NATURAL RESOURCES & ENVIRONMENT SECRETARIAT

Application Form for Environmental License for Projects under Category 2 and 3

SINEIA F-02

<table>
<tr><th colspan="8">SINEIA FORM F-02: INFORMATION ABOUT THE PROJECT AND THE ENVIRONMENTAL SURROUNDINGS</th></tr>
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<tr><td rowspan="3">1</td><td>1.1 NAME OF THE PROJECT</td><td colspan="6">TOURISM CORRIDOR PROJECT OF HONDURAS: TRANCHE SAN PEDRO SULA – EL PROGRESO</td></tr>
<tr><td>1.2 ACTIVITY BASED ON THE CATEGORIZATION TABLE</td><td colspan="6">CONSTRUCTION OF ROADS, HIGHWAYS, RAILWAYS</td></tr>
<tr><td>1.3 PROJECT AMOUNT (LEMPIRAS)</td><td colspan="6">L. 123,500,602.12 (exchange rate on September 3, 2013 = 20.47)
B/. 6,033,248.76</td></tr>
<tr><td rowspan="8">2</td><td>2.1 EXACT LOCATION</td><td colspan="6">The project initiates just after passing the toll booth in the City of San Pedro Sula, Department of Cortés and ends upon arrival at Bridge La Democracia in the Municipality of El Progreso, Department of Yoro .</td></tr>
<tr><td>2.2 MUNICIPALITY</td><td colspan="6">San Pedro Sula, El Progreso</td></tr>
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<tr><td colspan="2">UTM(NAD 27 CENTRAL)</td><td colspan="5">WGS84 (DEGREES, MINUTES AND SECONDS)</td></tr>
<tr><td>X=</td><td>Y=</td><td colspan="2">Latitude= 15°27’46.95”</td><td>Longitude= 87°57’37.32”</td><td colspan="2">Start of the tranche passing the toll booth in the city of San Pedro Sula</td></tr>
<tr><td>X=</td><td>Y=</td><td colspan="2">Latitude= 15°24’14.44”</td><td>Longitude= 87°49’14.09”</td><td colspan="2">End of the tranche on bridge La Democracia</td></tr>
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<tr><td>RESIDENTIAL</td><td>COMMERCIAL</td><td>INDUSTRIAL</td><td>AGRICULTURAL</td><td>FORESTRY</td><td colspan="2">OTHERS</td></tr>
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<tr><td colspan="2">3.1 TELEPHONE NUMBER</td><td colspan="3">3.2 FAX NUMBER</td><td colspan="2">3.3 EMAIL</td></tr>
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<tr><th colspan="8">II.- OWNER'S GENERAL INFORMATION, LEGAL REPRESENTATIVE</th></tr>
<tr><td>4</td><td colspan="5">4.1 OWNER’S NAME, LEGAL REPRESENTATIVE OR CORPORATE NAME (INDIVIDUAL OR LEGAL ENTITY)</td><td colspan="2">4.2 NATIONAL TAX REGISTRY NUMBER OR PASSPORT</td></tr>
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	TRANSPORTATION, CIVIL WORKS AND HOUSING SECRETARIAT (HEREINAFTER CALLED SOPTRAVI)			
	4.3 DOMICILE: AVENUE/STREET/NUMBER		Barrio La Bolsa Frente al Hospital y Clínicas San Jorge	
	4.4 MUNICIPALITY		Comayagüela M.D.C	
	4.5 DEPARTMENT		Francisco Morazán	
	4.6 Telephone numbers			4.9 EMAIL
	Fixed	Mobile Phone	Fax	
	2225-1771			Ugasoptravi1@gmail.com uga@soptravi.gob.hn

	III.- LEGAL REPRESENTATIVE GENERAL INFORMATION			
5	5.1 NAME OF THE LEGAL REPRESENTATIVE			Attorney Carlos Arlinton Velásquez Jimenez
	5.2 DOMICILE			5.3 Honduran Bar Association Number
	Residencial Plaza, Boque A, casa N°8			10744
	5.4 TELEPHONE NUMBERS			5.5 EMAIL
	FIXED	MOBILE	FAX	
	2225-5445	9934-4515		velasquesjimenez@yahoo.com

	IV.- CLASSIFICATION (ACCORDING TO THE CATEGORIZATION TABLE)		
6	6.1 SECTOR	6.2 SUB-SECTOR	6.3 CATEGORY
	Urban Development (Diverse Real Estate and Infrastructure)	Urban Development (Diverse Real Estate and Infrastructure)	Construction
	6.4 DIVISION	6.5 ACTIVITY NAME	6.6 DESCRIPTION
	Construction	Construction of roads, highways, railways	In the selective rehabilitation and maintenance of the existing road between San Pedro Sula and El Progreso, the following activities will be included, maintenance of bridges, cleaning gutters and drainage, road sign installation, replacement of slabs wherever necessary, exploitation and transportation of material from borrow pits. It also includes the construction of a toll booth with an administrative offices and a space for the National

				Police. In the Project construction stage, plans exist for the rehabilitation of the central segment of Bridge La Democracia, over the Ulua River.
	6.7 CIIU CODE	6.8 NOTES:		
	SC			

V. INFORMATION REGARDING THE ENVIRONMENTAL SERVICE PROVIDER				
	7.1 Name	7.2 Registration Number	7.3 Classification	7.4 Authorized until
7	Ingeniería y Ambiente de Sula	RE-0017-2003	Environmental Analysis and Control in General Matters	December 2014

VI.- TECHNICAL DESCRIPTION OF THE PROJECT

The Honduran State, through the National Commission For The Public-Private Partnerships (hereinafter called COALIANZA), and the Secretary of State in the Transportation, Civil Works and Housing Secretariat (SOPTRAVI) under the Law on Promotion of Public - Private Partnerships, established and awarded by International Competitive Tender, the Construction and Operation of the Tourism Corridor of Honduras. The successful bidder of this process is to the Atlantic Highway Consortium, SA de CV (Consorcio Autopistas del Atlántico, S. A. de C.V.), comprising the GRODCO, S IN C.A. (Colombian companies), and PRODECON, SA de CV, (Honduran companies).

Project Components of the Tourism Corridor of Honduras

The Tourism Corridor of Honduras, includes the following components:

1. The design and construction of the selective rehabilitation and maintenance undertakings of the highway's tranches connecting: San Pedro Sula – El Progreso (17.50 km); La Barca – El Progreso (36.50 km); Camalote –Tela (62.66 km) and Tela – La Ceiba (97.00 km).
2. The expansion to four lanes, two on each way of circulation of the tranches that connect: La Barca – El Progreso de 36.50 km and Camalote – Tela 62.66 km
3. The bypass of the city of El Progreso, this is a completely new construction: The bypass of El Progreso 5.94 km
4. The rehabilitation of La Democracia Bridge and Construction of a new four-lane bridge in Santa Rita.

Objectives of the Project - Tourism Corridor of Honduras

The objectives of the Concession of the Tourism Corridor Project of Honduras are:

1. To reduce travel times by providing a roadway surface in optimum condition and signposted, complying national and international standards.
2. To duplicate lanes and separate traffic directions between La Barca-El Progreso-Tela.
3. To introduce continuous routine maintenance on road.
4. To provide equipment and personnel for security and user assistance on the road.
5. The public-private partnership will introduce a positive flow of resources to the Honduran State, for the construction of infrastructure, job creation, without the high initial investment required for infrastructure. These investments, which are

made possible by the private sector, will be amortized as the project generates benefits, concomitantly with the corresponding contributions to the tax authority.

Environmental Technical Document

The tranche object of this Environmental Study includes the Tranche San Pedro Sula – El Progreso with a 17.5 km length and the rehabilitation of bridge La Democracia.

This way a detail of the activities to be performed is described for the Tranche San Pedro Sula- El Progreso.

VI.1 PLANNING STAGE

At this stage the following activities will be implemented:

- Dissemination of the project through the Citizen Participation Plan. The awarded project is presented in the media and outreach meetings are started with all stakeholders, including civil society, institutions and the community in general.
- Preparation of the technical environmental documents and Application of the Environmental License. Parallel to the statement and the proposal in hand we elaborate the corresponding Environmental technical documents, according to the indicated instrument for each category, for later submission to NATURAL RESOURCES & ENVIRONMENT SECRETARIAT (KNOWN IN SPANISH AS SERNA) and obtain the respective environmental license. (Regulations of the National System of Environmental Impact Assessment SINEIA - Agreement No. 189-2009).
- Processing of the corresponding permits. The CONCESSIONAIRE must take the steps required by the UGA (Environmental Management Unit) of the Transportation, Civil Works and Housing Secretariat (SOPTRAVI) for all the activities to be performed, for example, tree pruning permit, use of water resources from the Natural Resources & Environment Secretariat (hereinafter called SERNA), use of authorized sites by the municipal authorities (UMA's) for the final disposal of solid waste and construction waste, among others.
- Relocation of Public Services utilities. The Concessionaire shall prepare the final design plans for the relocation of public utilities (electricity, water supply, sewage system, drainage and communications), obtain approval from all Concessionaires to make the necessary Works to prevent any cut or interruption of service during the construction phase.
- Preparation of the Work Programme. The Concessionaire shall prepare or update their detailed work program and submit it to Transportation, Civil Works & Housing Secretariat (Known In Spanish As SOPTRAVI) for proper approval.
- Traffic Detour Plan Development during the construction, including traffic studies and works for the adequacy of minor roads, as required.
- Location of construction materials supply sources. Similarly, the Concessionaire must find the best construction material supply sources and foresee within its work program the continuous provision to decrease quantities and storage area. In the case of borrow pits that have a concession, the proper documentation will be requested to prove that they have a mining concession and the respective license issued by Natural Resources & Environment Secretariat (Known In Spanish AS SERNA) and make compliance with the technical guidelines established by Honduran Geology And Mines Institute (Known In Spanish As INHGEOMIN) . For the operation permit all corresponding processes will be done before the competent authority of the UGA of Transportation, Civil Works &

Housing Secretariat (Known In Spanish As SOPTRAVI).

At this stage the Concessionaire company must start training workers so that the appropriate training that ensures the proper formation for the protection and health of the environment and persons and at the same time prepare the terms of reference for companies that will be subcontracted , in such a way that compliance with environmental regulations is ensured.

VI.1 SELECTIVE REHABILITATION, REFINEMENT AND CONSTRUCTION STAGE

8

8.1 Area of the Project (attach a copy of the plans in double letter size)

The plans that include the Project area are not presented, in this project, only maintenance activities are executed, there is no such development. The location of the project is presented in Google Earth and in the corresponding Cartographic sheet in Figure 8.1 and Annex I

8.1.1 Total area of the project (Apt) in m²

The total area of th Project is of 705,000 $m^{2.}$. 40 meters of easements are located in this area

The total area of the project is of 705,000 m2. Within this area we include 40 meters of the existing road easement, a temporary facilities location area of 5,000 m2 (0.5 ha) in the length of the tranche San Pedro Sula - El Progreso of 17.5 km.

8.1.2 Net area of the project (Apt) in m²

The net area of the project (Apn) is of 705,000 m2. Within this area we include 40 meters of the existing road easement, the area of temporary facilities, in a the length of the tranche San Pedro Sula - El Progreso, of 17.5 km.

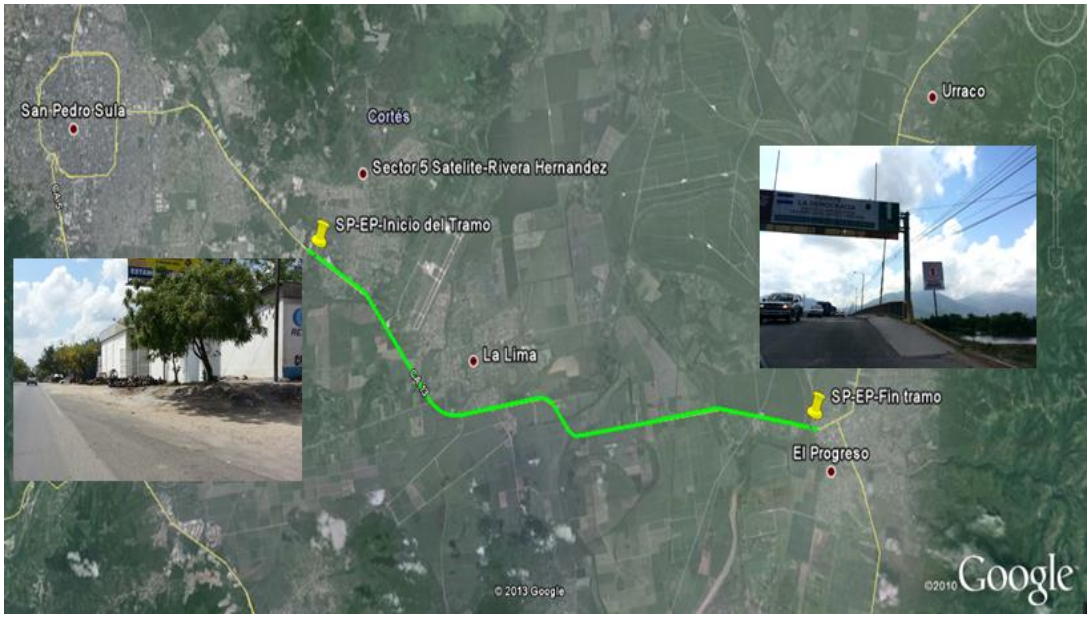
8.1.3 Total area to be constructed in m²

Maintenance will be performed in the existing road on this tranche. No expansion or construction of roads or additional lanes will be performed. The selective rehabilitation and maintenance of this particular tranche will include the construction of a toll booth and the rehabilitation of bridge La Democracia.

8.1.4 Limits and geographical location

The selective rehabilitation of the tranche San Pedro Sula - El Progreso, sits on one of the major road networks in Honduras CA-13, specifically connecting the municipalities of San Pedro Sula, La Lima and San Manuel in the Departments of Cortes and the municipality of El Progreso in the Department of Yoro. See Figure 8 1:

Figure 8-1. Geographical location of the Project



Fuente: http://www.sinit.hn/index.php

8.1.5 Administrative location

Administratively the tranche San Pedro Sula - El Progreso, is located between the departments of Cortes and Yoro, crossing the municipalities of San Pedro Sula, La Lima, San Manuel, in the department of Cortes and the municipality of El Progreso, in the department of Yoro.

8.2 Describe the activities

8.2.1 Selective rehabilitation and maintenance stage

As pointed out in the Concession Agreement, the term selective rehabilitation and maintenance is the rehabilitation activities with tendency to renew the initial condition of the road, so that they meet the service levels specified in the Concession Agreement.

The selective rehabilitation and maintenance stage existing in the tranche San Pedro Sula - El Progreso, will last 10 months. The activities included in this stage of selective rehabilitation and maintenance are described below:

Installation and Operation of Temporary Facilities: This activity includes site selection for the location, construction and / or purchase or rental of temporary facilities next to the site of work and operation of these during the time provided according to plan of work (they can be temporary or semi-permanent during the selective rehabilitation, refinement and construction stage). These facilities will consist of at least:

- Field Offices for engineers and for the administrative sector.
- Rest areas, food and sanitary services for workers.
- Storage areas for materials and equipment.
- provisional parking for machinery.

Similarly we have anticipated that the change inland use, land leveling, removal of vegetation cover, office construction, enabling and implementation of the machinery yard, construction or rehabilitation of roads, adequacy of the parking area and whatever is necessary for security (perimeter fence) and comfort of workers.

The area that will be used for these temporary facilities will at least have 0.5 ha

- Replacing pavement layer: This activity involves the partial or total rupture, removal and placement of concrete pavement in the deteriorated areas of the tranche. The works will be carried out provided that the slabs are fractured and that the problem cannot be corrected by sealing cracks.

Cleaning or scheduled sweeps of the roadway is included.

The concrete used will be moved from the site of preparation (concrete plant) to the site of placement. For this case local plants in operation will be used, located in San Pedro Sula, in which case the Concessionaire will have to ask the owner for the proper environmental license issued by NATURAL RESOURCES & ENVIRONMENT SECRETARIAT (KNOWN IN SPANISH AS SERNA)

- Preparation of the work site: The actions that are anticipated consist on cleaning, cutting and removal of grasslands on both sides of the roadway and in the median along the alignment. The cutting grass or shrubs will be performed on both sides of the road, to a length of 1.0 meters from the outside of the gutter (of concrete, stone and formed into natural ground). Priority will be given to curves, bridges access, intersections and areas of poor visibility. Pruning of trees that are located in medians, that have reached great heights, thereby interfering with power lines and preventing users visibility, is also included.

- Maintenance of drainage works: This involves the cleaning and removal of debris, dirt, residue, sand or any other material of gutters, inlets and culverts, minor repairs to gutters, drains, sewers, discharge heads or any other drainage work the requires it.

- Maintenance of bridges: This activity is more specific and is based on the structural inspection that make up bridges (e.g. Supports, abutments, beams, etc.) as well as the cleaning and repair of joints, guardrails, drainage, pavement layer, etc.. The purpose of this activity is to keep the bridge in good condition, repairing damaged secondary members, keeping the flow channel free of obstructions that prevent the free flow of water, while keeping the bridge area clean in the inferior or superior part.

- Construction: This activity is divided into the foundations, construction of the structures of concrete and steel (Considering: columns, structural walls, beams, among others.), masonry (those jobs that can be done with concrete blocks or terracotta blocks, as is shown in the plans), placement of doors, windows, stairs, installation of ceiling or roof, finishes, furnishings (considering only the design, specification, quantity, size and location in the final plan), interior and exterior lighting , bathroom and kitchen. These constructions include the toll booth for the tranche and administrative offices for staff and the National Police

- • Exploitation and transport of material from borrow pits: This activity involves cutting (exploitation) and transport of stone material to be used for the rehabilitation of the bridge La Democracia, from its borrow source the worksite. This activity requires greater mobilization of trucks, equipment and construction machinery, and will start securing the area with protective barriers that will limit internal road traffic of the work site . This action will ensure the safety of pedestrians and workers. In which case, depending on the type of bank either dry or alluvial, must comply with the technical guidelines for its use

The Concessionaire shall be responsible for requesting the necessary permits through the UGA of Transportation, Civil Works & Housing Secretariat (Known In Spanish As SOPTRAVI) before the Honduran Geology And Mines

Institute (Known In Spanish As INHGEOMIN) for the exploitation of the selected borrow pits.

Guaymón river has been identified as a borrow pit for material extraction for construction activities. Its location and verified use is presented in the following table.:

Table 8.1. Guaymón borrow pit

Bank	Verified Used	Borrow pit capacity	Owner	Coordinate
Guaymón River	• Gravel Concrete • Concrete Sands • Crushed Base • Filler • Stone embankments • Drainage beds	Enough	Granted to Transporte Juárez	428459 1715832

Borrow pit: El Guaymón

Location: 600 on the left of the road that leads to El Progreso Tela, 100 meters before Guaymon River Bridge, over the river with the same name
Coordinates UTM: X= 428459.000; Y= 1715832

- Installation of road signals and illumination: Consists on the repair or replacement of signage, both vertical and horizontal and light poles; and verification of the operation and programming of traffic lights and luminaries.

    - brush from the surroundings is cleaned.
    - The installation of horizontal road signals or painting the dashed centerline on the pavement and the continuous line that runs along the edges with white paint. The edges of the islands in the central part of the road should be painted with a yellow line. The purpose of this activity is to define the traffic lanes for drivers to stay within them and have a guide or reference.
    - The vertical signals that are deteriorated will be restored and replaced.

- Use of water sources: This activity consists on obtaining and transporting water resources from surface water bodies within the area of influence of the project to where it is required for those Works that require it, compaction, concrete casts, irrigation , etc.). This resource is usually obtained by pumping from the providing body (river with permanent or semi-permanent flow) to a temporary storage tank from where it will be transported to the worksite.

- Removal of temporary facilities and equipment: This activity refers to the removal or restoration or decommissioning of temporary facilities. The key actions include the cleaning and restoration of the area (within restoration we can include soil scarification, removal of any structure that is to be discarded, placing topsoil, replanting and reforestation, if applicable)

- Management of construction waste and solid waste: This activity involves the collection, separation, transportation, and disposal of surplus materials or construction waste generated during the construction of the work in any of the activities mentioned above (including the restoration or removal of temporary facilities), as well as solid and domestic waste and the construction activities generated by the operation of the temporary facilities.

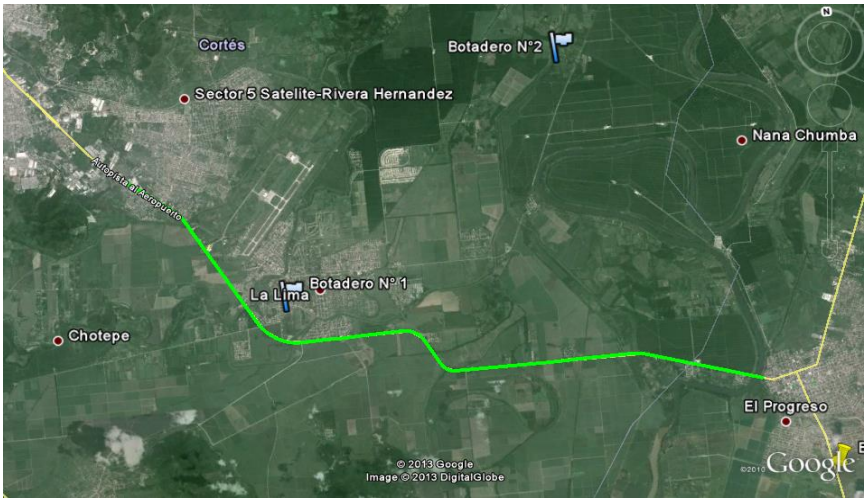
The description of the current conditions of the sites chosen as dump sites for this work as dumps and their location is shown in Table 8 2:

Table 8-2. Description of the Dump Sites

N°	TRANCHE	TYPE OF ALLOWED WASTE	CURRENT STATUS
1	SPS - EL PROGRESO Coordinates: Zone 16 East: 407637 North: 1679947 Location: Barrios Los Pinos La Lima Department: Cortés Municipality: La Lima	Only construction waste	
2	SPS - EL PROGRESO Coordinates: Zone 16 East: 408053 North: 1711537 Location: Station 5k + 300 Department: Cortés Municipality: La Lima	Solid waste	

Source: The Concessionaire

Figure 8-2 Location of dump sites



Source: Google Earth. Field work, April 2013

8.2.2 Construction Stage

The construction phase will last 24 months, and will be held in parallel to the selective rehabilitation and maintenance of the tranche. It Includes the rehabilitation of La Democracia Bridge, an activity that involves repairing the central segment of the bridge that gave way in 2009 by an earthquake. In this segment the activities to be carried out will include the placement of reinforcing steel and Portland cement cast concrete, in a length of 36 meters approximately.

8.3 Describe the machinery to be used in the selective rehabilitation, refinement and construction stage

With regard to the equipment used during the selective rehabilitation, refinement and construction of the Project, the following are listed (see Table 3)

Table 8-3. Equipment to be used

Phase	Activity	Machinery and equipment
Selective Rehabilitation and maintenance	Roadway maintenance, drainage and bridge works. Cleaning and tree pruning	Backhoe, tank trucks, dump trucks, other (sweepers).
	Worksite preparation	Bulldozer, wheel loader, dump truck, truck flatbed
	Maintenance of signals and lighting	Crane Truck
Construction	Bridge construction	Excavator, backhoe, dump trucks, flatbed

Source: Concessionaire

8.3.1 Vehicular Equipment

The traffic flow, product of the activities of the project will consist mainly on moving raw materials from Works and waste disposal, truck fuel dispenser or asphalt distributors. It also includes inspections, operation personnel and field supervisor transportation.

List the materials to use in each construction stage (detail the origin of aggregates, masonry wood, foundry, water, etc..)

8.4 List the materials to use in each construction stage (detail the origin of aggregates, masonry wood, foundry, water, etc..)

The development of the various Works comprising this project will require supply of construction materials in a timely and efficient manner. In this sense, a Supply Plan will be developed to guarantee in advance the materials required for each stage of the work, so that it can meet a timetable for execution and with the required quality by the specifications.

A storage policy, aimed at the management and control of materials according to their displacement, replacement time and the importance of its application in the execution of the work and in that sense supply contracts, consignment and auto parts will be signed. Orderly transport of materials is contemplated, with no major impacts on the transit of the storage site or supply, until the areas of the Works.

Some of the main materials specified in Table 8-4:

Table 8-4. List of basic raw materials

Materials

concrete
sand
Steel (rod)
wood
paint
concrete
zinc
Cyclone wire
Signs of all kinds
Wire Mesh

Fuente: Concessionaire

In the case of concrete, it will be purchased from the concrete production plants, existing in the area, located in the city of San Pedro Sula.

8.4.1 Fuel

Fuel will be supplied by trucks used for these services or asphalt distributors, who will transport it from the fuel storage site in temporary facilities and will supply the machinery daily in each work front. These trucks shall have all the signaling and emergency implements such as fire extinguishers, triangles or cones, first aid kits and spill absorbent material. Consumption is expected to be approximately over 50.000 liters per month.

8.4.2 Energy

For field offices and camps: these must be connected to the system of the National Electrical Energy Company (ENEE), in case of an emergency, an own fuel-based generator would be used. Also for road works, portable fuel operated generators will be used.

8.5 Describe the origin of water to be consumed / amounts to use

During the construction phase, the water required for the Dust Emissions Control Program, which is detailed in the EMP(Environmental Management Control), will be obtained from the existing of surface water bodies closest to the alignment (See Table 5 August), once the corresponding permit has been obtained from the Hydric Resources Authority of the Natural Resources & Environment Secretariat (known In English as SERNA).

Table 8-5. List of surface water bodies passing through the alignment

Name
Chamelecón River
Ulúa River

Source: The Concessionaire

To meet the needs of cleaning, sanitation, etc., water tanks with a capacity of 55 gallons could be installed in the camps, which would be supplied daily (depending on need), by tank trucks with water from any of the water bodies mentioned

above.

With regards to the consumption of drinking water by workers, 5 gallon bottles or more should be used. Private companies could provide this service.

The amounts used in this stage will be minimal, representing less than 25% of the remaining flow.

8.6 Number of employees at this stage (work area)

Jobs that are expected to be needed during the selective rehabilitation, refinement and construction stage are shown in Table 8.6. The list refers to 79 jobs. Within this list the administrative staff is not listed.

Table 8.6. Jobs during the rehabilitation, refinement and construction stage

AMOUNT	DESCRIPTION
2	Master of Paving Work
1	Master of Mechanical Works
1	Work Master of the Crushing Plant
1	Topographer
2	Prism holder
2	Assistant of the topographer
2	Tractor operator
2	Front loader operator
5	Dump truck operator
2	Concrete truck operator
1	Crushing plant operator
1	Concrete plant operator
2	Water tank operator
1	Compressor operator
1	Horizontal Signal Equipment Operator
8	Masons
20	Construction Assistants
2	Mechanic
1	Mechanic assistant
1	Electrician
1	Electrician assistant
1	Welder
1	Welder Assistant
2	Greasers
1	Lube truck driver
3	Light vehicle driver
8	Flaggers
1	Environmental Specialist
1	Environmental Specialist Assistant
1	Manager of workplace safety
1	Assistant Clerk of workplace safety
79	Total

Source: Own Compilation

VI.2 Operation Phase

9

9.1 **Describe the course of business or activity when in operation**

For the road to be kept in operational safe conditions within the design horizon, maintenance activities must be performed on behalf of the Concessionaire for a period of 30 years.

9.2 **Describe the services or products to be borrowed or produced**

During the operation phase, the following activities will be executed:

- Roadway maintenance
- Drainage Works maintenance.
- Bridge maintenance
- Road signals and illuminati.

During this stage the Concessionaire will implement a road safety service for free and will include the following :

1. Central Emergency Services which will work twenty-four (24) hours a day. The Concessionaire shall respond to emergency requests and/or accidents which have occurred in the tranche, through the Emergency Center, communicating them or referring requests to the National Police, a hospital, doctor, clinic or similar, or an insurance company, as applicable.
2. Real Time Emergency Communication System. The terminals shall be located at a distance of twenty-five (25) miles between each other. This system should at least allow the execution of free calls exclusively to the Emergency Central.
3. Ambulance service For the attention of the injures and transfer to another hospital center, medical center, polyclinic, as applicable
4. Vehicle transfer service for vehicles that have been damaged on the road to the nearest service station, distance must not exceed seventy (70) miles.
5. An office for use by the National Police of Honduras. This office should be adjacent to areas of location of each toll unit , with its basic equipment and electricity, to support surveillance and control.

9.3 **Describe the machinery to be used**

The machinery to be used in the operation phase, is presented under Table 0-1:

Table 0-1. Equipment List - Operation and Maintenance Phase

Phase	Activity	Machinery and Equipment
Operation and Maintenance	roadway, drainage woks, and bridges maintenance	Backhoe, dump trucks, other (sweepers)
	Road signal and illumination maintenance	Crane truck

Source: Concessionaire

The traffic flow during the operation phase will consist mainly of moving raw material for Works and disposal of waste, fuel dispenser car or asphalt distributors. It also includes inspections, operation personnel and field supervisors transport.

9.4 **List the raw materials to be used**

During the operation phase the raw material will consist mainly of the supplies required for the maintenance of the project facilities. The supplies will be purchased in the local market, in addition, the Concessionaire should have an inventory of

spare parts, especially for road sign installation.

9.4.1 Fuel

Fuel will be supplied by trucks used for these services or asphalt distributors, who will supply the machinery daily in each work front. These trucks will have to have all the signaling and emergency implements such as fire extinguishers, triangles or cones, first aid kits, barrels and spill absorbent material. Consumption is expected to be approximately over 5.000 liters per month and less than 50,000 liters a month

9.4.2 Energy

The energy in the operation phase will be required for temporary facilities. This energy will be through a connection to the power grid of the ENEE or to an own generator powered by fossil fuel. At this stage it is expected to have a lower consumption of about 360 liters per year and in any case a lower energy consumption of 240 MWh / year.

9.5 Describe the origin of water and the amounts to be used.

Water consumption in the operation phase will be for cleaning the road (if necessary) and to for cleaning and sanitary needs in camps or temporary facilities.

Water from surface water bodies where the alignment crosses will be used, they are the same that were mentioned in the construction phase, for which a permit or Concession issued by the corresponding authority will be required,

The water consumption should not exceed 25% of the remaining flow.

9.6 Hazardous substances to be used

Some of the hazardous substances to be used are: asphalt, paints, oils for machinery, solvents or degreasers, hydrocarbons, diluents, additives for concrete, among others.

Hazardous substances to be used, must have their safety sheet (MSDS) and the staff that handles them must have the required training and protective equipment required for handling them for safety purposes.

In the case of hazardous waste, such as packaging of these materials, oily rags, paint residues among others, management will be conducted according to the Waste Management Plan indicated by the EMP(Environmental Management Control).

9.7 List the number of employees by department (detail gender)

Jobs that are expected to be required during the construction phase are shown in Table 9.2. The list refers to 41 jobs for the operation and maintenance of this Tranche, since despite it is a Tranche of 17.5 km work will be undertaken by crews as they progress in maintaining Tranche.

Table 0.2. Jobs during operation and maintenance

Amount	DESCRIPTION
1	Master of Paving Work
1	Master of Mechanical Works
1	Topographer
2	Prism holder
1	Assistant of the Topographer

1	Tractor operator
1	Front Loader Operator
5	Dump Truck Operator
1	Concrete truck operator
1	Crushing plant operator
1	Concrete plant operator
1	Compressor operator
1	Water tank operator
1	Horizontal Sign Operator
2	Masons
5	Construction Assistants
2	Mechanics
1	Electrician
1	Welder
2	Greasers
1	Lube Truck Diver
2	Light Vehicle Driver
4	Flaggers
1	Environmental Specialist
1	Responsible for workplace safety
41	Total

Source: Own Compilation

VII Description of the Environmental Surroundings of the Project

VII.1 Physical Environment

All aspects of the physical environment baseline in the project area are presented in this section. The information presented in this section was obtained from both the review of existing information like surveys and direct on-site measurements.

10

10.1 Bodies of water

10.1.1 Rivers, lakes, lagoons, wetlands, seas

Along the San Pedro Sula - El Progreso alignment , several bodies of water are presented, with major rivers and streams presented in Table 0-1:

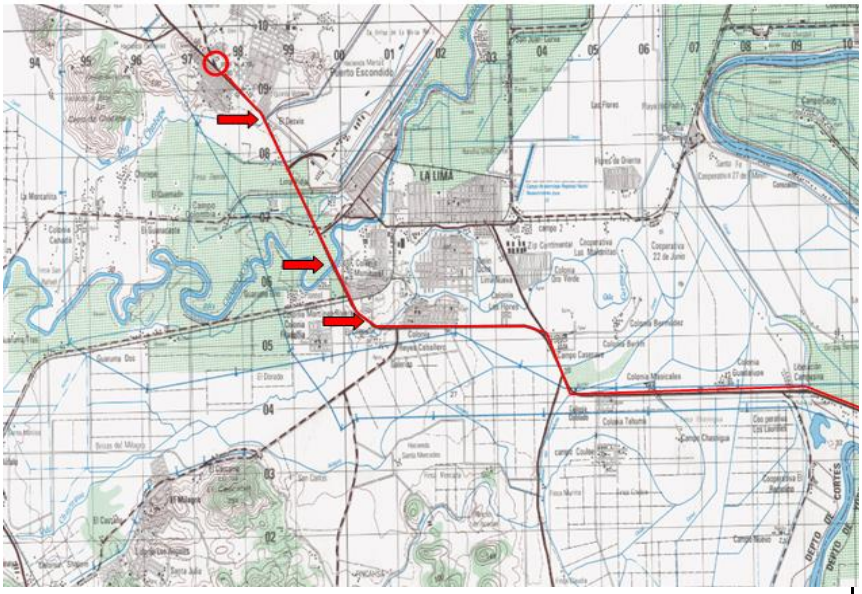
Table 0-1. Bodies of water flowing through the alignment

Name
Chotepe Channel
Chamelecón River
Ulúa River
Chasnigua Stream

Source: The Contractor, based on Field work

The location of the water bodies that cross the project alignment is shown in Figure 10 1:

Figure 0-1. Nearest bodies of water



Source. Cartographic Sheet El Progreso.

10.1.2 Basins

The municipality of San Pedro Sula has identified three areas with specific characteristics related to hydric resources: (a) Merendón Reserve area; (b) the urban and sub-urban area and (c) the West Shed of el Merendón.

The area of the reserve of el Merendón is an ecosystem with high hydric productivity with 18 water producing basins. The following communities benefit from this region, the communities of Naco, Cofradia, San Pedro Sula, Cuyamel, Omoa, Puerto Cortes,

Choloma and 69 other communities. The Merendón area also includes part of the cloudy ecosystem of Cusuco National Park, where the a tributary of cuyamel, the Cusuco River originates, and the rivers of Naco and Manchaguala originate in the area of influence.

The urban and sub-urban area depend on its groundwater and surface water supply sources.

The surface water sources are the Piedras, Santa Ana and Zapotal Rivers, which are born at the Merendón Reserve Zone.

The estimated production per surface water sources has been evaluated by 40%. The surface currents provide 22.2 million cubic meters per year (28% of the river flow comes from Piedras, Santa Ana and Zapotal rivers and is used to supply the city).

10.1.3 Production and water recharge zones

Municipality of San Pedro Sula

The groundwater sources contribute with 70% of the annual production of water to supply the population of this area. These percentages may vary depending on the years seasons. Groundwater used to supply the population comes from the principal aquifers of San Pedro Sula. The water supply from the Chamelecón aquifer is suitable for the present and future supply for these areas in terms of quantity, but not in regard to the quality of the waters, because iron and manganese concentrations have been detected in concentrations above the recommended limits. The aquifer recharge in San Pedro Sula is divided into: a) Infiltration of rain: 17.7%; b) Infiltration of Rivers 31.3%, c) infiltration by water leaks: 16.6% d) Inflow from the North: 34.4%.

Municipality of El Progreso

As for water producing microbasins,7 have been identified, which currently supply water to some communities of the municipality.

The only micro-basin declared as a Water Production Area is the micro-basin of Pelo River, located in the Range of Mico Quemado. The total area is 3,570 hectares and provides water to the municipal capital by 70% being consumed. This micro-basin has a management plan for its protection.

Except for the micro-basin of Pelo River, no other micro-basin in the municipality of El Progreso has been declared as a water producer, therefore no management plan has been planned, which becomes a disadvantage for the people of this municipality, since there is nothing to guarantee the quality and quantity of water production of these micro-basins.[1].

Table 0.2. Water Producing Micro-basins in El Progreso

Micro-basin	Community It supplies
Pelo River	El Progreso Col. Rodas Alvarado

[1] Diagnóstico Integral Multidimensional, El Progreso, Yoro.

La Sarrosa Stream	Col Las Palmas Buenos Aire Sur
La Danta Stream	Agua Blanca Norte
Guacamaya Stream	Guacamaya
Camalote Stream	Col. 7 de Abril El Porvenir Norte Col. San José Castaños Carlos R. Reina San Jorge Col. Primavera
Corocol Stream	Col. Corocol
El Milagro Stream	Agua Blanca Sur

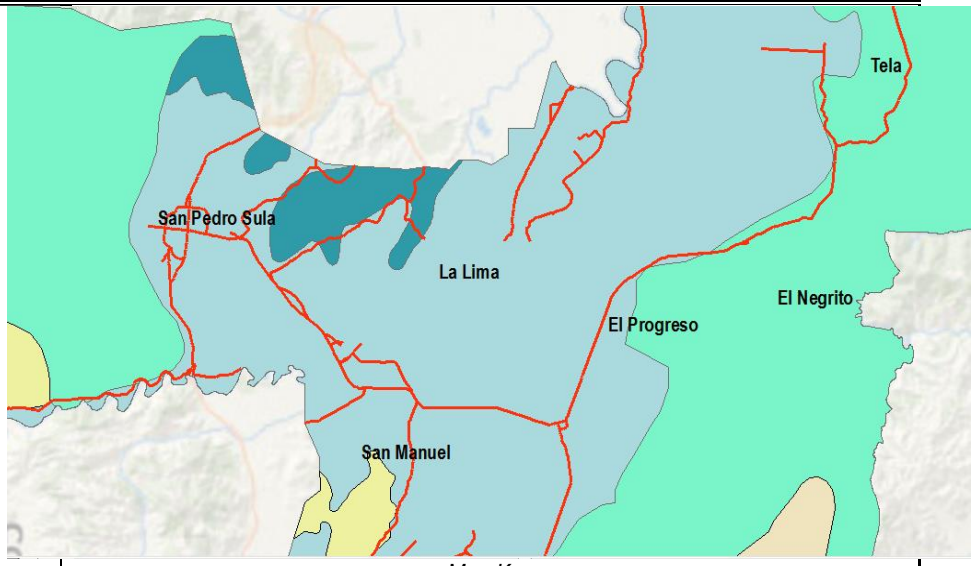
Source: water boards Shop, Municipality of El Progreso.

10.1.4 **Possible location of underground water**

In general, all the Sula Valley presents highly productive aquifers, specifically the municipalities of San Pedro Sula and El Progreso. It has the following characteristics: rocks with local limited underwater resources, highly productive extensive aquifers, moderately productive and extensive local aquifers.

In most of the municipality of El Progreso (69%) extensive and highly productive aquifers are located, and as seen in the hydrogeological map (See Figure 10 2), the whole project is in highly productive aquifers.

Figure 0-2. Hydrogeology in the Project Area



Map Key

- Acuiferos extensivos y altamente productivos
- Acuiferos locales y extensivos, moderadamente productivos
- Acuiferos locales y extensivos, pobre a moderadamente productivos
- Acuiferos locales, moderada a altamente productivos
- Lago de yojoa
- Rocas con recursos de agua subterranea locales y limitados

Source: Hydrogeology. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System.

10.2 **Land (according to the classification by category)**

The city of San Pedro Sula is developed on Quaternary alluvium (continental and marine sediments). The Merendón, which forms the western flank of the valley is composed by Cacaguapa schist, consisting of a metamorphic basement composed of sericitic and graphitic schists, phyllites, gneiss, quartzite, marble and thick quartz veins. Between the cities of San Pedro Sula and Choloma there are intrusive rock massifs of the tertiary.

The Chamelecón fault is located in the western part it is directed from north to southwest. Between the mountains west of San Pedro Sula we find normal faults oriented north to south. The Motagua fault is located at a distance of approximately 30 km, where earthquakes have been detected. At the foot of the mountain range of The Merendón alluvial fans have formed that gather in the alluvial plains. These areas are of great value for the use of potable water for communities. Most soils in the valley are alluvial and in many places high water levels are observed.

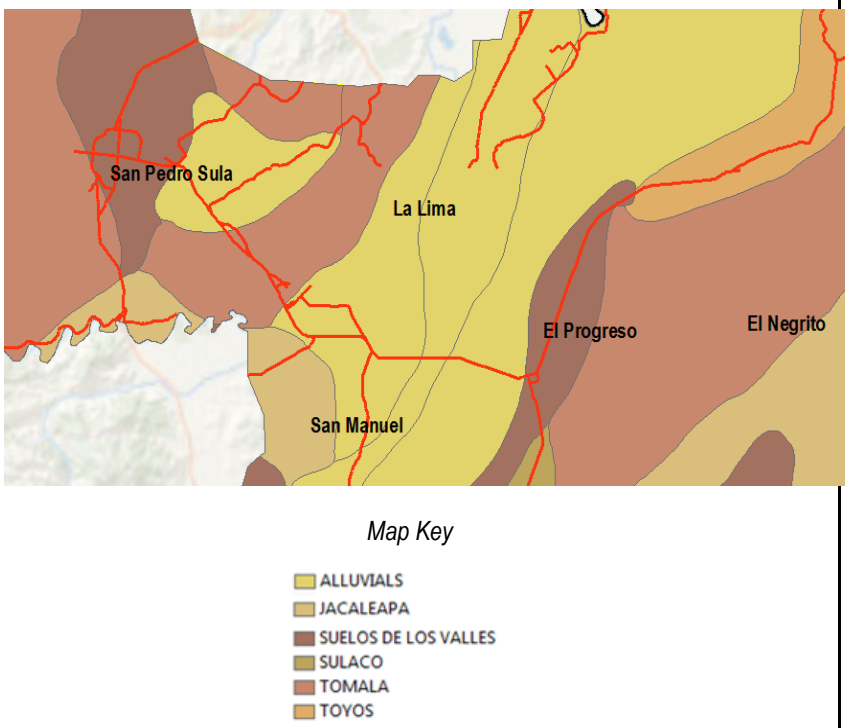
10.2.1 **Type**

- Floodplain Soils: These sand and gravel soils with a thickness greater of 90 meters, which generally constitute aquifer material . This type of soil is the most representative in the City of El Progreso.

- Soils of the Valleys Soils: These soils are well-drained with coarse sandy loam texture. They are suitable for intensive cultivation and pasture, with soft and low landslide hazard slopes.
- Tómala Soils: These soils are well-drained, shallow, derived from shale gneiss with a mixture of marble and quartzite.

Figure 0-3, shows soil classes presented by Simmons in the Project area:

Figure 0-3. soil classes presented by Simmons in the Project area:



Source: Types of soil according to Simmons. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System.

10.2.2 **Slope**

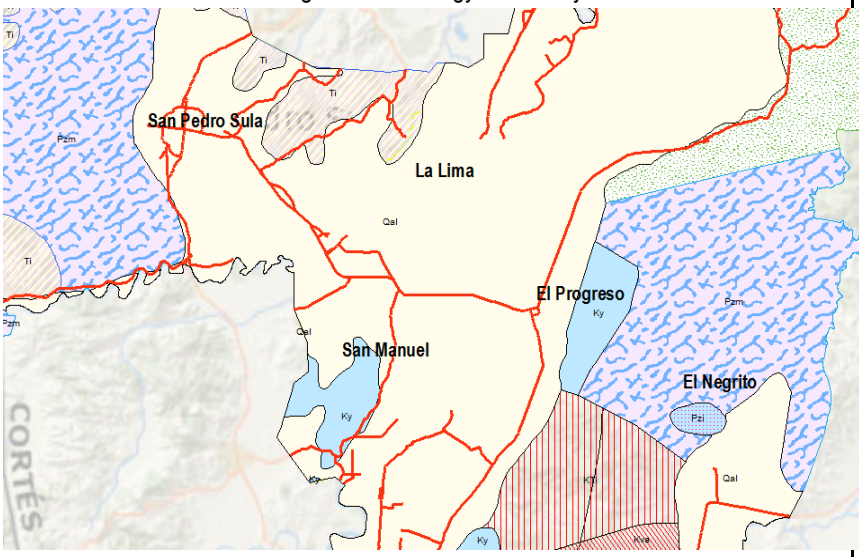
The Sula Valley area includes the city of San Pedro Sula and the suburban area. In this area, approximately 65% is plain with slopes of less than 10%, with some as high reliefs like Chotepe, Campiza and Tres Pasos hills, and the area of the foothills of the Merendon mountain system.

10.2.3 **Geology**

The Tourism Corridor of Honduras: Tranche San Pedro Sula - Tela, runs along one geological formations, which is described below

Recent marine continental sediment (Qal): This formation includes deposits of foothills and gravel terraces, floodplains and river bed deposits. It is occupied by the largest area of the municipality of El Progreso.

Figure 0-4. Geology in the Project area



Qal — Recent continental and marine sediments, including deposits of foothills and gravel terraces, floodplains and river bed deposits.

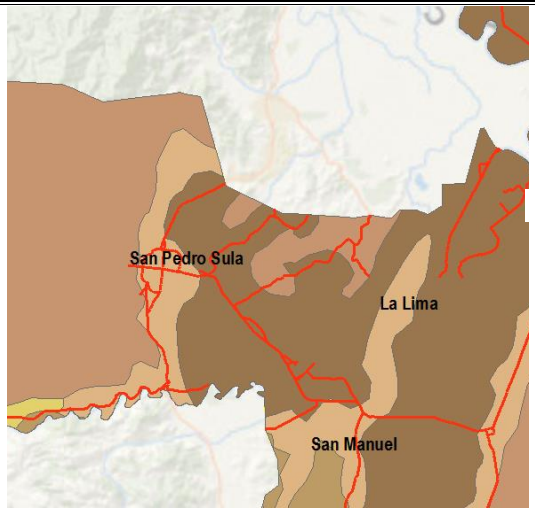
Ki — Intrusive rocks: granites, granodiorites, diorites and tonalite of variable ages

Source: National Geologic Map. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System.

