buffer and work zones; and
5. Provide adequate measures that control driver behaviour through construction zones.

Traffic Control Zone: It includes all those areas of carriageway in advance of the actual work site which are required for advanced warning of the hazard as well as safety zones, the transition zones and the working zone itself.

The Traffic Control Zone can be further divided into three components, which are the Advance Warning Zone, the Transition Zone, and Working Zone. All construction zones will have a working zone, which is flanked by a Transition Zone for each direction of approaching traffic, and an advance warning zone will precede these in turn Advance Warning Zone.

The "advance warning zone", is the area to warn the road user of the approaching hazard and to prepare them for the change in driving conditions. It is essential for traffic control in the construction zone. It will provide information on:

1. The presence of the hazard through the 'Men at Work' sign, accompanied by the distance to the hazard;
2. Any changes affecting traffic arrangements (such as a reduction in the number of lanes and/or in the speed limit) within the traffic control zone;
3. Extent of the hazard (for example; the length of restriction); and for general information;
4. The type of hazard.

The advance warning zone is also where the reduction in speed of vehicles should be notified. The drivers will be advised to reduce their speed so as to achieve the desired approach speed before reaching the approach transition zone. The information in this zone is conveyed through a series of traffic signs along the length of the zone.

Transition Zone: The transition zone is the area in which the traffic is guided into the altered traffic flow pattern around the working zone. This is one of the most crucial zones as far as traffic safety aspects are concerned because most of the movements involved are merging / turning in nature. The transition zone has two components: The Approach Transition Zone and Terminal Transition Zone.

The initial part of the transition zone called Approach Transition Zone should further reduce the approach speed of vehicles and channelize them into the narrower and /or restricted number of lanes, if this is necessary.

At other construction zones, it may be necessary to divert traffic away from the original carriageway and the design of the temporary road geometry through the transition zone should consider the following factors:

1. The turning radius of the longest vehicle that generally uses the road should be the ruling radius for curves;
2. Where changes in vertical profile are required these should be shallow enough to allow safe passage of animal drawn vehicles (if these are present in significant numbers);
3. The zone should have a good drainage to avoid any stagnation of water on the road surface.
4. Sources of dust should be minimized. This is not only essential for good visibility but also for proper maintenance of signs and barricades in the zone.

The traffic is taken across the transition zone mostly with the help of signs, barricades, channelizes and pavement markings.

Working Zone: The working zone is the zone where actual construction is being undertaken. It contains the work area and a working space, as well as lateral and longitudinal buffer zones to create the safety zone to protect both the workforce from wayward vehicles entering the area of actual work and the road users from construction equipment areas.

Speeds should continue to be controlled in this zone because of the close proximity of moving construction plant and site operatives. Further, there may also be a difference in the elevation of the road and the diverted path in the zone.

The path of the traffic must be very clearly delineated through the traffic control zone to avoid vehicle intruding into the work area. Delineators and channelizers discussed further below must be used effectively for this purpose. Where the work site uses machinery with revolving booms like cranes or excavators the intrusion of moving parts must be considered when determining the lateral clearances for the buffer or safety zone.

Terminal Transition Zone: The Terminal Transition Zone (TTZ) provides a short distance to clear the work area and to return to normal traffic lanes. It extends from the downstream end of the work area to the sign indicating the end of works.

A downstream or closing taper may be placed in the TTZ. It may be useful in smoothening of the flow of traffic. However, it may not be advisable when the trucks carrying material move into the work area by reversing from the downstream end of working zone. The length of the downstream taper may be 25-30 m.

Other Aspects: The distance between two traffic control zones should be such that the flow of traffic can return to normal stream between them. Separation should permit fast moving traffic to overtake slow vehicles so that platoons can be dissipated and traffic normalized. These distances could vary from 2 Km on urban roads to 5 Km or 10 Km on rural roads according to gradients, traffic levels or traffic operation schemes.

Traffic Control Devices: Traffic control devices are the equipment and installations over and on the road, which individually and collectively perform the following tasks:

1. Warn the road user;
2. Inform the road user;
3. Guide the road user;
4. Modify road user behaviour;
5. Protect the road user and the vehicle;
6. Ensure safe passage to the road user; and
7. Provide a safe working area.

The primary traffic control devices used in work zones are signs, delineators, barricades, cones, Pylons, pavement markings and flashing lights.

A detailed Traffic Control Plan will be prepared and submitted before commencement of the work.