10.2.4 **Capacity of land use**

The alignment of the Tranche San Pedro Sula - El Progreso, shows soils with usability for intensive crop rotation. See Figure 10 5:*Figure*

0-5. Soil use capacity Tranche San Pedro Sula - El Progreso



Map Key

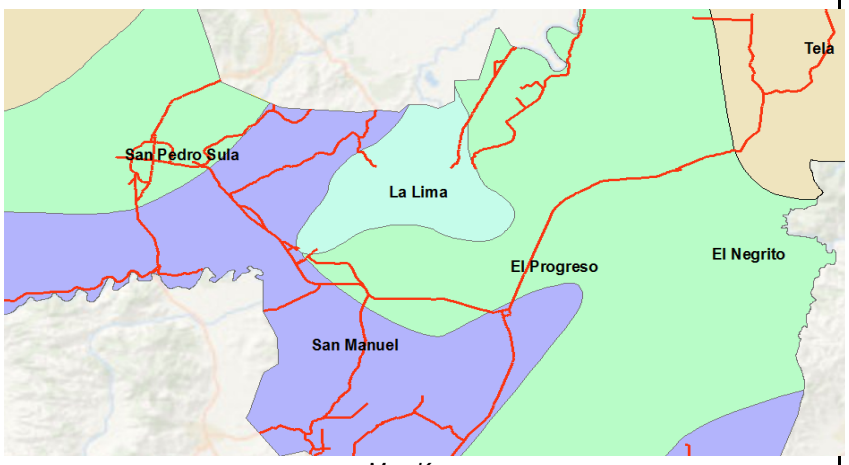
- I.II Cultivos Intensivos
- II Cultivo intensivo y extensivo
- III.I Cultivos en Rotacion
- VII.6 Bosque Protector y tala selectiva(latif

Source: National Geologic Map. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System.

10.3 **Climate**

According to the Zuñiga's climate classification, the following climates are present in the project's area: late rainy season, very rainy tropical See Figure 0-6:

Figure 0-6. Climate classification in the Tranche San Pedro Sula - El Progreso



Map Key

- Muy lluvioso con Invierno lluvioso
- Muy lluvioso de barlovento
- Muy lluvioso tropical
- Variante lluvioso de altura
- Variante muy lluvioso de Barlovento (Semiestacional)
- lluvioso de altura
- muy lluvioso con distribucion regular de lluvias
- variante muy lluvioso tropical

Fuente: Clasificación climática de Honduras. Secretaría Técnica de Planificación y Cooperación Externa (SEPLAN). Sistema Nacional de Información Territorial.

10.3.1 Pluviometry (annual average precipitation, wettest months, etc.).

The climate of the region of San Pedro Sula is characterized by two distinct seasons: one rainy, comprising the period from May to December, and a dry season during the months of January to April. Another important factor that influences the climate is its topography, because the mountains block the flow of air masses, causing heavy rainfall on the windward side and less rainfall in the leeward side.

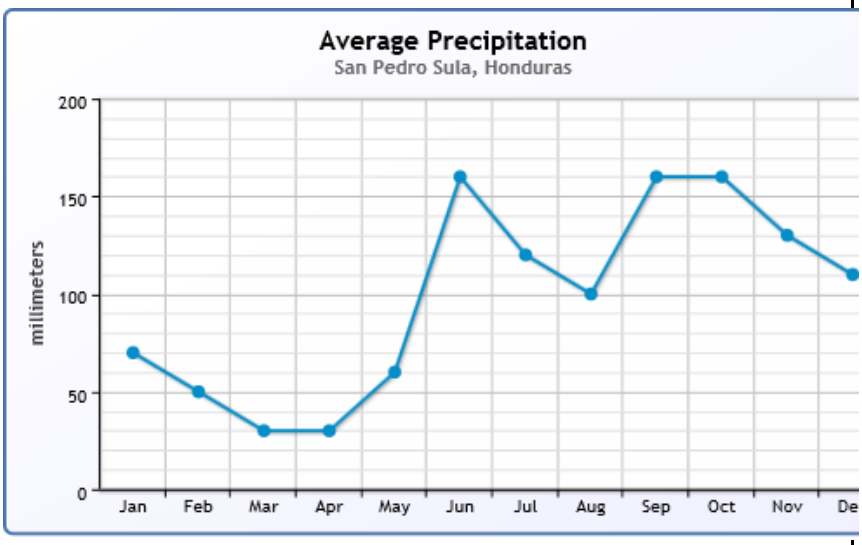
The annual rainfall for a registry of 39 years of measurements in San Pedro Sula, is presented in the Table 10 3 and Figure 10 7:

Table *10 3. Precipitation (mm) Average annual in San Pedro Sula*

Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1210	70	50	30	30	60	160	120	100	160	160	130	110

Source: http://www.weatherbase.com/

Figure *0-7. Annual average rainfall in San Pedro Sula*



Source: http://www.weatherbase.com/

10.3.2 Average annual temperature

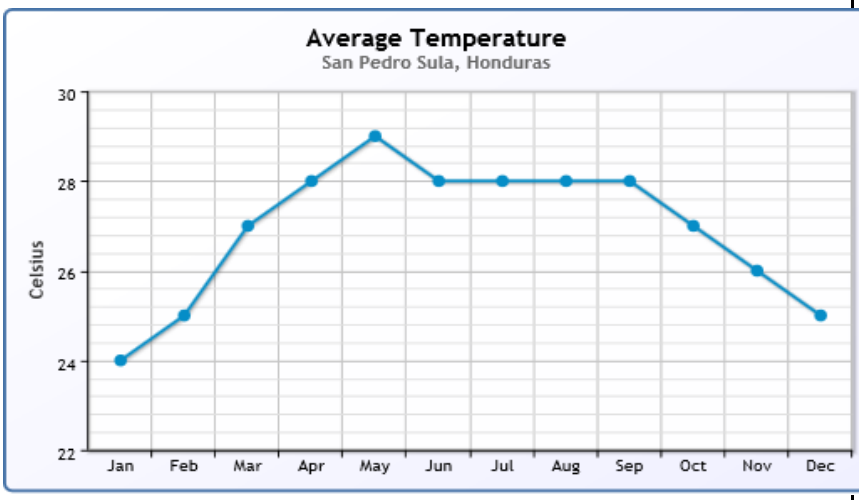
The average monthly temperature varies from 24 ° C in December and January to 29 ° C in May and June. The average temperature is 27 ° C according to records from 18 years of measurement. See Table 10 4 and Figure 10 8:

Table 0-3. Average annual Temperature (° C) in San Pedro Sula

Annual	Jan	Feb	Mar	Apr	May	Jun	Jul
27°C	24°C	25°C	27°C	28°C	29°C	28°C	28°C

Fuente: http://www.weatherbase.com/

Figure 0-8. Annual average temperature in San Pedro Sula



Source: http://www.weatherbase.com/

10.4 Risks of flooding (according to official maps or documented experiences)

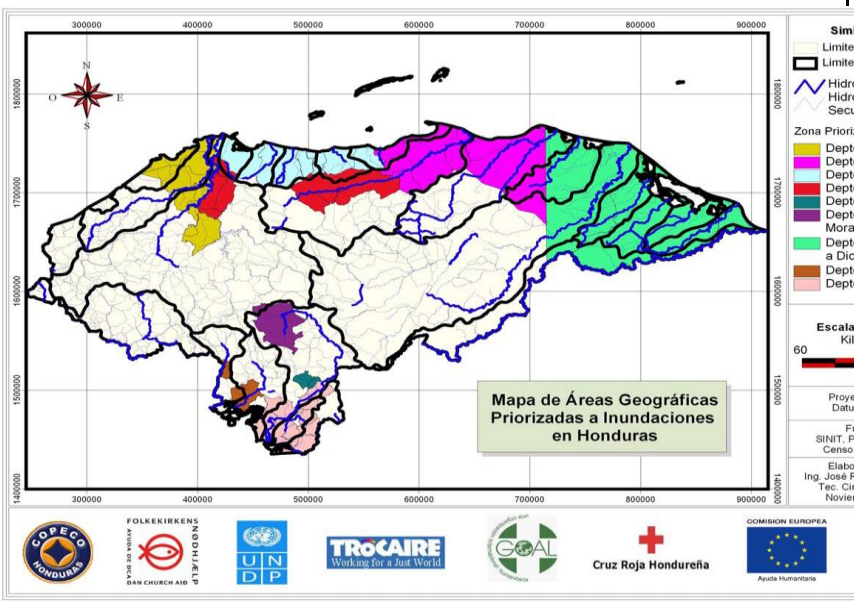
The areas most affected by the floods have been the floodplains by major rivers (Ulua, Chamelecón Patuca, Choluteca, Sico and Paulaya and other)the areas adjacent to major rivers and the nearby communities of all basins and short sub-basins, where the times of concentration of flood water are very low.

The increase in human settlements in high risk areas, the improper use and soil deterioration from deforestation and poor basin management, have become a key factor to build greater flood vulnerability concept . Deforestation contributes well to river and streams siltation and in a warm microclimate. Floods despite low levels of annual rainfall, are very common and devastating. (Country Document, DIPECHO., 2007)..

10.4.1 Geographic prioritization according to flood threats

According to the country document, DIPECHO, the flood worktable identified as priority areas for this threat five regions, they are displayed on the map of geographic priority areas to flooding, which is presented as follows in the listing: Ulua and Chamelecón and Mezapa-Lislis Macrobasin, Aguan River, Iriona and Gracias a Dios Basin, and Choluteca River Macrobasin.

Figure 0-9. Geographic map to flooding areas prioritized in Honduras



The population exposed by the flooding threat in the prioritizing executed in the national Shop comprises a total of 3,742,237 inhabitants (data projected to 2007) of 9 departments and 55 municipalities. See Table 10.5

Table 0.4. Priority basins

Priority basin	Exposed Population
Aguan river basin	300,812
Mezapa – Lislis Basin	403,719
Iriona and Gracias a Dios Basin	110,767
Choluteca River Basin	1,445,703
Ulúa – Chamelecón Macrobasin	1,481,236
TOTAL	3,742,237

Source: Country Document, DIPECHO. 2007

The population exposed within the Ulua Macrobasin, in the department of Cortés (San Pedro Sula) and Yoro (El Progreso), are presented below:

Table 0-5. Exposed population in the Ulua Macrobasin

Macrocuenca Ulúa - Chamelecón		
Departamento	**Municipio**	**Población Expuesta 2007**
Cortes	Choloma	237,132
	Omoa	30,148
	Puerto Cortes	111,372
	SPS	515,458
	San Manuel	45,649
	Villanueva	120,651
	La Lima	62,595
	Pimienta	20,821
	Potrerillos	22,194
	Santa Cruz de Yojoa	61,461
	San Francisco de Yojoa	13,968
Yoro	El Progreso	186,971
	Santa Rita	17,165
	El Negrito	35,651
Total		**1,481,236**
TOTAL		**3,742,237**

Source: Country Document, DIPECHO. 2007

The variables and indicators considered for prioritization of the areas are:

1 Threat frequency

2 High population density

3 Areas of high productivity

4 Poverty levels

5 Coordination and response capability mechanisms

6 Poor interinstitutional presence

7 Isolation of zones

* The variables of institutional presence and isolation are heavier for the area of Gracias a Dios and Iriona.

El Progreso is located at the foot of the mountain (Cerro Mico Quemado), it is one of the reasons why this municipality, especially the urban area, is vulnerable to flooding by the water discharge in short times, supported by the crossing of the Ulua River on the southeast.

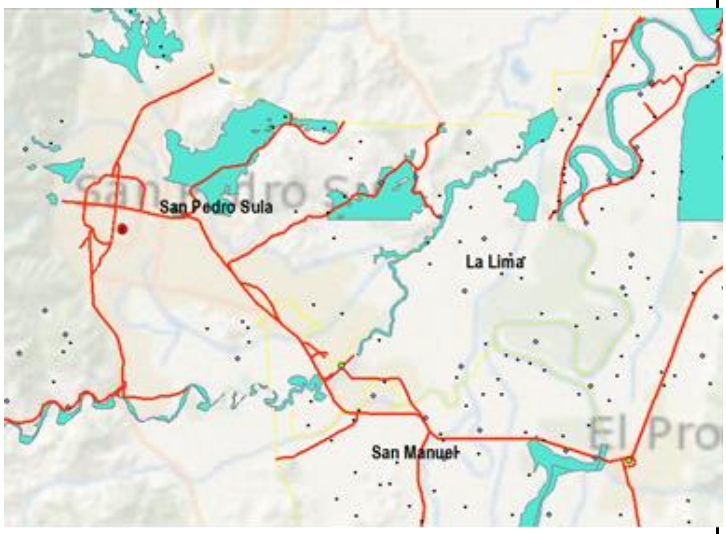
In the municipality of El Progreso, zones threatened by flooding have an area of 12,792.56 hectares (Lower Threat), 4332.40 ha (Medium Threat) and 8574.68 ha (High Threat) causing damage to homes, bridges, roads, potable water and energy electrical network, PMDN, (2003)..

According to the municipal emergency plan (2010), The municipality of El Progreso has been severely affected by periodic flooding, given its location downstream of the Ulua and Pelo Rivers, that because of the large amounts of water they bring during rainy season or during an extreme event, they easily overflow their pits and affect the

population, their goods and crops.

Among the factors that make these areas more vulnerable to suffer the ravages of floods we have: deforestation in the upper watershed and not considering preventive and mitigation measures to be taken by local authorities which should be aiming at territorial ordinance, because currently many human settlements are found around the edges of containment walls developed to mitigate the flood problem. The bodies of water that represent a risk of flooding are; Ulua and Pelo rivers; The Los Castaños, Arena Blanca, La Mina, La Guacamaya, Corocol, Pajuiles, Chindonga and La Ruidosa Creeks.

Figure 0-10. Map of flood and population by Municipality of Honduras



Source: Flood Threats. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System.

10.5 **Landslide Risks (in a radius of at least one kilometer)**

The Alignment San Pedro Sula - El Progreso, does not show landslide risk areas. Flat slopes are seen throughout the whole alignment.

10.6 **Risk of earthquakes or tremors (verifiable information)**

The Honduran territory is geologically bounded by two tectonic plates, the plate of cocos and North America. The first one shows a subduction over the second, resulting in constant release of energy of varying intensity.

Data from all the epicenters shown in the map have been using a model of intensity and frequency reflected on a map, which reflects the threat of seismic hazard in Central America, projecting the Bay Islands fault and on the same trajectory the Motagua fault. Inside the country a series of faults are reflected (see Figure 10.11),

which have molded the national topography, including the Patuca fault and others crossing west toward the center of the country.

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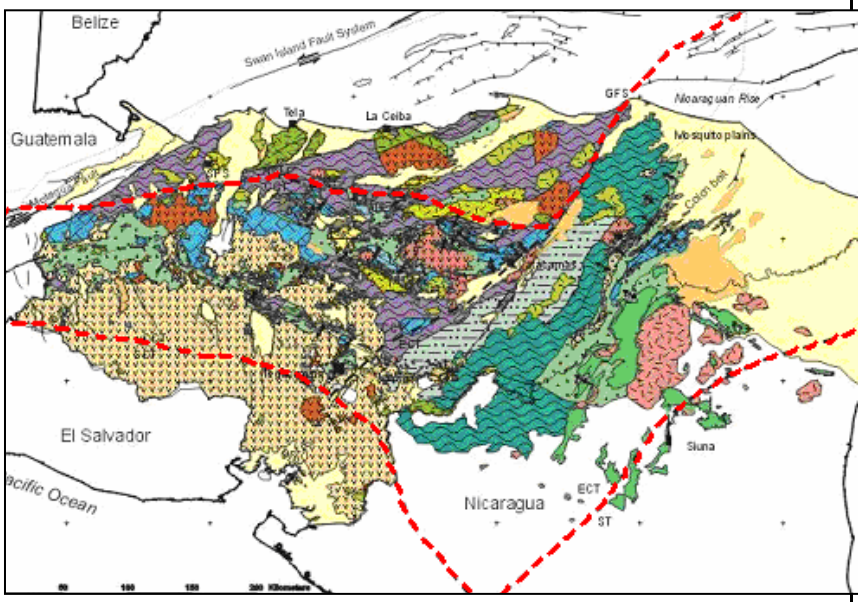
Figure 0-11. Faults in the Honduran Territory



Source: Country Document, DIPECHO. 2007

The base map associated with earthquakes was generated taking into account the contributions of the Program for Disasters of the United Nations, whose vector database identifies the frequency of earthquakes in the Central American territory and the measured intensity in the Richter scale. The population exposed to the threat of earthquakes in prioritization executed at the national Shop included a total of 899.438 inhabitants (projected to 2007) of 49 municipalities.

The geographical prioritization of earthquake threats resulted in the following vulnerable areas:

1. Department of Yoro (municipalities of Yoro, Yorito), Department of Francisco Morazán (Marale).
2. Ocotepeque (Ocotepeque, Mercedes, Santa Fe, Concepción, Dolores Merendón, San Jorge, San Fernando), Lempira (Cololaca, Guarita, San Juan Guarita, Valladolid, La Virtud, Mapulaca, Virginia, Piraera), Copán

	(Florida, El Paraiso, Copán Ruinas) e Intibucá (San Antonio, Sta Lucia, Magdalena, Colomoncagua) and La Paz (Santa Elena La Paz, Yarula, Marcala, Cabañas, Santa Ana, Opatoro, Mercedes de Oriente, San Antonio del Norte). 3. Valle (San Lorenzo, Nacaome, Amapala, Guascorán, Caridad, Aramecina and Alianza) and Choluteca (El Triunfo, Concepción de Maria, Namasigue, Choluteca and Marcovia). 4. Cortés (Omoa and Puerto Cortés). 5. Guanaja. From the above it is concluded that in prioritizing areas vulnerable to earthquakes, the municipalities of the area of influence of the Project.

VII. 2 Biological Environment

This chapter covers the information necessary to know the current status of the biological environment in the area of influence of the project. This information will be used in the identification and recovery of the potential impacts that the Works could generate and if applicable, to give special attention to the corresponding Management Plan.

The baseline developed for this study included the compilation of secondary data of the area, which responds to research by different authors and the verification as field work.

The main characteristic features of the biological medium in the Project Area are described as follows.

11

11.1 Protected areas (declared or define their declaration status)

no protected areas are located near the alignment of the Tranche San Pedro Sula - El Progreso.

11.2 Fauna (most common animals in the project environment)

Since no modifications will be done in the structure of the road, the diagnostic run was performed continuously and no seasonal transects were conducted.

This Tranche is an urban area with traditionally low diversity report. 3 orders, 7 genera and 7 species all residents were identified and recorded in any CITES appendixes. This low diversity may result from the low diversity of flora.

Table 9-1. Bird species observed in the *Tranche San Pedro Sula – El Progreso*

No	Order	Family	Scientific Name	Common Name	Status
1	Accipitriformes	Cathartidae	*Coragyps atratus*	Zopilote	R
2	Accipitriformes	Cathartidae	*Cathartes aura*	Tincute	R
3	Columbiformes	Columbidae	*Zenaida asiatica*	Paloma ala Blanca	R
4	Passeriformes	Tyrannidae	*Tyrannus melancholicus*	Tirano	R
5	Passeriformes	Turdidae	*Turdus grayi*	Zorzal	R
6	Passeriformes	Icteridae	*Quiscalus mexicanus*	Zanate	R
7	Passeriformes	Passeridae	*Passer domesticus*	Pinzón Casero	R

Source: Diagnostic conducted in June 2013.

Observation: R = Resident; M= Migratory

11.3 Flora (trees, plants, etc..)

On the tour through this Tranche, 13 species of trees distributed in 7 families and 13 genera were reported. See Table 11.2:

Table 9-2. Species of flora observed in the Tranche San Pedro Sula – El Progreso

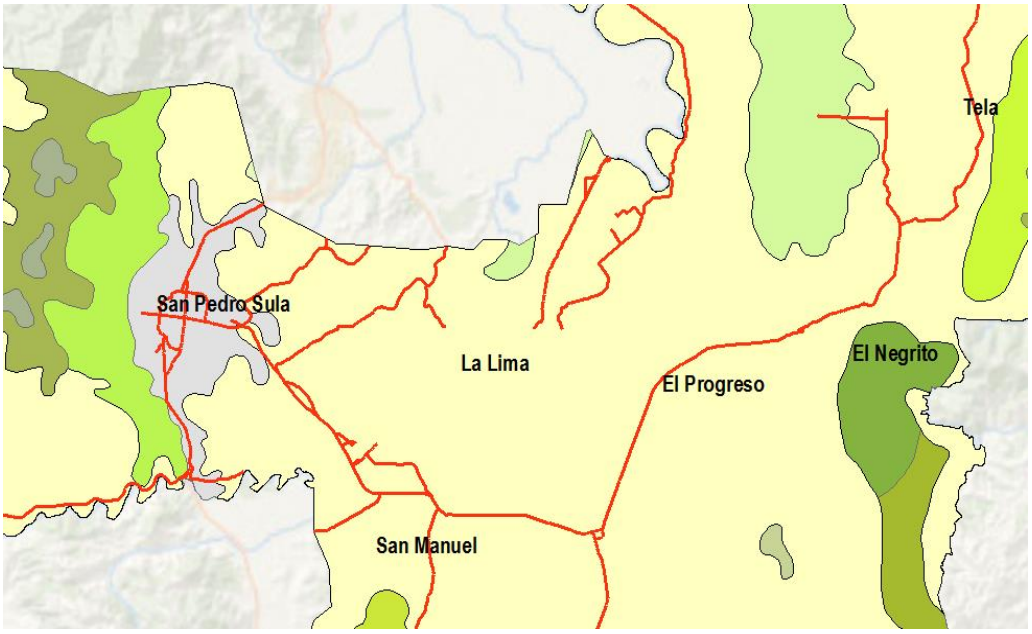
	Family	Scientific Name	Status	Common Name
1	Apocynaceae	*Cascabela thevetia* (L.) Lippold	Native	Quiebra muelas
2	Bignoniaceae	*Cresentia alata*	Native	
3	Burseraceae	*Bursera simaruba* (L.) Sarg.	Native	Indio desnudo
4	Leguminosae	*Acacia fistula* L.	Native	cañafístula
5	Leguminosae	*Cassia siamea* Lam.	Exotic	Acacia amarilla
6	Leguminosae	*Delonisx regia* (Bojer ex Hook.) Raf	Exotic	Morazán
7	Leguminosae	*Gliricidia sepium* Kunth ex Steud.	Native	Madriado
8	Leguminosae	*Senna reticulata* (Willd.) H.S. Irwin & Barneby	Native	
9	Meliaceae	*Melia azedarach* L.	Native	Paraíso
10	Moraceae	*Cecropia peltata* L.	Native	Guarumo
11	Nyctaginaceae	*Bougainvillaea x buttiana*	Exotic	Napoleón
13	Palmae	*Cocos nucifera L.*	Native	Coco

Source: Diagnostic conducted in June 2013.

11.4 **Ecosystems**

All alignment of the Tourism Corridor of Honduras: San Pedro Sula – El Progreso, is located according to the ranks of classification of ecosystems, in the "system of agriculture" which includes human intervention ecosystems, agriculture, livestock, shrimp farms, salt extraction farms and others. Specifically the city of San Pedro Sula, is classified as urban area. See Figure 9-1:

Figure 9-1. Characteristic ecosystems of the project area



Map Key

- Bosque tropical semideciduo mixto, submontano
- Herbazal pantanoso con gramíneas, palmas y/o arbustos
- Sistema agropecuario
- Vegetación tropical costera en suelos muy recientes, moderadamente drenado
- Bosque tropical siempreverde latifoliado, submontano
- Area urbana

Source: Vegetable Ecosystems Map of Honduras. Technical Secretariat of Planning and External Cooperation (SEPLAN). National Land Information System

VII. 3 Social Environment

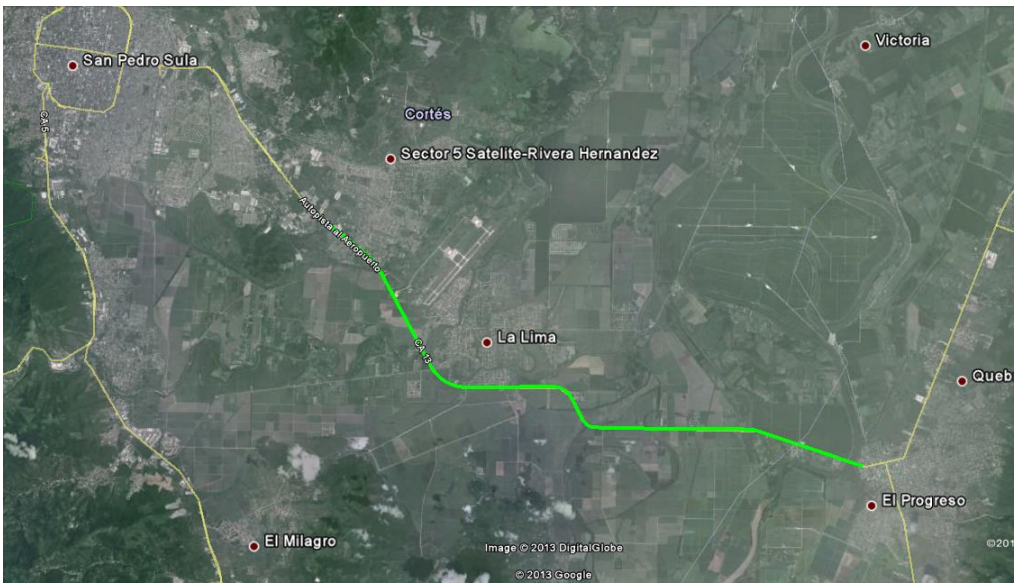
This section is the result of an analysis of information from the Population and households Census in addition to the review of related documents describing the area. It includes information on population characteristics, education, and other socio-demographic and economic indicators that provide relevant information about the quality of life of communities, equipment, services, infrastructure and economic activities, among others.

For this environmental assessment, the description of this section shall consist on the general aspects of the departments, municipalities, and in any possible cases, at the level of communities located along the alignment within the area of influence of the project.

11.5 **Population where the project is located (attach location map and satellite image 1:50000)**

The project for Maintenance of the tranche San Pedro Sula - El Progreso is located on one of the major road networks in Honduras CA-13, it is located in the departments of Cortes and Yoro, connecting the municipalities of San Pedro Sula, La Lima, San Manuel and El Progreso.

Figure 12-1. Satellite image of the Projects location



Source: Google Earth. 2013

12

11.5.1 **General characteristics of the population of the area of influence**

In this section we detail the characteristics at a level of knowledge, beliefs, education and behaviors of the population of the area of socioeconomic influence of the Project. Some of the general characteristics of the municipalities affected by the project are described as follows:

11.5.1.1 **Demographics**

The population estimate for 2010, conducted by the National Statistics Institute of Honduras, for municipalities of the socioeconomic influence area is presented in Table 12-1:

Table 12-1. Estimated population by municipalities, by rural and urban areas. 2010

Department / Municipality	Urban population			Rural Population			TOTAL
	Men	Women	Total	Men	Women	Total	
Cortés	602,170	655,009	1,257,179	157,306	155,806	313,112	1,570,291
San Pedro Sula	330,975	353,036	684,011	18,251	17,185	35,436	719,447
La Lima	25,585	29,103	54,688	4,399	4,128	8,528	63,216
San Manuel	17,041	19,081	36,122	8,356	8,983	17,339	53,461

Yoro	141,171	152,487	293,658	131,475	126,967	258,442	552100
El Progreso	84,916	92,535	177,451	13,406	13,572	26,978	204,429

Source: National Statistics Institute of Honduras. Population projections by Departments and Municipalities. 2010.

When speaking of urban and rural population of the Municipalities (2010), of the area of socioeconomic influence we observe that in the municipality of San Pedro Sula, 95% of the population lives in urban areas and 5% in rural areas . For the Municipality of La Lima, 86% of the population resides in urban areas, while in the Municipality of San Manuel, 67.5% reside in urban areas. Finally, in the municipality of El Progreso, 87% of the population lives in urban areas and only 13% live in rural areas.

11.5.1.2 **Housing**

The main indicators of education of the population in the area of socio-economic influence, are presented in Tables below:

Table 12-2. Total occupied housing in the Municipalities of the ASEI

Municipality	Total private houses occupied
San Pedro Sula	115,163
La Lima	11,017
San Manuel	6,285
El Progreso	29,485

Source: Honduras National Statistics Institute. Occupied private dwellings. 2001census.

11.5.1.3 **Education**

The main indicators of education of the population in the area of socio-economic influence, are presented in Tables below:

Table 12-3. School attendance of the population in the area of socio-economic influence

Municipality	Assists	Does not assist	Total	Not Considered
San Pedro Sula	149,696	299,229	448,925	66,533
La Lima	16,840	30,541	47,381	6,213
San Manuel	8,581	17,893	26,474	4,266
El Progreso	40,520	87,136	127,656	19,713

Source: Honduras National Statistics Institute. Complying school. Census 2001.

Table 12-4. Knows how to read and write

Municipality	Knows	Does not know	Total
San Pedro Sula	389,872	59,053	448,925
La Lima	41,931	5,450	47,381
San Manuel	21,956	4,518	26,474
El Progreso	104,070	23,586	127,656

Source: Honduras National Statistics Institute. Can read and write. Census 2001 .

Table 12-5. Last level or passed grade in Formal Education

Last passed grade	San Pedro Sula	La Lima	San Manuel	El Progreso
none	51,859	4,286	3,921	20,513
Basic (Primary - Secondary)	364,627	40,510	22,178	103,411
Superior (non-university)	5,737	525	96	684
University (graduate)	26,702	2,060	279	3,048
total	448,925	47,381	26,474	127,656
Not considered	66,533	6,213	4,266	19,713

Source: National Statistics Institute of Honduras. Last level or grade passed in Formal Education. 2001 Census. Observation: It Is worth mentioning that these figures belong to the last census conducted in 2001.

Municipality of San Pedro Sula

A percentage of the population of the municipality, which was not considered in the census for these educational variables 6,213 (13.1%). All analysis performed, concentrated in 87% of the population of the Municipality

- As for school attendance we have 33% of the population of the municipality as complying school and the remainder 67%, does not assists, however 87% of the population studied are literate and only the remaining 13% is not.
- With respect to the last level or grade approved, we can see that approximately 11.5% of the population of the municipality has no approved grade, on the contrary 81% of the population has a basic education at a grade school and high school level and 6 % has a college degree.

Municipality of La Lima

A certain percentage of the population of the municipality was not considered in the census for these educational variables 47,381 (15%). All analysis performed concentrated on 85% of the population of the Municipality

- As for school attendance we have that 35% of the population of the municipality is complying school and the remainder 65%, does not assists, however 88% of the studied population are literate and only the remaining 12% is not.
- With respects to the last level or grade approved, we can see that approximately 9% of the population of the municipality has no degree approved, on the contrary 85% of the population has a basic education at grade school and high school and 4 % has a college degree
-

Municipality of San Manuel

A certain percentage of the population of the municipality was not considered in the census for these educational variables 26,474 (16%). All analysis performed concentrated on 84% of the population of the Municipality

- As for school attendance we have that 32% of the population of the municipality is complying school and the remainder 68%, does not assists, however 83% of the studied population are literate and only the remaining 17% is not.
- With respects to the last level or grade approved, we can see that approximately 15% of the population of the municipality has no degree approved, on the contrary 84% of the population has a basic education at grade school and high school and 1 % has a college degree

Municipality of El Progreso

A percentage of the population of the municipality, which was not considered in the census for these educational variables 19,713 (15%). All

analysis performed, concentrated in 85% of the population of the Municipality:

- As for school attendance we have 32% of the population of the municipality as complying school and the remainder 68%, does not assists, however 82% of the population studied are literate and only the remaining 18% is not.
- With respect to the last level or grade approved, we can see that approximately 16% of the population of the municipality has no approved grade, on the contrary 81% of the population has a basic education at a grade school and high school level and 2.4 % has a college degree.

11.6 **Economic activity of the population**

11.6.1 **Department of Cortes**

At the departmental level, it can be mentioned that the main economic activities of the department are represented by manufacturing (29%), followed by wholesale trade, retail trade, hotels and restaurants (21.80%) and finally agriculture, forestry , hunting and fishing (12.52%).

11.6.1.1 **Economic activities in the Municipality of San Pedro Sula**

The main economic activities in the municipality of San Pedro Sula are distributed as follows:

Table 12-6. Main Economic activities in the Municipality of de San Pedro Sula

Economic activity	Cases	%
Activities not clearly specified	16,089	8.67
	8,757	4.72
Agriculture, forestry, hunting and fishing	110	0.06
Mining and quarries	47,154	25.42
manufacturing	909	0.49
Electricity, gas and water	13,526	7.29
construction	52,416	28.26
	9,641	5.20
Wholesale, retail, hotels and restaurants	11,638	6.27
	25,258	13.62
Total	185,498	100.00
NSA:	329,960	

Source: National Statistics Institute of Honduras. Economic Activity. census 2001.

Clearly in terms of the above Table, the highest percentages are represented by its wholesale, retail, hotels and restaurants, with 28.3%, while manufacturing accounts for 25.4%.

11.6.1.2 **Economic activities in the Municipality of La Lima**

The main economic activities in the municipality of La Lima, are distributed as follows:

Table 12-7. main economic activities in the municipality of La Lima

Economic Activity	Cases	%
Activities not clearly specified	1,638	9.96

Agriculture, forestry, hunting and fishing		2,762	16.79
Mining and quarries		7	0.04
manufacturing		3,511	21.34
Electricity, gas and water		65	0.40
construction		958	5.82
Wholesale, retail, hotels and restaurants		3,540	21.52
Transport, storage and communications		1,051	6.39
Establec, finance, insurance, real estate and business services		707	4.30
Community, social and personal services		2,214	13.46
	Total	16,453	100.00
NSA:		37,141	

Source: National Statistics Institute of Honduras. Economic Activity. census 2001.

In the case of the Municipality of La Lima, is clear as to the above Table, the highest percentages are you represented by the wholesale, retail, hotels and restaurants, with 21.5%, while manufacturing accounts for 21.3% and agriculture, forestry, hunting and fishing 17%.

11.6.1.3 **Economic activities in the Municipality of San Manuel**

The main economic activities in the municipality of San Manuel, are distributed as follows:

Table 12-8. Main economic activities in the Municipality of San Manuel

Economic Activity		Cases	%
Activities not clearly specified		1,005	11.70
Agriculture, forestry, hunting and fishing		1,625	18.92
Mining and quarries		4	0.05
manufacturing		2,550	29.68
Electricity, gas and water		32	0.37
construction		653	7.60
Wholesale, retail, hotels and restaurants		1,363	15.87
Transport, storage and communications		442	5.14
Establec, finance, insurance, real estate and business services		180	2.10
Community, social and personal services		737	8.58
	Total	8,591	100
NSA:		22,149	

Source: National Statistics Institute of Honduras. Economic Activity. census 2001.

In the case of the Municipality of San Manuel, it is clear as to the above Table, that the highest percentages are you represented by the manufacturing industry with 29.6%, and agriculture, forestry, hunting and fishing 19% and retail trade Wholesale, retail, hotels and restaurants 16%.

11.6.2 **Department of Yoro**

Among the economic activities of the Department, agricultural stand out with the following crops: bananas, sugar cane, oil palm, banana, coffee, corn, rice, beans and perform activities related to livestock.

11.6.2.1 **Economic activities in the municipality of El Progreso**

The economy of the municipality of El Progreso is largely linked to agricultural activities, mainly oriented towards the production of palm oil and basic grains (maize and beans) as representative crops in all communities. Classification of economic activities is presented in the municipality of El Progreso in Table 12.9:

Table 12-9. Main economic activities in the municipality of El Progreso

Economic Activity	Cases	%
Activities not clearly specified	3,283	7.86
Agriculture, forestry, hunting and fishing	9,788	23.42
Mining and quarries	15	0.04
manufacturing	9,403	22.50
Electricity, gas and water	204	0.49
construction	2,831	6.77
Wholesale, retail, hotels and restaurants	8,677	20.76
Transport, storage and communications	1,946	4.66
	1,147	2.74
Establec, finance, insurance, real estate and business services	4,499	10.76
Total	41,793	100.00
NSA:	105,576	

Source: National Statistics Institute of Honduras. Economic Activity. census 2001.

11.7 **Source of water supply for the population**

In private houses, water supply sources come mainly in its greatest percentage (> 80%) from the public or private system. See Table 12.10

Table 12-10. Water supply in the houses of the ASEI Municipalities

Sources of Water	San Pedro Sula		La Lima		San Manuel		El Progreso	
	Cases	%	Cases	%	Cases	Cases	Cases	%
From the pipes in the public or private system	102,060	89	9,038	82	5,203	83	24,429	83
From Winch well	698	1	60	1	120	2	461	2
From Well with pump	6,264	5	1,614	15	643	10	1,758	6
From River or stream	2,472	2	16	0	27	0	1,866	6
From Lake or pond Itinerant vendor	84	0	4	0	5	0	35	0
other	581	1	12	0	9	0	52	0
From the pipes in the public or private system	3,004	3	273	2	278	4	884	3
Total			11,017	100	6,285	100	29,485	100
NSA :	26,015		2,330		1,330		6,392	

Source: National Statistics Institute of Honduras. Water supply. 2001 Census.

The city of San Pedro Sula has an integrated water system, as well as numerous isolated systems. The city depends for its supply of water from surface and groundwater sources. Most of the supply (70%) comes from underground sources, which must meet the stationary deficits experienced by surface sources.

The reserve area of the mountain range of El Merendón west of the city represents the watershed area Piedras and Santa Ana rivers. These are

the main surface sources in the city. Apart from these two sources, the city also captures resource from Zapotal River, located northwest of the city and other minor sources like La Puerta and La Primavera Creeks..

By 2007, 85% of homes in the municipality of El Progreso, had drinking water systems. As for the type of service was 69% was supplied from the public service, 23% of wells and the rest by another system.

In relation to hydrogeology, all Sula Valley area has highly productive aquifers, ensuring supply. Thus this kind of aquifers account for 70% of the municipality's territory, thanks to the presence of the Ulua River in its western limit.

11.8 **Cultural Heritage**

The concept of cultural heritage refers to "the legacy of tangible and intangible assets that endorses a specific society over time and from which forges an identity as a people or nation; cultural heritage expresses a form of be, do, and dream, a vision of life, a meaning, a meaning of existence. " In the municipality of El Progreso, the following are mentioned:

- Architecture: La Casa del Cuadrante, El Barracón, La Casa del Administrador Bananero.
- In communication and transport: The train and the bicycle.
- Artistic expression: Artist Guillermo Mahchi, La Fragua Theater, Poet Othniel Nataren Alvarez, Couturier Carlos Campo.
- History: The so-called architects of the great strike of 1954.

11.8.1 **Archaeological ruins**

Within the area of the easement path of this road or adjoining thereto, no archaeological ruins exist, the query is made to the Institute of Anthropology and History, IHAH; on the requirement for a certificate of exemption process of the project, and responded it was not necessary because the expansion of the road is not yet planned..

11.8.2 **Communities or ethnic peoples or Afro-descendants**

According to the 2001 Census, the town of El Progreso has mainly Ladino population, having recorded a other ethnic groups of very small populations, as reflected in the table below.

Table 12-11. Ethnic Groups in El Progreso

Ethnicities	Population	Percentage (%)
Garífuna	244	0.165
Negro ingles	73	0.049
Tolupan	10	0.006
Pech (Payas)	3	0.002
Misquitos	13	0.008
Lenca	64	0.043
Tawahka	21	0.014
Chortí	50	0.033
Otro	146,891	99.67%

Source: Municipal Development Plan focusing Land Management, El Progreso, Yoro.

11.8.3 **Cultural interest sites**

Municipality of San Pedro Sula

- Museum of Anthropology and History (Honduras).
- Museum "Daisy Bonilla Fasquelle".
- The San Pedro Sula Cathedral "St. Peter the Apostle".
- The Cusuco National Park.
- Victoriano Lopez School of Music.
- The Nature Museum .

11.9 **Transportation**

For the international and domestic flights service, San Pedro Sula has the Ramón Villeda Morales International Airport . The airport is located 15 km east of the city; It is the most busiest airport in the country, even more than the one in the capital city, Tegucigalpa. In this airport the following airlines offer their services, LACSA, TACA, COPA, United, Delta, Spirit, Sosa, Easy Sky, AeroCaribbean, Avianca, American, Continental and Iberia..

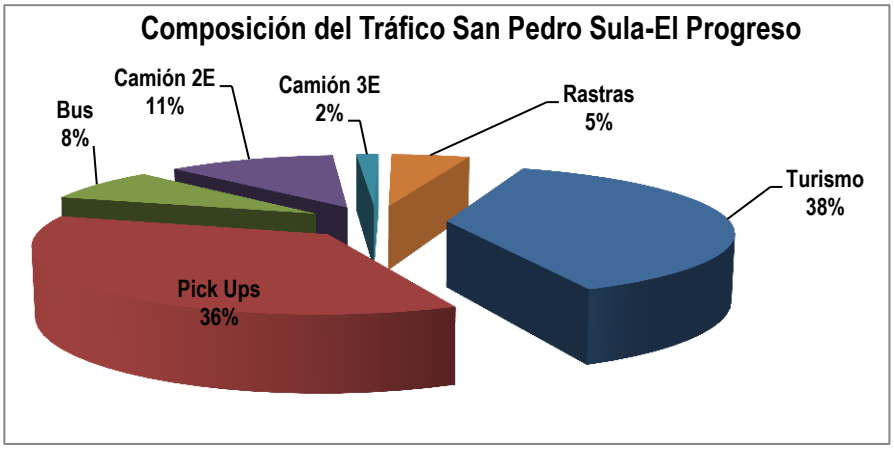
The city is connected to all major cities of the country by means of a proper system of roads. People visiting San Pedro Sula that decide to travel by land (bus) to other cities, generally use the Metropolitan Bus Terminal, located 5 km south of the city. This terminal was designed to unite all the bus lines under one roof and thus relieve some of the traffic congestion in the city.

There are routes of urban and interurban transportation, intercity transportation with a good number of runs throughout the day. In addition there are transport routes at a regional level that connect El Progreso with the surrounding municipalities and major cities in the country. We find, the north-south axis (Choluteca, Tegucigalpa, San Pedro Sula), west-north (Santa Rosa, Santa Barbara, San Pedro) and the north coast (Tela, La Ceiba, Tocoa, Olanchito).

11.9.1 **Traffic**

The composition of the current traffic on the tranche: San Pedro Sula - El Progreso is as follows: 38% is composed of the light vehicles (tourism), 36% pickups, buses 8% buses, 11% 2E type trucks, 2% the 3E type, 11% Freight trucks . See Figure 12 1

Graphic 12-1. Composition of traffic on the tranche San Pedro Sula – El Progreso

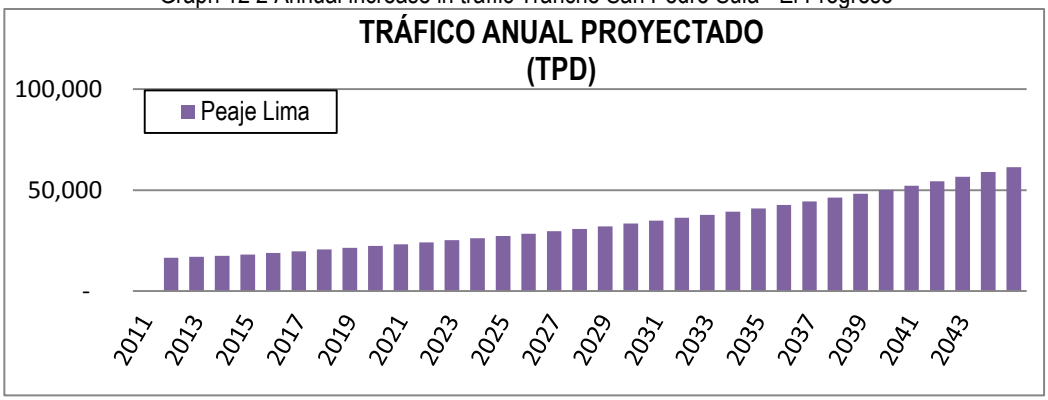


Source: Consultant, based on performed projections.

Yearly traffic (TPD) for 2013 in the tranche San Pedro Sula - El Progreso, is of 16,995 vehicles. Completing the selective rehabilitation and maintenance of the Tourism Corridor Project: Tranche San Pedro Sula – El Progreso, on 2015, we will have an annual traffic of about 18,156 vehicles.

The annual increase in traffic will be between 3% and 4% until 2045, according to projections. See Figure 12 2:

Graph 12 2 Annual increase in traffic Tranche San Pedro Sula - El Progreso



Source: Consultant, based on performed projections.

11.10 Solid wastes

In the case of the Municipality of El Progreso, the collection system is currently Granted under concession to MC (PROAMBIENTE), which efficiently meets their service, by monitoring satellite units and georeferencing systems.

Although there are authorized sites suitable for waste disposal at a municipal level, it is clear that most of the area's population of Socioeconomic Influence gets rid of solid waste by burning or burying them.

11.10.1 Collection (containers, soil, etc.).

The mechanism of garbage disposal in the area of economic influence of the Project is presented in Table 12.12:

Table 12.12. Disposing of garbage in the area of socio-economic influence

Waste Elimination	San Pedro Sula		La Lima		San Manuel		El Progreso	
	Cases	%	Cases	%	Cases	%	Cases	%
Throws it on the street, river, creek, lake or sea	4,881	4	311	3	238	4	1,003	3
Is picked up by the garbage truck	85,648	74	8630	78	379	6	13,411	45
IS taken to the deposit or container	1514	1	107	1	109	2	199	1
Is burned or buried	19,551	17	1,803	16	4,844	77	13,505	46
Pays a particular person to dispose of it	2,885	3	84	1	629	10	1,161	4
Other	684	1	82	1	86	1	206	1
Total	11,516 3	100	11,017	100	6,285	100	29,485	100

NSA :	26,015		2,330		1,330		6,392	

Source: National Statistics Institute of Honduras. Garbage disposal. 2001 Census.

As for waste disposal in the ASEI, we have that in the Municipality of San Pedro Sula, 74% of the waste is collected by the garbage truck and in 17% of cases, burned or buried. On the other hand in the Municipality of La Lima 78% of the garbage is collected by garbage truck and 16% burned or buried. On the contrary in the Municipality of San Manuel in 77% of cases dispose by burning or burying trash.

In the municipality of El Progreso, at least 45% of the garbage disposal is performed by a garbage truck and in 46% of cases it is burned or buried.

It is noted that a garbage collection service is present in the Municipalities of San Pedro Sula, La Lima and El Progreso, while in the Municipality of San Manuel handling or disposal of waste is done through burning.

11.10.2 **Transportation (compactors, dump trucks, carts, etc..)**

In the case of the municipality of El Progreso, they currently cover 100% of the urban area (3 routes) and 70% of rural areas. 8 units are used for collecting and compacting garbage and count with a claims management system for immediate response. See Figure 12.3:

Figure 12-2. Garbage truck in the Municipality of *El Progreso*

Source: LBG, Field work, April 2013.

The municipality of San Pedro Sula has a department responsible for the management of solid waste in relation to its transport it currently covers 100% of the urban zone, for which a city is divided into 8 sectors and 9 special routes. Several units for collecting and compacting trash are used, comprised of compacting trucks and structure trucks, approximately 20,000 tons are collected per month.

11.10.3 **Disposal (uncontrolled landfill, controlled landfill, sanitary filling)**

Two sites for solid waste disposal have been identified, both are located in the municipality of La Lima. Figure 12.3 presents the current conditions found in each of these sites.

Figure 12-3. *Waste disposal sites in the area of socio-economic influence*

Controlled dump site in La Lima

Dump Site in the Municipality of La Lima

Source: LBG, Field work, April 2013.

11.11 Collection, treatment and disposal of wastewater

As for wastewater, it is generally expected that they come from camps and machinery yard (mainly washing machinery and equipment) and mobile sanitary services that will be placed on the work fronts and in the camps. For camps and machinery parking, mitigation measures exist for the management of these liquid wastes consisting mainly of settlers or sand traps and grease traps; the final discharge will be monitored to comply with environmental regulations. As for wastewater coming from mobile sanitary services, these are the responsibility of the service provider or Concessionaire, however will require the registration of custody and compliance for final disposal.

In Table 12-13, we present the provision of sanitary services in the occupied private housing units within the Municipalities of ASEI in the

Table 12-13. *Municipal sanitary service in the area of influence*

Sanitary Service	San Pedro Sula		La Lima		San Manuel		El Progreso	
	Cases	%	Cases	%	Cases	%	Cases	%
Toilet connected to the sewage system	84937	73	9052	80	1913	30	13,291	44
Toilet connected to a septic tank	15180	13	1168	10	2468	38	11,088	37
Toilet connected with river discharge, creek, lagoon, sea or lake.	1658	1	203	2	79	1	462	2
Latrine or simple pit	9715	8	579	5	1590	25	3,279	11
None	4999	4	345	3	372	6	1,942	6

Total	116,489	100	11,347	100	6,422	100	30,062	100
NSA :	49		2		6		23	

Source: Honduras National Statistics Institute. Sanitary Service. 2001 Census.

With regard to the sanitary service, the Municipality of San Pedro Sula, 73% of households have a toilet connected to the sewerage system, 13% have a toilet connected to a septic tank and 4% do not have any.

In the case of the Municipality of La Lima, it is observed in 80% of cases the, occupied private housing units have toilets connected to the sewerage system, 10% of households having toilet connected to septic tank and about 3% not has no service.

In the municipality of San Manuel, 38% of occupied private housing has toilets connected to septic tank, 30% have toilets connected to the sewerage system and 6% do not have any service.

In the municipality of El Progreso, 44% of households are connected to the sewerage system, 37% are connected to a septic tank and 6% have no toilet. The urban zone of El Progreso has a public sewer system which is deteriorated and in an almost totally inefficient operation, the rest of the settlements in the municipality have toilets or latrines connected to septic tanks. This second system is a serious problem of soil contamination and sources of surface and ground water in the area, affecting the health of residents, mainly children. The sanitation system of public sanitary sewer of El Progreso has treatment lagoons and for final disposal water is discharged into to the Ulua River.

11.12 **Health**

The main health facilities in the Municipalities of socioeconomic influence area is presented as follows:

San Pedro Sula has a number of major hospitals, among which are: Leonardo Martinez Hospital, Doctor Mario Catarino Rivas Hospital, CEMESA Hospital, Del Valle Hospital, etc.. The city also has a good number of private clinics, the Military Hospital of San Pedro Sula hospital to cater exclusively for military personnel and the Honduran Institute of Social Security hospital, which serves the population with social insurance. This city also has thirty health centers, 14 of which are managed by the municipality.

In 2007 the municipality of El Progreso had 7 Health Centers with a Medical Dentist (CESAMO), two located in the municipal capital 1 in each of the following communities: Urraco Pueblo, Guaymitas, La Mina, Agua Blanca Sur and Quebrada de Yoro. The population served by 2007 and the staff providing assistance for each Center, is presented in Table 12-14:

Table 12-14. *Health installations in the Municipality of El Progreso*

Health Center	Health Unit	Attended population on 2007	Staff that provides assistance
MO Carlos B. González cation: El Progreso	CESAMO Carlos B. González Location: El Progreso	78,847	physician, nurse, assistant nurse, psyc microbiologist,
) y Clínica Materno Infantil : El Progreso, Col. Berlín	CESAMO y Clínica Materno Infantil Location: El Progreso, Col. Berlín	43,325	Physician, nurse, assistant of the n
CESAMO ation: Urraco Pueblo	CESAMO Location: Urraco Pueblo	18,529	2 auxiliary nurses, 1 general physician, 2 a environmental health, one fund ra
CESAMO ocation: Guaymitas	CESAMO Location: Guaymitas	11,106	2 auxiliary nurses, 1 social service Doctor, ., 1 Environmental health technical(tsa), 1 1 cleaning woman

CESAMO Location: La Mina	CESAMO Location: La Mina	14,807	2 auxiliary nurses, one Cuban doctor, 1 environ health technical (EHT), 1 pharmacy clerk, 1 wat
CESAMO Location: Agua Blanca Sur	CESAMO Location: Agua Blanca Sur	12,958	2 auxiliary nurses, 1 general doctor, 1 environm health assistant 1 environmental health technic watchman, 1 cleaning lady, 1 pharmacy clerck, municipal health unit
CESAR Location: Quebrada de Yoro	CESAR Location: Quebrada de Yoro	5,553	1 auxiliary nurse, one doctor in Cuban social se 1 environmental health technical

Source: Municipal Development Plan focused on territorial ordinance plan, El Progreso, Yoro.

VIII.- Affidavit Of The Legal Representative

13

I **Carlos Arlinton Velásquez Jiménez** of **Honduran** Nationality , Of legal age, **married**, Identity number (passport, resident card) number **1803-1970-00322**, residing in: **Residencial Plaza, Bloque A, Casa #8;** under the condition of **Legal Representative** of The Civil Works & Transportation And Housing Secretariat (known as SOPTRAVI) project: Tourism Corridor of Honduras: Tela – La Ceiba Tranche.

Located **between the Municipalities of San Pedro Sula, La Lima, San Manuel and El Progreso**; I declare that the information here provided on this form is true. I therefore manifest that I am aware of the existence of the Code of Good Environmental Practices of Honduras and declare that I agree to comply in all that apply to this Project, Work or Activity.

_____

Legal Representative Signature

IX.- Affidavit of the Lender of Environmental Services

14

I, **Carol Yisel Perdomo Cardona** , of legal age and of this domicile, **Civil Engineer** by profession and acting in my capacity as legal **representative of the consulting firm Ingeniería y Ambiente de Sula**, registered in the Natural Resources & Environment Secretariat (Known In Spanish as SERNA) **RE-0017-2003**, and hereby certify that all the information concerning the environmental status of the area where you plan to

build the **Tourism Corridor Project Tranche San Pedro Sula – El Progreso** in the municipalities of **San Pedro Sula, La Lima, San Manuel, El Progreso**, is true at the time of the inspections. In witness whereof I sign this in the city de_____ ____ on ____ of the year ___

_____

Lender of Environmental Services Signature

X.- Additional Requirements to Submit

15	A	Form F-02 Assessment of the Significance of the Environmental Impact (Digital Matrix and printed)	X
	B	Environmental Management Plan	X
	C	Document of company constitution, individual trader or legal person	NA
	D	Title Deed or lease of the place where the project will be developed, duly stamped and registered	N/A
	E	Certificate issued by the Municipal Environmental Unit (MEU), which states teh status of the project (if it has commenced operations and if it is located in an environmentally fragile area) (only for procedures in the Natural Resources & Environment Secretariat Known in Spanish as SERNA)	N/A
	F	Publication (in a newspaper of general circulation) of alert of entry before this Secretariat, five days prior to the presentation of this form and other requirements.	X
	G	Detail or breakdown of the amount of global investment activity, work or project.	X
	H	The basic design of the site corresponds with a general level of activity, work or project to be developed	NA
	I	The copy of the map sheet in which is the AP located	X
	J	Certification issued by the consultant responsible for the geotechnical and civil engineering situation of the land where the project is located.	NA
	K	Certification issued by a consultant responsible for the situation of geology, geomorphology, hydrogeology and natural terrain threats.	NA
	L	Certification issued by the consultant responsible for the archaeological situation of the land where the project will be located.	X

Photocopies of any deed or other documents must be authenticated

XI.- COMPETENT AUTHORITY ONLY									
16.1 ENVIRONMENTAL AUTHORITY RECEIVING				16.2 DATE		month		year	
16.1.1 SERNA		16.1.2 Municipality		16.3 TIME		16.4 Seal (receipt)			
16.5 Name of civil servant receiving									
16.6 Position									
16.7 FOLLOW-UP ON FILE									

Name	Position	Action			Date	
		Report	Revision	Opinion	Starts	Ends

XII.- Results of the Environmental Evaluation Process					
17.1 Environmental Feasiblility	17.1.1 Accepted		17.1.2 Rejected		
17.2 Civil servant authorizing the License			17.3 Position		
17.4 SIgnature of Civil Servant authorizing			17.5 Number of License		

A- F02 FORM – EVALUATION OF THE ENVIRONMENTAL IMPACT SIGNIFICANCE (MATRIX)

1. RESOURCE CONSUMPTION

A. CONSTRUCTION STAGE

	Component/ Subcomponent	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	y	Regulatory framework (z)					X= y * z	Value per Component	
		(Value = 1)	(Value = 2)	(Value = 3)	(Value = 4)	(Value =5)		a	b	c	d	e			
1.1 Water	1.1.1 Source/ consumption	Body of water (surface or underground) within or outside the ADI not used as a source of drinking water	Body of water(surface or underground) which supplies the drinking water network outside ADI communities	Body of water(surface or underground) from which the community's drinking water network is supplied	Drinking water network outside the ADI project/ Well within the ADI project	Drinking water network within the ADI project	1		4				4.00	4.00	General Water Law
1.2. Energy	1.2.1 Source / consumption		An own generator will be used, which will make noises, cause gases, and vibrations in the ADI, where there is NO population	An own generator will be used, which will make noises, cause gases, and vibrations in the ADI, where there IS population	It will be necessary to disconnect the public network in order to make the project's own connections	The public network's consumption might generate supply problems to the community	3		4				12.00	12.00	The Electric Subsector Framework Law

B. OPERATION STAGE

1.3 Water	1.3.1 Consumption in public supply network	Water consumption does not exceed 50 m^3/month.		Water consumption between 50 and 200 m^3/month.		Water consumption greater than 200 m^3/month.							0.00		
	1.3.2 Superficial body of water consumption		Water consumption does not exceed 25% of the remaining flow.	Water consumption is greater than 25% and less than 50% of the remaining flow	Water consumption is greater than 50% of the remaining flow.	Greater consumption than the remaining flow.	2		4				8.00	8.00	General Water Law
	1.3.3 Consumption of underground source		Water consumption is no greater than 50 m^3/day.	Water consumption between 50 y 200 m^3/day.	Water consumption greater than 200 and less than 500 m^3/day.	Water consumption greater than 500 m^3/day.							0.00		
1.4. Energy	1.4.1 Energy self-sufficiency through biofuels	Less than 360,000 liters are consumed	More than 360,000 liters and less than 750,000 liters of fuel per year are consumed	More than 750,000 liters and less than 7,500,000 liters of fuel per year are consumed	More than 7500,000 liters and less than 15,000,000 liters of fuel per year are consumed	More than 15,000,000 liters of fuel per year are consumed							0.00		
	1.4.2 Energy self-sufficiency through fossil fuels	Less than 360,000 liters are consumed	More than 360,000 liters and less than750,000 liters of fuel per year are consumed	More than 750,000 liters and less than 1,800,000 liters of fuel per year are consumed	More than 1,800,000 and less than 3,600,000 liters of fuel per year are consumed	More than 3,600,000 liters of fuel per year are consumed	1				2		2.00	6.00	Regulations for the installation and operation of service stations, deposits of fuel for own consumption and alternative or substitute products. (Agreement No. 1011, The Gazette
	1.4.3 External supply	Less than 240 Mwh/year, or 360.000 liters of fuel per year, or 12 TJ/year will be consumed.		More than 240 and less than 1200 Mwh/year, or more than 360.000 L and less than 1800.000 L of fuel per year, or more than 12 or less than 60 TJ/year will be consumed.		More than 1200 Mwh/year, or 1.800.000 L of fuel per year, or 60 TJ/year will be consumed.	1		4				4.00		
												A Consumptio		30.00	

2. IMPACT ON THE BIOLOGICAL ENVIRONMENT

A. CONSTRUCTION STAGE

	Component/ Subcomponent	CASE 1 (Value = 1)	CASE 2 (Value = 2)	CASE 3 (Value = 3)	CASE 4 (Value = 4)	CASE 5 (Value =5)	y	Regulatory framework (z) a	b	c	d	e	X= y * z	Value per Component	
2.1 Fauna	2.1.1 Terrestrial fauna			There will be some type of impact (displacement, hunting, destruction of habitat)		There will be impact on endangered species, indicators, CITES, endemic or with small populations.	3			3			9.00	18.00	Environment General Law
	2.1.2 Aquatic fauna			There will be some types of impacts(displacement, hunting, destruction of habitat, etc.)		There is an impact on endangered species, indicators, CITES, endemic or with small populations.	3			3			9.00		Environment General Law
	2.1.3 Coral reefs					There will be limitations and conditions.							0.00		
	2.1.4 Introduction of non-native species of fauna					There will be introduction.							0.00		
2.2 Flora	2.2.1 Terrestrail flora			There will be some type of impact (logging, burning, extraction of timber, etc.)		There will be an impact on endangered species, indicators, CITES, endemic or with small populations.	3			3			9.00	18.00	Environment General Law
	2.2.2 Aquatic flora			There will be some impact(extraction, cutting, siltation, etc.)		There will be an impact on endangered species, indicators, CITES, endemic or with small populations.	3			3			9.00		Environment General Law
	2.2.3 Wetlands					There will be impact.							0.00		Environment General Law
	2.2.4 Introduction of non-native species of flora					There will be introduction.							0.00		

A. OPERATION STAGE

2.3 Fauna	2.3.1 Terrestrial fauna			There will be some type of impact (displacement, hunting, destruction of habitat, etc.)		There will be an impact on endangered species, indicators, CITES, endemic or with small populations.	3			3			9.00	9.00	
	2.3.2 Aquatic fauna			There will be some type of impact (displacement, hunting, destruction of habitat, etc.)		There is an an impact on endangered species, indicators, CITES, endemic or with small populations.							0.00		
	2.3.3 Coral reefs					There will be limitations							0.00		
	2.3.4 Introduction of non-native species					There will be introduction.							0.00		
2.4 Flora	2.4.1 Terrestrail flora			There will be some type of impact(logging, burning, extraction of timber, etc.)		There will be an impact on endangered species, indicators, CITES, endemic or with small populations.							0.00	0.00	Environment General Law
	2.4.2 Aquatic flora			There will be some impact (extraction, cutting, siltation, etc.)		There will be an impact on endangered species, indicators, CITES, endemic or with small populations.							0.00		
	2.4.3 Wetlands					There will be impact.							0.00		
	2.4.4 Introduction of non-native species					There will be introduction.							0.00		
													SEI Biological environment	45.00	

3. Physical Environment

A. Construction Stage

Component/ subcomponent			CASE 1 (Value = 1)	CASE 2 (Value = 2)	CASE 3 (Value = 3)	CASE 4 (Value = 4)	CASE 5 (Value =5)	y	Regulatory Framework (z) a	b	c	d	e	X= y * z	Valuation by component	
3.1. Atmosphere	3.1.1 Emissions	3.1.1.1 Stationary sources(see regulations of emissions by stationary sources)	Controlled emissions but which may cause impacts		Partially controlled emissions		Uncontrolled emissions.	3				2		6.00	17.00	Regulations for the control of emissions generated by stationary sources.
		3.1.1.2 Mobile sources (see regulations of vehicle emissions)	Mobile equipment, in fair condition,will be used				Mobile equipment, old and in poor condition, will be used.	1				2		2.00		Rules for the Regulation of emissions of polluting gases and smoke in motor vehicles.
		3.1.1.3 Air pollution emissions (dust, smoke, and others not included in Regulations)	Controlled emissions but which may cause impact		Partially controlled emissions.		Uncontrolled emissions.	3			3			9.00		General Environment Law
		3.1.1.4 Ionizing radiations.					There are emissions							0.00		
	3.1.2 Other emissions not included in Regulations (odors, gases, and others)		Air pollution is generated and it is controlled, but could generate damages		Air pollution is generated, but it is partially controlled.		Air pollution is generated, but it is uncontrolled.	3			3			9.00	9.00	
	3.1.3.Noises and/or vibrations				There is generation of noise or vibration and it exceeds the limit of the applicable regulation and/or could be alliviated.		There is generation of noise or vibration and it exceeds the limit of the applicable regulation and/or could not be eased.	3				2		6.00	6.00	General regulations for prevention of accidents at work and occupational diseases
3.2. Bodies of Water	3.2.1 Reduction in capacity of infiltration			From 1,500 to 7,500 m^2 of waterproof area	More than 7,500 to 15,000 m^2 of waterproof area	More than 15,000 to 30,000 m^2 of waterproof area	More than 30,000 m^2 of waterproof area.							0.00	8.00	General Environment Law
	3.2.2 Place for excretal dsiposal			In portable septic pits	Septic pits will be built	Outdoors, inside the AP, or on the AID	In bodies of water	2					1	2.00		Technical standard of discharges of Wastewater into Receiving Bodies and Sewerage
	3.2.2 Place of sewage disposal (remains of concrete, oils, fuels, paints, sealants and other liquid chemical substances)		They will be treated and deposited to guaranteed receivers.	They will be disposed in places properly controlled by competent authority.	They will be taken to places, not controlled, but authorized by the municipality	Outdoors, inside the AP, or on the AID	In bodies of water	2			3			6.00		Health Code
3.3 Soil	3.3.1 Residuos solidos	3.3.1.1 Specials	Disposed in cell of confinement in controlled landfills or use means of sterilisation or incineration authorized by the competent authority		Are disposed in landfills without cells specific for special waste	Final disposal treatment or no adequate provision	Final disposal in uncontrolled dump or unauthorized location	4				2		8.00		Regulations for the Integral Management of Solid Waste
		3.3.1.2 Non specials.	Final disposal in a landfill or an authorized treatment method			Final disposal in controlled landfill	Final disposal in uncontrolled dump or unauthorized location	4				2		8.00	28.00	Regulations for the Integral Management of Solid Waste
		3.3.1.3 Inert		It is finally disposed in a dump in the AP or to a non-commercial third party	Is finally disposed in a landfill with classification or a dump outside the AP.		It is disposed in places not approved by the competent authority	2				2		4.00		Regulations for the Integral Management of Solid Waste
		3.3.1.4 Transportation of waste	Complies with existing regulations		It will use the municipal transport system and it does not comply with regulation	It will use its own transport system and it does not comply with regulation	Subcontract a transportation service and it fails to comply with regulation	4				2		8.00		Regulations for the Integral Management of Solid Waste
	3.3.2 Use of Soil						Use will be modified							0.00	0.00	Municipalities Act / General Environment Law
	3.3.3 Movement of soil.			Soil movements and filling without mobilization outside the project area, are expected.	Soil movements and carrying it outside the AP up to volumes of 1,000 m^3 are forseen.	Soil movements and carrying it outside the AP up to volumes of 10,000 m^3. are forseen	Soil movements and carrying it outside the AP up to volumes greater to 10,000 m^3. are forseen	4			3			12.00	12.00	General Environment Law
	3.3.4 Sloping.		The net area has a slope of about 0-15%.	The net area has a slope of about 15-25%.	The net area has a slope of about 25-45%.	The net area has a slope of about 45% y 60%.	The net area has a slope greater to 60%.	1			3			3.00	3.00	General Environment Law
	3.3.5 Density of construction.			Coverage of construction is less that 25% of the Project's total area.	Construction coverage is greater than 25% but less than 50% of the Project's property total area.	Construction coverage is greater than 50% and less than 70% of the Project's property total area.	Construction coverage is greater than 70% of the Project's property total area.				3			0.00	0.00	Municipalities Act / General Environment Law

B. OPERATION STAGE

Component / subcomponent			CASE 1 (Valor = 1)	CASE 2 (Valor = 2)	CASE 3 (Valor = 3)	CASE 4 (Valor = 4)	CASE 5 (Valor =5)	y	Regulatory Framework (z) a	b	c	d	e	X= y * z	Valuation by component	
3.4. Atmosphere	3.4.1 Emisiones	3.4.1.1 Stationary sources(see regulations of emissions by stationary sources)			Emissions will be generated									0.00	21.00	
		3.4.1.2 Mobile sources (see regulations of vehicle emissions)			Mobile equipment, that it is not known if it will comply with emission standards, will be used.		Mobile equipment, that will not comply with emission standards, will be used.	3				2		6.00		Rules for the Regulation of emissions of polluting gases and smoke in motor vehicles.
		3.4.1.3 Air pollution emissions (dust, smoke, and others not included in Regulations)					It will produce emissions	5			3			15.00		General Environment Law
		3.4.1.4 Ionizing radiations.					There will be emissions							0.00		
	3.4.2 Other emissions not included in Regulations (odors, gases, and others)		Air pollution will be generated and it is controlled, but could generate damages		Air pollution will be generated, but it is partially controlled.		Air pollution will be generated, but it is not controlled.							0.00	0.00	
	3.4.3.Noises and/or vibrations				There is generation of noise or vibrations and it exceeds the limit of the applicable regulation and/or could be alliviated.		There is generation of noise or vibrations and it exceeds the limit of the applicable regulation and/or could not be alliviated.	3				2		6.00	6.00	General regulations for prevention of accidents at work and occupational diseases
3.5 Bodies of Water	3.5.1 Type and quantity of sewage				More than 3.785 m^3 and less than 3.785 m3 per day or, industrial sewage , agro-industrial, agricultural and aquaculture		More than 3,785 m^3 per day or special sewage category A or B	1					1	1.00	5.00	Technical standard of discharges of Wastewater into Receiving Bodies and Sewerage
	3.5.2 Place of sewage disposal		Control based on volume or source and composition is not required	Unload waste water to the sewer system, complying with the regulations.	Unload wastewater to receiving body, complying with the regulations	Download wastewater to receiving body, wihtout complying with the regulations	Unload wastewater to receiving body, without complying with the regulations	4					1	4.00		Technical standard of discharges of Wastewater into Receiving Bodies and Sewerage
3.6 Soil	3.6.1 Residuos sólidos	3.6.1.1 Specials	Disposed in cell of confinement in controlled landfills or use means of sterilisation or incineration authorized by the competent authority		Are disposed in landfills without cells specific for special waste	Final disposal treatment or no adequate provision	Final disposal in uncontrolled dump or unauthorized location	3				2		6.00	26.00	Regulations for the Integral Management of Solid Waste
		3.6.1.2 Non specials.	Final disposal in a landfill or an authorized treatment method			Final disposal in controlled landfill	Final disposal in uncontrolled dump or unauthorized location	4				2		8.00		Regulations for the Integral Management of Solid Waste
		3.6.1.3 Inert		It is finally disposed in a dump in the ap or to a non-commercial third party	Is finally disposed in a landfill with classification or a dump outside the AP.		It is disposed in places not approved by the competent authority	2				2		4.00		Regulations for the Integral Management of Solid Waste
		3.1.1.4 Transportation of waste	Complies with existing regulations		It will use the municipal transport system and it does not comply with regulation	It will use its own transport system and does not comply with regulation	Subcontract a transportation service and it fails to comply with regulation	4				2		8.00		Regulations for the Integral Management of Solid Waste
	3.6.2 Use of soil						Its use will be modified							0.00	0.00	
	3.6.3 Population density.		A density less than 50 occupants per hectare is expected		A density greater than 50 and less than 200 occupants per hectare are expected.		A density greater than 200 occupants per hectare are expected.							0.00	0.00	
														Physical Environme	141.00	

4. SOCIAL ENVIRONMENT

A. CONSTRUCTION STAGE

Component/subcomponent		CASE 1 (Value = 1)	CASE 2 (Value = 2)	CASE 3 (Value = 3)	CASE 4 (Value = 4)	CASE 5 (Value =5)	y	Legal Framework (z) a	b	c	d	e	X= z * y	Valuation per component	
4.1 Housing	4.1.1 Impact on homes or other assets				Temporary	Permanent							0.00	0.00	compulsory purchase Act, Decree 113
	4.1.2 Mobilization, relocation of people from the AP.					There is mobilization, relocation of people living in the PA or area influenced by the effect of the project.							0.00		Compulsory Purchase Act, Decree 113
4.2 Culture	4.2.1 Landscape.				Development of infrastructure in an urban area and causes an imbalance in the texture of the existing landscape.	Development of infrastructure in an rural or urban area and it affects the texture of the existing landscape.							0.00	0.00	General Environment Law
	4.2.2 Patrimony.				The project partially affects the existing scientific, architectural, anthropological or archaeological heritage.	The project entirely affects the existing scientific, architectural, anthropological or archaeological heritage.							0.00		Cultural Heritage Law
4.3 Vialidad	4.3.1 Vehicular, maritime, air traffic, etc.	Generates new traffic ratio greater to 10% and less than 25% of the current traffic.		Generates new traffic ratio increased to 25% and less than 50% percent of the current traffic.		Generates new traffic ratio increased to 50% of the current traffic.	1		4				4.00	4.00	Traffic Law
	4.3.2 Means of communication					The roads of the ADI are not designed to withstand the traffic equipment and machinery							0.00		
4.4 Basic Services	4.4.1 Water					The project will alter the quality of the ADI's water source							0.00	0.00	
	4.4.2 Solid wastes			Generating solid waste will bring on problems to the public recollection system.		The generation of solid waste will collapse the municipal disposal site.							0.00		
	4.4.3 Residual water					RW layout will be in soil or bodies of water used (or to be used) by the community.							0.00		
4.5 Population's Health	4.5.1 Generating diseases			The project could affect the health of the population in the area of influence of the project.		The project affects the health of the population in the area of influence of the project.	3				2		6.00	12.00	Health Code Regulations
	4.5.2 Vectores			The project could generate or increase the type and quantity of vectors in the project area.		The project generates or increases the type and quantity of vectors in the project area.	3				2		6.00		Health Code Regulations
	4.5.3 Quality of the environment					The project could alter the normal pace of life of the population							0.00		General Environment Law

B. ETAPA DE OPERACIÓN

Component/subcomponent		CASO 1 (Valor = 1)	CASO 2 (Valor = 2)	CASO 3 (Valor = 3)	CASO 4 (Valor = 4)	CASO 5 (Valor =5)	y	Marco legal (z) a	b	c	d	e	X=z * y	Valoración por efecto	
4.6 Housing	4.6.1 Impact on homes or other assets					Activities could generate vibrations or other impacts that damamge houses.							0.00	0.00	
4.7 Culture	4.7.1 Patrimony.				The project partially affects the existing scientific, architectural, anthropological or archaeological heritage.	The project entirely affects the existing scientific, architectural, anthropological or archaeological heritage.							0.00	0.00	
	4.7.2 Culture , traditions					New religions, new celebrations or customs different from those of the community will be introduced.							0.00	0.00	
4.8 Vialidad	4.8.1 Vehicular, maritime, air traffic, etc.	Generates new traffic ratio greater to 10% and less than 25% of the current traffic.		Generates new traffic ratio increased to 25% and less than 50% percent of the current traffic.		Generates new traffic ratio increased to 50% of the current traffic.	1			4			4.00	4.00	Traffic Law
	4.8.2 Means of communication					The roads of the ADI are not designed to withstand the traffic that will be generated by the project.							0.00	0.00	

4.9 Basic services	4.9.1 Drinking water				The community does not accept that the company uses its water source	The community does not accept that the company use its network/ there is no availability of water for the project.							0.00	0.00		
	4.9.2 Solid wastes			The RW collection system has no ability to provide total service to the project.		The lifespan of the landfill or the RW dump will decrease largely to accommodate the waste of the company.							0.00			Regulations for the Integral Management of Solid Waste
	4.9.3 Sewer system and/or treatment of RW			The sewer system has no capacity to accomodate the rw of the project.	The treatment system has no capacity to accomodate the rw of the project.	The RW are discharged to a body of water used as source by the communities in the ADI							0.00			
4.10 Population's Health	4.10.1 Generating diseases			The project could affect the health of the population in the area of influence of the project.		The project affects the health of the population in the area of influence of the project.	3				2		6.00	12.00		
	4.10.2 Vectors			The project could generate or increase the type and quantity of vectors in the project area.		The project generates or increases the type and quantity of vectors in the project area.	3				2		6.00			Health Code Regulations
	4.10.3 Quality of the environment					Work will be done at night and there will be noise, vibrations, traffic vehicles, etc.							0.00			
4.11 Conflicts using Natural Resources and Raw	4.11.1 Soil					The soil will be used for growing products that do not improve food security.							0.00	0.00		
	4.11.2 Forest					The project will decrease the availability of forests for energy purposes in the community .							0.00			
	4.11.3 Production					Raw material (basic grains, water, etc.)will be used for purposes other than food.							0.00			
												SEI Social Environment		32.00		

5. RISKS

A. CONSTRUCTION STAGE

Component/subcomponent		CASE 1 (Value = 1)	CASE 2 (Value = 2)	CASE 3 (Value = 3)	CASE 4 (Value =4)	CASE 5 (Value =5)	y	Legal Framework (z) a	b	c	d	e	X= y * z	Valuation per effect	
5.1.Handling of substances	5.1.1 Handling of fossil fuels.		It consumes, handles or stores less than 5,000 litres a month.	It consumes, handles or stores more than 5,000 and less than 50,000 litres a month.	It consumes, handles or stores more than 50,000 and less than 500,000 litres a month.	It consumes, handles or stores more than 500,000 litres a month.	4				2		8.00	18.00	Regulations for the Installation and Operation of Service Stations, Deposits of Fuel for own Consumption and Alternative or Substitute Products.
	5.1.2 Handling of agrochemicals.					Agrochemicals (fertilizers, herbicides, pesticides, insecticides, etc.)are used, stored, transported, or consumed.							0.00		
	5.1.3 Handling of substances with hazardous characteristics (other than pesticides)					Yes there is consumption, handling, transport or storage of hazardous substances.	5				2		10.00		General Regulations for Prevention of Accidents at Work and Occupational Diseases
	5.1.5 Handling of risky biological material					Yes there is consumption, handling, transport or storage of hazardous biological material							0.00		
5.2.Natural phenomena (location)	5.2.1 Floods					The project is located in a flood area.							0.00	30.00	Ley de SINAGER
	5.2.2 Landslides					The project is located in areas prone to landslides or subsidence.							0.00		
	5.2.3 Earthquakes					The project is located in areas identified as areas of telluric activity.	5			3			15.00		Ley de SINAGER
	5.2.4 Winds					The project is located in an area prone to hurricanes and the infrastructure is not resistant to that kind of phenomenon.	5			3			15.00		Ley de SINAGER
5.3 Occupational health	5.3.1 Accidents at work				The area of the project presents risks for workers	The construction will include the development of hazardous activities.	5				2		10.00	10.00	General Regulations for Prevention of Accidents at Work and Occupational Diseases

B. OPERATION STAGE																
Component/subcomponent		CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	y	Legal Framework (z)					X= y * z	Valuation per effect	
		(Value = 1)	(Value = 2)	(Value = 3)	(Value =4)	(Value =5)		a	b	c	d	e			
5.4.Handling of substances	5.4.1 Handling of fossil fuels.		It consumes, handles or stores less than 5,000 litres a month.	It consumes, handles or stores more than 5,000 and less than 50,000 litres a month.	It consumes, handles or stores more than 50,000 and less than 500,000 litres a month.	It consumes, handles or stores more than 500,000 litres a month.	4				2		8.00	18.00	Regulations for the Installation and Operation of Service Stations, Deposits of Fuel for own Consumption and Alternative or Substitute Products
	5.4.2 Handling of agrochemicals.					Agrochemicals (fertilizers, herbicides, pesticides, insecticides, etc.)are used, stored, transported, or consumed.							0.00		
	5.4.3 Handling of substances with hazardous characteristics including radioactive material (other than pesticides)					Yes there is consumption, handling, transport or storage of hazardous substances.	5				2		10.00		
	5.4.4 Handling of risky biological material					Yes there is consumption, handling, transport or storage of hazardous biological material.							0.00		
5.5 Occupational health	5.5.1 Accidents at work					The project includes dangerous operations	5				2		10.00	10.00	General Regulations for Prevention of Accidents at Work and Occupational Diseases
												SEI Risk		86.00	

6. SIGNIFICANCE OF ENVIRONMENTAL IMPACTS OF THE PROJECT, WORK OR ACTIVITY

The grade obtained (SEI preliminary value) in the attached form must be weighted with the following factors to obtain the final grade that will serve as a criterion for the classification according to the significance of the environmental impact (SEI) outlined in this document.

1. SEI preliminary value, i.e. the sum of all the SEI values of each evaluated mean (∑)	**334**

2. According to the regulations applicable to the operation of the activity, work or project (p)

2.a With the committment from the developer to adhere, voluntarily, to the standards or guidelines of a sector, subsector of best environmental practices, that might exist for the work or project. Said instrument will be of mandatory compliance for the proponent from the moment in which the corresponding authority of the SINEIA gives the environmental license.	**0.9**	**2.c** Without specific environmental legislation governing the activity work or project	**2**
2.b With specific environmental legislation governing the activity, work or project. Specify_____	**1**	**2.d** With specific environmental legislation that establishes the prohibition of the performance of the work or project	**3**
	(p)	**1**	

3. Value of SEI adjusted by regulations (SEI_R) =	**334**

4.Classification of the area according to the location of the project area (β)

4.1. Location authorized by the Plan of Land of Use, regulation or approved zoning plan or another environmental planning of land use	**0.5**	**4.2** Location authorized by the Plan of Land of Use, regulation or approved zoning plan or another environmental planning of land use, not approved Localización autorizada por Plan de Uso del Suelo, reglamento o plan de zonificación u otra	**1**
4.3. Location in area without a plan for use of the land, regulation or zoning plan or another environmental planning of land use	**1.5**	**4.4** Location in environmentally fragile area, except that referred to in the paragraph 4.1	**2**
	(β)	**0.5**	

5. Final score of the SEI:	**167**

6. Classification on the basis of the final score and that establishes the procedure of the SINEIA, according to the decision path.

Type	Grade	Final Category	Procedure
Moderate	Less or equal to 850	**2**	Guide for good environmental practices or in its defect the over view of the Environmental Management Plan
High	Greater than 850 and less or equal to 2,800.	**3**	Environmental Management Plan using an established structure in the terms of reference indicated by the SINEIA scheme of the Evaluating and Environmental Manual.
Very High	Greater than 2,800	**4**	Environmental Impact Study, according to the terms of reference indicated by the SINEIA

B. Environmental Management Plan

Introduction

This document presents the Environmental Management Plan (EMP) of the Tourism corridor of Honduras Project: Tranche San Pedro Sula - El Progreso, as established by Agreement No. 189-2009 of the Regulation of the National Environmental Evaluation System (SINEIA), which notes that the EMP will be an integral part of environmental assessment tools in order to organize the applicable environmental measures and commitments.

The EMP is a set of technical operations and proposed actions, which aim to ensure the operation of any human activity, within legal, technical and environmental standards, techniques to prevent, correct or mitigate negative environmental impacts or risks and to ensure continuous improvement and compatibility with the environment.

The EMP describes programs or mitigation measures that should be executed or completed by the developer to prevent and minimize environmental impacts during the planning and design, construction, and operation of the Tourism corridor of Honduras: Tranche San Pedro Sula - El Progreso. In the event that the developer proposes different measures to those described in the Plan, it is his responsibility to obtain approval from Natural Resources & Environment Secretariat (hereinafter called SERNA) and/or other state agencies whose competence requires it for the implementation of the new measures.

EMP Objectives:

1. Provide the Civil Works, Housing and Transportation Secretariat (SOPTRAVI) the developer a document attesting to all the measures identified by the consultant to prevent, minimize, mitigate and compensate for potential negative impacts from the Tourism corridor Project: Tranche San Pedro Sula - El Progreso and to enhance positive impacts;
2. Define the parameters and variables that will be used to assess environmental quality in the area of influence of the Project;
3. Establish mechanisms for relevant authorities to follow up the environmental variables of the Project and implement the necessary controls;
4. Designing mechanisms for preventing and responding to accidents and contingencies.
5. Ensure compliance with social and environmental goals of the project, including compliance with the Equator Principles and Performance Standards on Social and Environmental Sustainability of the International Finance Corporation (IFC).

The Project Tourism corridor of Honduras: Tranche San Pedro Sula - El Progreso will be developed within the framework of social and environmental sustainability, also it will be guided by the Equator Principles and the Performance Standards on Social and Environmental Sustainability of The International Finance Corporation (IFC). Based on this principle, the Environmental Management Plan developed here includes the elements set for compliance with the Standards and Principles of Performances of Ecuador and must include the following elements:

- Environmental and Social Assessment;
- Management Program;
- Organizational Capacity;
- Training;
- Community Involvement;
- Supervision; and
- Accountability Reports

The Financial Institutions signatory of the Equator Principles (EPFIs, for its acronym in English) financed projects only when they meet the following requirements [5]:

Review and Categorization. Based on Agreement N° 1714-2010, of the Secretariat of Natural Resources and Environment, to achieve full compliance with the given objectives and responsibilities we proceed to modernize and issue a new Table of Environmental Categorization in the Republic of Honduras. This categorization Table, has as main objective to identify activities Works or projects subject to the process of environmental impact assessment, as well as categorize or classify them according to their potential environmental impact. This project, due to its nature is defined as Category 2, which corresponds to those human activities classified from Moderate to low - moderate Potential environmental impact or environmental risk. This is consistent with the Performance Standards and Equator Principles, where this project, according to their potential impacts is defined in the "**Category C**: Projects with non-adverse with a minimum environmental and social impact "

Social Environmental Assessment. This principle is met with the identification of environmental and social impacts and risks, including labor, health and safety, considered in this Environmental Impact Assessment, as required by Decree No. 104-93, General Law of the environment of the Republic of Honduras and its regulations set out in Agreement No. 109-93, in addition to the implementation and enforcement of existing regulations in Honduras on Safety, Health and Industrial Hygiene.

Applicable Social and Environmental Standards. As you can see in this EMP, this project will adopt the Performance Standards of the IFC and the sectoral guidelines WB/IFC as social and environmental standards and comply with the requirements of environmental regulations of Honduras established by Decree No. 104-93 and its regulations Agreement No. 109-93.

The Action Plan and Management System. According to this requirement, this project includes the Environmental Management Plan (EMP), which is equivalent to the Action Plan and Social and Environmental System Management, establishing the Performance Standards and Equator Principles. This EMP includes specific plans including Hazardous materials Management Plan, through the Collection Programme, Separation and Disposal and Waste, Plan for Preparedness and Emergency Response, through the Contingency Plan and Plan for health and Safety through a Risk Prevention Plan.

Consultation and Disclosure. The Performances Standards and Equator Principles require the project to properly incorporate the concerns of the affected communities and/or involved through a process of consultation and outreach to ensure the free, anticipated and informed consultation and that it facilitates participation. Therefore, during the process of Elaboration of the assessment impact by the relevant instrument according to category, interviews were conducted to ascertain the opinion of the mayors and key stakeholders in each municipality of the area of socioeconomic influence of the Project. Moreover, as indicated by mandatory requirements for obtaining the environmental permit, a sign will be placed in the area where the project will be developed, where the name of the project, work or activity, location and address of the Proposer shall be indicated, where the public can get more information.

Complaint mechanism. This project, in the Citizen Participation Plan established a Complaints Mechanism as part of the management system to allow the reception and facilitate the resolution of concerns and complaints from affected individuals or groups, which will remain during the execution of the work. This mechanism consists on a Field Office established by the Concessionaire with a "single window" as well as receiving them in the offices of the Environmental Management Unit of SOPTRAVI.

[5] Principles 7, 8 and 9 are not mentioned because they are established agreements between the financial institution and the borrower beyond the scope of this EIA.

Affected Communities. After defining the area of influence of the Project, it is confirmed that despite the existence of villages or communities along the alignment of the Tourism corridor project Tranche, San Pedro Sula - El Progreso, they will only be impacted in a negative way by the development of certain specific and temporary activities, such as increased traffic, dust generation and polluting gases product of machinery, among others, as the activities to be developed, will be conducted only in areas of existing easements.

1.1 Information on professional consultant or team that the EMP produced

This Environmental Management Plan has been prepared by the company The Louis Berger Group, Inc and the Honduran company Ingeniería y Ambiente de Sula S de R.L with Registration Number in the Natural Resources & Environment Secretariat (hereinafter called SERNA) RE-0017-2003, consists of the following providers of environmental services:

Table 1.1. List of Environmental Services Providers

Name	Registration No.	Company	Classification
Carol Perdomo	RI-007-2004	Ingeniería y Ambiente de Sula	General environmental specialists. General review
Ana Marcela García	RI-029-2003	Ingeniería y Ambiente de Sula	General environmental specialists. Developing MEIA, description of impacts
Judith Perla	RI-0032-2003	Ingeniería y Ambiente de Sula. Subcontracted	Biologist Environmental Specialist.
Contributors			
Saulo Romero		Ingeniería y Ambiente de Sula. Subcontracted	Biologist with emphasis in Zoology. Description of the biological environment and mitigation measures
Germán Sandoval		Ingeniería y Ambiente de Sula. Subcontracted	Biologist
Julio Aysa		The Louis Berger Group	Coordinate the Project. Environmental Specialist General review
Zuleika Ibañez		The Louis Berger Group	Environmental Specialist GIS support
Yiseth Martínez		The Louis Berger Group	Environmental Specialist Description of mitigation measures
Julio Vanegas		The Louis Berger Group	Road specialist
Horacio Ibarra		The Louis Berger Group	Geotechnical specialist

Source: Own Compilation

1.2 Identification of standards and legislation to be complied

This section mentions the environmental requirements and other legislation applicable to the Project under the Environmental Assessment.

During the different stages of project some activities that generate environmental impacts will be developed and it is important then to know the laws and regulations for each specific case.

1.2.1 Legislation

The legislation discussed below contemplates:

- Environment designed for the protection of natural resources and the environment,
- Any sector that has environmental relevance and
- Various topics, such as the regulations of the Territorial Ordinance Plan and health code.

1.2.1.1 Constitution of the Republic of Honduras

The Constitution of the Republic, Title III, Chapter VII of Health, that "the right to health protection is recognized. The duty of everyone to participate in the promotion and preservation of personal and community health. The State will preserve the environment to protect the health of the people"(Art. 145).

A very important aspect for this project, in terms of environmental protection regulation, it is exposed in Article 340 of the Constitution which states:

> "It is declared of public utility and necessity, technical and rational exploitation of natural resources of the Nation. The State shall regulate its use, in accordance with the public interest and determine the conditions of Concession to individuals. The country's reforestation and conservation of forests are declared of national interest and collective interest. "

Article 354 states that "the tax or property may only be awarded or sold to individuals and in the form and manner prescribed by the laws. The state has the power to set or change the demarcation of areas of control and protection of natural resources in the country".

Finally on private property, the Constitution of the Republic of Honduras, Article 103 states, "The State recognizes, promotes and ensures the existence of private property in its broadest concept of social function and without other limitations than those for reasons of necessity or public interest established by law. ""The right of property shall not prejudice the eminent domain of the State" (Article 104).

Then "No one shall be deprived of his property, but because of necessity or public interest ranked by the law or decision based on law and without prior to fairly priced compensation". (Art 106)

1.2.1.2 Forced expropriation act

According to Decree 113, which refers to the Expropriation Act, the following is explained in Article 1,:

> "The forcible expropriation for public utility and necessity, as authorized under Article 103 of the Political Constitution cannot be implemented with respect to real property, except in accordance with the requirements of this law. (Art. 1)
>
> "They will be Works of public utility and necessity, those that are principally intended to provide the State, one or more departments, or one or more municipalities, any use or improvements in overall good yield, as the erection of

new towns, squares or streets, the construction of communication roads, charity or instruction buildings, building forts, walls and other defenses, whether executed by the State, Departments or peoples, or by companies particular or private duly authorized."(Art. 2)

Therefore, the Constitution of Honduras and the Law of Expropriation provides expropriation as a way in which the State may satisfy some collective need, before which, the private interest must yield, but conditioned it, either by judgment or by decree, to fair compensation.

1.2.1.3 General Environment Law

On June 30, 1993 the General Environmental Law came into force, with principles and objectives that govern the environmental activity of all public and private bodies, having them cited in any administrative or judicial proceeding. Here are the most important items with the related activities that will be developed in this project:

Article 1: Thus the Environmental Law among its general principles defines that it is of common interest, the integral ordinance of the national territory considering the environmental aspects and economic, demographic and social factors.

Article 4: The public and private projects that affect the environment should be designed and implemented taking into account the interrelatedness of all natural resources and interdependence between man and his environment.

Article 5: The projects, industrial facilities or any other public or private sector, likely to pollute or degrade the environment, natural resources or the historical cultural heritage of the nation, will be preceded mandatorily by an Environmental Impact Assessment (EIA), which will allow preventing possible negative effects.

In virtue of the measures to protect the environment or natural resources resulting from these assessments it shall binding on all parties in the implementation phase and during the life of the works or installations. To this end the Secretary of State in the offices of the Environment created the national system of environmental impact assessment. In the case of existing installations or works shall be as provided in the Chapter on Final Provisions[6].

Article 6 -. The provisions of this Act and the special laws concerning the protection of human health and the protection, conservation, restoration and proper management of natural resources and the environment, will become mandatory in the evaluation of EIA , referred to in the preceding article.

Article 28: In accordance with this law and the respective sectoral laws for the Executive Branch, through the Secretary of State in the Department of the Environment and other relevant secretariat of state and decentralized institutions, the following attributions:
a) Execution of the general environmental policy, proposed by the Environmental Secretariat and approved by the President of the Republic;

b) Planning the rational use of natural resources, considering their uses alternatives and natural interrelationship in the ecosystem;

c) The comprehensive land use planning through plans that consider the environmental and economic, demographic and social factors;

d) The management of protected natural areas;

e) The issuance and administration of technical standards to prevent and control the subject matter of this Act;

f) Control of the emission of any contamination and registration of pesticides, fertilizers and other potentially polluting chemical, biological or radioactive products requiring authorization to import or manufacture in accordance with the laws on the matter, and

[6] Article 5 of the Environment Act was amended by the Law of Financial Balance and Social Protection, subsequently by Decree 181-2007, of the Environmental Decentralization

to ensure the legal prohibitions apply to the introduction or manufacture of such products whose harmful condition is duly established;

g) The control of activities that should be considered highly risky because of their negative effects on health and the environment, according to this and other laws and regulations;

h) The prevention and control of disasters, environmental emergencies and other contingencies that impact negatively in part or in the whole national territory;

i) Development of inventories of natural resources at a national level;

j) The ordering of watersheds;

k) Implementation of the System of National Watershed considering natural resources in general;

l) The remaining that this Act and other laws reserved to the bodies of executive power;[7]

Article 30: It is responsibility of the State and municipalities in their corresponding jurisdiction, the management, protection and conservation of watersheds and natural water reservoirs, including the preservation of natural elements involved in the hydrological process. Water users, regardless of the intended purpose, they are required to use it wisely, preventing its waste and ensuring wherever possible its reuse.

Article 31: Will be object of protection and special monitoring the water of the following categories:

a) The water intended for human consumption or populations in general;

ch) Those that are in protected areas, and;

d) Any other source of general importance.

Article 32: It is forbidden to discharge in inland or marine waters over which the State exercises jurisdiction, all kinds of polluting wastes, whether solid, liquid or gaseous, may affect the health of humans or aquatic life, altering the quality water for their own purposes or to alter the ecological balance in general.

The Secretariats of Public Health, Natural Resources and National Defense and Public Safety, will be responsible for exercising control over the management of inland and marine waters, noting the technical standards and regulations established by the sectoral laws and regulations.

Article 33: It is prohibited to place human settlements, military bases, industrial plants or any other type in the areas of influence of sources of water supply to populations or irrigation of agricultural crops intended for human consumption, whose residues even if treated, present potential risks of contamination, the municipalities ensure the correct application of this regulation.

Article 41 -. Means those protected flora and fauna species of plants and animals to be given special protection for their rarity, condition in the ecosystem or in risk of extinction. Their exploitation hunt, capture, trade or destruction.

Article 48: The land of the national territory should be used rationally and compatible with its natural vocation, trying to maintain its productive capacity, without altering the balance of ecosystems.

Its potential use is determined by considering socio-economic, physical, ecological, factors in the framework of the relevant land management plans.

Article 51: The usage of urban land will be object of plannifications on behalf of the corresponding municipalities, considering among others, the civic residential sectors, commercial, industrial, residential and recreational sectors, complying the quality of life of the inhabitants and the protection of the environment.

[7] Amended by adding a decree 181 -2007 (Decentralization of Environmental Licensing)

Article 54 -. Discharge and disposal of solid and liquid waste from any source, toxic and nontoxic can only be made in locations assigned by the competent authorities and in accordance with the relevant technical regulations and pursuant to the corresponding municipal bylaws.

Article 59: is of public interest the activity tending to avoid air pollution by the presence of harmful gases, smoke, dust, particulate matter, radioactive materials or other discharges that are harmful to human health, to public or private property flora and fauna and the ecosystem in general.

Article 60: In order to prevent the negative physiological effects on people, flora and fauna, the Executive Power, through the Secretariat of State for Public Health, in consultation with the National Environment Council and other competent bodies, will identify the technical regulations establishing the permissible emission levels and emission of pollutants, for which it will issue the necessary regulations.

The motor vehicles, industries and other fixed or mobile, public or private facilities which discharge gases or other pollutants in the atmosphere, are bound to observe such standards, including treatment systems that may be relevant. The municipalities in their corresponding jurisdictions, shall have authority to supervise the compliance with those standards.

Article 61: The Executive Branch through the Ministry of Public Health, will regulate the tolerance indexes of noise, vibration and emissions of smoke and dust.

Article 66: The solid and organic wastes from domestic, industrial or agricultural, livestock, mining, and other public uses, sources technically be treated to prevent alteration in the soils, rivers, lakes, lagoons and generally in maritime waters and terrestrial, and to prevent air pollution.

Article 68: The State shall exercise in accordance with the Health Code, the laws of Vegetal Health and Animal Health and other related provisions, control over the manufacture, formulation, importation, distribution, sale, transport, storage, use and disposal of toxic or hazardous agrochemicals and products used in agriculture, livestock, industry and other activities.

Toxic or hazardous substances shall not be subject to manufacturing, storage, importation, marketing, transport, use or disposal if they have not been duly authorized by the Secretariat of State for Public Health in the department of authority. Once the authorization has been given it must be enrolled in the corresponding special registers. Article 70: The anthropological, archaeological, historical, artistic, cultural and ethnic heritage as well as its natural setting, are under state protection.

Article 70: The anthropological, archaeological, historical, artistic, cultural and ethnic heritage as well as its natural setting, are under state protection..

Article 78: The natural or legal persons, public or private, who want to do any work or activity that could seriously alter or impair the environment including natural resources, are required to report the same to the competent authority in respect of the matter and prepare an environmental impact assessment (EIA) in accordance with the provisions of Article No. 5 of this Act

Included within these activities: chemical, petrochemical, steel, oil, tannery, paper, sugar, cement, beer, shrimp, liquor, coffee and agribusiness in general; generation and transmission of electricity, mining; construction and operation of pipelines; transport; final disposal, treatment or disposal of waste and hazardous substances, projects in the sectors of tourism, recreation, urbanization, forestry, human settlements and any other activities that can cause severe damage to the ecological balance.

Article 79 The work or activity which the preceding Article relates to cannot be executed without having an assessment and corresponding authorization.

Article 83: State agencies that have jurisdiction in environmental matters shall exercise any inspection and supervision, and to that effect its officers and employees are vested enough to inspect premises, facilities or specific areas or to demand to the appropriate authority, information to verify compliance with the relevant legal provisions.

The municipalities shall comply inspection and surveillance activities in the areas of its competence and jurisdiction. The regulation will develop this disposition.

1.2.1.4 Regulation of the National System of Environmental Impact Assessment

Article 1: In accordance with Articles 5, 9, and letter ch and 11 d, of the General Environmental Law mandating the creation and development of the "National System of Environmental Impact Assessment", this regulation is issued.

Article 2: The objectives of this Regulation are:

a) Organize, coordinate and regulate the National System of Environmental Impact Assessment (SINEIA), establishing the connections between the Secretariat of Environment; public institutions, private and international sectors.

b) Ensure that plans, policies, programs and projects, industrial facilities or any other public or private activity may contaminate or degrade the environment, are subjected to an evaluation of environmental impact to avoid damage to the environment.

d) Implement policies, standards, procedures to update the SINEIA in line with the economic, political, social, legal, cultural and environmental development of the country, always seeking the compatibility of development and the environment.

Article 18: The Environmental Units (UMA) created in the municipalities and institutions of the executive branch that manage natural resources or sectors with a strong environmental component (UGAs), will have technical assistance from SERNA for its organization and collaboration work with this Secretariat as it pertains to the National System of Environmental Impact Assessment.

Article 19: The Secretariat of State in the Ministry of Natural Resources and Environment (SERNA), by treaty or taking mandated law, may delegate some of their functions within the National System of Environmental Impact Assessment (SINEIA) in Municipalities or other institutions of the executive branch, through their respective environmental units, having a good level of organization and operation. Possible to delegate functions, among those we have: document review Environmental Impact Assessment (EIA) will issue environmental licenses, monitoring and verification of reports

Article 24: Any project, work or public or private activity must have an environmental permit before starting execution.

Article 29: The projects, Works or activities are ordered in an Environmental Categorization Table exhaustively, that draws on the International Standard System ISIC, International Standard Industrial Code of all productive activities. With this, a standardized system that provides information to users of the system, guidance on procedures to follow environmental assessment, allows better coordination with other state authorities and makes possible a better and more effective statistical control of the management processes.

Article 30 -. Projects, Works or activities are categorized into four different categories 1, 2, 3 and 4 taking into account the factors or conditions that are relevant in terms of their characteristics, nature, potential environmental impacts or environmental risk.

- Category 1 corresponds to projects, Works or activities considered of low potential environmental impact or environmental risk.
- Category 2 corresponds to projects, Works or activities of moderate potential environmental impact or environmental risk.
- Category 3 corresponds to projects, Works or activities with high potential environmental impact or environmental risk.

- Category 4 corresponds to projects, Works or activities considered high potential environmental impact or environmental risk. Mega development projects are considered part of this category.

All the projects, Works or activities that by their nature, are below those of Category 1, are classified as very low environmental impact or environmental risk. As such, not subject to meet proceedings of Environmental License, however, will be subject to comply with current environmental legislation and also in all that applies in the Code of Good Environmental Practices of Honduras.

1.2.1.5 Act of Municipalities

Article 13: Municipalities have the following attributions:

5. Construction and maintenance of public roads on its own or in collaboration with other entities;

7. Protection of ecology, the environment and promotion of reforestation;

8. Control on public roads, sidewalks, parks and beaches, including their ordering, occupation, road signs, urban and interurban transport terminals and will be responsible for care of those goods;

15. Conclusion of contracts for construction, maintenance or management of local public services or Works with other public or private entities, at their convenience, pursuant to the Act

When the Municipalities granted the Concession Agreement for the construction of Works or provision of municipal services to private companies with resources from these, they may authorize them to recover their costs and earn a reasonable profit by means of the most appropriate charge system, without prejudice to the rights corresponding to the municipality: of public roads, in collaboration with the National Electricity Company (ENEE).

1.2.1.5.1 Regulation of the Municipalities Act

Article 132:. Institutions that have the responsibility to control and manage the natural resources of the country, as COHDEFOR, the Secretariat of Natural Resources, etc., should establish agreements of mutual cooperation and responsibility with the municipalities within whose jurisdiction these natural resources are located , whether in individual, ejido, national, etc. in order to obtain optimum benefits for the Municipality in palliation of this Act and its Regulations.

To this purpose the Municipality may Concession the permit exploitation of renewable and non-renewable natural resources, after developing a technical study approved by the corresponding secretariat or institution.

3. Achieving social and material welfare of the Municipality, performing public Works programs and services;

4. Preserving cultural heritage and civic traditions of the municipality; disseminate and promote them if or in collaboration with other public or private entities

6. Protect the environment and local ecosystem;...

8. Rationalize the use and operation of municipal resources according to the priorities and programs of national development.

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1.2.1.6 Forestry Law, Protected Areas and Wildlife

This law states in Article 1 that "... the legal regime to which shall be subject the administration and management of Forest Resources, Protected Areas and Wildlife, including protection, restoration, utilization, conservation and development, fostering sustainable development, according to the social, economic, environmental and cultural interest of the country".

And resolves objectives, outlined in Article 3:

b) Ensure the protection of Forest Areas, Protected Areas and Wildlife and improving them and rationalize the exploitation, industrialization and commercialization of forest products.

e) Declare and manage protected areas and wildlife;

f) Preventing the illegal occupation or fragmentation of public forest areas.

p) Promoting co-management as a basic mechanism to incorporate the participation of civil society in the management of protected areas and improve the quality of life of communities; and,

q) Promote reforestation.

As to the Fauna and wild Flora the following items of interest are mentioned:

Article 115: Protection Management and Administration of the wild Flora and Fauna. Corresponds to the National Institute of Forest Conservation and Development, Protected Areas and Wildlife (ICF), the protection, management and administration of wildlife from around the Country.

Article 117: Hunting Or Capture of wild Fauna. Hunting or capture of threatened or endangered species is prohibited.

The National Institute of Forest Conservation and Development, Protected Areas and Wildlife (ICF), previous to a study involving the Municipal Corporations and communities make the declaration of a species as threatened or endangered, also taking into account the Conventions and International Treaties.

Hunting or catching species of wild fauna for commercial and sports means, not included in the above category shall be subject to the provisions of the corresponding Municipal Corporations and the hunting license issued by the National Institute of Forest Conservation and Development Areas, Protected Areas and Wildlife (ICF). The National Institute of Forest Conservation and Development, Protected Areas and Wildlife (ICF), also declare closed seasons, times of hunting or capture allowed, and other technical regulations that correspond. On use of marine, river and lake species is regulated by the Fisheries Act.

Article 118: Endangered Flora. Managing exploitation of endangered flora shall be in accordance with the policies and strategies issued by the National Institute of Forest Conservation and Development, Protected Areas and Wildlife (ICF), which will be in accordance with International Conventions and Treaties signed and ratified by Honduras.

The National Institute of Forest Conservation and Development, Protected Areas and Wildlife (WILDLIFE) (ICF), make the declaration of endangered species of flora; to declare that end seasons and other technical regulations that apply.

In **conservation and protection of land and water**, in Chapter IV of this Act, the following items are highlighted:

Article 120: Handling Watershed. The National Institute of Forest Conservation and Development, Protected Areas and Wildlife (ICF) is responsible to lead the processes to develop and implement management plans and integrated management of river basins, watersheds and micro sub-basins, with emphasis on conservation of resources, soils, forests and water.

Article 123: Protection of water Sources and flows. The villages Adjacent to watercourses areas shall be subject to a special regime of protection; however, in all circumstances the following regulations must be observed:

a) The high hydrological recharge or watershed areas are exclusive protection areas, all activity is prohibited in these areas when these basins are legally declared as water supplying areas. These areas will be determined by the area of the basin covered by fifty meters (50mts) below the river birth until water part coming within the upper part of the basin.

b) When there is a water birth in hydrological recharge areas upstream or within an area that has no legal declaration of water suppliers zone, an area will be protected within two hundred fifty meters (250 meters) from the center of the water birth or watershed;

c) Shelterbelts of hundred fifty (150 meters) will be established in rivers and streams, measured in horizontal projection from the shore line, if the slope of the basin is equal to or greater than thirty percent (30%); and fifty meters (50 meters) if the slope is less than thirty percent (30%); within forest areas of the urban perimeters, regulations of the Municipalities Act will apply; and,

d) The marine and lacustrine coastal forest areas shall be protected by a strip no less than one hundred meters (100 m) wide from the highest tide line or the highest level or to reach the Lagoon or Lake.

In these buffer zones it is prohibited to cut, damage, burn or destroy trees, shrubs and forests in general. Similarly, the construction of any type of infrastructure prohibits the execution of agricultural and livestock activities and all others that endanger the purpose intended. Except hydric infrastructure management and water management and road infrastructure, not withstanding the environmental impact study. Agricultural activities existing at the effective date of this Act shall be respected, but simultaneously will encourage and support agroforestry projects aimed at the protection and proper management of natural resources and the environment.

This law has its corresponding regulations, this being the General Regulation of the Forestry Law, Protected Areas and Wildlife. Executive Decision No. 031-2010.

1.2.1.7 General Water Law

General Water Law. Decree No. 181-2009, "This law aims to establish the principles and regulations applicable to the proper management of water resources for the protection, conservation, enhancement and utilization of water resources to promote the integrated management of the resource at the national level" .

Article 36: Conservation: The conservation actions of waters are intended to conserve or increase the volumes of water intervening ecosystems that generate it or influencing the activities that diminish or affect its biodiversity through the instruments established by this Act .

Article 43: Protection of Water Resources: The protective actions are aimed to preserve or increase levels of water quality and quantity, before the destructive effects of natural phenomena and human actions of resource degradation and pollution.

Article 44: Discharge of sewage: The Water Authority or Municipality may authorize, in accordance with the active environmental and technical regulations and only in the allowed spaces, the direct or indirect discharge of wastewater into a body of water, provided that these discharges do not contain pesticides, fertilizers and any other product or substance toxic or pollutant.

Except for what is established in the previous paragraph, the treatment of wastewater discharges resulting from domestic, agricultural, livestock and industrial activities is mandatory. Reuse or recycling of discharged water will be authorized under the same conditions.

Article 45: The protection in the Construction of Works: During execution of Works duly authorized, shall include measures to prevent the discharge of sediment to the stream and bodies of water in rivers, reservoirs, lakes, lagoons and coastal areas; such Works shall be on account of the promoter and/or executor of the work, who also shall indemnify for damages that might be caused.

Rule 46: Removal of Aggregates of Rivers, Lakes and other water spaces: No extractions are allowed within five hundred (500) meters upstream and five hundred (500) meters under bridges, levees, dams or any other urban hydric infrastructure .

Article 59.-Use Rights: The use of water for private benefit or by any public entity may only be made pursuant to a right of use Granted under concession under this Act, provided it is of beneficial used and does not harm third party rights.

Article 61.-Principles for Utilization: The use of hydric resources shall be governed by the principles of:

- Optimal human, social and economic benefit;
- Durability and resource protection; and,

• Generation of minimal environmental impacts;

These criteria will be applied at the basin level, sub-basins and micro-basins and pointed out in the organization and planning instruments under this Act

Article 62.-Types of Concessions of use: The granting of rights of water use will be in accordance with the following classifications:

Depending on the type of use:

- Consumptive, not obliged to return the water after being used; and,
- No consumptive, forcing to return the water after use or used without removing it from its source in the conditions that determines its title.

According to the continued use:

- Permanent, allows to obtain water whenever resources are available at the source; and,
- Eventually, allows to obtain water only after having satisfied the Concessions of the permanent exercise, excess resources exist in the source

Article 63.-**Use of underground waters**: The use of underground waters is subject to studies and research, regulating plans and hydric zoning maps in order to maintain proper hydric balance and quality in these aquifers. Its commercial and industrial use shall be described in the Regulation of this Law.

Relevant studies for exploitation or drilling of wells will be conducted to determine its potential and use, it shall have a permit issued by the Water Authority, prior authorization from the corresponding Municipality.

Article 66 Instruments to document usage rights: All right is Granted under concession through permits, licenses and Concessioning at the request of an interested party or by tender, in accordance with the provisions of this Act and the rules of ordering and hydric planning. No right can be given that prejudices uses legitimately Granted under concession, affecting the balance between recharge and extractions of surface and underwater waters, aquifers or restricts the use of water for drinking.

1.2.1.8 General Mining Law. Decree 283-2012

The objective of the law is to regulate mining and metallurgical activities in the country; therefore it is of public order, general interest and of mandatory application. Article 1.

In case of mining activities they will be safeguarded under the Concession Figure of the Mining Permit or in case of small-scale and artisanal mining, commercialization is made through a registration system. Article 6.

The Classification of Mining Rights defined in the Articles 8 to 11; the exploitation activities are regulated in Articles 18 to 23 and the close activities from Articles 28 to 31. Similarly, article 32 states that the competent authority must verify restoration activities.

The commercialization is regulated by Articles 37 and 38 and the obligations of the Concessionaire are regulated in Article 54. Transfer of mining rights by articles 60 and 61 is regulated.

The requirements for the Concessioning of Concessions are defined in Article 69 and 70.

Cutting activities, filling and leveling are standard in Article 95, which stipulates that the permits will be Granted under concession by the relevant municipalities also that surplus should not be commercialized and intended only for public purposes.

In Article 96 the creation of the Honduran Institute of Geology and Mines (INHGEOMIN) is defined.

1.2.1.9 Traffic law 205-2005

Article 1. This Law aims to preservation of public order, protection of life, physical integrity of persons, protection of goods and the promotion of social welfare by the legal regulation of the use and circulation of land motor vehicles and the mandatory police registration thereof.

All persons who drive any type of vehicle and its passengers are subject to its provisions when driving on roads, streets and other public or private in all of the national territory included in all the national territory, and pedestrians; and, where appropriate, the owners of such vehicles, livestock owners or others that also make use of such roads public or private.

These regulations include in regards to what is applicable, car parking lots, public or private, buildings built for car parking lots, campuses and terminals for transporting of people and cargo, gas stations, sports tracks, road courses and other similar analog sites where services are provided or vehicles can circulate.

This Act and Regulations are public and of social interest.

Article 2.- The material scope of validity of this Act, includes:

1) The ordering and referent road signs:

a) Design the ordering; and,

b) The installation of road signals on the road system

2) The control of vehicular traffic that includes:

a) Control of road traffic;

b) Patrol and control operations;

c) Electronic surveillance and detection of committed offenses;

d) Investigation of accidents;

e) Actions relating to the vehicular property crimes; and;

f) Emergency plans.

Article 25. Shall be the functions of the Transit Engineering section:

1) Conduct feasibility studies in both urban and rural areas, aimed at developing design of Works and traffic regulations for the safety and flow of vehicular and pedestrian traffic, coordinating these features with the competent authorities;

2) Collaborate with the municipalities and the State Secretariats in the Offices of: Public Works, Transport and Housing (SOPTRAVI); and Natural Resources and Environment, to establish the criteria and / or recommendations for the placement of signs, traffic regulating devices on the location of the passenger and cargo transport terminals , as well as in the development of plans for the management of circulation, in order to achieve maximum performance of the existing road network;

3) Assist the municipalities in developing studies in speeds, parking, user behavior, census and installation of traffic lights;

4) Conduct studies and submit recommendations to the competent authorities in relation to sanitation of the rights of way;

5) Conduct studies and scientific research, developed from models aimed at finding workable solutions to the problems of road ways; and,

6) Establishing the technical capacity criteria, specific uses, for private vehicles, public transport of passengers and cargo and industrial uses.

Article 82. The road signs to order, facilitate and make easy and safe movement of vehicles and pedestrians, consists in:

1) Warning signs or danger;

2) Regulatory Signs;

3) Informative signs;

4) Route or destination signs;

5) Markings on the roadway; and,

6) Traffic signals and other intersection signs.

The installation of road signals indicated in paragraphs 1), 2), 5) and 6) is strictly enforced and will be designed as provided in the Act and its Regulations.

Article 83. It is corresponding to the municipal authorities in the area of its jurisdiction, the installation and maintenance of the road signs in urban areas; the Secretariat of State in the offices of Public Works, Transport and Housing (SOPTRAVI) , in the highways and rural area.

1.2.2 Relevant legislation to the project (environmental and sectoral environmental relevance regulation)

There is some legislation pertaining to different sectors of the public administration, whose policy is relevant to the components of the environment, this sectoral legislation, of environmentally relevance encompasses a broad spectrum. Sets of rules presented below are attached to the vital regulations of compliance for the Project development.

1.2.2.1 Health Code

The following general provisions are set out in the Code of Health:

Article 1: Health is considered as an integral, biological, psychological, social and ecological state of wellbeing, well-being it is an inalienable human right and it corresponds to the State as well as to all natural or legal persons, promoting their protection, recovery and rehabilitation.

Article 3: Corresponding to the Secretariat for State for Public Health, which for the purposes of this Act shall be called "The Secretariat", the definition of national health policy, standardization, planning and coordination of all activities public and private in the health field. In the departmental and municipal levels it will act through regional headquarters and sanitary areas, correspondingly, under a rational principle of coordination and administrative decentralization.

With respect to Paper I, unique title of the Rights and Duties related to Family and community health and to the environment, the following articles are highlighted:

Article 9: Everyone has the right to live in a healthy environment, in accordance with this Code and the other regulations, and the general duty to protect and improve the surrounding environment.

The secretariat is responsible for ensuring the environmental conditions in order to comply with the provisions of this Article.

Meanwhile, in Book II, of the Promotion and Protection of Health, Title - Sanitation of Environment, states that: "For purposes of the application of this Code and other health regulations, the term environment, is set of natural resources, which preservation and renewal by the State and of all the inhabitants, are necessary to ensure the health and general welfare. "(art. 25).

Article 26: Water usages are classified as follows:

a) For human consumption;

b) For home use;

c) For the preservation of flora and fauna;

d) For agricultural and livestock use; and,

e) For industrial use

1.2.2.1.1 Potable and waste water

Article 34: It is prohibited to use water as a site for disposal of solid waste, having to strictly adjust the regulations set to be established.

Article. 35 All discharges of liquid waste into waters shall be subject to the requirements and conditions established by the regulations taking into account the characteristics of the sewage system and the corresponding receiving source.

Article 41: The excreta, sewage, and storm water shall be disposed properly and sanitarily, in order to prevent contamination of soil, air and water sources for human consumption as well as the formation of breeding disease vectors.

Article 43: Any building, concentration of buildings or any other work of urban development, located outside the range of the public sewage system, prior to construction, should develop a proper system of waste disposal, to abide standards established in the regulations of this Act, and shall be approved by the municipal authority where the system is located.

1.2.2.1.2 Of the air and its contamination

Article 46: The term air pollution is defined as deterioration of its purity, by the presence in excess of the permitted concentrations of agents such as solid particles, dust, smoke, radioactive material, spread sound waves and others that the Secretariat defines as pollutants, as well as the presence or emanation of odors which jeopardize the welfare of people.

Article 47: The secretariat defines the conditions in accordance with regulations on air quality.

Article 48: When the emissions from a fixed or mobile source of pollutants, pass or may exceed the limits set in standards we shall proceed to apply treatment systems set for that purpose by the Secretariat.

Article. 50 The use of fuels that contain substances or additives in a grade of concentration which resulting atmospheric emissions overpass the fixed security limits, will not be allowed.

1.2.2.1.3 Of Solid wastes

Article 52: Garbage of any kind should be eliminated sanitarily -. is up to the municipalities to organize, recruit and take responsibility for the cleaning services, collection, treatment and disposal of waste in compliance with the regulatory standards.

Article 53: The properties previously authorized by the municipalities with the assent of the secretariat may be used as high garbage disposal.

Article 57: If because of the location or volume of waste produced, the responsible entity for cleaning cannot make the pickup, it will be up to the individual or producer establishment, to transport and final disposal in the authorized sites by the Municipalities in accordance with the provisions of Article 53 of this Code.

1.2.2.1.4 Of occupational health

Article 101: The health of workers is an indispensable condition for the socio-economic development of the country. Its preservation, conservation and restoration are declared as social and health interest activities, in which the government, the private sector, workers and the community in general should be involved,.

Article 114: In all workplaces the necessary steps are taken to avoid the presence of chemical, physical and biological agents in the air, in such concentrations and levels that they pose risks to the health and welfare of workers or the general population .

Article 115: THE SECRETARIAT will require companies to disclose among staff potentially exposed to risk, the measures to prevent accidents, as well as the adoption of the necessary measures in case of emergency

1.2.2.1.5 Of industrial safety

Article 120: In every workplace there should be an available trained staff member, equipment and devices for firefighting, that can be used immediately and with maximum efficiency. Such equipment and devices shall be subject to inspection by the specialized governmental entity .

Article 121: The manufacture, storage, handling, transport and trade of flammable or explosive substances will be regulated.

Article 122: All equipment, tools, facilities and electricity networks must be designed, constructed, installed, maintained, operated and marked in such a way to prevent risk of fire and avoid contact with the elements under tension.

1.2.2.2 Regulation of Environmental Health

This regulation includes regulations for:

- The final disposal of black, sewage and excreta storm water (Article 28 to Article 50)
- Of air its contamination and control (Article 51 to Article 60)
- Of Solid Waste (Garbage) (Art. 61 to 84)
- Disaster and emergency (Article 135 to Article 146)

1.2.2.3 Territorial Ordinance Plan Act

"This Act establishes the Territorial Ordinance Plan it constitutes a state policy that incorporated into national planning, promotes comprehensive, strategic and efficient management of all national resources, human, natural and technical, by implementation of policies, strategies and plans that ensure effective human development in dynamic, homogeneous, equal in opportunities and sustainable, in a process that reaffirms the human person as the supreme end of society and at the same time its most precious resource. "(Art. 1)

Article 8: The organization for the LAND MANAGEMENT (PLAN LAND ORDINANCE) constitute the set of government institutions and instances of citizen participation that by designation, delegation or integration will assume under the provisions of this Act, the functions of rectory, coordination, operation and monitoring of the process of land management generally promoting standards, arranging policies, designing strategies and implementing tools that makes it viable and permanent.

Article 46: Are technical instruments of the territorial planning, which were subordinate instruments that contain guidelines of the land management indicated in article 40 of this Act, and are the following:

- National land ordinance plan: technical and political instrument that contains general rules governing land use, management of natural resources and the integral occupation of the territory. For its long-term nature orients activities of the economic, environmental and social sectors at national, regional, municipal areas and areas under special regime, serving as a frame of reference for the various sectoral plans and strategies, and is constituted by the plans of use and occupation of the territory in the corresponding levels;;
- Regional plan of land management: it is a technical instrument that guides the activities of the economic, environmental and social sectors at the regional level and provides a reference to the various sectoral plans and strategies, and is constituted by use plans and land occupation to a regional level. The system of regions will be established by the Central Government;
- Municipal plan of land management: it is a technical instrument that guides activities of economic, environmental and social sectors at a municipal level and provides a reference to the various sectoral plans and strategies and consists of plans of use and territorial occupancy at a municipal level;
- Land ordinance plan of areas under special arrangements: Technical Instrument of territorial regulation of these spaces; and,
- Other ordinance plans: Required for managing the land management in circumstances justifying the judgment of the Executive Committee of land management, particularized ordinances.

1.2.3 Standards on environmental issues

1.2.3.1 Air quality

In this section we expose the technical regulations relative to air quality, with the following existing regulations:

- Regulations for Control of Emissions of Toxic Gases, Fumes and dust from motor vehicles and
- Regulations for the control of emissions from stationary sources.

1.2.3.2 Water quality

For the water topic the reference to the following standards is:

- Technical standards for wastewater discharges to the sanitary sewage system. Agreement No. 058, which aims to:

a) To regulate wastewater discharges to receiving bodies and sanitary sewage system,

b) Encourage the development of waste minimization programs, installing treatment systems and wastewater disposal, to reduce the production and concentration of pollutants discharged into the environment.

1.2.3.3 Regulation for Integral Management of Solid Waste (Resolution No. 1567-2010)

Which aims to (Art. 1) regulate the integrated management of solid waste operations including prevention, reduction, storage and packaging, transportation, treatment and disposal of such waste, promoting the use of them in order to avoid risks to health and the environment.

Article 3 states that the national implementation and will be of binding compliance on the municipal governments and any natural or legal person, public or private, that as a result of their activities generates or handles solid waste either as a producer, importer, distributor or users of a good.

Classification and composition of waste are defined in Articles 16 to 19, the hazardous characteristics defined in number 20; Articles 21 and 22 states the stages of the management of special solid waste. Storage and treatment of hazardous waste 28-32 and 33.'s Disposal is regulated in Articles 34-43.

The non-special waste are regulated in Articles 44 to 65, Articles 72 and 73 regulate the management of inert solid waste.

1.2.3.4 GENERAL REGULATIONS OF PREVENTIVE MEASURES OF OCCUPATIONAL INJURIES AND DISEASES - REFORMED

This Regulation applies to the entire territory of the Republic, aims to establish, develop and provide legal, technical and administrative mechanisms for the prevention of occupational accidents and diseases in the workplace.

The provisions of this Regulation shall apply in everywhere and in any kind of work, whatever its legal form of its organization and benefit; They shall also govern the actions to promote and protect the health of workers.

All public and private employers, contractors, subcontractors and workers and their organizations, and public and private entities are subject to the provisions laid down in this Regulation.

Article 4

Additionally, this regulation defines the guidelines for Safety and Health Programs at Work, in articles 44 to 49. Personal Protective Equipment articles 107, 108 and 392.; Noise and Vibration Articles, articles 351-366 377-381 Chemical products.; First Aid 424-428.

1.2.4 MUNICIPAL TAXATION FRAMEWORK

BELOW ARE PRESENTED THE TAXATION FRAMEWORK OF THE MAIN MUNICIPALITIES IN THIS TRANCHE

1.2.4.1 MUNICIPALITY OF SAN PEDRO SULA

The following is the Taxation Framework of the Municipality of San Pedro Sula:

Table 1-2. TAXATION FRAMEWORK OF THE MUNICIPALITY OF ***San Pedro Sula***

Environmental Aspects	Articles	Observations

Environmental Aspects	Articles	Observations
Resource extraction or exploitation	**50**	The Extraction and Exploitation of Resources tax is paid by natural or legal persons for exploitation or extraction of natural resources, whether temporary or permanent use and their payment corresponds to one percent (1%) of the market value of extraction or exploitation of the resource within the municipality. In the case of metallic mineral exploitations in addition to industries , Trade and Services tax will be paid to the municipality for every ton of material or processed brushwood, in Lempiras, the equivalent of Fifty Cents ($ 0.50) U.S. Dollar of America, according to the customs valuation factor. The following will be taxed: a) The removal or quarrying, minerals, sand and gravel. b) Forest and its derivatives. c) Hunting, fishing or extraction of any kind. The tax for extraction or exploitation of natural resources must be paid within 10 days following the month in which the operations of extraction or exploitation were done, the taxpayer must submit the appropriate affidavit.
	51	It corresponds to the Municipal Environmental Division (MED), monitoring for compliance with all the responsibilities that the taxpayer carries affection of this tax, as well as all actions that correspond environmentally.

Environmental Aspects	Articles	Observations
	52	The taxpayers shall comply with the following requirements: a) Request from MED a permit for extraction or exploitation of resources before starting its operations, which will be issued prior to the judgment of the environmental feasibility, the validity of the permit for resource extraction or exploitation for commercial purposes, shall be one year. The operating permit for resource extraction without commercial purposes will be valid as determined by the judgment of the environmental feasibility issued by MED. b) Together with the previous application, submit the Business Operation Permit and a monthly estimate of amounts of resources to exploit or extract and an estimate of their market value according to the selling price. c) In the case of exploitations or extracting resources for commercial purposes, the taxpayer shall submit a monthly report where the quantities and types of products extracted or exploited in the municipality are indicated.. d) Projects of extraction or exploitation of resources must have their respective environmental license, mitigation measures contract issued by the Secretariat of Natural Resources (SERNA) and Metal and / or Non-metallic Mining Exploitation Concession issued by Executive Director of Development to Mining (DEFOMIN), as applicable. Excepted for removals of non-metallic minerals in commercial quantities of not less than ten cubic meters (10m ³) whose permissions are granted directly by MED prior to Environmental judgment. Keeping an valid permit granted directly by MED, in case of use of material for municipal projects and communities in emergencies.
	53	The natural or legal person that does not obtain from MED their respective Judgment for Environmental Extraction and exploitation of resources, may not develop his exploitation activity. In case he exercises such an activity without the appropriate license, he will be fined for the first time with a fine of Ten Thousand (L. 10,000.00) to forty thousand Lempiras (L.40, 000.00) lempiras, according to the importance of illegally exploited resources; in cases of recidivism, he was penalized every time, with the maximum amount of the fine; without prejudice of stopping activities by the offender.

Environmental Aspects	Articles	Observations
Solid Waste	**59**	Municipal Solid Waste (MSW). Domestic, industrial and other solid waste that occurs because of everyday activities or eventual of the citizens of San Pedro Sula and that are located in a particular place for the handling and use thereof, after the Municipality has provided to citizens the service for Cleaning Street Sweeping, Garbage, Hauling and Management of Solid Waste and Sanitation Services, ornamentation and Maintenance of Parks and Boulevards. Consequently, the municipal Solid Waste (MSW) are declared as Municipal goods, under the conditions described in this paragraph. ARE DECLARED AS "MUNICIPAL GOODS" THE MUNICIPAL SOLID WASTE (MSW) under the conditions described in the previous paragraph, it is stated of Public Interest, the use, exploitation, recycling of Municipal Solid Waste (MSW), either for re-processing or manufacture of organic, industrial products, power generation etc. For the use or exploitation of Solid Waste (MSW), the City approved a CANON, payable by a natural or legal person who receives the authorization for its use. The Municipal Corporation, under the proposal of the Mayor, will determine all the conditions under which any natural or legal person must operate, during the usage of the authorization for exploitation of the Municipal Solid Wastes..
	85	Prohibitions and Penalties. Any natural or legal person, who by their activities generates hazardous wastes must submit an application to the Municipal Environmental Division (MED), who will coordinate with the Solid Waste Unit to issue guidelines for management and treatment of these. Whoever fails to comply with this obligation, shall be punished by a fine of Two Thousand Five Hundred Lempiras (L.2, 500.00). It is forbidden to deposit toxic waste out of the sanitary landfill; whoever does it, shall incur a fine of twenty thousand Lempiras (L.20, 000.00) per cubic meter of deposited material. Those who execute the action and the owner of the Industry and / or from which the wastes originated will be severely liable . It is forbidden to litter, dispose of dead animals and all types of waste in streets, parks, boulevards, riverbanks and riverbeds and streams, rights of way, vacant lots and other public places. The offender of this standard will be charged a fine of Two Thousand Lempiras (L.2, 000.00).
	86	Companies in the Industry and Trade or other, private of this and/or other municipality who use the landfill, carrying waste under their own risk; must obtain their corresponding license in the offices of the Solid Waste Unit, Public Services Unit, attached to the Superintendence of Citizen Participation. For that the equivalent of one

Environmental Aspects	Articles	Observations
		vehicle can make use of the sanitary Landfill, the value of SANITARY PERMIT, will have the effect of ONE YEAR (1) and will be canceled in the municipal treasury, according to the following categories: CATEGORY "A" All of those individuals or companies that deposit wastes under their own means in the sanitary landfill and are not engaged in this work as part of their activity, will pay a value of THOUSAND FIVE HUNDRED LEMPIRAS (L. 1,500.00). CATEGORY " B" The Companies that are engaged in the economic activity of collecting Solid Waste will cancel the sum of TWO THOUSAND Lempiras (L. 2,000.00). CATEGORY " C " All Solid Waste collector vehicle, coming from another municipality will pay a value of TWO THOUSAND FIVE HUNDRED LEMPIRAS (L. 2,500.00) ARTICLE 87 LANDFILL USE RATE - The Industrial Companies, Commercial and others, and the individuals from this or any other municipality, that makes use of the Sanitary Landfill will pay, previous from obtaining the Permit a fee based on the following categories: **CATEGORY** " A" All those persons that with their own vehicle Pick up, wagons and others whose waste volume is in the range of 0 to 0.5 TONS, shall be exempt of payment for the use of this sanitary landfill **CATEGORY** " B" All those companies and / or natural or legal persons with their own small truck type vehicle (C-2) whose volume of waste is in a range of: 0:0.5 UP TO 3.00 TONS , will pay TWO HUNDRED LEMPIRAS (L. 200.00) **CATEGORY** " C" All of those companies and / or individuals or legal, whose own vehicle is used to deposit their solid waste or waste in the sanitary landfill and are not engaged in this activity and its volume is in the range of 3 TONS HEREAFTER will pay a ONE HUNDRED FIFTY LEMPIRAS (L. 150.00) per metric ton. **CATEGORY** " D " All those companies and / or individuals or companies, which are engaged in economic activity in the collection of Solid Waste or waste and that provide direct services to the City and its volume is in the range of 3 TONS, HEREAFTER will pay EIGHTY LEMPIRAS (L. 80.00) per metric ton. CATEGORY "E" CATEGORY " E " All those companies and / or natural or legal persons involved or not on the economic activity of the collection of Solid Waste or waste from other municipalities that wish to

Environmental Aspects	Articles	Observations
		deposit solid waste or waste in the sanitary Landfill in San Pedro Sula, will pay a value of TWO HUNDRED LEMPIRAS (L. 200.00) per metric ton. CATEGORY " F " All those companies and / or natural or legal persons involved or not in the economic activity of the collection of Solid Waste or wastes, wishing to deposit solid waste and / or toxic liquids in the sanitary Landfill in San Pedro Sula, are required to first decontaminate these same materials like: Creoline, lime, or carbide to reduce pollution and to pay a value of THREE HUNDRED LEMPIRAS (L. 300.00) per metric ton. PROHIBITION AND PENALTIES. Those persons or legal entities whose economic activity, whether industrial, commercial or service and that use the Sanitary Landfill without permission, to deposit their Solid Waste or wastes, they forfeit the vehicle and a fine of TWO THOUSAND FIVE HUNDRED LEMPIRAS (L. 2,500.00) will be applied per metric ton, when they come from the Municipality of San Pedro Sula and FIVE THOUSAND Lempiras (L. 5,000.00) per metric ton, when they come from another Municipality
Groundwater resource	**74**	Whoever projects drilling a new well, must take action before the municipality, through the MED if it were a PERMIT and through the Municipal Secretariat if it were a USE LICENSE. MED may issue permits for use of underground water sources only when it is intended for home use or human consumption. For all other uses and exploitations, it is necessary to execute the processing of the Exploitation License before the Honorable Municipal Corporation, who for the corresponding resolution will hear expert advice as it deems appropriate.
	75	MED is responsible for monitoring compliance with the terms on which the Municipal Corporation has cleared a Water Use License. Permits and Licenses do not grant property rights and can only be exercised by anyone with the appropriate authorization.
Cutting and pruning of trees	**88**	Special Services Cutting and pruning trees. When the citizen may wish to cut or trim trees with the characteristics set out in this article and also do the transportation of the waste that is generated, he must go to the Parks and Boulevards Unit and request special services, after consulting MED. The cost of this service depends on appropriate assessment and monitoring done by Parks and Boulevards Unit based on the following rate: 1.- Pruning: a. Small tree, up to five meters high. L. 400.00 b. Medium tree, 6 to 10 meters high, between L. 500.00 a L.2,000.00

Environmental Aspects	Articles	Observations
		c. Big, big tree 10 meters high L.2, 500.00 to L.10, 000.00 2 -. Cut: a. Small tree, up to five meters high. L. 250.00 to L.600.00 b. Tree medium a16 to 10 feet tall, between L. 600.00 to L.3,000.00 Big Tree, over 10 meters high L. 3,500.00 to L.15,000.00 3 -. Hauling vegetative material: For each tree between L.250.00 to L.8,000.00 Environmental Permit for cutting and pruning trees, as well as payment for the special service of cutting and pruning trees, provided by the Unit of Parks and Boulevards will be canceled at the Municipal Treasury. In the parks, boulevards and squares, it will be responsibility of the Boulevards and Parks Unit, harvesting, transportation of waste to be generated which will be delivered to the Solid Waste Unit. Pruning performed by the ENEE and any other company that need to execute this task will be done via agreement.
Environmental Protection	**90**	Protection Service, Maintenance and Preservation of the Environment. Scope. The service for protection, maintenance, preservation, restoration and environmental management is the effective and sustainable provision, we charge in order to cover the cost of operating the same.
	98	Services Rendered. In environmental issues, MED provides the following services: 1 - Cut and pruning trees Permits 2 - Permits for Exploration, Drilling and Exploitation of wells. 14 - Permits for extraction of non-metallic, non-commercial materials.

SOURCE : OWN COMPILATION.

1.2.4.2 MUNICIPALITY OF EL PROGRESO

The following is the Taxation Framework of the Municipality of El Progreso:

Table 1-3. **TAXATION FRAMEWORK OF THE MUNICIPALITY OF EL PROGRESO**

Environmental Aspects	Articles	Observations
Extraction of Non-Renewable Resources	**40-48**	- Fee for extraction of renewable and nonrenewable natural resources. Hunting of aquatic species up to 200 meters deep. - Request for records at the Municipal Environmental Unit. Presentation of plan for closing usage areas. -Permit for domestic usage of non-metallic mining. - Requirement for Environmental License.
Solid Wastes	**54, 109-117**	- Cleaning, collection and disposal of solid waste. - Service charge rates. - Contamination of water bodies by sedimentation or siltation as a result of earthworks or improper stacking of material and without erosion control Works is prohibited. - Disposal of solid waste shall be regulated anywhere outside the municipal crematorium or Municipal landfill, La Municipality, businesses and people in charge of transporting the waste to the municipal proper place. - - It is strictly forbidden to place inside or outside the crematorium or Municipal landfill all bacteriological sludge from treatment plants of industrial wastewater without having been treated previously as is so for any other pharmaceutical, chemical or hospital product or of other that is about to reach maturity - The accumulation of tires or any container with features that can generate vector proliferation is prohibited
Wastewater	**55, 118-119**	- Operation and maintenance of the sanitary sewage system. - The discharge of chemical substances, fuel, oils, greases and hydrocarbons in general into the sanitary sewage systems is prohibited and will be subject to a fee of Lps. 5,000.00 and Lps. 10,000.00 in case of recidivism. - It is prohibited to discharge to the sanitary sewage system any storm and industrial water that by their characteristics could alter the physical, chemical or bacteriological conditions of the receiver waters of the effluents of the sewage systems, therefore provoking damages to the tube

Environmental Aspects	Articles	Observations
		lines. Those that are considered illicit tube lines
Extraction of Water for Industrial and Commercial Use		-Rate charge for use of the resource. - Permit or License of Resource Utilization To the Municipality. - Penalties.
Environmental Services	**75-77**	- Implementation of regulatory framework to guide and allow direct control and sustainable use of natural resources. - The municipality is responsible to preserve and protect the ecological balance and environmental protection.
Forests and green areas.	**78-90**	- Prohibition of cutting trees. - The rate of pay for cutting trees. - Forest fires are prohibited. - Prohibition of logging. - Permission request to cut trees. - Penalties.
Water for human consumption and pollution of water bodies.	**91-97**	- Prohibition on the following activities: a) Installation of human settlements. b) Discharge of raw sewage on bodies of water. - The discharge of treated wastewater will only be permitted by the Municipal Environmental Unit. - Any operator of the water supply for human consumption should be sticking to the technical standard for consumption of drinking water. - Application for permit for drilling.
Environmental Sanitation	**98-102**	-All excreta, sewage, wastewater and storm water must be connected properly. - All buildings must be connected to the system
Regulation of Latrines	**106-108**	- Installation of latrines in places where coverage of sewage systems exists is prohibited or within 250 meters with respect to a water birth and 150 meters on both sides of a permanent water course or lagoons.

Environmental Aspects	Articles	Observations
		- Penalties.
Control of visual, sonic and radioactive contamination.	**120-127**	- It is strictly forbidden to exceed the noise levels or maximum sound allowed, which will be established according to zones and schedules.

SOURCE: OWN COMPILATION

3.2.5 ENVIRONMENTAL GUIDE FOR ROAD PROJECT OF SOPTRAVI

THE CONCESSIONAIRE SHOULD ALSO BE SATISFIED WITH THE PROVISIONS OF ENVIRONMENTAL GUIDE FOR ROAD PROJECTS OF SOPTRAVI:

Table 1-4. *GUIDE FOR ENVIRONMENTAL ROAD PROJECTS OF SOPTRAVI*

2 Environmental Aspect applied to the design, construction and rehabilitation of road projects	Numeral	Observations
Provisions during the design stage	11.1	- Selection of the best route of the new road or highway. - Environmental criteria for the selection of the route that should be considered. - Road Marking - Stop booths - Crosswalks
Provisions during the construction phase	11.2	- Prevent erosion during the progress of the work - Set the exploitation of sites of detected borrows. - Train staff
Description of typical activities in construction projects, rehabilitation and maintenance of roads and highways	11.3	Generals
	11.3.1	Removal of plant material and stripping
	11.3.2	Scarification and conformation of the
	11.3.3	Extraction of stone material
	11.3.4	Blasting
	11.3.5	Removal and disposal of waste material
	11.3.6	Filling with coarse rock material
	11.3.7	paving
	11.3.8	Conformation of ditches

2 Environmental Aspect applied to the design, construction and rehabilitation of road projects	Numeral	Observations
	11.3.9	Cleaning of box and tubular culverts
	11.3.10	Cleaning and conformation of the riverbed
	11.3.11	Drainage Works
	11.3.12	Rehabilitation of bridges
	11.3.13	Installation of road signals
	11.3.14	Transportation of hazardous materials
	11.3.15	Installation of camps
	11.3.19	geotextiles
Control procedures, monitoring and environmental audits of Works	12	- Environmental Compliance and Supervision
Environmental considerations and criteria for typical activities in construction projects, rehabilitation and maintenance	Annex 6 File 1	Criteria and environmental considerations on the construction of ditches.
	Annex 6 File 2	Criteria and environmental considerations about building counter ditches
	Annex 6 File 3	Criteria and environmental considerations on building slopes and landslide rehabilitation.
	Annex 6 File 4	Criteria and environmental considerations on the construction of sewers.
	Annex 6 File 5	Criteria and environmental considerations about stripping and pruning
	Annex 6 File 6	Criteria and environmental considerations on bridge rehabilitation
	Annex 6 File 7	Criteria and environmental considerations on scarification and conformation of the
	Annex 6 File 8	Criteria and environmental considerations on extraction of disposable material
Environmental considerations and criteria for typical activities in construction projects, Rehabilitation And Maintenance	Annex 6	Criteria and environmental considerations on pavement (asphalt treatment)

2 Environmental Aspect applied to the design, construction and rehabilitation of road projects	Numeral	Observations
	File 10	
	Annex 6 File 11	Criteria and environmental considerations on transport of hazardous materials
	Annex 6 File 13	Criteria and environmental considerations on Paving (lining)
	Annex 6 File 14	Criteria and environmental considerations on cleaning and shaping of the riverbed
	Annex 6 File 15	Criteria and environmental considerations on installation of stone quarries or pits, asphalt plants, landfills and other temporary sites
	Annex 6 File 16	Criteria and environmental considerations on drainage structure cleaning
	Annex 6 File 17	Criteria and environmental considerations on installation of road signals
	Annex 6 File 18	Criteria and environmental considerations on extraction of stone material.

SOURCE: OWN COMPILATION.

3 PROJECT DESCRIPTION (SUPPLEMENT TO EAI DATA)

3.1 Project Area and Area of Influence

Total project area (Apt) in m²

The total project area is of 705,000 m². Within this area, 40 meters of the existing road easements are included, two areas for location of provisional installations - 5,000 m2 (0.5 ha) each totaling 10,000 m2, throughout the length of the alignment San Pedro Sula – El Progreso de 17.5 km.

Net area of the project (Apn) in m²

The net area of the project (Apn) is 2,750,000 m2. Within this area 40 meters of existing road easements are included, two areas for location of provisional installations of approximately 10,000 m2 (0.5 ha each), throughout the length of the tranche San Pedro Sula – El Progreso, de 17.5 km

Total area to build in m²

This project for selective rehabilitation and maintenance, only one maintenance will be performed on the existing road, no expansion or construction of additional roads or lanes will be done. The rehabilitation and maintenance of this specific tranche will include the construction of a toll booth and the rehabilitation of bridge La Democracia.

Area of influence of the project

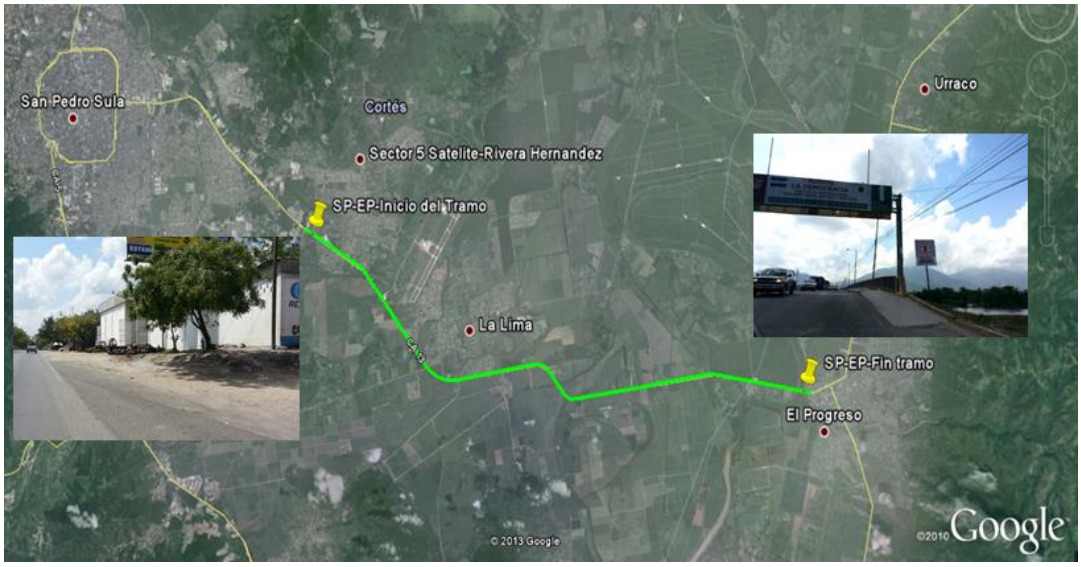
TO determine the area of direct influence (ADI) the definition established in the Environmental Evaluation and Control Guidebook – by SERNA 2009 was taken as a base, which is considered as: The project environment that is located outside the overall area of the project and extends from its boundaries to a distance of 500 meters.

Based on this definition and for this specific project, the area of influence will correspond to the existing road area of the road easements of the tranche (40 meters) plus 500 meters on either side of the easement, in a length of 17.5 km. (which includes the area of the bypass).

3.1.1 Geographical Location and Limits

The rehabilitation and maintenance of the tranche San Pedro Sula - El Progreso, sits on one of the major road networks in Honduras CA-13, specifically connecting the municipalities of San Pedro Sula, La Lima and San Manuel in the Departments of Cortez and the town of El Progreso in the Department of Yoro. See Figure 4.1:

Figura 3-1. Geographic Location of the Project



Source: http://www.sinit.hn/index.php

3.1.2 Administrative location

The tranche San Pedro Sula – El Progreso, administratively is found between the departments of Cortés and Yoro, passing through the municipalities of San Pedro Sula, La Lima, San Manuel, in the department of Cortés and the municipality of El Progreso, in the department of Yoro.

3.2 Components of the project and its stages

The activities to be performed in each of the stages of the project are described below:

PLANNING STAGE

At this stage the following activities will be undertaken:

- Award from the State of the affected land. At this stage the physical environment of the new road is determined (including easements) and technical records are made to start the indemnification process that SOPTRAVI will carry out, to acquire private lands that may be necessary to develop the work.
- Dissemination of the project through the Citizen Participation Plan. The awarded project is presented in the media and outreach meetings begin with all stakeholders, both representatives of civil society, institutions and the community in general.
- Preparation of technical environmental Documents and Application for the Environmental License. Parallel with the aforementioned, and with the proposal in hand, the preparation of the Technical Environmental Documents begins, as per the instrument indicated for each category, for later submission to SERNA , to obtain the corresponding environmental license. (Regulation of the National System of Environmental Impact Assessment SINEIA - Agreement No. 189-2009).

- Processing of the corresponding permits. The CONCESSIONAIRE must take the steps required by the UGA (Environmental Management Unit) - SOPTRAVI for all the activities to be performed, for example, tree pruning permit, use of water resources from SERNA, use of authorized sites by the municipal authorities (UMA's) for the disposal of solid waste and construction waste, among others.
- Relocation of Public Services utilities. The Concessionaire shall prepare the final design plans for the relocation of public utilities (electricity, water supply, sewage system, drainage and communications), obtain approval from all Concessionaires to make the necessary Works to prevent any cut or interruption of service during the construction phase.
- Preparation of work program. The Concessionaire shall prepare or update a detailed work program and present it to SOPTRAVI for its approval.
- Development of Traffic Detours Plan during the construction, including traffic studies and Works for the adequacy of minor roads, as required.
- Location of construction materials supply sources. Similarly, the Concessionaire should find the best construction materials supply sources and provide in its work schedule a continued provision to decrease the quantities and storage areas.
- In the case of material borrow pits that have a grant, you will need to request the documentation that proves the ownership of a mining concession and the respective license issued by SERNA and make compliance with the given measures . Otherwise, the material borrow pit that does not have a concession for exploitation, will process through the UGA of SOPTRAVI the proper permission before the INHGEOMIN for granting the concession of non-exploited borrow pits.

At this stage, the Concessionaire Company should begin to train workers so that an appropriate training for health protection and the environment of persons is ensured and at the same time, the preparation of the terms of reference for the firms to be outsourced should initiate, in order to ensure compliance with environmental regulations in-force in that moment.

SELECTIVE REHABILITATION AND MAINTENANCE UNDERTAKINGS

As pointed out in the Concession Agreement, the term selective rehabilitation and maintenance are the activities of selective rehabilitation with tendency to renew the initial condition of the road, so that they meet the service levels specified in the Concession Agreement.

The first stage to be undertaken is the selective rehabilitation and maintenance of the tranche existing between El Progreso – Tela, which will last 10 months. The activities included in this stage are described as follows:

- **Location and Operation of Temporary Facilities:** This activity includes site selection for the installation, construction and/or purchase or rental of temporary facilities next to the worksite and the operation of these during the time provided under the work plan (they can be temporary or semi-permanent, during the construction phase). These facilities will at least be the following:

  - Field Offices for engineers and for the administrative sector.
  - Provisional repair Shops.
  - Rest areas, food and sanitary services for workers
  - Provisional parking for machinery

  Likewise the following has been foreseen: the change in land use, land leveling, removal of vegetation, construction of offices, enabling and implementing machinery parking, construction or rehabilitation of access roads, parking area adequacy and whatever is necessary for security (perimeter fencing) and comfort of workers

  .

The area that will be used for these temporary facilities will have at least 0.5 ha.

- Replacement of the pavement layer: This activity involves the partial or total rupture, removal and placement of concrete pavement in blighted areas of the tranche. The works will be carried out provided the slabs are fractured and that it is not possible to correct the problem by sealing cracks. The cleaning or scheduled sweeps of the road is included.

- **Preparation of the worksite:** Planned actions include: cleaning, cutting and removal of grasslands on both sides of the roadway and central strips along the alignment. Cutting of grass and shrubs will be performed on both sides of the road, up to a length of 1.0 meters from the outside of the gutter (concrete, stone or formed in the natural soil). Priority will be given to the curves, bridge access, intersections and areas of poor visibility. It also includes pruning of trees that are located in the central strip that have now reached high altitudes, thereby interfering with power lines and preventing visibility of users.

- **Maintenance of the drainage Works:** it consists of cleaning and removal of debris, dirt, residue, sand or any other material from the gutters, inlets and culverts, minor repairs to gutters, drains, sewers, discharge heads or any other work of drainage that may require it.

- **Bridge maintenance:** This activity is more specific and is based on the structural inspection that makes up bridges (e.g. brackets, stirrups, beams, etc.) as well as the cleaning and repair of joints, guardrails, drainage, pavement layer, etc. The purpose of this activity is to keep the bridge under good condition, repairing damaged secondary members, keeping the channel free of obstructions for the free flow of water and keeping clean the superior and inferior areas of the bridge..

Construction: The buildings that are covered by this activity include the toll booth and the administrative offices for staff and the National Police. This activity is subdivided into the foundation, construction of concrete structures and steel (considering: columns, structural walls, beams, etc.), masonry (those jobs that can be done with concrete blocks or terracotta blocks, as shown in the plans), placement of doors, windows, stairs, installation of ceilings or roofs, finishes, furnishings (only considering the design, specification, quantity, size and location in the final plan), interior and exterior lighting, bathroom and kitchen. These constructions will include the toll booth of the tranche and administrative offices for staff and National Police.

Exploitation and transportation of materials from borrow pits: This activity involves cutting (exploitation) and transport of stone material to be used for the rehabilitation of bridge La Democracia from its borrow source (pit, dry or alluvial) to the Worksite. This activity requires greater mobilization of trucks, equipment and construction machinery, and will initiate securing the area with protective barriers that will limit traffic through the internal roads of the Worksite. This action will ensure the safety of pedestrians and workers

Guaymón river borrow pit has been identified, as a borrow pit for extraction of material for construction activities. The description of the borrow pit and its location is shown in Table 3-1

Table 3-1. Guaymón borrow pit

Barrow pit	Verified Use	Borrow Pit Capacity	Owner	Coordinates Location
	• Gravel for concrete	Enough	Granted to Transporte	428459

Río Guaymón	• Sand for concrete • Crushed base • Filler • Stone embankments • drainage beds		Juárez	1715832

Source: The Concessionaire

Borrow pit: El Guaymón

Location: 600 meters on the left of the road to El Progreso, Tela, 100 meters before Guaymon River Bridge over the river of the same name
Coordinates UTM: X= 428459.000; Y= 1715832

In this case the Guaymón borrow pit has a concession granted to Transporte Juárez. In this case the dealer will make sure that they have the permission of the in force concession and current environmental license.

- **Installation of road signals and illumination:** Consists on the repair or replacement of signage, both vertical and horizontal and light poles; and verify the operation and programming of traffic lights and luminaries.
    - brush from the surroundings is cleaned.
    - The installation of horizontal road signals or painting the dashed centerline on the pavement and the continuous line that runs along the edges with white paint. The edges of the islands in the central part of the road should be painted with yellow line. The purpose of this activity is to define the traffic lanes for drivers to stay within them and have a guide or reference.
    - The vertical signals that are deteriorated will be restored.
    - Use of water sources: This activity as its name suggests is the collection and transport of water resources from surface water bodies within the area of influence of the project to where it is required for those jobs that require it (compaction , cast concrete, irrigation, etc..). Obtaining resource is usually done by pumping from the body of the resource provider (river with permanent or semi-permanent flow) to a temporary storage tank where it was transported to the work site. Possible sources of water used for this tranche may be the Ulua River and Rio Chamelecón.

- **Management of construction waste and solid waste**: This activity involves the collection, separation, transportation, and disposal of surplus materials or construction waste generated during the construction of the work in any of the activities mentioned above (including the restoration or removal of temporary facilities), as well as solid and domestic waste and the activities of the construction generated by the operation of the temporary facilities.

CONSTRUCTION PHASE

The construction phase will last 24 months. It includes rehabilitation of bridge La Democracia, an activity that involves the repair of the central segment of the bridge. Bridge La Democracy gave in on 2009 by and earthquake. In this segment the activities to be carried out will include the placement of reinforcing steel, cast reinforced steel..

OPERATION PHASE

The operational phase begins with the complete delivery of road work and when open to the general public, both road users and those living adjacent to the road. The operation will be continuous and permanent, with a long 30 year term.

For the road to be kept in operational safe conditions within the design horizon, maintenance activities must be performed.

The following activities are executed during the operation phase:

- Maintenance of the roadway (patching or replacement of slates)
- Maintenance of the drainage works.
- Maintenance of bridges
- Maintenance of signage and lighting

Besides the aforementioned, the Concessionaire will provide, free of charge, the road safety service and will include the following:

2. Central Emergency Services which will operate twenty-four (24) hours a day. The Concessionaire shall respond to emergency requests and/or accidents which have occurred in the tranche, through the Emergency Center, communicating them or referring requests to the National Police, a hospital, doctor, clinic or similar, or an insurance company, as applicable.
3. Communication System in Real Emergency Time. The terminals shall be located at a distance of twenty-five (25) miles between each other. This system should at least allow the execution of free calls exclusively to the Emergency Central.
4. For the attention of the injures and transfer to another hospital center, medical center, polyclinic, as applicable
5. Transfer of vehicles that have been damaged on the road to the nearest service station, distance must not exceed seventy (70) miles.
6. An office to be used by the National Police of Honduras This office should be adjacent to areas each toll unit, with its basic equipment, and should measure at least 70 m^2

RESTORATION PHASE

One of the main measures to be adopted as part of the policy during the execution of the Works, in view of the environmental aspects, is an adequate restoration of each of the sites intervened during the execution of the Works.

However, during the restoration phases, of each of the sites, including: location of sewers, drainage Works, support roads, camps, sites of borrow pits, etc…should undergo a thorough review of the area in order to remove all contaminated soil.

All sites intervened by the Concessionaire shall be thoroughly cleaned upon leaving each one of them.

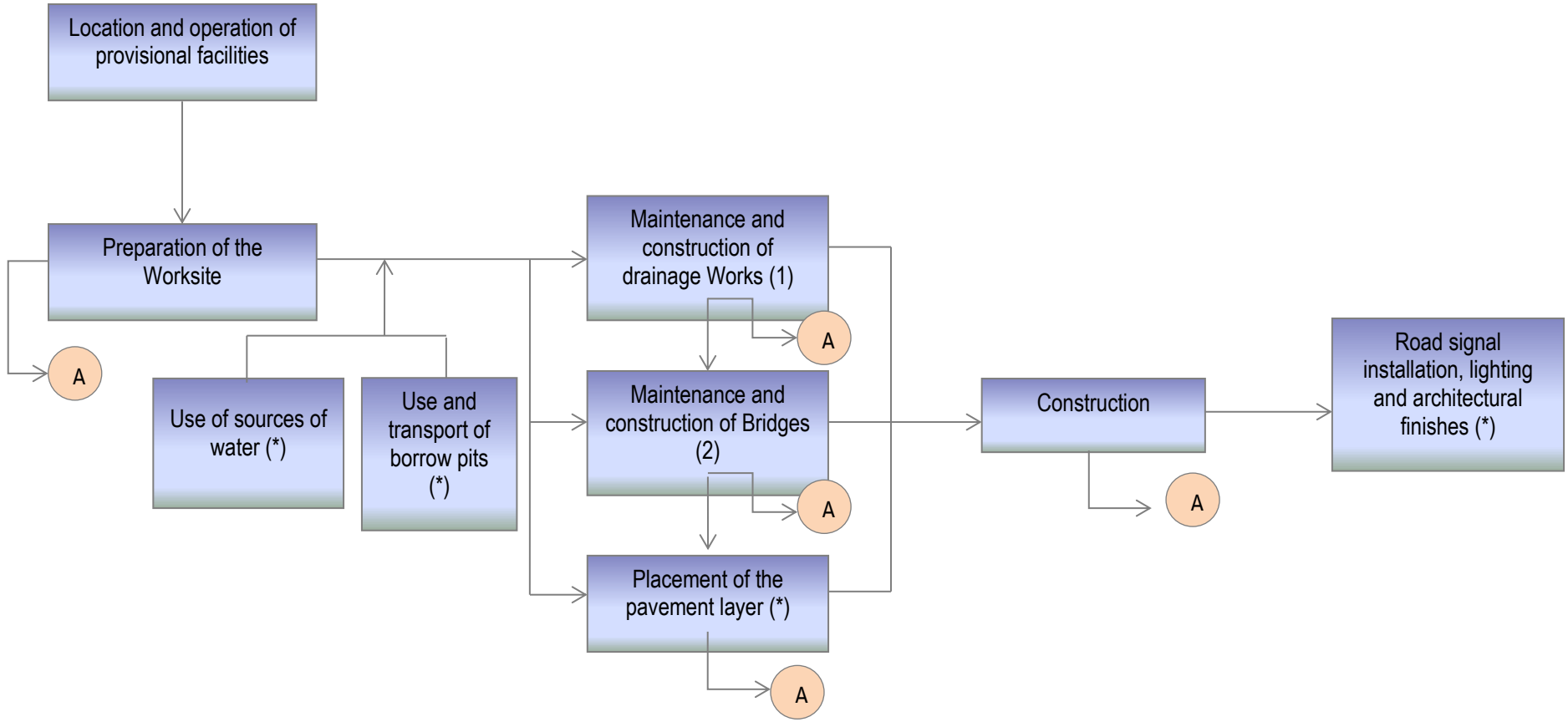
In order to facilitate cleaning tasks during the restoration stage of each site, it is recommended that the Concessionaire perform all of his work in a clean environment with techniques to avoid contaminating the resources located in the vicinity of the intervention.

The Concessionaire shall take into account the measures issued by the UGA / SOPTRAVI, when there is a closure or abandonment of the work.

3.2.1 Flowchart of activities

The Flowchart of activities to be developed in the selective rehabilitation, refinement and construction stages, are presented in Figure 4.2:

Figura 3-2. Activities flowchart of the selective rehabilitation, refinement and construction stage



(*) Observation: The rehabilitation of bridge La Democracia is included in this activity

3.3 Infrastructure to develop

At the stage of selective rehabilitation and maintenance, the construction of ta toll booth will be executed In this construction administrative offices, office for the national police, with all its equipment will be installed.

Meanwhile, in the construction phase of the rehabilitation of the bridge La Democracia, which is currently out of order will be performed. In this activity, the central segment (approx. 36 meters), of bridge La Democracia will be built.

3.4 Equipment and machinery to be used

With regards to equipment used during the rehabilitation, refinement, construction, operation and maintenance of the Project we have the following (see Table 4.2):

Table 3-2. Equipment list

Phase	Activity	Machinery and Equipment
	Preparation of the Worksite	Moto bulldozer, compacting roller, front loader, dump trucks, backhoe, flatbed, tanker
Selective Rehabilitation and maintenance And Construction	Maintenance of drainage Works and bridges	Moto bulldozer, double drum roller, pneumatic compactor, asphalt setter, dump trucks, flatbed
	Substitution of the pavement layer	Moto bulldozer, compacting roller, front loader, dump trucks, backhoe, flatbed, tanker
	Management of Construction and Solid Waste	Backhoe, dump trucks
	Installation of road signals. Illumination and arquitectural finishes	Crane Truck
	Withdrawal of Provisional Facilities and Equipment	Front loaders, dump trucks, flatbed

Source: The Concessionaire

3.4.1 Vehicular Equipment

The traffic flow, resulting from the activities of the project will consist mainly on moving raw material needed for Works and waste disposal, truck fuel dispenser or asphalt distributors. It also includes inspections, operation personnel and field supervisors transport.

3.5 Labor force in Construction

Table 8.6, shows the jobs that are foreseen necessary during the construction stage. The list makes reference to 79 jobs for the selective rehabilitation and maintenance stage, the administrative staff is not considered in the list.

Table 3-3. Jobs during the selective rehabilitation, refinement and construction stage

AMOUNT	DESCRIPTION
2	Master of Paving Work
1	Master of Mechanical Works
1	Work Master of the Crushing Plant
1	Topographer
2	Prism holder
2	Assistant of the Topographer
2	Tractor operator
2	Front loader operator
5	Dump truck operator
1	Concrete truck operator
1	Crushing plant operator
1	Concrete plant operator
2	Water tank operator
1	Compressor operator
1	Horizontal Signal Equipment Operator
8	Masons
20	Construction Assistants
2	Mechanic
1	Mechanic assistant
1	Electrician
1	Electrician assistant
1	Welder
1	Welder assistant
2	Greaser

1	Lube truck driver
3	Light Vehicle Drivers
8	Flaggers
1	Environmental Specialist
1	Environmental Specialist assistant
1	Manager of workplace safety
1	Manager of workplace safety assistant
79	**Total**

Source: Own compilation

The listing of the necessary manpower in the operation stage is presented in Table 4 4. The list refers to 41 jobs for the operation stage, not including administrative staff.

Table 3-4. Jobs in the operation stage

AMOUNT	DESCRIPTION
1	Master of Paving Work
1	Master of Mechanical Works
1	Topographer
2	Prism holder
1	Assistant of the Topographer
1	Tractor operator
1	Front Loader Operator
5	Dump Truck Operator
1	Concrete truck operator
1	Crushing plant operator
1	Concrete plant operator
1	Compressor operator
1	Water Tank Operator

AMOUNT	DESCRIPTION
1	Horizontal Signal Equipment Operator
2	Masons
5	Construction Assistants
2	Mechanic
1	Electrician
1	Welder
2	Greasers
1	Lube truck driver
2	Light Vehicle Drivers
4	Flaggers
1	Environmental Specialist
1	Manager of workplace safety
39	Total

Source: Own compilation.

3.6 Disposal of solid waste in the stages of selective rehabilitation refinement and , construction, operation and restoration

Waste generation from the various activities that make up the project throughout the different phases will be handled as shown below..

3.6.1 Selective rehabilitation and maintenance undertakings and Construction

During the selective rehabilitation, refinement and construction phase, solid wastes are generated due to the development of activities of cleaning and grassland removal, removal of existing infrastructure (pavement), drainage cleaning and decrease of activity and these are due to their safety, they will be taken directly to the sited of the authorized landfills by the authorities of Municipality (UMAs) for the project.

Table 3-5, shows a general characterization of the waste that will be deposited directly into these authorized dumps:

Table 3-5. General Characterization of non-toxic waste to be disposed in authorized landfills

Non-toxic solids
Scrap wood
Food residues
Empty water containers
Demolition debris
Domestic solid waste
Remains of sand, cement and gravel

Source: Own compilation.

All the remains from the demolition of concrete slabs of Portland Cement or other material may be reused/recycled.

The temporary storage of debris shall be set up for a proper drainage so that no pools of water are generated, to avoid affecting the movement of equipment and staff. This will also avoid the invasion of lands or properties outside the areas authorized for the Works and will avoid causing damage to the surrounding vegetation.

The remaining solid waste coming from human activities necessary for the implementation of the construction Works will be arranged conventionally, subcontracting a garbage collection service for its daily removal either with a collection company or by the municipal authority's own means (UMA's) dump, selected for this work.

For the wastes that can be recycled, we propose contacting Companies in charge of recycling in the area, for the sale of these wastes, one of these could be the Reciclados de Honduras company, located in Barrio Suyapa, which buys paper, carton, plastics and metals.

3.6.2 Operation

The solid waste produced during the operation and maintenance stage will be of a domestic type (food waste, paper, glass and plastics), produced by road users and workers of the company in charge of the maintenance activities. These wastes will be collected and disposed of in the authorized landfill site.

Periodically metal waste, concrete (slabs), wood or plastic (replacement parts), paint cans, among others, from maintenance operations, will be handled by companies specializing in these tasks (they must have their corresponding permits).

Residue considered hazardous or toxic will be handled, collected, transported and placed in final disposal sites authorized by a manager (must have a permit from the competent authority) to handle these substances.

3.6.3 Restoration

During the stage of restoration, of each of the sites, like sewers, drainage Works, support roads, camps, industrial plants, etc.. should undergo a thorough review of the area in order to remove all contaminated soil.

If the Works are to be stopped for a long time (over three months), the Concessionaire shall perform the following tasks prior to the demobilization of personnel and equipment:

- Mark the areas that may cause danger to the general population, or prohibiting the passage indicating the precautions to be taken. (e.g. danger deep pit road under construction, unstable zone, etc..).
- Cover the pits on stand-by thus avoiding the disposed solid waste in them to be open on the surface.
- Remove from Works all traces of fuel, grease, or other elements that may cause danger of explosion or fire.
- Remove tools and equipment that stand some threat to the surrounding population.
-

3.6.3.1 Restoration of provisional installations

All the fixed and dismountable installations that were installed for the execution of the work must be dismantled, and then the scrap, debris, and fences must be removed and buried in the dump sites authorized by the Municipal Authorities (UMA's).

At this stage, the measures issued by the UGA / SOPTRAVI for those cases in which there is a closure or restoration of Works.

3.7 Description of the liquid waste generated in the construction, operation and restoration phases

3.7.1 Rehabilitation, refinement and construction

During the rehabilitation, refinement and construction stage liquid waste will be generated mainly from oils and lubricants used for the maintenance of machinery. These will be stored temporarily in the site properly destined for this, until their recollection by an authorized manager, who will have the responsibility to treat and dispose them in an authorized disposal site.

A toilet must be installed for every 10 persons or workers of the same sex, plus one more if a lady is part of the team. Toilets must be reasonable accessible and all work sites and they must not exceed a distance of 60 m from the work site. In these provisional installation areas, the installation of a septic tank will be necessary for the management of grey waters, deriving from washing of machines and camp area cleaning.

These Toilets must be properly maintained and cleaned, serviced by specialized companies which must have all of the permits required by the national legislation for this activity.

3.7.2 Operation

During the operation phase, liquid waste will be generated mainly from oils and lubricants used for the maintenance of machinery. These will be stored temporarily in the site properly destined for this, until their recollection by an authorized manager, who will have the responsibility of treating and disposing them in an authorized disposal site.

Similarly for workers, portable toilets will be provided and for camping areas or temporary facilities a septic tank to handle gray water shall be installed, as described in the selective rehabilitation, refinement and construction phase.

3.7.3 Restoration

In the dismantling of provisional installations, work sites, and borrow pits, special care will be given to the collection of hazardous liquid residue that might have been left as a result of the development of activities during the execution of the Work.

The transport of materials, especially those with potential contamination, like grease, oils, fuel, asphaltic mixtures, among others; must be done with the proper precaution measures, from the site of origin to the site of disposal. They will be managed, collected, transported, and placed on the final disposal site by an authorized manager (must have the corresponding permit)..

4 IDENTIFICATION, CHARACTERIZATION AND ASSESSMENT OF ENVIRONMENTAL IMPACTS

The objective of this identification process is to provide an initial indicative information base for further quantitative evaluation. A matrix was prepared which allowed us to contrast the different activities of the project with the resources and natural processes that could be affected by the activities. The likely impacts were identified by each consultant depending on their area of expertise.

For the Impact Identification Matrix, the environment used was divided into seven (7) components or means in which the potential impacts associated with the project are presented, as indicated below:

1. Aquatic (water)::
    - 1a. Alterations of the hydric regime (courses and drainage of water)
    - 1b. Deterioration in the quality or water pollution
    - 1c. Alterations in the water table level
2. Atmospheric (air):
    - 1a. Deterioration in the quality or air pollution
    - 1b. Dust generation and / or foul odors
    - 1c. Increased noise levels.
3. Terrestrial (land):
    - 3a. Effect on soil compacting or leveling
    - 3b. Quality deterioration or contamination of soil
    - 3c. Extraction or soil loss
    - 3d. Increase in soil erosion
    - 3e. Decreased fertility and suitability of land use
4. Biotic (flora and fauna):
    - 4a. Loss of vegetation cover
    - 4b. Disturbance or alteration of terrestrial or aquatic fauna
    - 4c. Increased risk of abuse of wild animals
    - 4d. Increased risk of abuse of wild animals
5. Socioeconomic:
    - 5b. Modifications to the local vehicular traffic
    - 5c. Increased local and regional economy
    - 5e. Increased risk of disease transmission
    - 5f. Increased risk of occupational accidents
    - 5g. Employment generation (+)
    - 5h. Increased public health issue because of the generation of solid and liquid waste
    - 5i. Nuisance to the surrounding communities by the project Works
    - 5j. Changes in land use
    - 5k. Alteration of public services

5l. Savings in travel time

5m. Decreased concentrations of toxic gases from mobile sources

5n. Savings in fuel costs

5o. Reducing the risk of road accidents and increase road safety

6. Historical and cultural:

6e. Impact on historic and archaeological sites

7. Landscape related:

6a. Alterations or changes in the landscape and aesthetics of the environment

Furthermore, the activities and sub-activities contemplated for this work are listed by stages:

A. Planification Stage

The following activities will be executed in the planning stage

- Verification and processing of relevant permits (e.g. Tree pruning permits, borrow pits, etc.) and water use permit.
- Dissemination of the Project through the Citizen Participation Plan.
- Location of waste disposal sites and residual material (debris).
- Location of the supply sources of construction materials.
- Preparation of the Work Programme.
- Preparation of Traffic Management Program to control and detour traffic during construction activities.

These activities have an impact on the environment, they simply define and limit the areas affected (e.g. the area of influence), and the natural, social and cultural resources, and infrastructure or services that will be affected by the work. However, it is important to note that all these activities will be needed to continue with the execution of the following two stages, the construction and operation and maintenance phases.

B. Selective Rehabilitation, Refinement and **Construction**

At this stage the following activities will be undertaken:

B.1 Location y and Operation of Temporary Facilities (site selection, installation and / or purchase or lease, operation of facilities)

B.2 Preparation of the Worksite (cleaning, clear vegetation and tree pruning, construction of temporary traffic detours).

B.3 Use of water sources (collection and transport of water resources)

B.4 Maintenance of drainage Works (maintenance and placement of sewers, ditches and underdrains).

B.5 Substitution and placement of the pavement layer (placement, distribution, compacting of the base and transportation and placement of the pavement layer).

B.6 Bridge maintenance (paint and reconstruction of guardrails).

B.7 Rehabilitation of bridges (rehabilitation of Bridge La Democracia)

B.8 Construction. Foundation, construction of concrete and steel structures (considering: columns, structural walls, beams, etc.) and masonry.

B.9 Exploiting of borrow pits. This activity involves the exploitation and transportation of the material to be used for the selective rehabilitation, refinement and construction stage (where required) from its source of loan, to the site of work.

B.10 Road signal installation. Lighting and landscape finishes (installation of barriers, signs and light poles).

B.11 Removal of temporary facilities and equipment (removal or restoration or decommissioning of temporary facilities).

B.12 Handling of construction waste and solid waste and liquids (collection, separation, transportation, and disposal of materials).

A. Operation and Maintenance Stage

C.1 Selective rehabilitation and maintenance of the Project (operation of the road and complementary Works)

C.2 Periodic and routine road maintenance (maintenance of the , drainage, bridges, installation of road signals and Lighting.

C.3 Night lighting

For the identification of environmental impacts, a matrix of interaction between "Actions or activities of the project" and "environmental factors" was developed. This impact identification was performed following the Leopold Matrix model (modified).

Table 4-1. Impact Identification by Leopold Matrix modified

Impacts		Selective rehabilitation, refinement and construction activities												Activities of the Operation and Maintenance Stage		
Id	Manifestation of Impact	B1-Location and Operation of Temporary Facilities	B2- Preparation of Worksite	B3-Use of Water Sources	B4- Maintenance of drainage Works	B5-Placement of the pavement layer	B6- Maintenance of bridges	B7-Bridge Rehabilitation	B8-Construction	B9-Exploiting borrow pits	B10 signage, lighting and finishes	B11 Removal of temporary facilities	B12 Management of Construction Waste	C1- Commissioning of Project	C2 Maintenance	C3-night lighting
1	***Aquatic (water)***															
1a	Alterations of the water regime (courses and drainage of water)	• B (-)		• B (-)						• M (-)					• B (-)	
1b	Deterioration in the quality or water pollution	• B (-)	• B (-)	• B (-)	• B (-)		• B (-)			• M (-)			• B (-)		• B (-)	
1c	Alterations of the water table			• B (-)												
2	***Atmospheric (air)***															
2a	Deterioration in the quality or air pollution	• B (-)				• M (-)	• B (-)	• B (-)	• B (-)	• M (-)		• B (-)	• B (-)		• B (-)	
2b	Dust generation and / or foul odors	• B (-)	• B (-)		• B (-)	• M (-)	• B (-)	• B (-)	• B (-)	• M (-)		• B (-)	• B (-)		• B (-)	
2c	Increased noise levels.	• B (-)	• B (-)		• B (-)	• M (-)	• B (-)	• B (-)	• B (-)	• M (-)		• B (-)	• B (-)		• B (-)	
3	***Terrestrial (land)***															
3a	Effect on soil compacting or leveling	• B (-)														
3b	Quality deterioration or contamination of soil	• B (-)	• B (-)			• B (-)			• B (-)				• B (-)		• B (-)	
3c	Extraction or soil loss								• B (-)	• M (-)						
4	***Biotic (Flora and Fauna)***															
4a	Loss of vegetation cover	• B (-)	• B (-)												• B (-)	
4b	Disturbance or alteration of terrestrial or aquatic fauna	• B (-)	• B (-)	• B (-)	• B (-)		• B (-)			• B (-)			• B (-)		• B (-)	• B (-)
5	***Socioeconomic***															
5b	Modifications to the local vehicular traffic	• B (-)	• B (-)	• B (-)		• M (-)	• B (-)	• B (-)		• B (-)			• B (-)	• M (+)	• B (-)	
5c	Increased local and regional economy (+)	• M (+)				• M (+)	• M (+)	• B (+)	• B (+)	• M (+)					• M (+)	
5e	Increased risk of disease transmission	• B (-)														
5f	Increased risk of occupational accidents	• B (-)	• B (-)		• B (-)	• M (-)	• B (-)	• B (-)	• B (-)	• B (-)	• B (-)	• B (-)	• B (-)		• B	• B (-)
5g	Employment generation (+)	• M (+)	• M (+)		• M (+)	• M (+)	• M (+)	• B (+)	• M (+)	• M (+)	• M (+)		• M (+)		• M (+)	• B (-)
5h	Increased public health issue of the generation of solid and liquid waste	• B (-)			• B (-)	• B (-)	• B (-)	• B (-)		• B (-)		• B (-)	• B (-)		• B (-)	

Impacts		Selective rehabilitation, refinement and construction activities												Activities of the Operation and Maintenance Stage		
Id	Manifestation of Impact	B1-Location and Operation of Temporary Facilities	B2- Preparation of Worksite	B3-Use of Water Sources	B4- Maintenance of drainage Works	B5-Placement of the pavement layer	B6- Maintenance of bridges	B7-Bridge Rehabilitation	B8-Construction	B9-Exploiting borrow pits	B10 signage, lighting and finishes	B11 Removal of temporary facilities	Management of Construction Waste	C1- Commissioning of Project	C2 Maintenance	C3-night lighting
5i	Nuisance to the surrounding communities by the project Works	• B (-)	• B (-)			• M (-)			• B (-)	• B (-)		• B (-)			• B (-)	
5j	Changes in land use	• B (-)														
5l	Savings in travel time (+)													• B (+)		
5m	Decreased concentrations of toxic gases produced by mobile sources (+)													• B (+)		
5n	Savings in fuel costs (+)													• B (+)		
5o	Reducing accidents and improving road safety (+)													• M (+)		
6	***Historical and cultural***															
6a	Impact on historic and archaeological sites															
7	***Landscape related***															
7a	Alterations or changes in the landscape and aesthetics of the environment	• B (-)								• B (-)		• B (-)				

Observation: • B = Low, • M = Medium, • A= High Source: The Consultant

A description of the involvement or impact the project will generate in different media and environmental variables is presented. This description is derived from the identification of impacts previously presented under Tables Table 5.1 and Table 5.2, using combined Leopold Matrix.

4.1 Air Emissions - Atmospheric Environment

In general terms. it can be said that the air quality along the road tranche is good. This tranche crosses the urban areas with presence of some industries and population centers and fluid traffic. Similarly, the project is developed in a completely open area, thus allowing the dispersion of particles.

selective rehabilitation, refinement and construction stage

Rehabilitation, refinement and Construction stage

The major impacts on quality or air pollution are associated with the rehabilitation, refinement and construction stage. All vehicle equipment and construction equipment of the work produce emissions.

- **Contribution of particulate matter (dust)**

Significant amounts of suspended particulate matter like product of the activities of preparation of the work site, the maintenance and rehabilitation of the roadway and bridges and product of the construction of the toll booth and also because of the increase of heavy traffic (machinery).

The implications that can bring significant increase in particulate matter (dust) in the areas of work are those that cause effects on the health of workers, especially when they do not count with the necessary protective equipment, reason for which among the mitigation measures we have, the monthly periodic maintenance to machinery and measures for material transportation.

- **Emission of particles generated in combustion engines of the equipment**

Emissions of gases and particles from the combustion engines of the equipment and machinery represent an additional contribution of pollutants to the air quality of existing agents, although this additional contribution does not significantly affect air quality if the mitigation measures specified in this EMP are used, especially those which refer to good conditions and maintenance of construction machinery.

- **Increased noise levels**

The placement of the pavement layer and the exploitation and transportation of materials from borrow pits, requires the use of heavy equipment and machinery, so noise levels will increase in the site where the activity takes place. This will directly affect staff who is involved in the job, but this impact can be mitigated using the corresponding protective equipment.

.

Operation and Maintenance Stage

During the stage of operation and maintenance, air pollution will be generated by the emissions that come from the functioning and operation of the maintenance and vehicular equipment of the work. Consider that most of the activities generate impacts with low magnitude and are presented with less frequently during operation and maintenance activities.

4.2 Production of common toxic, hazardous solid waste,

Many of the activities to be undertaken through the Project, include the generation of common solid waste and in some cases hazardous waste, that is why a Management Program for Solid Waste is established in this EMP.

Rehabilitation, refinement and construction stage

During the construction phase, solid waste is generated due to the development of the activity of location and operation of temporary facilities and decrease of the activity, and the activities of maintenance such as cleaning gutters, sewers and road paint and bridges. The waste generated from these activities will be taken directly to landfill sites licensed by the Municipal Authority (UMA's) for the Project.

In the operation stage

The solid waste produced during the operation and maintenance stage will be of a domestic type (food waste, paper, glass and plastics), produced by road users and workers of the company in charge of the maintenance activities. These wastes will be collected managed, collected, transported and placed on the final disposal sites by an authorized manager (must have the corresponding permit from the competent authority by the municipal authority (UMA's) for the project.

4.3 Production of storm water, wastewater, domestic and industrial

4.3.1 Storm water

The Concessionaire shall ensure the proper management of surface water and infiltration before and during the execution of any surface excavation or excavation area or filling, as well as temporary storage areas and in general, all of the work areas where runoffs of surface water can be generated specially during the rainy season that drag sedimentable material, so it is important to prevent this from being deposited in bodies of water, sewers or drains. For this the channels, pipes, ditches and any other means of drainage shall be kept clean or have equipment needed to divert or remove water from these areas of work.

4.3.1 Wastewater

As for wastewater, it is generally expected to come from these camps and machine yards (mainly from washing machinery and equipment) and portable toilets that will be placed on work fronts and camps. For camps and machinery parking, there are mitigation measures for the management of these liquid wastes consisting mainly of sedimentation tanks or sand traps and grease traps; the final discharge will be monitored to comply with environmental regulations of Honduras, anticipating that final discharge will be some superficial body by direct discharge.

During the construction phase, liquid wastes are generated primarily in the areas of work and / or temporary facilities. They shall have a septic tank for handling of gray water and for the disposal of sewage portable toilets are to be provided (1 toilet for every 10 workers of the same sex) or discharge them on the septic tank of the camp. The sanitary facilities shall be serviced with proper maintenance by specialized companies, provided they have all the required national legislation permits for this activity.

4.4 Regarding the management of raw materials and construction supplies

With regards to the management of raw materials in the selective rehabilitation, refinement and construction stage, this work contemplates the transportation of materials like concrete or any necessary material for minor repairs of the roadway from its source of acquirement to the work site and the raw materials necessary for the rehabilitation of bridge La Democracia on the construction stage.

The main environmental impacts to be prevented are associated with the alteration of the quality of air by the emission of contaminant gases coming from equipment and construction machinery, the generation of dust and noise, the disturbance or alteration of terrestrial fauna by the presence of the Works and its equipment and construction machinery, the modification of local vehicular traffic for extraction material transport, increase of occupational accidents. Among the positive impacts that are perceived in the generation of jobs and the increase of the local and regional economy

In order to face the impacts related to the management of raw construction materials, this EMP poses the Surveillance and Control Program that includes the delimitation of the areas of influence to avoid damages and the Program for Camp Management and provisional installations. A Local Provider Management Plan is defined to mitigate the impact deriving from the increase of the local and regional economy a management Plan for Local Providers is stated.

4.5 Regarding natural hazards

Like the rest of the region, the area of the municipalities of San Pedro Sula, La Lima, San Manuel y El Progreso are vulnerable to tropical storms, hurricanes and earthquakes, but there are no areas or sites prone to landslides or flooding. When facing a natural threat, the EMP provides for a risk prevention plan and an emergency and contingency plan in case of an unexpected event.

4.6 Regarding soil and underground water

5.6.1 Soil

In the selective rehabilitation, refinement and **construction phase**

The cleaning and clearing activities will be conducted along the alignment, but never cutting or removal of vegetation where soil is exposed.

With regards to the potential for soil contamination by accidental spillage of fuels and / or lubricants, and concrete products or waste, the adoption of good engineering practices and equipment maintenance will be the mitigation measures to address this impact.

Operation stage

In the operation stage the impacts on soil are reduced to maintenance activities, primarily replacement tiles or patching, which generated impacts on the quality or soil pollution.

4.6.1 Underground waters

The use of water sources will only be performed of surface bodies crossing the alignment, for which it is recommended for this activity, as a mitigation measure to use rivers with a greater flow.

4.7 Regarding local biodiversity and protected areas

According to the quick diagnostic performed by biologists, we concluded that this tranche is completely urban and no flora or fauna species considered vulnerable or in danger are located

In the maintenance phase or rehabilitation and maintenance stage, only tree pruning and maintenance of green areas will be performed.

a. Regarding the socio-economic and cultural environment in the project area and surrounding communities

For analysis of the socio-economic component we have considered those communities that could be influenced and benefited by the implementation of the Project Tourism corridor of Honduras: Tranche San Pedro Sula - El Progreso in what has been called socioeconomic area of influence (AISE in Spanish). Thus, the socioeconomic study area is limited to the municipalities of San Pedro Sula, La Lima, San Manuel y El Progreso.

In the selective rehabilitation, refinement and construction stage

One of the positive impacts in the construction phase, is the creation of jobs. The activities of this project will employ much local labor, mainly in the area of socio-economic influence of the Project (Municipalities of San Pedro Sula, La Lima, San Manuel y El Progreso), for which purpose this EMP proposes education and training plans for a better performance of the staff and to achieve environmental conservation in the workplace and in all activities performed. It is noteworthy that the Concession Agreement establishes the requirement for the Concessionaire to employ local labor in the areas of influence

Moreover, with the development of the project, a high demand for products and services necessary for the work is created, increasing in this way the local and regional economy by implementing a program of selection of local and regional suppliers.

As negative socioeconomic impacts of the project environment, we have: traffic disturbance, increased risk of occupational accidents, increased risk of disease transmission and increase public health problems due the generation of liquid waste and solids. But these will have a magnitude considered either low or medium (depending on the assessed activity) and its duration is limited to the refinement, rehabilitation and construction the stages.

Inconvenience to road users by the Works of the project, is also a negative socioeconomic impact that has been identified for this project. Many of the activities contemplated by this work, generate discomfort to the users and the communities near the project alignment, that is why the Concessionaire will have to implement a work plan, where the schedules are set to avoid damages to the daily activities of the communities in the area of socio-economic influence of the Project. Furthermore, permanent communication with the community is proposed, through the Communication Plan and the Disclosure Campaign Project.

In the Operation Stage

In the operation stage, certain benefits or positive impacts to users with the commissioning of the project are observed:

The project with the road maintenance, will generate minimum savings in travel times and savings in fuel costs for users. Added to this, with these savings (time and fuel), the concentrations of toxic gases from mobile sources will significantly decrease.

As a positive impact from project implementation, a reduction of road accidents is expected along with an increased safety on the road due to the improvements and services offered by the Concessionaire in this tranche.

Is worth mentioning that the Commissioning of the Project, will generate a negative impact in the economy of users due to the new payment of toll in this tranche. This impact has not been evaluated because the location of the toll booth and the collection rate to be applied to users are not yet clear.

4.8 Regarding landscape aspects

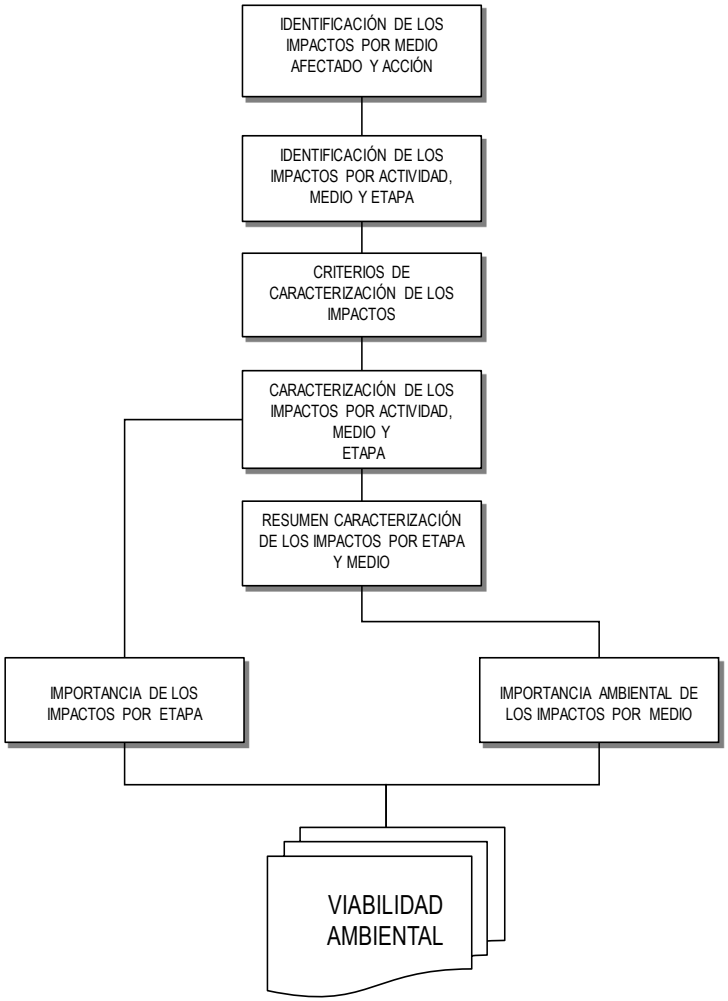
The area where the Tourism corridor of Honduras tranche San Pedro Sula– El Progreso will be developed, is an area that was previously intervened when the construction of the road occurred. The selective rehabilitation and maintenance works to be done, and the expansion of lanes, will concentrate within the existing road easements.

Some activities that will affect the landscape have been planned: the installation and operation of temporary facilities, construction, installation of road signals and night lighting and landscape finishes.

5 ASSESSMENT OF IMPACTS AND SYNTHESIS

The methodology used for the categorization and evaluation of impacts is explained through the process of Figure 6.1. The results are embodied in an interactive matrix that allows the evaluator clearly discriminate the most affected and environmental factors over which more attention should be paid to during the implementation of mitigation measures and environmental management that prevents, reduces, controls, compensates or encourages such impacts; and to determine the level of these measures.

Figure 5-1. Flowchart of the impact assessment process



The identification of impacts in an Environmental Study is to determine which of the activities associated with the project cause changes to the characteristics of the factors / components and environmental attributes.

The objective of the identification is to provide a first indicative information as a basis for further qualitative and quantitative impact assessment. This section will evaluate global impacts from the Project Tourism corridor tranche San Pedro Sula – El Progreso. The methodology for the identification of impacts and subsequent evaluation consists of the following elements:

- Review of existing documentary information and consultation with specialists who have conducted some type of evaluation in the project area.
- Baseline Surveys, depending on the fieldwork conducted by each of the consultants.
- Identification of environmental variables that will be affected by the Project.
- Development of an Impact Identification Matrix, taking as a base the Leopold Matrix, which will contrast the different activities of the project with the resources and natural processes that could be affected by the activities performed. The likely impacts were identified by each consultant depending on your area of interest and submitted at the beginning of the studies for further verification at the end of fieldwork.
- • Development of the "Importance Matrix of Environmental Impact" (MEIA) like impacts assessment methodology applied to the impacts that have been identified previously as "Moderate" or "High" (obtained from the modified Leopold Matrix).

For the identification of the impacts we will consider that the project will be developed in three stages:

a) Planning
b) Construction and expansion
c) Operation and maintenance

The categories used for the categorization of impacts are the following (see Table 5.1):

Table 5.1. Characterization of Impacts

Classification	Typology	Description
Nature of the Impact		The nature of the impact that indicates how the impact acts on its environment; can be positive (+) or negative (-).
Sign	+/ -	The sign refers to the beneficial impact character (+) or detrimental (-) of the various actions that will act on the various factors considered.
Intensity	I	This term refers to the degree of impact of the action on the factor in the particular field in which it operates. The valuation range will be between 1 and 12, in which 12 expressed a total destruction of the factor in the area in which the effect occurs, and 1 minimal involvement. Values between these two terms reflect intermediate situations.
Extension	EX	Refers to the area of theoretical influence of impact in relation to the project environment (area%, relative to the environment, in which the effect manifests). If the action produces a very localized effect, it is considered that the impact has a punctual character. If, however, the effect does not allow a precise location within the project environment, having a pervasive influence on all of it, the impact will be Total; considering the intermediate situations, by gradation, such as Partial and Comprehensive impact. For the effect to be punctual but occurs at a critical spot, you are confer worth four units higher than it should be based on the manifested percentage extension.
Moment	MO	The term impact manifestation refers to the of time between the onset of action and early effect on the factor of the considered medium . When the time is null, the time will be Immediate, and if lit is less than one year, Short Term. If a period of time ranging from 1 to 5 years, medium-term, and if the effect takes to manifest more than five years, Long Term.
Persistence	PE	Refers the time in which the effect remains since its inception and until the affected factor would return to the pre-action conditions, by natural means or by introducing corrective measures . If it lasts less than a year, we believe that the action produces a Fleeting effect. If it lasts between 1 and 10 years, Temporal; and if the effect is longer than 10 years in duration, we consider the effect as permanent.
Reversibility	RV	It refers to the possibility of restoration / regeneration of the factor affected by the project; that is, the possibility of returning to the initial conditions set to action, by natural means, once that fails to act on the medium. May be Short Term, Medium Term or Irreversible.

Classification	Typology	Description
Recoverability	MC	It refers to the possibility of reconstruction, total or partial, of the affected factor resulting from the project. In this case, the possibility of returning to the pre-action initial conditions, through human intervention (introduction of mitigation or corrective measures). The effect is fully recoverable, as it is immediate (> 1 year) and medium term (between 1 and 10 years), if it is partial, i.e. not fully recovered, the effect is mitigated. Finally, the effect cannot be recovered, when the impossible alteration of repair, both by natural action and human. In case of being unrecoverable, but there is the possibility of introducing compensatory measures, the effect behaves as mitigated.
Synergy	SI	This attribute provides the reinforcement of two or more simple effects. The total component of the demonstration of simple effects, caused by actions acting simultaneously is higher than would be expected from the manifestation of effects when actions that provoke act independently not simultaneous.
Accumulation	AC	This attribute gives an idea of the progressive increase of the demonstration effect, when it persists continuously or repeated the action that generates it.
Effect	EF	This attribute refers to the cause-effect relationship, i.e. the form of manifestation of the effect of a factor as a result of an action. The effect may be direct or primary, being in this case the impact of the direct result of this action. In the event that the effect is indirect or secondary manifestation is not a direct as a result of the action, but occurs from a primary effect, acting as a second order action.
Periodicity	PR	The frequency refers to the regular manifestation effect either constant in time (Continuous effect) cyclic or recurrent (periodic effect) so unpredictably over time (Irregular effect), or constant over time (continuous effect).

Source: Conesa, 2003

To assess the significance of impacts of the project, the methodology established in the "Document 07 - Methodology for the assessment of environmental impacts" of the Guidebook of Environmental Evaluation and Control Natural Resources & Environment Secretariat (hereinafter called SERNA), Honduras, 2009), has been taken into account, as presented below (see Table 6.2):

Table 5.2. Valuation of Impacts

Classification	Values	Classification	Values

Classification Nature	Values	Classification Intensity (I)	Values
Beneficial Impact (Positive) Harmful Impact (Negative)	+ -	Low Medium High Very High Total	1 2 4 8 12
Extension (EX)		**Moment (MO)**	
Punctual Partial Extensive Total Critical (International)	1 2 4 8 (+4)	Long Term Medium Term Immediate Critical	1 2 4 (+4)
Persistence (PE)		**Reversibility (RV)**	
Fleeting Temporary Permanent	1 2 4	Short Term Medium Term Irreversible	1 2 4
Synergy (SI)		**Accumulation (AC)**	

Classification	Values	Classification	Values
No Synergism (Simple)	1	Simple	1
Synergistic	2	Accumulative	4
Very Synergistic	4		
Effect (EF)		**Periodicity (PR)**	
Indirect (Secondary)	1	Irregular Or Discontinuous	1
Direct	4	Periodic	2
		Continuous	4
Recoverability (MC)		**Importance (I)**	
Immediately Recoverable	1	**I = ± (3 I+ 2 EX+ MO + PE + RV + SI + AC + EF + PR + MC)**	
Recoverable In The Medium Term	2		
Mitigated	4		
Irrecoverable	8		

Source: Conesa, 2003

The major impact is represented by a number that is derived by the proposed model in the above Table. Impacts identified are grouped taking its environmental importance, according to the following pattern (see Table 6.3):

Table 5.3. Hierarchization of Impacts

Environmental importance	Score
Impacts with irrelevant environmental importance	**<25**
Environmental Impacts with moderate importance	**25 a 50**
Impacts with severe environmental importance	**>50 a 75**
Important critical environmental impacts	**>75**

Source: Conesa, 2003

5.1 Evaluation of environmental impacts

The Matrices of Environmental Impact Assessment (MEIA) are presented in the following tables, for each significant impact on the (medium importance) both positive and negative, identified by the modified Leopold Matrix for Project Tourism corridor of Honduras: tranche San Pedro Sula - El Progreso.

Table 5.4. MIIA Quality deterioration or air contamination and dust and foul odor generation

STAGE/ACTIVITY	Selective Rehabilitation and maintenance/Placement of Bearing Layer / Exploitation and transport of material from borrow pits								
IMPACTED MEDIUM	Physical								
IMPACTED FACTOR	Air								
POTENTIAL IMPACT	Quality Deterioration or Air Contamination/ Dust and Foul Odor Generation (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	2	4	1	1	1	1	4	1	1

Importance I	**24**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate

≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.5. MIIA Increase in noise levels

STAGE/ACTIVITY	**CONSTRUCTION STAGE** Selective rehabilitation and maintenance Placement of Bearing Layer / Exploitation and transport of material from borrow pits								
IMPACTED MEDIUM	Physical								
IMPACTED FACTOR	Air								
POTENTIAL IMPACT	Increase in Noise Levels (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, sporadic o aperiodic y discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	2	4	1	1	1	1	4	1	1

Importance I	**22**

Points	Type
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.4. MIIA Modification to Traffic

STAGE/ACTIVITY	Selective Rehabilitation and maintenance/Bridge Construction/Placement of Bearing Layer								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Modification to Local Traffic (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								

Chosen Value									
2	2	4	2	1	1	1	4	2	1

Importance I	**26**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.7. MIIA Increased Risk of Workplace Accidents

STAGE/ACTIVITY	Placement of Bearing Layer / Selective Rehabilitation and maintenance								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Increased Risk of Workplace Accidents (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4

•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	1	4	1	1	1	1	4	1	1

Importance I	**29**

Points	Type
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.8 MIIA Disruptions to Surrounding Communities due to Project Activities

STAGE/ACTIVITY	Placement of Bearing Layer / Selective Rehabilitation and maintenance								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Disruptions to Surrounding Communities due to Project Activities (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
• Low 1	• Punctual 1	• Long-term 1	• Fleeting 1	• Short term 1	•No Synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
• Medium 2	• Partial 2	• Medium-term	• Temporary 2	• Medium	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term recoverable

		2		term 2					term 2
• High 4	• Extended 4	• Immediate 4	•Permanent 4	• Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
• Very High 8	• Total 8	• Critical (+4)							•Irrecoverable 8
• Total 12	•Critical (+4)								
Chosen Value									
4	2	4	2	1	1	1	4	2	1

Importance I	**24**

Points	Type
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.9 MIIA Hydrological Regime Alteration

STAGE/ACTIVITY	**SELECTIVE REHABILITATION AND MAINTENANCE STAGE** Exploitation and transport of material from borrow pits								
IMPACTED MEDIUM	Physical								
IMPACTED FACTOR	Water								
POTENTIAL IMPACTS	Hydrological Regime Alteration (water course and drainage)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction

Low 1	• Punctual 1	•Long term 1	• Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, sporadic or aperiodic and discontinuous 1	•Immediately recoverable 1
•Middle 2	• Partial 2	•Medium term 2	• Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium term recoverable 2
•High 4	• Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very synergistic 4			•Continuous 4	•Partially recoverable, Mitigated and/or compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
2	2	4	2	1	1	1	4	4	4

Importance I	**25**

Points	Type
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.10. MIIA Quality deterioration or water contamination (-)

STAGE/ACTIVITY	**SELECTIVE REHABILITATION AND MAINTENANCE STAGE** Exploitation and transport of material from borrow pits								
IMPACTED MEDIUM	Physical								
IMPACTED FACTOR	Water								
POTENTIAL IMPACT	Quality deterioration or water contamination								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
Low 1	• Punctual 1	•Long-term 1	• Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, sporadic aperiodic and discontinuous 1	•Immediately Recoverable 1
•Medium 2	• Partial 2	•Medium-term 2	• Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term recoverable term 2
•High 4	• Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially recoverable, Mitigated and/or compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
2	2	4	2	1	1	1	4	4	4

Importance I	**27**

Points	Type
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.11 MIIA Extraction or loss of soil (-)

STAGE/ACTIVITY	**SELECTIVE REHABILITATION AND MAINTENANCE STAGE** Exploitation and transport of material from borrow pits								
IMPACTED MEDIUM	Physical								
IMPACTED FACTOR	Ground								
POTENTIAL IMPACT	Extraction or Loss of Soil (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, sporadic or aperiodic and discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially recoverable, Mitigated and/or compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	1	4	4	4	1	1	4	4	8

Importance I	**40**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design

≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.12. MIIA Modifying the Local Vehicular Traffic (+)

STAGE/ACTIVITY	**SELECTIVE REHABILITATION AND MAINTENANCE STAGE** Operation and Maintenance								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Modifying the Local Vehicular Traffic (-)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
* Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, sporadic or aperiodic and discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	2	4	1	1	1	1	4	4	1

Importance I	**46**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.13 MIIA Increased local and regional economy

STAGE/ACTIVITY	**Selective Rehabilitation and maintenance** Location and Operation of Provisional Facilities / Placement of Bearing Layer / Bridge Construction / Exploitation and transport of material from borrow pits
IMPACTED MEDIUM	Socioeconomic
IMPACTED FACTOR	Socioeconomic
POTENTIAL IMPACT	Increased Local and Regional Economy (+)

Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	8	4	2	1	1	1	4	4	1

Importance I	**48**

Points	**Type**

< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.14. MIIA Employment Generation (+)

STAGE/ACTIVITY	Selective Rehabilitation and maintenance and Maintenance								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Employment Generation (+)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	•Punctual 1	•Long-term 1	•Fleeting 1	•Short term 1	•No Synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
•Medium 2	•Partial 2	•Medium-term 2	•Temporary 2	•Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
•High 4	•Extended 4	•Immediate 4	•Permanent 4	•Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
•Very High 8	•Total 8	•Critical (+4)							•Irrecoverable 8
•Total 12	•Critical (+4)								
Chosen Value									
4	8	4	2	1	1	1	4	4	1

Importance I	**60**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design
≥ 25 , < 50	Moderate

≥ 50 , < 75	Severe
≥ 75	Critical

Table 5.5. MIIA Reduction of Accidents and Increased Road Safety (+)

STAGE/ACTIVITY	**OPERATION AND MAINTENANCE STAGE** Project Deployment								
IMPACTED MEDIUM	Socioeconomic								
IMPACTED FACTOR	Socioeconomic								
POTENTIAL IMPACT	Reduction of Accidents and Increased Road Safety (+)								
Intensity	Extension	Moment	Persistence	Reversibility	Synergy	Accumulation	Effect	Periodicity	Recoverability
IN	EX	MO	PE	RV	SI	AC	EF	PR	RC
Degree of Destruction	Area of Influence	Term of Manifestation	Permanence of the Effect	Change in the Alteration	Enhancing the Manifestation	Progressive Increase	Cause-Effect Relationship	Regularity of the Manifestation	Human Reconstruction
*Low 1	• Punctual 1	• Long-term 1	• Fleeting 1	• Short term 1	•No synergy (simple) 1	•Simple 1	•Indirect (secondary) 1	•Irregular, Sporadic or Aperiodic and Discontinuous 1	•Immediately Recoverable 1
• Medium 2	• Partial 2	• Medium-term 2	• Temporary 2	• Medium term 2	•Synergistic 2	Cumulative 4	•Direct 4	•Periodic 2	•Medium-term Recoverable term 2
• High 4	• Extended 4	• Immediate 4	•Permanent 4	• Irreversible 4	•Very Synergistic 4			•Continuous 4	•Partially Recoverable, Mitigated and/or Compensable 4
• Very High 8	• Total 8	• Critical (+4)							•Irrecoverable 8
• Total 12	•Critical (+4)								
Chosen Value									
4	4	4	4	2	1	1	4	4	2

Importance I	**37**

Points	**Type**
< 25	Irrelevant or matching or environmental measures were contemplated in the design

≥ 25 , < 50	Moderate
≥ 50 , < 75	Severe
≥ 75	Critical

7.2 Synthesis of Environmental and Social Impacts Associated with the Project

This is a synthesis of the environmental and social impacts associated with the project:

7.2.1 Air contamination and dust and foul odor generation (-)

The impacts on air quality due to the generation of vehicular emissions, dust and foul odors are considered of irrelevant importance (I=24), it is a medium intensity impact with partial extension and can be immediately recoverable with mitigation measures focused on periodic sprinkling and the use of canvas tarps for transport of materials. Vehicle and machinery maintenance are the responsibility of the concessionaire.

In the specific case of the bearing layer replacement and exploitation of borrow pits is where this impact is manifested due to activities of machinery movement that generates contaminating dust and gas particles to the atmosphere.

Currently air quality in the tranche is good, since there are trees in the alignment and gas concentrations are quickly dispersed.

7.2.2 Increase in noise levels (-)

Noise levels along the road are not currently significant, traffic conditions and the road's characteristics do not permit the concentration of vehicles which increases noise levels in roads. Anyhow, the highest noise levels are not continuous enough to become a nuisance for the communities.

The Selective Rehabilitation and maintenance stage will produce an increase in sound levels as a consequence of traffic and the operation of machinery and vehicles. This impact is considered as irrelevant or incompatible (I=22) because it is of medium intensity, punctual, with fleeting occurrence and of immediate recovery.

During Selective Rehabilitation and maintenance the noise generated by Project activities will happen only from 6:00 am to 6:00 pm which is the Schedule for this type of Project. Noise levels depend on the kind of machinery in operation; the disturbances are conditioned by the distance of affected houses or Project employees.

Due to the difficulty of measuring noise levels on site during the Selective rehabilitation and maintenance and Construction Stage, the following chart establishes noise levels that OSHA has estimated for equipment similar to the one used for this activity:

Table 5.17. Noise Levels in dBA Produced by Construction Equipment

Origin	*Intensity(approximate)*
Truck	83-93 dBA
Tractor	73-93 dBA
Loader	72-85 dBA

Source: EPA, EUA, 1972

As can be seen, with the exception of the loader, both the trucks and the tractors to be used, are potential sources of noise above 85 dBA, which is the maximum value according to the General Regulation of Preventive Measures for Accidents and Professional Diseases of the Republic of Honduras that a person can be exposed to for a maximum of 8 hours.

Due to the previous information, all workers are required to have auditory protection equipment to minimize exposure risks.

During the operation stage, increases in noise levels are produced once rehabilitation of the road has been completed, will be the same that have been occurring currently due to vehicle transit on the road.

7.2.3 Modification to Traffic (I=30)

As negative socioeconomic impacts during selective rehabilitation and maintenance, the alteration of local traffic has been considered of medium importance (I=33) specifically for the bearing layer placement activities and bridge maintenance, because this requires partial lane closures. In this sense, all Traffic Management Program must be implemented and include the detours and temporary closures due to the installation of road signals, measure that must be applied in coordination to the National Transit Direction regulations to minimize nuisances to road users.

The operation stage presents this impact but positively, because the maintenance of the roadway and the rehabilitation of the bride are expected to be positive for users.

7.2.4 Disruptions to Surrounding Communities due to the Project (-)

The disturbance to communities surrounding the Project is a negative socioeconomic impact identified for the Project. As a mitigation measure, the project will implement a work plan that establishes the working schedule to avoid affecting daily community activities in the area of socioeconomic influence of the project, including the promotion and permanent communication with the community through the Communication Plan.

7.2.5 Increased risk of workplace accidents

All of the activities to be executed during the selective rehabilitation and maintenance stage convey the risk of workplace accidents, impact that has been considered of moderate importance (I=32)

To reduce the risk of workplace accidents there will be training sessions for the workers and machinery operators, about safety and the use of personal protection equipment amongst other measures outlined in the Accident Prevention Plan.

There will be First Aid Kits in all areas of the project including heavy machineries and project vehicles, in case of an accident there will be contact with local hospitals or ambulance services.

7.2.6 Hydrological Regime Alteration (courses or waterways)

During the activity of exploitation and transport of material from borrow pits; there is a possible minor alteration to the hydrological regime, due to the activities of riverbed material extraction, causing the formation of pools that must be leveled once activities are concluded. This impact has been evaluated as moderate (I=29), and is established as a mitigation measure, in compliance by the concessionaire to the technical requirements established by INHGEOMIN for the extraction of floodplain soils

72.7 Quality Deterioration or Water Contamination

The deterioration of quality or water contamination impact is presented during the exploitation of borrow pits which will increase turbidity, due to the suspension of riverbed material and possible oil spills from the machinery's engines.

7.2.1 Effects on soil due to compacting or leveling

In the material extraction borrow pits is possible that a moderate importance impact is generated (I=34) on the soil, due to the constant transit of machinery used for material extraction. This impact has been values of medium intensity, punctual nature and completely mitigable, for which a Surveillance and Control Program must be implemented to delimit exclusive work areas and reduce the transit of machinery in affected zones.

7.2.3 Extraction or loss of soil

The extraction or loss of soil is specifically presented during the exploitation of borrow pits with a moderate importance (I=44) because the intensity of this impact is high and of partial extension. The river is expected to recover by natural means because it is a permanent flow river that always has reposition material. To curb this impact, exploitation is meant to be sustainable and consider the technical guidelines for the exploitation of floodplain soils with the same machinery for extraction.

7.2.3 Employment Generation (+)

This impact has been given severe positive importance (I=58) since during all selective rehabilitation activities employment will be generated given the high intensity and total extension of the Project.

One of the direct effects is that there must be personnel hired for the different selective rehabilitation and maintenance activities, these Jobs might be for skilled or non-skilled labor including engineers, architects, masons, carpenters, machinery operators etc. The hired staff will receive direct benefits during 12 months as a consequence of the multiplying effects of indirect employment. This impact is valued as positive during all activities.

7.2.4 Increase in local and regional economy (+)

Due to the characteristics and type of project, the project will require labor for the diverse activities of the project. The project will generate indirect sources of employment with the companies that supply goods and services to the project thus increasing local and regional economy. Considering this impact of moderate importance in certain project activities such as the installation of provisional facilities the replacement in the bearing layer, bridge construction and exploitation and transport from material to borrow pits, due to the grist demand of products and raw materials that the development of these activities require. This impact has been assigned high intensity in the total area and influence of the project with a moderate importance (I=38)

7 MITIGATION MEASURES

This section details the environmental programs that will be implemented to prevent, mitigate and compensate the negative environmental impacts identified in sections 1.1, and boosting the positive impacts.

The Mitigation Plan includes a series of actions that have been grouped according to nature and specific objectives, in a series of programs detailed in ***Table 5.1***:

Table 5.1. Description of Impacts and specific mitigation measures for each environmental impact

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
Water	Use of Hydrological Resources	1a. Hydrological Regime Alteration	Low to High	General Environment Law General Water Law	General Water Law: Art. 59, 61, 62, 63. Guidelines for the Exploitation of Floodplain Soils (INHGEOMIN)	• Extraction activities must be done in adequate and specific sites not along the river bed. 1. Enforce a Surveillance and Control Program, to avoid damaging other areas. 2. Proper water usage in accordance to the Water Usage Permit	1. Daily field verification 2. Record worker's training on environmental issues	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
		1b. Phreatic Level Alteration	Low to Moderate	General Environment Law General Water Law	General Water Law: Art. 59, 61, 62, 63. Guidelines for the Exploitation of Floodplain Soils (INHGEOMIN)	• Enforce a Surveillance and Control Program, to avoid damaging other areas. 3. Proper water usage in accordance to the Water Usage Permit 4. Follow the technical guidelines of INHGEOMIN for floodplain soils.	• Daily field verification a) Keep water consumption records	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Generation of wastes and hazardous substances	1c. Quality deterioration or water contamination	Moderate	General Environment Law General Water Law Health Code Regulation for Integral management of Solid Wastes	General Environment Law: Art. 32, 54, 66. General Water Law: Art. 36, 43, 44. Health Code Art, 34, 35, 41.	• Management Program for Liquid and Solid Wastes • Contingency program: Prevention and Control of Hazardous Substance Spills (oils, fuels, paints, etc.)	b) Daily field supervision c) Separation of wastes at source, deposit placement. d) Final waste disposal record e) Record of the amount of substances disposed of in authorized containers. f) Record of worker's training on water contamination issues.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security Supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
AIR	Contaminating gas emissions	2a. Quality deterioration or air contamination	Low to Moderate (Placement of Bearing Layer)	General Environment Law Health Code Regulation for Control of Contaminating Gases and Smoke Emissions from motor vehicles	General Environment Law : Art 60 Health Code : Art. 46, 48, 50 y 114. Parameters established by the Regulation for Control of Contaminating Gases and Smoke Emissions from motor vehicles	• Construction Equipment and Vehicles Preventive Maintenance Plan • Vehicular Emissions Compliance Control Program	a) Monthly maintenance record b) Vehicular Emissions Maintenance Record (opacity %) c) Workers training record on air contamination.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security Supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Dust Emissions	2b. Dust and foul odor emission	Low to Moderate (Placement of Bearing Layer)	General Environment Law Health Code Municipal Taxation Plan	General Environment Law : Art 59, 61 Health Code : Art. 46, 48 y 50.	• Dust and Foul Odor Emission control Program	1. Daily water sprinkling on the road 2. Photographic record f activities 3. Cleaning of the street if necessary 4. Inspection of canvas tarps for cargo trucks 5. Disposal of wastes in designated areas	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security Supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Noise	2c. Increase in noise levels	Low to Moderate (Placement of Bearing Layer)	General Environment Law General Regulation of Preventive Measures for Accidents and Professional Diseases	General Environment Law : Art 61 Maximum noise levels established by the General Regulation of Preventive Measures for Accidents and Professional Diseases	• Preventive Maintenance Program for vehicles and construction equipment • Work Schedule: avoid as much as possible work during night hours or rest periods; if unavoidable notify affected populations in advance • Provide auditory protection equipment for workers exposed to levels higher than 80 dBA.	1. Record of monthly maintenance 2. Compliance to work schedules established in the work plan. 3. EPP review and measurement of noise and vibration levels workers are exposed to.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security Supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
SOIL	Structural Alteration of the Soil	3a. Effects on soil due to compacting or leveling	Moderate	General Environment Law	General Environment Law : Art. 48.	• Surveillance and Control Program: delimit the area of direct influence to avoid damage to other areas. • If required at the end of operations, soil that has been compacted by the transit of heavy machinery or temporary facilities must be loosened and covered with topsoil for later revegetation.	1. Daily field supervision 2. Worker's training records on environmental issues. 3. Identification of areas compacted by the transit of heavy machinery and/or temporary facilities and their readequation.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Generation of wastes and hazardous substances.	3b. Quality deterioration or soil contamination	Low	General Environment Law	General Environment Law : Art. 48, 66.	• Contingency Program: Prevention and Control of Hazardous Substance Spills (oils, fuels, paints, etc.) • Liquid and Solid Wastes Management Program	1. Monthly record of incidents or spills in project area. 2. Waste separation at source, storage in tanks 3. Final waste disposal record 4. Record of amounts of waste disposed of in authorized sites 5. Worker's training record on soil compacting issues 6. Daily field supervision	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Use of Material	3c. Extraction or loss of soil	Moderate	General Environment Law General Mining Law	Guidelines for the Exploitation of Borrow Pits (INHGEOMIN)	Surveillance and Control Program: delimit the area of direct influence to avoid damage to other areas.	1. Daily field supervision 2. Execute exploitation activities within the area stipulated by the concession 3. Request Environmental and Concession License 4. For new exploitation of borrow pits request corresponding permit to the SOPTRAVI Environmental Management Unit in INHGEOMIN 5. Follow the technical guidelines of INHGEOMIN for floodplain soils.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
		3d. Increase in erosion processes	Low to Moderate	General Environment Law	General Environment Law	Measures for erosion control and slope stabilization	6. Daily field supervision 7. Compliance with construction specifications 8. Execute cutting and shaping of filling activities in dry seasons. 9. Protect bare soil at the end of activities.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
FAUNA AND FLORA	Pruning and vegetation removal	4a. Loss of vegetation cover	Low	General Environment Law	General Environment Law : Art. 41, 60	Surveillance and Control Program: delimit the area of direct influence to avoid damage to other areas.	1. Daily field supervision 2. Worker's training record on flora and fauna issues	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Installation of camps/poaching	4b. Disturbance of terrestrial and aquatic fauna	Baja	General Environment Law	General Environment Law : Art. 41, 60	Surveillance And Control Program: Avoid predation and/or altering species' habitats	1. Daily field supervision 2. Worker's training record on flora and fauna issues	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
SOCIO ECONO-MIC	Road rehabilitation and maintenance	5b. Modification to local traffic	Moderate	Transit Law General Regulation of Preventive Measures for Accidents and Professional Diseases	Installation Of Road Signals according to the General Regulation of Preventive Measures for Accidents and Professional Diseases SOPTRAVI Road Manual	• Work Schedule: execute installation of road signals as planned in the Traffic Management Program • Coordinate with the National Transit direction for the permanent Information Campaign: Inform communities of planned activities	1. Regulation of speeds, daily field supervision 2. Necessary road signals required for activities 3. Record of worker's training on transit regulations 4. Presence of flagmen and safety cones when lanes are closed	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Camp installation	5e. Increase in the risk of disease transmission	Low	Health Code	Health Code: Art. 101, 114 y 115.	• Health and Hygiene Program for the Prevention of Diseases	▪ Hold health fairs and vaccination campaigns ▪ Record of worker's training on contagious diseases	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security Supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
	Worksite accidents	5f. Increased risk of accidents	Low to moderate	Health Code General Regulation of Preventive Measures for Accidents and Professional Diseases	Health Code Art. 120 a 122. General Regulation of Preventive Measures for Accidents and Professional Diseases, Art 44 al 49, 107, 108 y, 392, 424 a 428.	6. Risk and Accident Prevention Program 7. Keep first aid kits and ambulance services available	a. Maintain PPE inventory b. Field inspections by the security supervisor c. Record of worker's training on accident prevention measures and hazardous material management d. Have first-aid kits, extinguishers, and necessary emergency equipment.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist Security supervisor	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Liquid and solid Waste generation	5h. Increase in public sanitation issues due to the generation of solid and liquid wastes	Low	General Environment Law Health Code Regulation for the Integral Management of Liquid and Solid Wastes	General Environment Law: Art 6, 32, 54, 60. Health Code Art 52 y 53.	• Liquid and Solid Waste Management Program	• Separate wastes at source, installation of tanks • Final disposal waste record • Worker's training records on waste management issues.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Road maintenance and rehabilitation	5i. Disturbances to surrounding communities	Low to moderate	Transit Law General Regulation of Preventive Measures for Accidents and Professional Diseases		• Work plan: establish a work Schedule to avoid disturbing nearby communities • Permanent Information Campaign: Inform communities of planned activities	• Compliance with established work schedules • Communication evidence (meetings, flyers, radio) • Periodic supervision and implementation evidence for plans and programs	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation
	Location of temporary camps and facilities	5j. Changes in the use of soil	Moderate	General Environment Law. Territorial Ordinance Plan	General Environment Law: Art 1, 48, 51. Territorial Ordinance Plan): Art. 46	• Revise the El Progreso Territorial Ordinance Plan • Request change in the use of soil to the municipality	1. Develop activities planned in the Territorial Ordinance Plan	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

ISSUE	ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACT	DEGREE OF IMPACT	LEGAL FRAMEWORK	GUIDELINE	ENVIRONMENTAL MEASURES	OBLIGATION	RESOURCES	RESPONSIBLE	TERM
Landscape	Modifications to landscape	7a. Alterations or changes in the landscape and aesthetics of the environment	Low	Transit Law	Installation Of Road Signals according to the Transit Law and RGMPATEP	• Work Schedule: Execute the installation of road signals Surveillance And Control Program: Delimit the area of influence to avoid damage to other areas.	1. Daily field supervision 2. Necessary road signals for the Selective Rehabilitation and maintenance for the road operation phase.	See Section 10 Environmental Management Program Implementation Costs	Concessionaire Environmental Specialist	Permanent Selective Rehabilitation and maintenance Stage Construction Operation

Source: The Consultant

Each program proposed as a mitigation measure is detailed as follows.

- **Activities to Comply to Each Mitigation Measure**

  - **Temporary Facilities Management Program**

The construction and operation of temporary or provisional facilities will generate low importance impacts, and to mitigate the effects of this project activity, besides complying to the road manual, volume 8 of the environmental guide for road projects of SOPTRAVI (Transportation & Civil Works Secretariat) and any other program detailed in this section of mitigation measures in the applicable construction stage (e.g. Dust Control Program, preventive vehicle and construction equipment maintenance) the following mitigation measures must be applied:

• The construction and operation of temporary or provisional facilities will generate low importance impacts, and to mitigate the effects of this project activity, besides complying to the road manual, volume 8 of the environmental guide for road projects of SOPTRAVI (Transportation & Civil Works Secretariat) and any other program detailed in this section of mitigation measures in the applicable construction stage (i.e. Dust Control Program, preventive vehicle and construction equipment maintenance) the following mitigation measures must be applied:

• Strict compliance in the use of the areas designated for temporary facilities in the chosen areas. The location of small facilities or camps close to the service areas established for construction logistics shall not be authorized.

• The construction company must request to the competent authorities, owners or legal representatives of the area to be occupied (when these temporary facilities are located in private land), the permits for these temporary facilities.

• Before placing these temporary facilities the concessionaire must present a design that includes corresponding preventive and treatment measures in compliance to besides complying with the road manual, volume 8 of the environmental guide for road projects of SOPTRAVI (Transportation & Civil Works Secretariat). As a minimum it must contemplate the description of the characteristics of water proof surfaces, roofing, effluent treatment systems, runoff channeling, installation of road signals, distribution and orientation of the storage sites, solid waste management systems, etc.

• Before the operation of the temporary facilities these must be subjected to a process of risk analysis. The recommendations of the risk study must be implemented before occupying these temporary facilities.

• The camp must have an emergency response plan that must include as a minimum, the use of fire extinguishers and all fire protection equipment specified in the contract, located in strategic places and correctly marked to indicate the type of fire in which they can be used.

• Whenever possible, no tree shall be cut or any other plant species of special value, whether generic or landscape related. These facilities will preferable be located in previously intervened areas and away from water courses or water bodies. If it is necessary to cut down trees the required permit must be requested to the municipality, according to its local tax regulation.

• If necessary to remove vegetable material, it must be moved to other impact free zones and it must be adequately stored through conservation processes in order to place it again during the restoration of the area, as specified in the Environmental Recovery Abandoned Plan for each Area. The tree pruning residues must not be placed in water currents, it must be stacked in such a way it does not cost loss of equilibrium in the area and it must finally be transported and deposited in the site for final disposal of construction material. The incineration of theses residues is not allowed.

- It is strictly forbidden to hunt; set traps, commercialize or disturb fauna. In the case of rescue and relocation of animal species they must be reported to SERNA (Natural Resources & Environment Secretariat) to comply with procedures established by this authority.

- The temporary facilities must have independent water sources, including deposits or cisterns, which will be filled with water from non-intermittent sources with proper authorization from SERNA.

- If there is no nearby connection to the public sanitation drainage system, a septic tank must be installed, complemented, if necessary, with mobile sanitation units. It is forbidden under any circumstance to discharge sewage or throw solids wastes to any body of water.

- Skid resistant material will be placed wherever the ground is moistened. (E.g. in bathrooms and open corridors)

- The construction of temporary facilities must have crossed ventilation so air currents pass freely through them.

- For larger fueling operations (i.e. the warehouse area), besides having a system and procedure for safe dispatch, there must be fire extinguishers according to the Risk Prevention Plan, which contemplated the capacity of the warehouse.

- The temporary facilities must have signals indicating evacuation routes and meeting points according to the Risk Prevention Plan.

- The ratio of portable toilets to people is one for every 10 persons or workers of the same sex and one more if there is a lady. The toilets must be reasonably accessible in all work fronts and not exceed 60 mts distance from each work station.

- A formally established company must be hired to provide maintenance and cleaning of the septic tank. The same applies for a toilet maintenance service that includes but is not limited to the removal of wastes, chemical recharge; cleaning and disinfection, and toilet paper supply. This company must keep offer receipts for their cleaning activities and disposal of organic wastes and the construction company must keep records of this activity. The service must be supplied at least three times per week or depending on the recommendations of the company hired for cleaning. The toilets will be removed at the end of the project.

- The temporary facilities must have public services (water energy, phone service, waste collectors etc.). There must be water for hand washing and fresh water for consumption by the workers.

- A procedure for electrical safety at the facilities must be developed and executed in compliance to general Honduran technical requirements or the guidelines established by the electric energy company.

• If cafeterias or dining rooms are established, they must be located inside the temporary facilities and comply with necessary hygiene guidelines.

• Water proof waste containers must be installed in different areas. To promote recycling and reuse of residues, color differentiation will be used in the containers to classify wastes according to origin or source, and later evacuated by the providers of these services for recycle or reuse.

• In the temporary facilities area an Environmental Recovery Abandon Plan must be implemented at the end of the construction stage to include, as a minimum, the removal of all signs, notifications, and billboards that may have been placed temporarily during the execution of the process temporary connections and services, and reestablishing natural landscape conditions.

• If the temporary facility has provisional storage of material these materials will be organized by type, covering those that generate particles to avoid dispersion through wind and/or water erosion and, the design of access routes for trucks coming and going with material.

• With the exception of authorized security personnel, the use and carrying of firearms is prohibited within the Project Area. It should be avoided that workers move out of project areas without authorization from the temporary facility manager.

• The machinery cleaning operations must take place away from water bodies or there must be a treatment system for the effluents (i.e. water and oil separators, sedimentary, etc.)

- If the temporary camp zone is located where there is no rainwater drainage system, and the activities take place during the rainy season, a channel to intercept rainwater and runoff must be built and directed to the nearest natural drainage to avoid erosive processes and/or stagnant water.

- If there are workshops near the camps where fuel, oil, and lubricant residues are produced, the floors must be waterproofed and temporary collection measures must be implemented. The recovered hydrocarbons must be regenerated and reused for other activities not harmful to the environment, to avoid water and soil pollution and the destruction of vegetation.

- **Construction Equipment and Vehicles Preventive Maintenance Plan**

The most important impacts on the quality or air pollution are associated with the construction stage. All vehicles and construction equipment produce atmospheric emissions. To minimize the negative impacts the following measures must be observed:

Initial Activities:

- The staff chosen to operate the machinery, tools, or driving the vehicles must be trained before starting operations.

- The concessionaire will check that each of the vehicles have been subject to a technical and mechanical revision, which ensures perfect functioning of brakes, direction, suspension, permitted visual and auditory signals, and the exhaust system. The same applies for the condition of the tires and checking that the gas certificate for each vehicle has been updated.

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- The concessionaire will provide SOPTRAVI (Transportation & Civil Works Secretariat) (one month before starting the construction stage) with a list with the description of each piece of equipment, vehicle, or machinery used for construction and the process for transport to the worksite specifying the routes for each transport.

The concessionaire will provide, before the construction stage, a monthly maintenance plan for the machinery and equipment used during Project construction; this plan must follow the specifications indicated ion the manual or the requirements of the suppliers and distributors.

- If the maintenance of the equipment, machinery, or vehicles used during project construction must be done away from the temporary facilities, the concessionaire will provide a list of sites (shops, diagnostic centers) where the maintenance will take place.

- The maximum speed within the temporary facilities and workshops is 10 km/hr and a maximum of 45 km/hr in the supply roads.

Operation of Machinery and Equipment:

- The concessionaire, prior to starting the project, will check that all vehicles have the necessary road safety elements established by the National Transit Authority guidelines (DNT).
- The concessionaire will check that each one of the vehicles to be used has been subjected to a technical-mechanical revision, foreseen in the initial activities.
- The machinery will have proper identifications in a visible place indicating method of operation, load capacity, max speed, and danger warnings.

- In order to avoid excessive noise generation and non-compliance to maximum established limits according to national regulation, the concessionaire must consider noise levels, including the inspection of the mufflers of the machinery and occupational monitoring in compliance to the Environmental Monitoring Plan.
- Heavy machinery must have a preventive and corrective maintenance plan, specific to each piece of equipment or machine, indicating the date, the activities to be conducted, and the site where maintenance will take place, and the persons or departments responsible for this activity. The equipment maintenance will take place in the temporary facilities or in authorized diagnostic centers (in case of requiring a specialized center). There must be a record of the maintenance plan execution.
- Heavy equipment operators must inspect their machines daily, at the start and end of each workday, to ensure safe operating conditions.
- The vehicles used in the project must preferably include recent models, to avoid emissions that exceed the norm.
- The unnecessary operation of engines must be avoided to reduce disruptions to the environment produced by noise, exhaust gases, smoke, dust, and any other nuisance.

- **Vehicular Emission Control Compliance Program**

In compliance to the Regulation for the control of toxic gas, smoke, and particle emission from motor vehicles, article 4 of this Regulation states, "In order for the motor vehicles not to emit pollution levels that exceed levels allowed by this regulation, each vehicle must have an Emissions Control Card, issued by an authorized Emissions Control Center"

The use of the Emissions Control Card is not currently enforced; instead, a specialized company is hired once a year to monitor the vehicular fleet for each project.

- **Foul Odors and Dust Emission Control Program**

Air quality and consequently, worker's health may be affected during construction by dust emissions, due to cutting and filling, handling and transport of materials, or machinery, vehicle, and heavy equipment circulation.

The most relevant impacts regarding foul odors during the construction phase consist mainly on smoke discharges and foul odors that can be produced during the use of vehicles, equipment, and machinery; as well as the generation and accumulation of solid and liquid residues and organic wastes.

To mitigate the negative effects of the Project during the construction phase the following mitigation measures must be applied:

- Prepare a Dust Control Program, which contemplates activities prior and during execution. The Dust Control Program must contemplate a permanent water source for sprinkling. The project ground must be kept moist, sprinkling with water the road and areas more prone to accumulating dirt and dust, this activity must be done mainly in the road tranches within populated areas.
- If the work is subcontracted it must be ensured to comply with the Dust Control Program

- Prior to the execution to this activity, the concessionaire must present a loading procedure according to the type of equipment to avoid overloading supply lanes and material transport roads.
- Any truck that carries stone material must be covered with tarp or plastic and circulation speed must be limited.
- When executing loading operations, the transport equipment must be completely stopped with the parking brake on to avoid accidental movements.
- When vehicles circulate through the areas of indirect influence of the construction they must do so at moderate speeds to avoid producing excessive dust particles.
- The excavation areas must be kept free of solid wastes and dirt to avoid air contamination due to passing vehicles. Any construction wastes that can be easily transported by the wind have to be picked up immediately.
- There must be an adequate system for waste and organic material disposal. The concessionaire will promote the use of solid residue containers and sanitary services to avoid the dispersion of solid and organic residues.
- Open pit burning or burying of wastes in worksites is forbidden.

- **Traffic Management Program**

The Traffic Management Program will include the following mitigation measures:

- Regulate the speed of the vehicles and machinery along the road, especially when transiting in populated areas
- Comply to the corresponding regulations of weights and dimensions, to avoid excessive loads that damage the roads
- Organize maintenance brigades for periodic maintenance to access roads, reducing further damage to the roads, and the risk of accidents.
- Inform with at least 3 days anticipation, road users, specially community leaders municipal and transit authorities, school directors, local business managers, about the constant presence of large vehicles during the construction phase and in particular of peak equipment and machinery and material movements along the affected roads. Notice must be given through written press releases, flyers, radio ads, newspaper ads, etc.
- The necessary road signals will be placed to alert drivers and pedestrians about provisional detours. Transit control elements (traffic cones, vertical posts, informative signals, plastic barriers, etc.) will be used to direct road users to ensure safety and flow of vehicles.
- Give training and build awareness in vehicles and equipment drivers and operators about the National Honduran Transit Direction (DNT) regulations, as well as the particular Project regulations and sanctions regarding road safety. (E.g. transit speeds inside and outside the project sites, installation of road signals, etc.)
- Monitor internal Project speeds and apply sanctions in case of noncompliance.
- Limit Access and work areas to minimize circulation in these zones and avoid compacting of soils due to machinery and transit.

The traffic control devices, the signals, and symbols will be made to comply with the requirements of the DNT, and comply as well with the Highway Manual, of the General Highway Direction of SOPTRAVI.

The following measures must also be considered:

It is important to highlight that the measures of preventive installation of road signals and detours must be in place before start of operations, specifically in the current road system intersections. The state of the road signals must be verified during its use to foresee timely maintenance and/or replacement.

6. Specific personnel ("flagmen") for transit control in work areas, such as entry and exit control for heavy equipment, transport of equipment that exceeds regular width dimensions, worker's crossing etc.

7. When there are partial traffic closures or during material transport activities, "flagmen" will be used to guide traffic using "flags" or signals, to maintain organized traffic in the project's area. Before any activities that modify traffic routes there must be an information campaign through press, radio, and television. This campaign will inform the community of the date of activities that affect motor and pedestrian circulation and the corresponding alternate routes that are implemented.

- **Work Schedule to Regulate Construction Machinery and Equipment Operation Times**

The objective of this program is to establish a work plan that clearly outlines working schedules, of equipment located with the temporary facilities, as well as machinery operating in the different work areas.

If due to unforeseen conditions during project execution (e.g. delays due to unfavorable weather conditions), there are times when the construction company must work out of this schedule, and the company must present a work plan for specific nighttime operations, which considers, at least, the following:

Restricting the use of heavy equipment and machinery to the day shift (6:00 am – 6:00 pm). When activities must be done at night, with permission from the municipal authorities, the work must be limited to low-noise activities.

- Any work done outside the regular work schedule requires approval by the supervisor.
- The affected communities must be informed, in anticipation through flyers, ads in newspapers and/or use of audio equipment, of the date and time of activities executed outside of regular operation times. There must be one or several written notifications, posters or banners, along the area affected by work outside of regular operation times.
- Design a Lighting Plan according to safety measures for the executed activities.
- Monitor the levels of environmental noise during these work schedules to avoid exceeding max limits established by local regulations.

- **Surveillance and Control Program**

The Surveillance and Control Program will allow periodic, integrated and permanent evaluation of the environmental variables, both biophysical and socioeconomic and cultural in nature, during the project's execution. The implementation of this program must be organized in collaboration with the environmental specialist of the construction company, the project supervisor, and SOPTRAVI's Environmental Management Unit.

In this sense, the construction company will present to the SOPTRAVI Environmental Management Unit a detailed plan that includes the different activities to be executed during the construction phase. This program must be evaluated and approved by the SOPTRAVI Environmental Management Unit technicians who are able to suggest additional measures they consider convenient.

Protection Measures for the Control of Vegetation Cover Loss

This section refers to all intrusive project activities that have a negative impact on terrestrial and aquatic biological wildlife resources found in the area of influence.

The measures proposed here are based on Decree No 98-2007, established by Forestry Law, Protected Areas and Wildlife and its Regulation based on Executive Agreement No. 031-2009. In addition to these measures, the project must comply with the Highway Manual, Volume 8 Environmental Guide for Road Projects of the SOPTRAVI General Highway Direction.

These are the recommended measures:

- The limits of the total project area must be clearly marked with stakes, tape or flags.
- If it is necessary to affect and area beyond the total Project area, there must be a report describing the affected area this report must be authorized by the environmental coordinator of the construction company and must be presented for approval to the SOPTRAVI Environmental Management Unit.
- During construction mobile equipment must be operated to cause minimum damage to vegetation and soil. To this effect operators need to be trained and informed so all the staff is qualified.
- Choose adequate sites for the final disposal of vegetable biomass pruned or logged during clearing.
- Avoid the accumulation of vegetable biomass in non-authorized site.
- Vegetation must not be removed with controlled fire. Removed vegetation must not be burned; it should also not be retired from the site immediately. Removed vegetation must be placed in piles, no greater than 60 mts. In length and separated from non-intervened trees by a fire proof barrier at a minimum distance of 8 mts.

- Potentially useful timber can be used for other project activities once the corresponding permits have been received.
- Vegetable waste must not be placed in sites where it obstructs the flow of water and it can finally be dragged towards superficial waterways.
- Under no circumstances will removed vegetation be placed in areas where it obstructs drainage channels. However, in some cases vegetation may be used as dead barriers to control erosion.
- The debris and waste materials product of pruning or cutting, must be temporarily disposed away from standing trees (at least 10 mts.), in piles no greater than 60 mts. In length and which have fire barriers. It must be transported to an authorized site for final disposal.
- Extracting wildlife species from their natural habitat is forbidden.
- The elimination of vegetation using herbicides is not allowed. Herbicides can only be used in exceptional cases and under justified requests due to the impossibility of using mechanical means; in any case, herbicides can only be used with expressed authorization by the authorities.
- When tree pruning is necessary, it must be done by qualified personnel in such a way that:
- The cuts must be made at a correct angle and treated with healing agents to avoid decay organisms; pruning must be done during the optimal season and with adequate equipment.
- The cuts must be done immediately after the neck branch.
- Large and heavy branches must be pruned with weight discharge cuts to avoid tearing the cortex and accidents.
- Part of the biomass (logs and stakes) must be used as energy dissipaters to reduce the effects of water erosion.
- When cutting or stripping trees the following must be considered:
- Trees must be cut with chainsaws and delimbed before logging.
- Check trees for any kind of animal nest.
- Obtain necessary permits from environmental units or the ICF before cutting trees for project activities.
- If the trees are located near the roads safety cones and traffic control personnel must be deployed during the activity
- The machinery must only circulate through the construction area to avoid damaging vegetation.
- The cutting of trees must be done as the project advances since there might be last minute changes to the alignment, and at the same time the visual impact that massive vegetation cuts creates is reduced.
- Areas affected by bridge construction, borrow pits, and disposal areas and facilities must be reforested.

Protection Measures for the Control of Direct Impacts to Fauna

- Before opening the roads the environmental specialists must evaluate the area to avoid destruction of paths, nests and dens.
- In case of encountering wildlife species the project's environmental specialists must be notified for him, in turn, to notify corresponding authorities.
- Execute intrusion activities preferably during the day shift because noise is amplified during the night.
- In case of night time activities, lights must be focused towards specific work sites avoiding the illumination of wildlife habitats and minimizing the intensity of light as much as possible.
- Avoid the unnecessary noise created by whistles, horns, sirens, running engines, etc.
- Install and maintain mufflers in optimum conditions in all motor equipment (vehicles, general equipment and heavy machinery).
- Maintain all vehicles in optimum conditions and provide adequate and effective escape routes. Periodical maintenance must be given to all heavy machinery and motor equipment used during the project.
- Hunting, capture, setting traps, commercializing and voluntarily disturbing wildlife and fishing is totally prohibited.
- Keeping wildlife specimens as pets is forbidden in all campsites, working areas or living quarters.
- The acquisition of hunting and fishing products offered by the people living in the projects area of influence must have proper permissions issued by competent authorities for the use of wildlife and fishing resources. The acquisition of food products based on wildlife terrestrial or aquatic specimens is forbidden without the corresponding permits.
- If a wild animal is run over, mistreated or hurt by machinery or employees of the concessionaire or the supervising company it will be their responsibility to provide the animal with necessary medical care.

These are other measures that must be adopted within the surveillance and control program:

- Develop a Program for Civic Participation and Promotion
- Maintain a permanent Dissemination and Communication Plan regarding the advance of the Project and collateral activities.
- Maintain a high level of coordination with SERNA, SOPTRAVI (Transportation & Civil Works Secretariat) and the National Transit Direction (DNT).
- Ensure the prompt repair of any damage caused to the access roads caused by trucks, heavy machinery and equipment used in the project.
- Guarantee the installation of road signals to reduce the risk of accidents for road users and pedestrians. This measure includes the installation of permanent road signals throughout the area of influence of the project.
- Guarantee compliance to sanitation, safety, and industrial hygiene regulations for worker's conditions.

Based on this Surveillance and Control Program, the construction company will present periodic reports on the different activities during the construction and operation of camps and temporary facilities, personnel status, land movements, generation of solid and liquid residues, the use of the stone quarry, and waste material disposal, among others, as well as any collateral problems that might arise. It is recommended that these reports conform what is designated as the Environmental Project Book, which records that main project incidents on the subject.

The aforementioned activities must be verified by the environmental specialist, who must inform regarding compliance with environmental legislation and the measures proposed in the Environmental Management Plan. The environmental specialist will report to the SOPTRAVI (Transportation & Civil Works Secretariat) Environmental Management Unit regarding the evaluation's results, in order to apply corrective actions for measures that do not produce expected results, to control that activities executed during the construction stage do not cause significant unforeseen environmental alterations.

- **Technical Requirements for the Use of Dry Borrow pits**

As a mitigation measure for the exploitation of dry borrow pits, the concessionaire or subcontractor must comply with the following technical requirements established by INHGEOMIN:

1. The extraction of non-metallic mining material the will only be done by the company within established points in the INHGEOMIN map.

2. Before starting exploitation activities the company must have authorization to cut trees from the responsible entity

3. In case the company uses explosives:

1. The company must have the permits required by law and a Plan for Transport, handling, storage and use of explosives drafted by an expert.

2. A mining Plan must be presented.

3. Controlled explosions must be prepared in such a way to not affect private or public physical structures with a safety margin of at least 200 lineal meters between the site of the explosion and such structures.

4. The explosions must preferably be done at noon; all site neighbors must be notified about the activities to avoid speculations.

5. As a cautionary measure, qualified personnel must carry out an evaluation of the living quarters located near the stone quarry to have data regarding their conditions (structures, walls, roofs, etc.) Before starting the explosions and also monitoring their behavior during the process and the end of the activities.

6. The explosions must be permanently monitored using a seismograph.

7. All organic matter resulting from stripping must be quantified, piled and properly conserved to be used during the closure of the intervened area. Any activity that involves closure or restoration of the site must write and present a report to INHGEOMIN regarding the scope and cost of activities, the equipment to be used, and the staff and execution time table.

8. A Project supervisor who knows the terms of the agreements with the Republic of Honduras must be present in the Stone Quarry.

9. Extraction activities should not affect phreatic levels in the area.
10. No unstable slopes must remain at the end of the project.
11. Stabilization work must include engineering activities such as deviation channels, material compacting, and terraced walls that result in stable slopes.
12. During and after extraction, the transport of slope sediment or accumulated material must be prevented, building necessary structures to control sediment transport.
13. Revegetation must be done with species native to the area.
14. The extraction zone must be fenced off and permanently guarded to avoid trespassing.
15. All areas where dust occurs must be sprinkled with water, especially those located near living quarters.
16. Workers must be provided with all safety implements and to comply with the General Regulation of Preventive Accident Measures and Professional Diseases of the Labor Ministry (Republic of Honduras)
17. The whole Project area and the equipment exits must have adequate signals.
18. Any truck that transports material must be covered with a canvas tarp.
19. All activities must happen during the day shift, extraction, trituration, and transport are not allowed during the night.
20. If necessary, an area must be designated to wash the machinery.
21. The machinery must receive preventive maintenance to avoid oil spills in the area.
22. If the machinery is given maintenance in the area, there must be an adequate area for this activity.
23. If the project stores material there must be an adequate area for this purpose.
24. The company must provide georeferenced maps of the worksite and activity areas.
25. Adequate maintenance must be given to motor vehicles to reduce emissions and comply with pertinent regulation.
26. If rocks with sulfurs are found, INHGEOMIN must be notified immediately.
27. All solid waste generated by the worker's activities must be properly disposed.
28. In case of oil spills on the ground from machinery, the soil must be given appropriate treatment.
29. The company must find an adequate location to dispose of soils contaminated with oil products.
30. The company must have an Accident Prevention and Contingency Management Plan.
31. There must be a latrine (bathroom) for every 10 workers.
32. If the latrine is not connected to the Waste Water Collection System it must have a septic tank that complies with all technical specifications.
33. Under no circumstance shall the extraction activities endanger the freshwater conduction systems or the terrains adjacent to the project.

34. If the project triturates and washes extracted material, the resulting effluent must not be directly discharged to any receiving body, a structure or system (sediment capture boxes, precipitation dam, sediment transport barriers, etc.) to capture sediment must be built; the system must be kept clean by the company, and the resulting residue must be adequately disposed.

35. Maintenance must be given to the area's access roads.

36. All solid wastes generated by the worker's activities must be properly disposed.

37. On-site inspection controls must be done to verify compliance by the company to Environmental Mining Control Measures, the number of these inspections will depend on the activity timeline, recommending that an inspection is carried out every two months at cost to the executing company. If considered necessary and depending on the compliance to the norms. These inspections may increase or decrease with time.

38. As a result of the inspections, if new technical requirements are needed these will be provided by the mining authority based on field reports and must be observed by the executing company.

39. The executing company must report any abnormality immediately within the Project's area.

40. Once extraction of the material pit has ended, the company must close off and abandon the area, and notify, in writing, to the Executive Directorate.

- **Technical Requirements for the Use of Floodplain soils**

As a mitigation measure for the exploitation of floodplain soils, the concessionaire or the subcontractor must comply with the following technical requirements established by INHGEOMIN:

1. The Company cannot execute humid material extraction without the respective authorization.

2. Exploitation activities may only be executed within the area inspected during the field evaluations prior to issuing the respective permit.

3. Extraction can only be done in the points established by the INHGEOMIN maps.

4. There must always be a Project Supervisor in the extraction zone; he/she must know the environmental control measures dictated by INHGEOMIN and SERNA.

5. The company must provide workers with all safety implements and to comply with the General Regulation of Preventive Accident Measures and Professional Diseases of the Labor Ministry (Republic of Honduras)

6. The entire Project area and the machinery exits must have adequate signals.

7. Any truck that transports material must be covered with a canvas tarp.

8. Adequate maintenance must be given to motor vehicles to reduce emissions and comply with pertinent regulation.

9. All solid waste generated by the worker's activities must be properly disposed. Trash bags and disposal containers must be placed in all work areas.

10. Solid residues must be transported for final disposal to a site authorized by the municipal authority of the area of influence. The corresponding authorization must be presented to the Executive Directorate.

11. In case of oil spills on the ground from machinery, the soil must be given appropriate treatment.

12. The activity execution timeline for extraction and transport of non-metallic mining material must be established in writing.

13. Bimonthly on-site inspections must take place to verify compliance with the recommended measures.

14. Extraction activities should not affect phreatic levels in the area.

15. No mounds must be left in the riverbed.

16. If the project triturates and washes extracted material, the resulting effluent must not be directly discharged to any receiving body, a structure or system (sediment capture boxes, precipitation dam, sediment transport barriers, etc.) to capture sediment must be built; the system must be kept clean by the company, and the resulting residue must be adequately disposed.

17. The extraction of sediment banks not within the riverbed must not exceed the surface level of the river, during the month of maximum discharge, considering a level of up to 1.5 meters below the current level.

18. Extraction of sand banks must be done with even and leveled cuts, preventing the formation of ditches that generate stagnant waters.

19. The machinery´s engines must never come in contact with the live river channel.

20. During and after extraction, the transport of slope sediment or accumulated material must be prevented, building necessary structures to control sediment transport.

21. All activities must happen during the day shift, extraction and transport are not allowed during the night.

22. Any solid wastes generated by the worker's activities must adequately disposed of as established in guideline 12

23. The company must have an Accident Prevention and Contingency Management Plan.

24. The Company must have portable toilets for waste disposal in the locations authorized by the municipality.

25. On-site inspection controls must be done to verify compliance by the company to environmental mining control measures, the number of these inspections will depend on the activity timeline, recommending that an inspection is carried out every two months at cost to the executing company. If considered necessary and depending on the compliance to the norms. These inspections may increase or decrease with time.

26. As a result of the inspections, if new technical requirements are needed these will be provided by the mining authority based on field reports and must be observed by the executing company.

27. The Project executioner must immediately notify any irregularity in the area of influence.

29. Once extraction of the material pit has ended, the company must close off and abandon the area, and notify, in writing, to the Executive Directorate.

- **Dissemination and Communication Plan**

This Dissemination and Communication Plan aims to strengthen communication channels among the relevant project participants and integrate the community to the work environment. To this end, there will be a permanent effort to concentrate actions with local authorities, community groups and civil society organizations; the project also aims to establish permanent communication channels with the general public, which will not interact directly with the construction and the nuisance it creates, despite the mitigation measures adopted in this EMP Plan, however, the public will enjoy the direct and indirect benefits the Tourism Corridor will generate. This plan also considers communication with the general population, which will not be directly impacted by the construction, but is expecting to see the finished project.

To achieve these objectives, the design strategy is divided into main themes: specific strategies according to the project´s target audience, for example:

- Authorities: SOPTRAVI, as Project developer, SERNA and DNT as national regulating entities, as well as other institutions that might provide some kind of collaboration such as the Fire Department.
- Target audience or public within the area of socioeconomic influence: Citizens who will enjoy the new Tourism Corridor San Pedro Sula-Progreso
- The General Public: Citizens who have some interest or expectation regarding the finished Project.

Strategy and actions by the concessionaire, to achieve community integration to the project's environment:

- The establishment of individualized channels for contact with this target audience or general public will allow transmitting the information they need.
- The responsibility to communicate and inform of the project activities will be the concessionaire's responsibility, for which it must present a Dissemination and Communication Plan that identifies information and communication needs, as well as the proposed means for approval and supervision by SOPTRAVI.
- The Dissemination and Communication Plan presented by the construction company must include, at least, strategies, mechanisms, and resources focused on the following areas:
- Institutional
- Media
- Internet users
- Communities within the area of Socioeconomic influence
- La San Pedro Sula - El Progreso road users
- Inform affected local businesses and communities about the activities to be executed, through media (newspaper and/or radio) and/or communication workshops (focusing on schools with the project area of influence), at least two weeks before the project starts. If the effects are minimal, distribute an information pamphlet to each business and house in the same term. The minimum information to be relayed is:

1. Owner's name.
2. Name of the Project.
3. Affected zone.
4. Name of the builder.
5. Construction terms (estimated start and end dates).
6. Project characteristics.
7. Phone number and address for community communications.

- Install a sign in front of each activity containing the minimum information relayed through newspapers, radio, workshops or pamphlets.
- In the case of expected interference with public services, communication must take place at least three days before the event and implement a Contingency Plan, to minimize nuisances.

- **Environmental Education Plan**

One of the most important measures contemplated to correct or attenuate negative environmental impacts is the Environmental Education Plan, which is considered as a strategic instrument for the implementation of the Environmental Management Plan.

Environmental Education is conceived as a permanent process in which individuals and the community gain conscience of the surrounding environment and acquire knowledge, values, experiences and the will to act individually or collectively, to resolve current and future environmental problems. The Environmental Education Plan is an important mitigation measure to weaken negative environmental impacts that affect the population's life-quality due to the project's activities.

This plan is mostly directed to project staff, school teachers, community representatives and leaders from the main population centers in the project's indirect area of influence (which represent the project labor supply) because it is considered that the message will achieve a greater broadcast and multiplying effect through these leaders, increasing sensitivity and the ability to respond the environmental and natural resource deterioration situations.

The aforementioned leaders will be summoned in the neighborhoods or communities of the project's area of influence, to participate in informative sessions and interactive workshops, receiving printed material (posters, bulletins, etc.) to distribute among each citizen's co-workers (in schools, churches or community centers, in the project etc.)

The following issues are proposed as the content for informative sessions and workshops:

- Rational use of water.
- Deforestation and its influence on the water cycle.
- Soil conservation practices.
- Proper fuel manipulation and equipment and machinery maintenance.
- Environmental contamination (water, air and soil).

- Ecology and relation between water-soil-vegetation).
- Health, respect, and public area maintenance.
- Life-quality and natural resource conservation.
- Road safety
- Tourism

The staff must also be trained on the following flora and fauna protection issues:

- Types of dangerous reptiles, mammals, and insects
- Types of dangerous or stinging local plants
- Importance of natural resources
- Effects of forest fires
- Purchase of wild animals
- Bonfire prohibition

Training Records

The concessionaire must keep an updated record of the training given to project staff. This record must include the date of training and the general information of attendees (name, id number, and occupation in the project) and their signature, and the information of the trainer and his/her signature.

A similar record must be kept for the monthly informative sessions. Every worker is required to attend any training activities and achieve a clear understanding and familiarity of the different special environmental management requirements for the whole project.

It is recommended that seminars and/or workshops are given periodically and continuously (every four months), at least during the project's Selective rehabilitation and maintenance Stage. The concessionaire and the project's supervision must logistically support this program, with SOPTRAVI being the development coordinator. The concessionaire must fund the program with own resources and provide continuity to the implementation process, to guarantee the adoption of concepts and values by the staff during the project duration.

As logistic program coordinator, SOPTRAVI may look for support from diverse government institutions to find willing participating panelist who wish to contribute. Given its affinity with the proposed issues, the institutions might be SERNA, Public Health Secretariat, National Transit Direction, Ministry of Labor, and the IHAH, among others.

Environmental Education Plan for Authorities and Organized Groups

The program will be developed through a Seminar-Workshop directed to interested authorities and civil society representatives from each of the municipalities affected in the area of indirect influence. SOPTRAVI will be responsible for holding these seminars.

The objectives of each seminar-workshop are the following:

- Explain the technical characteristics of the project
- Explain the impacts of the project
- Explain the mitigation and compensation measures that will be adopted
- Channel the concerns of civil society

Each community workshop will have no more than 50 people including representatives from SERNA, the Municipal Environmental Units, local authorities and civil society members.

- Conceptual framework of the Honduras Tourism Corridor Project.
- Project and complementary activities description.
- Main negative and positive impacts produced by the project.
- The role of the SOPTRAVI Environmental Management Unit.
- Contamination prevention systems in the context of project road activities.
- Project Road Safety System

At the end of the seminar, there must be a plenary in which the coordinator will present his/her table's conclusions. Representatives from SOPTRAVI and SERNA will gather the documents presented in the plenary session and draft a final document that must be delivered, in no more than 30 days, to authorities and organized groups that participate in the seminar-workshop for its due dissemination.

Project Disclosure

To achieve this objective, the concessionaire will distribute flyers in the affected areas with the following objectives:

- Inform the population about the project's impacts
- Inform the population about mitigation and compensation measures to be adopted
- Inform the population about the dangers associated to the presence of the project

Flyers with the required information will be made and distributed freely among the affected population.

The flyers must contain at least the following information:

- Project plan diagram
- List of human health and environmental impacts
- List of mitigation and compensation measures
- Environmental risks

All costs associated to the Environmental Education Plan including sessions, seminars, and workshops must be covered by the concessionaire; all the material used for the training sessions must be approved by SOPTRAVI. All activities must be approved by SOPTRAVI.

- **Health and Hygiene Program for the prevention of Contagious Diseases**

The construction phase increases the risk of disease transmission due to the presence of workers throughout the project, and especially, during the location and installation of temporary facilities which will concentrate a great number of workers, the concessionaire must implement a Health and Hygiene Program for the prevention of Contagious Diseases STDs, HIV, and AIDS.

Contagious diseases are those that can be passed on from one person (animal) to another. There can be direct transmission from an infected person or animal to a healthy person, or there can be indirect transmission; sometimes through an intermediate animal host (mosquitoes, rat) and others through the environment (air, water, food)

The organisms that produce diseases in humans, called infectious agents, belong to different groups: bacteria, virus, fungi and can penetrate the organism through different means mechanisms, digestive, respiratory, skin, and mucous.

The chain of infection includes the following links: sick humans or animals; contaminating products (vomit, feces, urine, and blood)

6 **Source of infection:** sick humans or animals; contaminating products (vomit, feces, urine, blood)
7 **Means of disease transmission:** water, food, dust, air, insects, rodents, soil, objects
8 **Healthy humans:** the infectious agent can arrive through different ways; digestive, respiratory

Preventive measures aim to break this chain, by acting on each of the links:

9 On the source of infection: disinfection and deworming
10 On the means of transmission: personal hygiene and work environment

On healthy humans: vaccination and sanitary education.

Preventive Measures in work areas

- Keep work areas clean at all times
- Mosquitos are especially attracted by wastes and small puddles in work areas; for this reason, work areas must be inspected daily.

- Containers or solid wastes disposal tanks must be covered, to avoid accumulation of water.

Preventive measures for diseases spread by saliva

- The concessionaire must have a freshwater dispensing tank in all work areas. The tank must be washed and filled daily, to control this activity, a seal or tape with the date must be placed daily on the lid.
- Disposable glasses must be provided to the workers.
- Under no circumstance are workers allowed to drink water by placing their mouth directly on the tap.
- It is not recommended that workers share the same glass, as viral diseases like mononucleosis are passed on this way.

First aid measures to prevent the spread of HIV and AIDS

- Avoid contact with blood and other bodily fluids. Use gloves before providing first aid and cleaning blood or other bodily fluids. Wash or rinse gloves before removing them and discard in a plastic bag. Wash hands and other body surfaces immediately if you have been in contact with blood or bodily fluids, and after removing gloves.
- Make sure to avoid cuts when examining a wound or removing a sick patient's clothes, be careful when handling needles, scissors or other sharp instruments. If they are disposable, keep these instruments in a resistant, clearly-labeled container.
- **In case of an accident:** make the wound bleed freely, do not suck on it. Wash the area with soap and water (if eyes are affected, wash them with abundant soap and water. Do not forget to notify any accident and request appropriate medical assistance.
- If blood is spilled, wash with abundant common soap in a 1 to 10 proportion and dry with disposable towels. Use rubber gloves. If clothes become soiled, pick it up using gloves and soak in cold water before washing in the washing machine hot water cycle.
- **Mouth-to-Mouth resuscitation:** there is no evidence that mouth-to-mouth can cause HIV so there must be no hesitation to apply this procedure. If there is blood near the mouth, it will be necessary to clean before starting reanimation, which will be done using a clean handkerchief over the patient's mouth.

Preventive measures for sexually transmitted diseases

Clearly, the best preventive measure is not to engage in sexual relations with prostitutes, persons with promiscuous backgrounds, or strangers. If despite warning sexual relations occur, the use of condoms is recommended.

Condoms are currently the most effective methods to prevent most venereal diseases; however, they do not completely eliminate the risk of contagion.

Code of Conduct for workers in project areas

Besides applying the preventive measures outlined before, the most important aspect to prevent contagious diseases is the behavior of every worker in the project areas. The worker must:

- Observe good behavior and correct treatment of the community's members at all times.

- Restrict access to non-workers to the camps, facilities, and other service areas to prevent accidents, risk situations, and conflict opportunities. If this situation occurs, workers must kindly ask trespassers to leave the area for their own safety.
- There will be zero tolerance for the use of alcohol, drugs, or narcotics by the staff, especially within rest areas and other project facilities
- Respect and proper treatment of women and children of the surrounding communities must be guaranteed. In many cases, the most frequent cause of problems regarding personal conduct within project areas is improper treatment of local women.
- The labor, social, and commercial relations developed with the neighboring population as a result of company presence, must be based on mutual respect, avoiding conflicts that deteriorate the company's relationship with local communities or settlements.
- Maintain a cordial and respectful attitude with everybody, especially women, the elderly, and people with disabilities. Avoid inappropriate relations with minors- it is a crime punishable by jail.
- Use portable toilets for bodily functions. They have been installed for your comfort.

These norms of conduct and others that may be incorporated will be socialized extensively among all staff before the training and induction process regarding behavior patterns and relations with local staff.

Health issues and contagious disease prevention training

The Education Plan for the project's workers includes issues related to health, HIV, and the prevention of infectious diseases. The project will request the support of the Public Health Secretariat, through the nearest health center, to organize health fairs and vaccination campaigns for workers as necessary.

- **Mitigation measures execution and responsibility**

The concessionaire is responsible for the execution of mitigation measures through the environmental specialist designated for the project.

The entities responsible for the supervision of compliance by the concessionaire are SERNA, the Environmental Management Unit of Soptravi and the administrators of the Environmental Units of each municipality within the area of socioeconomic influence of the Project.

Table 5.1. Mitigation measures execution and responsibility

Medium	Impact	Mitigation Measure	Institution Responsible for Execution	Regulating Entity * See note
Aquatic	1a. Hydrological Regime Alteration	No extraction activities should be done in the center of the riverbed, only in the sites marked by INHGEOMIN Surveillance and Control Program: delimiting the area of influence to avoid damage to other areas. Avoid the formation of pools and depositing material on the natural water runoff sources and avoid the stacking of materials higher than 2 meters	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision
	1b. Alteration of phreatic levels	• Selection of water bodies with enough continuous flow to provide water to the project and not altering the aquifer recharge.	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision
	1c. Quality deterioration or water contamination	• Liquid and Solid Waste Management Program • Contingency Program: Prevention and Control of contaminating substance spills (oils, fuels, paints, etc.)	The concessionaire and the Environmental Specialist and the Security Supervisor	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat
Atmospheric	2a. Quality deterioration or air contamination	• Preventive vehicle and construction equipment maintenance program (adequate mechanical state is required) • Vehicular Emissions Compliance Control Program	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat /National Transit Direction DNT
	2b. Dust and/or foul odor generation	Program for dust emission control and foul odor prevention	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public

Medium	Impact	Mitigation Measure	Institution Responsible for Execution	Regulating Entity * See note
	2c. Increase in noise levels	Preventive vehicle and construction equipment maintenance program (adequate mechanical state of mufflers is required for machinery) Work Schedule: Avoid, if possible, working during the night or resting periods; if necessary notify the affected population in advance. Provide auditory protection equipment to workers exposed to noise levels over 80 dBA.	The concessionaire and the Environmental Specialist	Health Secretariat
Terrestrial	3a. Effects on soil due to compacting or leveling	Surveillance and Control Program: limiting of the direct area of influence to avoid damages to other areas. If necessary upon project completion, soil compacted by heavy machinery or temporary facilities must be loosened and covered with topsoil for subsequent revegetation.	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision
	3b. Quality deterioration or soil contamination	Contingency Program: avoid, if possible, the accidental spill of contaminating substances on the soil. Contingency Program: Prevention and Control of contaminating substance spill (oils, fuels, paints, etc.) Liquid and Solid Waste Management Program	The concessionaire and the Environmental Specialist	
	3c. Extraction or loss of soil	Surveillance And Control Program: delimiting the area of influence to avoid damage to other areas	The concessionaire and the Environmental Specialist	
	3d. Increase in erosion processes	Erosion control and slope stability measures	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision

Medium	Impact	Mitigation Measure	Institution Responsible for Execution	Regulating Entity * See note
	3e. Reduction in fertility and suitability of soil	Reforestation, arborization, and revegetation plan	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/ICF
Biotic	4a. Loss of vegetation cover	• Surveillance and Control Program: delimiting the area of direct influence to avoid damage to other areas	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/ICF
	4b. Alteration or elimination of terrestrial and aquatic fauna	• Surveillance and Control Program: Avoid poaching and/or species habitat disturbance.	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/ICF
	4c. Increased risk of running over wildlife	• Place animal crossing signs • Regulate speeds in road tranches	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat /National Transit Direction DNT
Socioeconomic	5b. Modification to local traffic	• Work Schedule: Execute planned installation of road signals in the Traffic Management Program • Coordinate activities with the National Transit Direction • Permanent disclosure campaign: Inform the communities about programmed activities	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat /National Transit Direction DNT
	5e. Increased risk of spreading disease	Health and Hygiene program for the prevention of contagious diseases	The concessionaire and the Environmental Specialist and the Security Supervisor	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat

Medium	Impact	Mitigation Measure	Institution Responsible for Execution	Regulating Entity * See note
	5f. Increased risk of workplace accidents	Risk and Accident Prevention Program Maintaining first-aid kits and ambulance services Records of worker's training on first-aid and emergency measures	The concessionaire and the Environmental Specialist and the Security Supervisor	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat / Fire Department/ Red Cross/ COPECO/ Ministry of Labor
	5h. Increase in public sanitation problems due to the generation of solid and liquid wastes	Solid residue collection and disposal program Portable toilets must be installed for workers; the responsible company must clean the toilets at least twice a week	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat
	5i. Disturbances to surrounding communities due to project activities	Work Plan: Establish a work schedule that avoids affecting daily community activities Work Schedule: Execute installation of road signals proposed in Transit Management Program Coordinate activities with the National Transit Direction DNT Dissemination and Communication Plan: maintain a permanent disclosure campaign with the affected communities	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/Public Health Secretariat /National Transit Direction DNT
	5j. Changes in the use of soil	Territorial ordinance plan review Request a change in the use of soil to the El Progreso Municipality	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision
	5k. Alteration of public services	Public services relocation program	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision/ENEE/SANAA

Medium	Impact	Mitigation Measure	Institution Responsible for Execution	Regulating Entity * See note
Landscape related	7a. Alteration or changes to the landscape and environment aesthetics	• Work Schedule: Execute planned installation of road signals in the Traffic Control Program • Surveillance and Control Program: Delimit the area of direct influence to avoid intervention in other areas.	The concessionaire and the Environmental Specialist	Environmental Management Units/SOPTRAVI / Tourism Corridor Supervision

Source: The Consultant

Note:

*** Art. 28-A (added through Decree 181-2007). -** The Natural Resources and Environment Secretariat (known in Spanish as SERNA) will delegate to the municipalities, the process of environmental evaluation for the execution of projects, industrial facilities and any other private or public activity that is meant to be developed within their territory, as well as the control and follow-up of mitigation measures for the environmental impacts subject to licensing. This evaluation process will be concurrent with the application for Construction and Operation permits, Article 68 of this law establishes exclusions to this delegation. Municipal Corporations will assume these responsibilities by issuing a Municipal Agreement that notifies SERNA about its intention and operating capacity, and therefore, assume responsibility of actions derived from delegated functions.

The municipalities of Distrito Central, San Pedro Sula, Juticalpa, La Ceiba, Puerto Cortes, Roatán, Guanaja and El Progreso are able to do this immediately. The other municipalities must submit to an evaluation and accreditation process by SERNA, who will issue a resolution in a period no greater than sixty (60) days upon presenting the request.

1 SPECIFIC MANAGEMENT PLANS

1.1 Common Solid Residues Management Plan

The objective of residue management is to minimize any impact on the worker's health and the environment, as well as limiting risk exposure, by providing orientation regarding risk management. All aspects related to the management and administration of residues in the work site, must comply with national Honduran legislation and other international directives from the World Health Organization (WHO), the United Nations Environment Programme UNEP, and the World Bank, among others.

Plan Objectives

Residual waste management will achieve the following goals:

- Reduce risks to health and the environment /flora, fauna, water, underground water, and air)
- Identify and classify residues
- Minimize the residue generation
- Select appropriate alternatives for residue treatment
- Document all aspects of waste management and elimination

The Project Manager is responsible for residual waste management, through the field Environmental supervisor, who must be adequately trained to carry out inspection, supervision, and recording of residual waste management practices.

Common solid residues

Non-hazardous residues do not generally present immediate concerns for public health or environmental impact.

The non-hazardous residues generated during the project construction, include, but are not limited to: residues from food, paper, plastics, iron, aluminum, glass, and packaged miscellaneous items, inert construction materials (wooden planks, belts, tires, plastic and paper bags and other containers).

Table 8.1 contains a list of non-hazardous residues generated by project activities:

Table 8.1 contains a list of non-hazardous residues generated by the construction of the Tourism Corridor Tranche San Pedro Sula - El Progeso:

Table 1.2. Non-hazardous Residues

Material Waste Flow	Description	Main Source	Management and Disposal Options	Observations / Important Considerations
Domestic/ General	Non-organic: Food	Main workers' rest areas within the worksite and main offices	Reuse /Rec-cycle /Disposal	Boost the initiative of diverting waste. Disposal of non-incinerable inert residues (plastic, glass, metals, polystyrene, etc.) and the flow of remaining incinerated wastes
	Food containers, plastic water bottles, paper, carton, glass (bottles, cans, windows), polystyrene, aluminum (containers)			
	Organic: food leftovers	Cooking and eating areas and worksite	Disposal	Diverting organic waste from disposal can reduce leachate
Construction Debris	Concrete waste, cement additives etc.	Construction and maintenance activities	Reuse /Rec-cycle /Disposal	Wastes like additives should be reused for future or current activities as much as possible.

Material Waste Flow	Description	Main Source	Management and Disposal Options	Observations / Important Considerations
Scrap metal	Metal cuttings, electric cabling, pipes,etc.	Construction areas	Reuse /Rec-cycle /Disposal	Donate to the community
Wood	Wood, pallets, plywood, wood chips, wood scraps, etc.	Packaging material	Reuse /Rec-cycle /Disposal	Reuse or donate to community for cooking or construction
Paper, carton	Office paper, cardboard	From offices and packaging materials	Reuse /Rec-cycle /Disposal	Separate at the source and maximize recycling opportunities such as donations to local schools.
Polystyrene	Polystyrene	Packaging material	Recycle / Disposal	Recycling
Plastics	Plastic wrappers, PET resin bottles, HDPE, scrap, etc.	Construction Area	Recycle/ Disposal	Recycling
Tires	Worn-out, damaged tires	Construction and operations equipment	Reuse /Rec-cycle /Disposal	Tires must be used for ground stabilization, and embankments (crushed)

Material Waste Flow	Description	Main Source	Management and Disposal Options	Observations / Important Considerations
Welding wastes	Soldering rods or millstones	Maintenance or construction related activities	Recycling / Packaging in drums and disposal	
Non-greasy fabrics	Non-greasy fabrics (rags, gloves, clothes, etc.)	Temporary facilities and maintenance workshops	Disposal	No special requirements for disposal

Source: 504832-0000-4EPA-1007 "Residual Waste Management Plan" –JVP

Project activities during the construction phase generate different kinds of residues which must be handled accordingly, to avoid garbage accumulation which can cause diseases that affect worker's health. The concessionaire must avoid situations that threaten the health of the workers and the general population through adequate management of residual wastes resulting in minimal negative impacts to the environment.

The concessionaire must implement actions to:

1. Avoid residue generation (source prevention)
2. Separate residues at the source
3. Find alternatives uses for residues (reusing)
4. Material recovery (recycling)

It is important to consider that from a waste management perspective, source reduction and reuse are preferred options before the implementation of recycling, treatment, and elimination.

The residues generated during construction, such as: woods, pieces of metal rods, cardboard, paper, cans, plastics, among others, and the domestic waste generated by the workers, must be stored in adequate containers and on a specially designed and properly protected area within the worksite.

In order to guarantee proper management of residual solids, the concessionaire must adhere to the following principles:

1. Train workers on the established regulations for solid waste management;
2. Prohibit the burning of solid residues;
3. Appropriate segregation and labeling of solid wastes containers;
4. Minimize residue production;
5. Maximize recycling and reuse;
6. Safe transport, and
7. Adequate residue disposal.

Waste Management Training

Training for all construction workers is a key element to achieve proper solid residue management. This training must take place before the start of operations in order to achieve better results. Some of the issues to be discussed during training are: safe management practices, storage, transport, treatment, and waste elimination, according to the nature of the residues.

It is also important to consider that training must be periodically renewed; the training sessions must be recorded along with the support documentation for the offered training.

Containers for Solid Waste Collection

The containers or deposits for solid wastes will be located in the work areas and operation centers, to promote appropriate disposal; not on the ground.

A recycling program must be implemented in the temporary facilities and workshops. Simple mechanisms for temporary separation and transport of wastes must be established for the different work areas. It is proposed to separate waste in these categories for recycling: paper, glass, metals, plastics, and organics. The color coding is illustrated in Figure 8.1:

Figure 1-1. Solid Waste

Source: 504832-0000-4EPA-1007 “Waste Management Plan”.

Figure 1.2.Good practices for Environmental Management of Solid Waste

Source: The Consultant

Procedures to minimize solid waste generation

The procedures for solid waste minimization include reduction at source and reuse. The source reduction of waste includes reducing the amount of materials moved to work areas. The concessionaire must consider the following elements for source reduction:

1. Purchasing products with the least amount of wrappings (e.g. groceries and paper)
2. Use of products with greater durability and that can be repaired (e.g. durable work tools and instruments)
3. Substitute single-use disposable products for reusable alternatives (e.g. bottles for cans)
4. Increase the content of recycled materials in products (e.g. find articles easily accepted by local recycling centers). Among the waste products that can be recycled are used asphalt, used concrete, leftover paint, construction timber, vegetable material from terrain clearing such as branches and stumps, used wooden pallets, discarded metals, and other materials.

The purpose of reducing sources is to avoid handling of solid wastes just by not generating them. The concessionaire must research opportunities for local reuse of products (e.g. devices, furniture, used oils), or the possibility of donating them to the community, instead of eliminating them.

Guidelines for safe transport of Solid Wastes

During construction, solid waste will be transported from the work sites to the final disposal site. The concessionaire must guarantee that the staff assigned to this task used appropriate procedures for waste transport and have the corresponding permits and authorizations required by law. The guidelines include, at least, the following elements:

- Driver of vehicles that transport solid wastes must avoid making unauthorized or unjustified stops along the transport route.
- Vehicles that transport solid wastes must be equipped with the following characteristics:

  - ✓ Covered (e.g. tarps or nets) to prevent accidental spillover on route;
  - ✓ Ability to perform flawlessly under severe weather conditions;
  - ✓ Respect the designed vehicle capacity, without overloading; and
  - ✓ Adequate and frequent cleaning to avoid unpleasant emanations.

Final Disposal of Solid Wastes

The concessionaire must carry out all necessary procedures for final disposal of the wastes generated during construction. The concessionaire must also present the certifications required by SERNA, as proof of adequate final disposal of wastes.

Specific Procedures

The following items describe the specific procedures the concessionaire must implement for the management of its solid wastes:

- Take responsibility for the classification, collection, transport and final disposal of all wastes generated by its activities.
- Keep work sites and storage areas clean and build awareness of waste management among the staff.
- Maintain records and manifests for the type and amount of wastes and the planned elimination of all wastes generated by its activities;
- Separate wastes at the source.
- Prohibit the open burning of wastes.
- Provide training to all staff involved in the adequate management and handling of wastes and emergency response
- Ensure, as much as possible, the recycling and reuse of waste generated in the work areas.

1.2 Management Plan for Toxic and Hazardous Solid Wastes

Hazardous wastes can negatively affect human health and the environment if they are inappropriately stored, handled or eliminated.

Initially, in the construction phase, hazardous wastes may include oils and greases used in vehicle maintenance, batteries (dry and wet-cell including lead acid), used oil filters, used chemical containers, paints, biological risk wastes from first-aid stations, hydrocarbons and chemically contaminated soils, rags and absorbent pads.

Many of the products used in the project are hazardous materials. Generally, hazardous materials are classified in four kinds- petroleum derivate, explosive agents, reactive and compressed gases.

Table 8.2 presents a general list of solid hazardous wastes generated during construction activities and the proposed strategies for the management of each of these wastes:

Table 1.3. Default Hazardous Wastes

Waste Flow/ Materials	Description	Main Source	Elimination options	Consideration/ Key observations
Oily fabrics	Oily fabrics (rags), gloves, clothes, etc.	Mechanic workshops, response to spills	Off-site elimination	Treat as hazardous material. Collect in an appropriate location, off-site removal by an authorized company.
Soils contaminated by hydrocarbons	Contaminated soil	Fuel spills		Treat as hazardous material. Store in an adequate container. Elimination by an authorized company.

Waste Flow/ Materials	Description	Main Source	Elimination options	Consideration/ Key observations
Lead-containing products	Batteries, soldering, electric devices, cables Sheet accessories, brass or bronze, balanced weights	Vehicle maintenance and equipment Construction activities	Off-site elimination or recycling	Treat as hazardous material. Consolidate and store to send for final disposal by an authorized company.
Used batteries	Dry-cell batteries	Electronics, offices, and monitoring equipment	Recycling	Treat as hazardous material. Return batteries to suppliers.
	Lead acid batteries	Equipment and vehicle maintenance	Recycling	
Asbestos-containing products	Vehicle braking wedges	Vehicles	Off-site elimination	Treat as hazardous material. Consolidate and store to send for final disposal by an authorized company.

Source: The Consultant

As a recommendation, the area designated for hazardous material storage, must be identified by red codes. Hazardous wastes must be placed by workers in appropriate containers and bins before transport to the hazardous wastes deposit, and include the following specific items:

- The material content (oil filters, batteries, etc.)
- The hazardous nature of the contents (flammable, corrosive, etc.)
- The date when the waste was generated.

Hazardous wastes must be consolidated and stored in a safe way in the hazardous waste deposit. Storage must not exceed 180 days upon reception at the deposit and storage prior to its shipment for appropriate elimination/treatment.

Management of Specific Wastes

Gas Cylinders

Compressed gases are considered hazardous materials, due to the high pressure of the containing cylinders. The uncontrolled escape of compressed gases creates leaks in the equipment or its hoses; or produce chain reactions. The Material Safety Data Sheets (MSDS) must provide the specific storage requirements for each gas. Gases must be stored in closed enclosures if possible.

The cylinders must be kept in a clean and well-ventilated area, in vertical position, away from incompatible material. Heat exposure must be avoided. They must be chained to a wall, rack, or other structure to prevent tipping over.

In case of accidental release of a compressed gas cylinder, the specifications detailed on the MSDS must be followed.

Gas cylinders must be returned to the provider. However, before being returned, the must be applied a label that indicates: the material they contained or contain if they have not been emptied, the provider's information, the serial number of the cylinder, pressure, date of last hydrostatic test, and any other additional identification mark considered necessary.

Used Batteries

Alkaline or zinc-carbon batteries are considered hazardous materials, lead acid batteries (vehicles), nickel-cadmium batteries (radios and cell phones), and lithium-mercury batteries require special treatment since their toxic elements could negatively impact the environment. For this reason, they must not be discarded nor stored in inappropriate containers before neutralizing their acid content.

The storage of vehicle batteries must occur in a restricted area, on a waterproof surface protected from the rain and surface water, no less than 50 meters from water courses. Vehicle batteries must be delivered to a specialized and environmentally authorized company for treatment and final disposal.

Oil Filters

When filters are replaced they must not be discarded in the deposit site before checking they are not contaminated with hydrocarbons or other hazardous substances. Filters that can be completely drained and crushed can be disposed of in special storage sites.

Used oil must be drained from filters before deposit. The filter draining process must occur at a temperature similar to the temperature of the source equipment ("hot""). There are several acceptable procedures for this operation. For example, perforating or crushing the filter drain used oil to an appropriate container. The contaminated filters that cannot be drained must be stored until the company responsible for these wastes collects them.

Contaminated Rags

Contaminated rags and absorbent pads will be treated with the same criteria and methodology of the substance they absorbed.

Personal Protection Equipment (PPE)

Storage facilities must be equipped with proper PPE, which includes, at least, eye washing stations and firefighting equipment. The staff that enters the storage sites must be equipped with proper PPE. The PPE must include rubber boots and gloves, chemical protection goggles, respirator, rubber apron, etc., as required.

Material Safety Data Sheets (MSDS)

La Material Safety Data Sheets (MSDS) must be provided for all hazardous materials by the product supplier, and must updated as soon as new materials are added to unify criteria.

A record of the MSDS must be kept for all hazardous substances used or produced during project activities.

Final Disposal

An authorized company must be contracted for final disposal of hazardous materials. The company must have a valid Environmental License which allows the provision of this service and compliance to national regulation in this matter.

1.3 Liquid Residues Management Plan

The sanitary residues or residual waters are generated by human activity during the construction of the Tourism Corridor. The volume that is generated will depend on the number of workers and the availability of toilets in the different work areas.

Portable toilets will be contracted from a specialized company (local supplier), which will clean the contents with the required frequency in order to keep them in acceptable sanitary conditions. 1 toilet for every 10 workers must be installed.

The installation of a septic tank for the management of greywater and soapy water (and sewage in case of not having portable toilets), from temporary facilities and workshops is recommended. Final disposal of this waste requires hiring an authorized company.

Table 8.3 presents a general list of hazardous liquid residues generate during project activities and the proposed strategies for the management of each kind of residue:

Table 1.4. Hazardous Liquid Residues and Management

Material Waste Flow	Description	Main Source	Elimination Options	Considerations/ Important Observations

Material Waste Flow	Description	Main Source	Elimination Options	Considerations/ Important Observations
Used oils	Lubricants, oils, hydraulic oil, brake fluid, etc. Equipment/Vehicle refrigeration agent	Equipment and vehicle maintenance	Reuse/Recycle off-site	Treat as hazardous material. Collect at an appropriate location; remove off-site by an authorized company. Return to provider if possible.
Oily water	Water and hydrocarbons	Oil/spills	Recycle off-site	
Solvents / Degreasers	Paint, thinner, acetone	Construction activities	Recycle off-site Treatment or Elimination	Treat as hazardous material. If practical, use low impact degreaser. Elimination by an authorized company.
Paints and covers	Paint residues resin covers	Construction Areas	Reuse/Treatment Elimination Off-site	Treat as hazardous material. Consolidate and store for site maintenance purposes or send off-site for final disposal.

Source: The Consultant

Used Oil

Used oil is considered a hazardous material and must be collected in oil collection tanks, with correctly labeled safety tags. The tanks must be located in protected areas within the hazardous material storage facility, which must have warning signs. For delivery to the authorized company. The mixing of used oil with antifreeze substances paint residues, degreasing solvents, synthetic lubricants, or any other liquid except water is forbidden.

Solvents

Tanks containing used solvents require rigorous management and strict content control. The following requirements must be observed: the tank must be in good conditions, be hermetically sealed, contain visibly updated labels, place barrels within protective containers, before recollection by authorized company.

Paints

Paints constitute an important source of hazardous wastes. Partially used cans must be grouped per type or eliminated. Paints and solvents of different kinds should not be mixed. Instrument like brushes, paint rollers and rods can be discarded if dry.

Storage of Hazardous Wastes

Adequate containment must be provided by levees or walls with a capacity of over 110% volume than the largest tank, and must be made of waterproof and chemically resistant materials. The containment area must have a reserve capable of containing an unusual 24 hr. storm event every 25 years, apart from having sinks equipped with the necessary pumps to collect and drain pluvial precipitation. Containment will be designed to prevent contact between incompatible materials.

For containers with lesser volumes, there must be anti-spill trays to avoid placing containers directly on the ground. The anti-spill trays must have a containment capacity of 110% the containers volume. They must be located on stable and level surfaces for storage and use.

Any bottle cylinder or hazardous material container must be labeled indicating content and hazard level.

Material Safety Data Sheets (MSDS)

Material Safety Data Sheets (MSDS) must be provided by the supplier for all hazardous material and will be updated as soon as new materials are added to unify criteria.

There must be a record of all MSDS for al hazardous substances used or produced during project activities.

FINAL DISPOSAL

An authorized company will be hired for final disposal of this type of waste. The company must have a valid Environmental License that allows providing this service and compliance to National Regulations.

1.4 Risk Prevention Plans

1.4.1 Identification of risks associated to Project Activities

In order to develop the emergency and contingency plans, it is necessary to identify the possible risks associated to the Tourism Corridor project development.

An environmental risk is the possibility of damage or catastrophe in the environment due to a natural phenomenon or human action.

During the construction of the Tourism Corridor San Pedro Sula-El Progreso –, some activities may represent risk situations, some activities may present risk to the environment, infrastructure and equipment.

The evaluation of inherent environmental impacts and risks during the different phases of the project considered the activities to be executed and the associated risks; the analysis focused on the kinds of risks for which, in case of an incident, activation of Emergency and Contingency Plan is required.

Considering the nature of the project there was a general evaluation of the project activities and associated risks, whether physical, biological, or chemical. It also includes safety and hygiene measures that must be enforced at all times to prevent affecting workers health.

The identified physical risks include workplace accidents, risks associated to the use of mechanical equipment (rollovers, traffic accidents, and run overs), risk of falling, risk of fire, risk of floods, earthquakes, among others. The spill of fuels constitutes a chemical risk, while biological risks include animal/insect bites and/or stings, animal attacks or contact with poisonous and/or allergenic vegetation.

The following is a list of measures to be implemented to avoid accidents during project development:

1.4.1.1 Physical Risks

The following physical risks could affect adequate functioning of the Project:

Risk of Workplace Accidents

Many of the construction Project activities present risks for workers. In order to prevent workplace accidents, the construction company must have a Manual of Construction Safety Regulations and an Occupational Security Regulation.

It must at least contemplate the following measures:

- **Accident prevention responsibility level:** every worker is responsible of following the Safety Regulations, consequently looking out for his/her and his/her coworker's safety.
- **Safety training:** all workers must receive a safety, health and hygiene induction before start of labors; as well as routine training on executed activities and safety regulations.

- **Personal Protection Equipment:** the company must provide personal equipment protection which every worker is required to use.
- **First-aid:** the company must train the workers selected for first-aid duties.
- **Lighting:** the company must provide sufficient lighting for nighttime activities.
- **Air pollution and noise prevention and protection:** the company must provide implements for auditory protection and to avoid the threats of polluting agents and dust, such as work shoes, helmets, eye protection, auditory protection, safety belts, and respirators, among others.
- **Fires:** the company must provide necessary equipment for initial fire containment and workers must follow the corresponding preventive measures.
- **Signals:** the company must develop a policy of installing signals to indicate possible risks.

- **Security Supervisor:** the company must include in its organization an Industrial Security, Health, and Hygiene Department, previously approved by the developer in compliance with current regulations and contractual specifications.
- Observe Honduran regulations regarding Industrial Security, Health, and Hygiene.
- The concessionaire must count with ambulance services (internal or external), as well as first-aid on site.
- Train workers on good construction techniques, occupational safety guidelines and the mandatory use of safety implements.
- The concessionaire must place the procedures manual within the reach of every worker, in case of accidents. The manual must include accident management and the sanction for regulation non-compliance.

As a consequence of theses training-awareness actions, the whole Project area must have safety and caution signals to avoid contingencies; this action must continue throughout the project duration.

The Contingency Plan must be followed to avoid bodily injuries and traffic accidents, and traffic accidents Vehicle driving policies for staff must be strictly enforced during project construction.

Flood Risks

Some areas within the projects are prone to flooding: Considering this risks the concessionaire must:

- Train workers on issues related to flood risks.
- Draft an Evacuation Plan per area which must be updated at least every 6 months.
- Identify areas prone to flooding and instability.
- Suspend activities when and incident occurs.
- Identify shelter areas.

Fire Risks

In order to guarantee effective protection against fire risks, the concessionaire must comply with the following measure amongst others:

- Count with the required fire extinction and prevention equipment. Guarantee access to firefighting equipment located in accessible places with clear signals.
- Provide a 20 lb ABC type fire extinguisher within a radius of 15 mts. from any site that holds more than 25 lts of flammable fluid or 3 kg. Or more of flammable gases are used in the site.
- Smoking is strictly forbidden in all areas that constitute a fire risk. Clear signs must be place in these areas.

Electric Risks

In this type of Project this kind of accident is unlikely, however, it must be considered. The concessionaire must:

- Hire qualified staff for electric work. Use of tools in proper condition.
- Any areas where cabling is installed superficially or buried must be covered. The cabling must be isolated.
- Spatially locate the area where cabling is installed superficially or buried.

Use of Mechanical Equipment

This type of risk is focused on the different equipment used during the different stages of the project and the possibility of running over workers. This risk is extended to workers who transport supplies and materials.

These are some preventive measures for staff that operates mechanical equipment:

- Operation of machines and tools by qualified personnel only (verify certification). Use of equipment and machinery in good condition and with proper protection (if applicable).
- Any employee that operates heavy equipment must be aware of the functions and limitations of the equipment. He/she must also be aware of the equipment's regulation within the work site.
- Count with the correct extinguishers for the equipment being used.
- Establish an early warning system before mobilizing equipment and activating the alarm when reverse maneuvers are executed.
- Delimit the safety zones for vehicle and machinery circulation. Vehicles operating within the construction site must not exceed 10 kms/h.
- Dump trucks carrying material or wastes to and from the project area must not be overloaded.
- Workers must be trained on the Honduran Transit Law regulations.
- All trucks must have a radio communication system for fluid communication in case of emergency.
- Control posts must be set up in different locations to really information about material transport.
- Safety cones and flashing signs must be placed in dangerous areas.

1.4.1.2 **Chemical Risks**

These risks are presented when the workers manipulate chemical substances incorrectly, affecting worker's health through physical contact or inhaling hazardous fumes. These are some measures to be considered:

- The concessionaire must observe strict safety measures in the temporary facilities to avoid spilling of bituminous material, fires, as well as accidents.
- Storage areas must be kept free of undergrowth, debris, and any other flammable material that does not require storage.
- Train the staff regarding the appropriate handling of chemical substances and the personal protection equipment to be used.
- Provide the staff with the required personal protection equipment for the handling of chemicals according to the MSDS.
- The work sites must be equipped with bottles for eye-washing and water for situations requiring safety washing or rinsing.
- Maintenance activities in the work sites must be kept to a strict minimum. If maintenance activities are executed in the work sites, it must be on surfaces that have some sort of temporary waterproofing.
- Spilling lubricants, fuels, or other hydrocarbon products on the soil, surface water, and water collection systems is strictly prohibited.
- Containment vats for hydrocarbon products must be designed to hold 110% more than the volume of the largest tank.
- If maintenance is required for equipment that may drain fuels or lubricants, containers must be used to collect these fluids, these containers must be kept close to the spill containment site.
- Waters contaminated by petroleum products cannot be discharged without separating the contaminating agents, which implies the installation of oil and petroleum separators.
- Any vehicle used for transport and/or delivery of liquid fuel or other flammable substance must have at least one portable fire extinguisher, ABC type, 20 lbs minimum capacity

1.4.1.3 **Biological Risk**

The biological risks include snake and other animal bites, as well as insect bites. This condition carries greater risk due to the clearing of vegetation activities to be executed in the area of direct influence. There is also the risk of contact with poisonous, allergenic and or irrigative vegetation. The following preventive measures must be applied in these cases:

- Require that the staff use adequate clothing to minimize skin exposure to insects and animals.
- Prohibit staff to unnecessarily disturb local wildlife.
- Train the staff on the dangers of working in this kind of areas and the pertinent preventive measures.
- Provide staff with enough insect repellant and anti-bite gloves.
- Prohibit staff to touch or collect vegetation in the work areas.
- Provide gloves for those activities where it is inevitable to have direct contact with vegetation.

1.4.2 **Security Training and Education**

Training is an essential element for the success of the prevention plan, the concessionaire commits to:

1. Instruct each employee to recognize and avoid unsafe conditions and the regulations that apply to their work environment to control or eliminate any danger or exposure to diseases or injuries.
2. Instruct employees required to handle or use hazardous materials. This training must focus on safe use and handling, as well as potential dangers, hygiene and the required measures for personal protection.
3. Guarantee that employees comply with regulation concerning tight or closed spaces, instruct them on the dangers involved, the necessary precautions and the use of required protection and emergency equipment. The concessionaire must comply with any specific regulation that applies to working in dangerous or potentially dangerous areas.
4. The company must keep records on workplace accidents and diseases in the site where workers usually report for duties.
5. The file must include:
    a) A record of bodily injuries and workplace accidents
    b) Supplementary records for each accident or disease.
6. Records must be updated and made available to authorized government representatives or other authorities.

1.4.2.1 **Personal protection equipment**

Supervisors must ensure that employees have the appropriate personal protection equipment and the workers are required to use them during any operation that implies exposure to dangerous, the equipment includes:

1. Feet Protection. Employees exposed to potential risks must use safety footwear. No canvas shoes or sandals are allowed in the construction site.

2. Head Protection. Employees that work in areas where there is risk of injuries due to flying objects, electrical shocks or burns must wear protective helmets.

3. Ear protection.

a) Whenever it is not feasible the reduce noise levels or periods of exposure, ear protection must be provided.
b) Inner ear protection devices inserted in the ear canal must be measured or prescribed individually by competent technicians. Cotton by itself is not acceptable and a protection measure.

4. Face and eye protection.

a) Employees must be provided with protective equipment for face and eyes, when machines or operations present a potential risk of eye or face injuries, resulting from exposure the chemical or physical agents.
b) Employees who require the use of corrective lenses must be protected by one of the following kinds of visors

-Visors with lenses that offer optic correction
-Visors that can be used over corrective lenses without altering visual adjustment
- Visors with corrective lenses mounted behind the protective glass.

5. Safety Vests

All company staff and sub-contractors must wear their respective reflective vest regardless of the job they perform.

Rules for Order and Cleanliness

The main concern of all construction works must be to focus on maintaining proper order and cleanliness in their work area to prevent environmental impacts. However, these "order and cleanliness" activities must be planned at the start of operations and be periodically verified until project completion.

3. Work areas must be free of wastes and debris of any kind for the duration of activities.
4. In workshop and storage areas, where activities and operations occur in short periods of time, debris and leftover material must be cleared from the work area as it produces fire risk.
5. The indications of the Waste Management Plan include guidelines for the management of solid, liquid, and hazardous wastes; these indications apply here as well.

1.4.2.2 **Fire Prevention and Protection**

The concessionaire is responsible for the development and maintenance of an effective fire protection and prevention plan in the work sites, during all phases of construction of the Tourism Corridor: Tranche San Pedro Sula- El Progreso

Fire Protection

To guarantee effective fire protection the company must comply with the following:

4. Guarantee the availability of fire prevention and extinction equipment.
5. Keep access to firefighting equipment clear at all times.
6. Locate firefighting equipment in accessible places and signals.
7. Inspect firefighting equipment periodically and maintain it in operable conditions. Defective equipment must be replaced.
8. Train and equip a fire brigade team to assume adequate protection of portables and human lives.
9. Provide a 20 lb ABC type fire extinguisher within a radius of 15 mts. from any site that holds more than 25 lts of flammable fluid or 3 kg. or more of flammable gases are used in the site.
10. Prohibit the use of carbon tetrachloride extinguishers and other toxic volatile liquids extinguishes.

Fire Prevention

To achieve a safe management of hazardous liquids, fuels, and flammables the concessionaire must

6. Ensure that only approved containers and portable tanks are used for storage and handling flammable and combustible liquids. Metal safety containers must be used for handling and use of flammable liquids in quantities greater than a gallon. The previous exception must not be applied to flammable liquid of high viscosity which must be handled in their original containers. For less than a gallon, only the original container or metal safety cans must be used for storage and handling of flammable liquids.
7. Keep storage areas free of undergrowth, debris and other flammable materials that do not require storage.
8. Provide at least one 20 lb ABC type fire extinguisher within a distance of 5 and 20 meters from any site that holds more than 25 lts of flammable fluid or 3 kg. or more of flammable gases are used in the site.
9. Provide at least one portable fire ABC type extinguisher with capacity of 20 lbs or more for every tank truck and other vehicles used for the transport and/or delivery of fuels and other flammable liquids.
10. Prohibit smoking and the lighting of bonfires in areas used for fueling, and fuel dispensing.
11. Ensure that striking and legible signs indicate the non-smoking rule.
12. Ensure that all operators turn off their equipment's engine when fueling and not using their cell phones when fueling.

1.5 Contingency and Emergency Plan

Attention to foreseen risks should preferably be preventive; however, in case of accidents of any kind, there must be a Contingency Plan that allows responding to the described risk situations.

The main objective of the Contingency Plan is to preserve the life, health, and integrity of the project's staff and prevent or minimize soil and surface water contaminations and preserve the quality of the environment in case of emergency.

To achieve these objectives the contingency plan must include various critical elements such as major and minor accident response procedures, spill containment procedures to prevent contamination of water and soil and, in case of a spill, have the necessary measures to clean and mitigate, and attention procedures for fire outbreaks and major fires. In terms of procedure, there are routine visual inspections and planned maintenance to reduce the potential for oil and other materials spilling on the soil or water.

The following is a list of the minimum contingency measures to be adopted:

1. Work sites must have an adequate alert system, to promptly warn the staff and give first-aid to injured people;
2. There must be a safe and efficient communication system with the nearest fire department in case of emergencies out of the company's control:
3. Work sites must be equipped with a radio or phone, first-aid kits, and qualified staff; there must be a working vehicle in case of emergency at all times; there must be equipment to extinguish fires and control explosions and fuel spills.
4. In case of spills or accidents that might affect surface waters, the company must have trained staff and proper equipment and materials to take quick and effective measures.
5. All work sites must have proper equipment to remove landslides, rock movements or provide assistance in case of floods.

The Plan activities obey the following order of priorities:

- Protection of human life

- Protection of human settlements (villages)
- Prevention of contamination in bodies of water (aqueducts, rivers, streams, lakes)
- Prevention of contamination in wildlife areas

The construction company is responsible of managing its own risks, as well as prevention and response to its emergencies. In this context, the construction company will always be the main and sole responsible for the safety and health of its employees as well as the activities they develop.

Before the start of operations, the construction company must establish the necessaries agreements with the Fire Department, the National Police and emergency teams the might be required in case of a contingency, with the objective of establishing mechanisms of notification and access to the corresponding sites within the work areas in case of requiring support during emergencies. Local hospitals and clinics must be informed about the properties of the hazardous wastes and materials used by the project and the type of wound or decease that may be caused by fires or explosions.

Table 8.4 presents a list of authorities that must be included in the Contingency Plan. This list includes telephone numbers in case of an emergency.

Table 1.5. Contacts for the Preparation of Contingency Plan

ENTITY	PHONE NUMBER
Transit Police	222
Preventive Police	199
Fire Department	198
Honduran Red Cross	195
Environmental Specialist	
Occupational Safety Specialist	
COPECO (Regional 1 and Regional 2)	2553-6561 / 2553-6562 2442-5820

1.5.1 **Emergency Equipment**

The company must prepare a list that details the type, amount and location of the equipment to be used for storage, containment, and cleaning of the work areas and construction sites. This list will include the procedures and impact minimization

measures to be used when responding to a spill. The selected, measure and mitigation equipment must adjust to the characteristics of the affected terrain as well as the types and quantities of material that could potentially be spilled. The following equipment, at least, for spill containment and cleaning must be provided:

d) Absorbents such as pads, rags, and burlap for containment and collection of spilled liquids.

e) Commercial equipment for spills (or its functional equivalent) which are prepackaged with a wide variety of absorbents for small and large spills;

f) Shovels and backhoes for the excavation of contaminated materials;

g) Containers, deposits and temporary storage bags to clean and store contaminated materials

1.5.2 Equipment Maintenance and Inspection

The projects security supervisor will inspect and require maintenance of the fueling and lubricant equipment following a strict program. The company must present written documentation on the methods employed and executed activities. All containers, valves, pipes and hoses must be regularly examined to evaluate their general condition. This evaluation will identify any sign of wear that could cause a spill, as well as leakage signals (e.g. accumulated fluids). Leaks must be corrected and repaired with the utmost diligence

1.5.3 Equipment Failures

Spills may be produced as a consequence of unpredictable events like the rupture of fuel tanks, radiators and hydraulic lines. Devices with an absorption capacity of up to 20 liters can be accommodated under them operator's seat, in construction and land movement equipment.

Construction staff will be trained on the operation and maintenance of the equipment, to prevent accidental discharge or fuel, oil or lubricant spills. The staff must also be aware of loos, dispositions and regulations of environmental contamination control that apply to their jobs. Training sessions will be held with crews about the prevention of spills, these sessions must be frequent enough to guarantee learning of spill prevention measures.

Containment is the immediate priority in case of a spill; if possible, the spill must be retained in the site of occurrence.

Cleaning procedures must begin immediately upon spill containment. Under no circumstance will containment equipment be used to store contaminated material. The company must have a list of the equipment that must be used to facilitate cleaning and minimizing damages to the environment.

In case of a spill, the project must notify the emergency response team, the environmental specialist and competent authorities.

1.5.4 Action Plan

Plan The following Action Plans must be followed step by step, and in order, to respond to emergencies related to the risks identified in the Risk Prevention Plan.

1.5.4.1 General Plan

1. The employee that detects the emergency must immediately inform the Area Supervisor and the Project Supervisor.

a. Project Supervisor arrives to the site of the emergency to assess the situation and coordinate pertinent actions with the assistance of the Area Supervisor

2. If the Project Supervisor considers the situation can be resolved with internal resources, he proceeds to activate the Action Plan for the specific situation.
3. If the Project Supervisor considers the situation cannot be resolved with internal resources, he proceeds to notify the Security Supervisor and/or the Environmental Specialist.

   a. The Security Supervisor and/or the Environmental Specialist coordinate activities with competent authorities and other external resources to determine the actions needed to resolve the emergency.

   b. The Security Supervisor and/or the Environmental Specialist proceed to apply provisional measures until the arrival of external help (as long as the safety of the staff is not compromised).

   c. The Security Supervisor and/or the Environmental Specialist, if necessary proceed to evacuate the facilities.

   d. The Security Supervisor and/or the Environmental Specialist, upon the arrival of external help, provide the necessary information to resolve the emergency.

1.5.4.2 **Fuel or Lubricant Spill**

1. The employee that detects the emergency must immediately inform the Area Supervisor and the Project Supervisor.
2. The Project Supervisor arrives to the site of the emergency to assess the situation and coordinate pertinent actions with the assistance of the Area Supervisor
3. If the Project Supervisor considers the spill can be resolved with internal resources he proceeds to act in accordance to the subsequent items, if this is not the case he must then precede to point 4 of the General Plan.
4. The source of the spill must be immediately stopped or cut.
5. A fire extinguisher must be transferred to the site of the spill.
6. The project supervisor notifies the Security Supervisor and/or the Environmental Specialist of the incident and provides preliminary information about its magnitude.

   a. The Security Supervisor and/or the Environmental Specialist, evaluates the need to coordinate actions with external resources and proceeds to it.

   b. The Security Supervisor and/or the Environmental Specialist, depending on the incidence magnitude, evaluate the need of transferring to the site to provide support, to the Plan´s activities.

   c. The Project Supervisor coordinates spill containment using, depending on the magnitude, of containment barriers in ditches and drainages and the use of absorbent materials.

   The Security Supervisor and/or the Environmental Specialist coordinate the tasks of cleaning up the spill.
7. The Security Supervisor and/or the Environmental Specialist draft the corresponding report and submit it to the developer or Project Manager.
8. The Security Supervisor and/or the Environmental Specialist make sure that the equipment and material used for spill containment that are restituted to their storage.
9. In the case of spills greater than 50 gallons, the project manager proceeds to inform competent authorities about the situation and executed actions within a 24 hour period after the incident.

1.5.4.3 **Fire Outbreak**

1. The Security Supervisor and/or the Environmental Specialist ensure that the equipment use for extinction is restituted in its storage place. The employee that detects the emergency must immediately notify the Area Supervisor and the Project Supervisor who must go to the site of the incident.
2. The employee that's detects the emergency takes the nearest extinguisher, foam tank or hose and proceeds to extinguish the fire outbreak; if he/she does not know how to operate the extinction system he/she must request help from other onsite staff.
3. Once the fire outbreak has been controlled, the project supervisor notifies the Security Supervisor and/or the Environmental Specialist about the incident.
4. The Security Supervisor and/or the Environmental Specialist drafts the corresponding report and submits it to the developer or Project Manager.
5. The Security Supervisor and/or the Environmental Specialist makes sure that the equipment and material used for extinction are restituted to their storage.

1.5.4.4 **Fire**

1. The employee that detects the emergency must immediately inform the Area Supervisor and the Project Supervisor.
2. The project supervisor notifies the Security Supervisor and/or the Environmental Specialist of the incident and provides preliminary information about its magnitude.

   a. The Security Supervisor and/or the Environmental Specialist proceeds to coordinate assistance with the nearest Fire Department and goes to the site.

The Security Supervisor and/or the Environmental Specialist proceed to notify the Developer or the Company Manager about the incident.

3. The Project Supervisor considering the safety pf the staff, proceeds if possible, to organize extinction activities while the Fire Department Arrives
4. Depending on the magnitude of the incident the Security Supervisor and/or the Environmental Specialist will assess the need of site evacuation and await the arrival of the fire department.
5. Once the emergency has been contained the Security Supervisor and/or the Environmental Specialist drafts the corresponding report and submits it to the Developer or Project Manager.
6. The Security Supervisor and/or the Environmental Specialist ensure that the equipment used for extinction is restituted to their storage location.
7. The Project Manager proceeds to inform the proper authorities of the situation and the applied containment measures, within 24 hours of the incident.

1.5.4.5 **Minor Workplace Accidents (concussions and lacerations)**

1. The employee that detects the emergency must immediately notify the Area Supervisor or the Project Supervisor and the First Aid Coordinator.
2. The employee that detects the emergency retrieves the first aid kit and provides the care that the injured worker requires.
3. The First Aid Coordinator goes to where the injured worker is located, assesses provided care and determines the need or not of sending the injured worker to a clinic for specialized attention.
4. If the need for specialized attention is acknowledged, the First Aid Coordinator coordinates the Security Supervisor and/or the Environmental Specialist the transfer of the affected person.
5. Once the emergency has been contained the Security Supervisor and/or the Environmental Specialist, in collaboration with First Aid Coordinator drafts the corresponding report and submits it to the Developer or Project Manager.
6. The Security Supervisor and/or the Environmental Specialist ensure that the materials from the First Aid Kit are restituted.

1.5.4.6 Minor Workplace Accidents Related to the Manipulation of Hazardous Substances

1. The employee that detects the emergency must immediately inform the Area Supervisor and the Project Supervisor and the First Aid Coordinator.
2. The employee that detects the emergency retrieves the First Aid Kit and the safety sheet (MSDS), of the chemical substance involved in the accident.
3. The employee that detects the emergency proceeds to administer first aid according to the instructions defined in the safety sheet of the chemical substance.
4. The First Aid Coordinator (who reports to the Security Supervisor), goes to where the injured worker is located, assesses provided care and determines the need or not of sending the injured worker to a clinic for specialized attention.
5. If the need for specialized attention is acknowledged, the First Aid Coordinator coordinates the Security Supervisor and/or the Environmental Specialist the transfer of the affected person. The safety sheet (MSDS), of the chemical substance involved in the accident, must be brought and given at the hospital.
6. Once the emergency has been contained the Security Supervisor and/or the Environmental Specialist, in collaboration with First Aid Coordinator drafts the corresponding report and submits it to the Developer or Project Manager.
7. The Security Supervisor and/or the Environmental Specialist ensure that the materials from the First Aid Kit are restituted.

1.5.5 Equipment and Material for Emergency Attention

The following is a list of equipment and material that must be available in the worksite during the implementation of the various Action Plans.

Once the work areas have been defined, during construction the concessionaire must prepare diagrams of the site that show the location of equipment and material for emergency control, as well as the minimum quantities that must be kept in stock.

During the construction phases of the highway the following equipment and materials must be kept on site:

- Portable Extinguishers
- Foam Fire Extinguishers

- Barriers for containment of major spills
- Barriers for containment of minor spills and absorbent pads
- Cleaning products for small fuel spills
- First Aid Kit
- Communications equipment
- Personal protection equipment for cleaning activities, including rubber and leather gloves, protective lenses, protective clothing.
- Shovels, machetes and picks.

Large plastic bags

- Flashlights

The inventory of these equipment and materials must be verified monthly.

Principle 10 of the United Nations Declaration on Environment and Development, establishes that environmental issues "are managed in a better way", with the participation of all interested citizens.

The Citizen Participation Plan has the following objectives:

1. Explain the project's characteristics to the population in the project's area of influence.
2. Establish dialogue and communication messages with the community benefitted by the Project.
3. Listen to the communities' opinions and perceptions regarding the project's potential impacts.
4. Learn the opinion of institutions and other key stakeholders through interviews.

The Citizen Participation plan has been designed to maintain effective communication in the communities within the area of socioeconomic influence and Serna, the Developer (SOPTRAVI) and the Concessionaire:

• SERNA (and/or Environmental Management Units → The Concessionaire → SOPTRAVI, the Environmental Management Unit of SOPTRAVI, through the unit chief who will serve as liaison.

• Community → The Concessionaire →SOPTRAVI, through the proper authorities only with strictly administrative problems.

• Community → The Concessionaire → SOPTRAVI, through the SOPTRAVI Environmental Management Units, when dealing with environmental issues or social complaints. The Environmental Management Unit will notify SERNA (Natural Resources & Environment Secretariat) about the object of the quarry or the existing problem.

• The Concessionaire will notify SERNA (Natural Resources & Environment Secretariat) and/or Environmental Management Units, about events related to the units as construction advances and coordinates follow-up inspections to the Project.

In all of these cases communication must be in writing and delivered directly to the corresponding offices. In this sense, the concessionaire should establish an office of citizen participation or community relations, which must be located in an area close to the project but accessible, or within the field offices, this office must have qualified personnel (social workers or sociologists) who will be responsible to respond and receive any doubt, complaint or information request from nearby or neighboring communities.

The concessionaire must establish a mechanism to receive complaints, through a single window or a toll free telephone number, which must be answered by the same qualified staff in charge of the previously mentioned citizen participation office.

1.5.5.1 Labor Hiring Program

Considering that the new program will require skill and unskilled labor, it is recommended that the concessionaire, through its human resources office, organize a job fair according to the projects labor needs. This job fair must be promoted through massive media three months before the start of project operations.

The concessionaire´s human resources office must receive resumes of possible candidates through a single window functioning during the projects execution, in order to involve or incorporate people from communities from within the area of socioeconomic influence to labor for which they are qualified or they can join new workers training programs, in collaboration with educational institutions, the Ministry of Labor and Social Security and the Honduran National Employment Service.

Finally, candidates who are duly selected and have enough qualifications to execute the required labor will be formally linked to the project with the requirements demanded by law and protected by the National Labor Regulations.

10.1.1.1 Institutional Strengthening

Considering that within the Environmental Management Program there will be an Environmental Surveillance and Control Program that implies the development of a system of environmental quality monitoring, the concessionaire in collaboration with SOPTRAVI, will hold project advanced meeting with involved institutions to familiarize them with project execution phases and facilitate their job of monitoring and follow-up.

10.1.1.2 Elements to Consider in the Citizen Participation Plan

Table 8.5, presents the elements and measures to be contemplated for the development of the Citizen Participation Plan:

Table 1.6. Citizen Participation Plan Evaluation Elements

No	Element	Measures
1	Maintain a citizen participation office managed by qualified staff to receive any doubt, complaint, or information request from the communities with the area of socioeconomic influence through a single window or a toll-free telephone line.	Record of visits, complaints, and/or requests received
2	Hold a job fair to incorporate community members from the area of socioeconomic influence to the project activities and maintain a single window to receive candidate applications during the project execution.	Number of person to be hired, by gender and age
3	Establish an agreement (with education institutions), or professionals for training on different issues.	Signing and execution of an agreement between the concessionaire and the educational institution or the professional trainers and SOPTRAVI, for an estimated period of time.

No	Element	Measures
4	Incorporate local schools identified in the area of influence to an environmental education Project.	Preparation of an environmental education program

Source: The Consultant

1.6 Environmental Recovery and Abandon

Environmental recovery will take place once construction activities have ended (e.g. installation and operation of temporary facilities, extraction of material from stone quarries, use of water sources, etc.) in those sites that require it and will not be used again. In this sense, the Environmental Recovery Plan must be presented in phases, as project stages end, with a corresponding Closure Plan.

The objective of environmental recovery is the restoration of adequate conditions for the restoration of natural biological communities in the work sites (natural recovery or natural revegetation). Environmental Recovery includes the following tasks:

- Reshaping of the pre-construction terrain profile
- Erosion control
- Revegetation
- Reforestation, if necessary

The Environmental Recovery Plan must be applied to all areas not occupied with project activities and which can be recovered such as temporary facilities, borrow pits, warehouses, storage sites, parking spaces, among others. The removal of temporary facilities and machinery requires removing all surface and underground infrastructure (e.g. aqueduct pipes, sewage or drainage systems, viaducts, cabling, etc.). Once all infrastructure has been removed environmental recovery or restoration must proceed, which must include only native species for reforestation and revegetation.

Recovery activities must be monitored constantly to ensure achieving the objective without leaving behind environmental liabilities. The concessionaire is responsible for the environmental recovery plan. To this effect, the concessionaire must present its Closure Plan to the SOPTRAVI Environmental Management Unit at least six (6) months before removing any project segment. The plan must detail demobilization, cleaning, and restoration activities according to initial conditions.

1.7 Monitoring and internal evaluation of the Environmental Management Plan and Individual Management Plans

1.7.1 Objective

The objective of the Environmental Management Plan is to document the degree in which preventive and mitigation actions outlined in the Environmental Management Plan achieve their objective of minimizing negative impacts associated with the project's construction.

In order to document and prove achieved objectives, it is necessary to collect and report key information that show how environmental variables have behaved, when corrective were executed and their degree of affectivity to prevent, mitigate, and compensate identified environmental effects.

1.7.2 **Special Monitoring Aspects**

This section summarizes the main environmental variables that will be monitored during the project's construction, in order to gather enough information to evaluate environmental effects due to its development. This monitoring is independent from the environmental inspection required to guarantee compliance of each of the mitigation measures proposed in this plan.

A summary of monitoring activities is included in table 8.6 to facilitate reading and approval by the environmental specialist and the pertinent authorities.

Table 1.7. Project Monitoring Plan

Nº	Impact	Medium	Mitigation Measures	Monitoring Activities	Periodicity	Regulation	Responsible
1	Contamination of Surface water during the construction of bridges, accidental fuel spills or sedimentation due to excavation. Effects on aquatic fauna	Ac and Bio	• Management Program for Liquid and Solid Wastes • Contingency program: Prevention and Control of Hazardous Substance Spills (oils, fuels, paints, etc.)	• Surface water quality monitoring in main waterways during the construction of every bridge upstream and downstream of the worksite. • Monitoring will take place through direct field measurements and lab analysis of sediment and water samples. • The water analysis includes parameters for phT°, biochemical oxygen demand, dissolved oxygen, suspended solids, fecal matter, greases and oils and hydrocarbons.	Surface water analysis will take place in main waterways during the construction of bridges or every three months if determined by SERNA or the Environmental Management Units	**Water Quality**[10] • Primary regulation for Environmental Quality and quality levels for continental waters for recreational use with and without direct contact. DE. 75 de 2008. Panamá. ▪ **Medium Risk:** Fir for recreation with and without direct contact. Continental waters that allow recreational activities that do not imply prolonged exposure with the liquid nor complete skin and mucous membranes immersion. It involves only recreational activities where limbs are moistened such as sailing and fishing. • Project draft that dictates environmental quality regulations for natural waters. ▪ **2 C Class Waters: Waters for:** a)Human consumption with conventional treatment (coagulation, flocculation, sedimentation, filtering and disinfection) b) Risk of contamination of vegetables consumed by humans after processing or parks, gardens and fields and sports when there is direct contact. c)Artisan fishing d) Risk recreation according to norms. e) Cattle watering. • World Bank recommended standards Limit Values for Natural Water PARAMETER / D.E 75 DE 2008 Mean Risk / Class 2 C / Limit BM - IFC PH: 6.5-8.5 / 6.0 – 9.0 / - Suspended Solids (mg/L): <50 / - / 50 Turbidity (NTU): 50-100 / <100 / - Dissolved oxygen (mg/L): 6-7 / >5 / - Biochemical oxygen demand (mg/L): 3-5 / <5 / <50 Greases and oils (mg/L): <10 / <10 / 10 Hydrocarbons(mg/L): 0.05-2.0 / <50 µg/L / - Fecal matters (UFC1/100 mL): 251-450 / <1000 / -	The Concessionaire Environmental specialist Tourism Corridor Supervision

[10] Since there is no Honduran Regulation, it is proposed to use World Bank and Panama City regulations which include: Primary regulation for Environmental Quality and quality levels for continental waters for recreation and no direct contact use. DE. 75 de 2008 y the Regulation Project to dictate the environmental quality for Natural Water.

<table>
<tr><th>Nº</th><th>Impact</th><th>Medium</th><th>Mitigation Measures</th><th>Monitoring Activities</th><th>Periodicity</th><th>Regulation</th><th>Responsible</th></tr>
<tr><td>2</td><td>Deterioration of quality or air contamination

Foul odor and dust generation</td><td>At</td><td>• Preventive vehicle and construction equipment maintenance program (adequate mechanical state is required)

• Vehicular Emissions Compliance Control Program

• Dust and Foul Odor Emission control Program</td><td>• Air quality monitoring must be done every six months in 4 control points located in the tranche (sensitive receivers)

• Site selection must consider the location of the most sensitive receivers, the activities of most impact on air quality; climatic variables that might influence the effects of dispersion and possible barriers or natural area conditions.

• Adequate maintenance of heavy equipment

• Maintenance Record</td><td>Every six months or according to the pertinent authority.

In 4 sites or according to the pertinent authorities as established in regulations</td><td><u>Air</u>: Since there is no local regulation for air quality control, it is suggested to use the World Bank and EPA guidelines.

World Bank parameter guidelines NO^2, SO^2 y PM_{10}, y EPA 2003 para CO
<table>
<tr><th>PARAMETER</th><th>PERIOD</th><th>MAX LIMIT</th></tr>
<tr><td>NO2 – World Bank 2007.</td><td>Annual</td><td>40 µg/m³</td></tr>
<tr><td></td><td>1 hour</td><td>200 µg/m³</td></tr>
<tr><td>SO2 – World Bank 2007.</td><td>24 hours (guide value)</td><td>20 mg/m³</td></tr>
<tr><td></td><td>10 minutes [11]</td><td>500 µg/m³</td></tr>
<tr><td>CO - EPA 2003. National Ambient Air Quality Standards.</td><td rowspan="2">1 hour</td><td>9 ppm</td></tr>
<tr><td></td><td>10 mg/m³</td></tr>
<tr><td>PM 10 – World Bank 2007.</td><td>24 hours</td><td>50 µg/m³</td></tr>
</table>
Regulation for Control of Contaminating Gases and Smoke Emissions from motor vehicles</td><td>The Concessionaire Environmental specialist Tourism Corridor Supervision</td></tr>
<tr><td>3</td><td>Impact to worker's health</td><td>SE</td><td>• Dust and Foul Odor Emission control Program</td><td>• Monitoring of breathable particles</td><td>Depending on the number of workers and exposure
Every six months</td><td><u>Total Breathable Particles</u>
Occupational Safety and Health Administration" (OSHA/ USA, max value is 5 mg/m³</td><td>The Concessionaire Environmental specialist Tourism Corridor Supervision)</td></tr>
</table>

[11] Según estudio de la OMS, se recomienda que no se supere una concentración de SO_2 de 500 µg/m³ durante periodos con una duración media de 10 minutos.

<table>
<tr><th>Nº</th><th>Impact</th><th>Medium</th><th>Mitigation Measures</th><th>Monitoring Activities</th><th>Periodicity</th><th>Regulation</th><th>Responsible</th></tr>
<tr><td>4</td><td>Increase in noise levels</td><td>At</td><td>• Preventive vehicle and construction equipment maintenance program

Work Schedule: avoid as much as possible work during night hours or rest periods; if unavoidable notify affected populations in advance</td><td>• Field supervision of applied measures
• Records of Personal Protective equipment
• Photographic record of staff wearing protective equipment
• Noise monitoring plan in 4 control points where the most sensitive receivers are located in the tranche.</td><td>Noise monitoring in the in 4 points during the Selective Rehabilitation and maintenance Stage and then every six months</td><td><u>Environmental Noise</u>

The impacts of noise cannot exceed the levels established in the following table, nor can the derive in a maximum increase of background noise levels 3 db in the nearest receiver.
.
<table><tr><th colspan="3">NOISE LEVELS GUIDE [1]</th></tr><tr><th rowspan="2">RECEIVER</th><th colspan="2">ONE HOUR L_{AQ} (DBA)</th></tr><tr><th>Daytime 07:00 – 22:00</th><th>Nighttime 2:00 – 07:00</th></tr><tr><td>Residential, Institutional, educational[2]</td><td>55</td><td>45</td></tr><tr><td>Industrial, Commercial</td><td>70</td><td>70</td></tr></table></td><td>The Concessionaire Environmental specialist Tourism Corridor Supervision</td></tr>
<tr><td>5</td><td>Impact to worker’s health</td><td>SE</td><td>• Provide auditory protection equipment for workers exposed to levels higher than 80 dBA.</td><td>Occupational Monitoring
• Noise and control measuring</td><td>Monitoring every six months and then every six months according to exposure conditions</td><td><u>Workplace Noise</u>

General Regulation of Preventive Measures for Accidents and Professional Diseases
Maximum Level: 85dB maximum exposure</td><td>The Concessionaire Environmental specialist Tourism Corridor Supervision</td></tr>
<tr><td>6</td><td>Soil contamination due to the spill of fuels, oils, greases, and/or lubricants.</td><td>T/S</td><td>• Liquid and Solid Waste Management Program
• Contingency Program</td><td>• Draft of the report
• Photographic record of spills and cleanup activities See Section 8.5.4.2.
• Application of vehicle and oils and grease best practices established by law</td><td>Permanent during Selective Rehabilitation and maintenance Construction Operation</td><td>Regulation for the installation and operation of Service Stations, Fuel Deposits and Alternative or Substitute Products. (Agreement No. 1011, La Gaceta 18/04/2009).</td><td>The Concessionaire Environmental specialist Tourism Corridor Supervision</td></tr>
</table>

Nº	Impact	Medium	Mitigation Measures	Monitoring Activities	Periodicity	Regulation	Responsible
7	Increase in public sanitation issues due to the generation of solid and liquid wastes	SE	• Liquid and Solid Waste Management Program	• Record of monthly disposal payments to the municipality • Record of waste disposal activities and amount of disposed material • Record of toilet cleaning	Permanent during Selective Rehabilitation and maintenance Construction Operation	• Health Code – Decree N°65 – 1991 • Environmental Health Regulation – Agreement N° 0094-1997 • Agreement for Solid Waste Management – Agreement N°378-2001	The Concessionaire Environmental specialist Tourism Corridor Supervision

Medium: Ac. = Aquatic (Water); At. = Atmosphere (Air); T/S = Terrestrial or Soil; Bio = Biologic (Flora and Fauna); SE = Socioeconomic y C = Cultural.

Source: The consultant

1.8 Implementation and Evaluation Timeline

Dates must be assigned for the mitigation measures that must be executed during each project phase. Some of these measures have specific dates and others continue throughout all project phases. The implementation timetable can be visualized in Table 8.7:

Table 1.8. Timetable for the Execution of Mitigation Measures

Medium	Impact	Mitigation Measure	Responsible Entity	Frequency	Stage	Regulating Entity
Aquatic	1a. Hydrological regime alteration	6. Under no circumstance shall the extraction activities endanger the freshwater conduction systems or the terrains adjacent to the project. 7. Surveillance and Control Program: delimit the area of direct influence to avoid damage to other areas. Avoid the formation of pools and depositing material on the natural water runoff sources and avoid the stacking of materials higher than 2 meters	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Municipal Environmental Units • SOPTRAVI Environmental Management Units • SERNA • Health Secretariat
	1b. Phreatic Level alteration	• Surveillance and Control Program: delimit the area of direct influence to avoid damage to other areas. Follow the technical guidelines of INHGEOMIN for floodplain soils. •	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Municipal Environmental Units • SOPTRAVI Environmental Management Units • SERNA • Health Secretariat
	1c. Deterioration of quality or air contamination	• Liquid and Solid Wastes Management Program Contingency Program: Prevention and Control of Hazardous Substance Spills (oils, fuels, paints, etc.)	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Municipal Environmental Units SOPTRAVI Environmental Management Units • SERNA • Health Secretariat
Atmospheric	2a. Deterioration of quality or air contamination	8. Construction Equipment and Vehicles Preventive Maintenance Plan 9. Vehicular Emissions Compliance Program	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA • DNT
		• Air quality monitoring plan in 4 control points where the most sensitive receivers are located in the tranche.	The Concessionaire Environmental specialist	Every six months	Selective Rehabilitation and maintenance Construction Operation	
	2b. Dust and foul odor generation	10. Dust and Foul Odor Emission control Program	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	

Medium	Impact	Mitigation Measure	Responsible Entity	Frequency	Stage	Regulating Entity
	2c. Increase in noise levels	11. Construction Equipment and Vehicles Preventive Maintenance Plan • Work Schedule: Avoid nighttime or rest period operations or notify affected communities in advance E Provide auditory protection equipment to workers exposed to noise levels over 80 dBA.	The Concessionaire Environmental specialist Security supervisor	Permanent	Selective Rehabilitation and maintenance Construction Operation	
		• Noise Monitoring Program	The Concessionaire Environmental specialist Security supervisor	Every six months	Selective Rehabilitation and maintenance Construction Operation	
		• Labor vibrations monitoring plan	The Concessionaire Environmental specialist Security supervisor	Every six months	Selective Rehabilitation and maintenance Construction Operation	
Terrestrial	3a. Effects on soil due to compacting or leveling	Surveillance and Control Program: Delimit the area of direct influence to avoid intervention in other areas.	The Concessionaire Environmental specialist	Permanent	Construction	• Municipal Environmental Units • Environmental Management Units • SOPTRAVI • SERNA
	3b. Quality deterioration or soil contamination	12. Contingency Program: avoid, if possible, the accidental spill of contaminating substances on the soil. 13. Prevention and Control of contaminating substance spills (oils, fuels, paints, etc.) Liquid and Solid Waste Management Program	The Concessionaire Environmental specialist Security supervisor	Permanent	Selective Rehabilitation and maintenance Construction Operation	
	3c. Extraction or loss of soil	• Surveillance and Control Program: Delimit the area of direct influence to avoid intervention in other areas.	The Concessionaire Environmental specialist	Permanent	Construction	
	3d. Increased soil erosion processes	• Erosion control and slope stability measures	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA
	3e. Reduction in fertility and use of soil	14. Reforestation, Arborization and Revegetation Plan	The Concessionaire Environmental specialist		Construction	• Environmental Management Units • SOPTRAVI • SERNA

Medium	Impact	Mitigation Measure	Responsible Entity	Frequency	Stage	Regulating Entity
Biotic	4a. Loss of vegetation cover	• Surveillance and Control Program: Delimit the area of direct influence to avoid intervention in other areas.	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Municipal Environmental Units • SOPTRAVI Environmental Management Units • SERNA • ICF
	4b. Alteration or elimination of terrestrial and aquatic fauna	• Surveillance And Control Program: Avoid predation and the alteration of species habitats	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Municipal Environmental Units • SOPTRAVI Environmental Management Units • SERNA • ICF
	4c. Increased risk of running over local fauna	• Place animal crossing signs; Speed regulation	The Concessionaire Environmental specialist	Once	Operation	• Municipal Environmental Units • SOPTRAVI Environmental Management Units • SERNA
Socioeconomic	5b. Modification to local traffic	• Work Schedule: Execute installation of road signals proposed in Transit Management Program • Coordination between DNT and • Dissemination And Communication Plan: Maintain a permanent campaign for communication of affected areas	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA • DNT
	5e. Increased risk of contagious diseases	• Health and Hygiene Program	The Concessionaire Environmental specialist Security supervisor	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA • DNT
	5f. Increase in the risk of workplace accidents	• Risk and Accident Prevention Program • Maintain first-aid kits and ambulance services • Record of worker's training on first aid measures	The Concessionaire Environmental Specialist Security supervisor	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA • Health Secretariat • Ministry of Labor
	5h. Increase in public sanitation issues and the generation of soils and liquid wastes	• Collection and Disposal of Solid Wastes Program • Portable Toilets for Company workers cleaned at least twice a week.	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA • Health secretariat

Medium	Impact	Mitigation Measure	Responsible Entity	Frequency	Stage	Regulating Entity
	5i. Disturbances to surrounding communities	• Work plan: Establish a work Schedule that avoids affecting daily community activities Work Schedule: Execute installation of road signals proposed in Transit Management Program • Coordination between DNT and • Dissemination And Communication Plan: Maintain a permanent campaign for communication of affected areas	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA Health secretariat
	5j. Changes in the use of soil	• Agreement selection in the El Progreso Municipal Zoning Plan • Request change in the use of soil by the municipality	The Concessionaire Environmental specialist	Permanent	Planning	• Environmental Management Units • SOPTRAVI • SERNA Health secretariat
Landscape related	7a. Alteration or changes to the landscape and environment aesthetics	• Execute planned installation of road signals in the Traffic Management Program. • Surveillance and Control Program: Delimit the area of direct influence to avoid intervention in other areas.	The Concessionaire Environmental specialist	Permanent	Selective Rehabilitation and maintenance Construction Operation	• Environmental Management Units • SOPTRAVI • SERNA Health secretariat

Source: The consultant

Note

*** Art. 28-A (added through Decree 181-2007). -** The Natural Resources and Environment Secretariat (known in Spanish as SERNA) will delegate to the municipalities, the process of environmental evaluation for the execution of projects, industrial facilities and any other private or public activity that is meant to be developed within their territory, as well as the control and follow-up of mitigation measures for the environmental impacts subject to licensing. This evaluation process will be concurrent with the application for Construction and Operation permits, Article 68 of this law establishes exclusions to this delegation. Municipal Corporations will assume these responsibilities by issuing a Municipal Agreement that notifies SERNA about its intention and operating capacity, and therefore, assume responsibility of actions derived from delegated functions.

The municipalities of Distrito Central, San Pedro Sula, Juticalpa, La Ceiba, Puerto Cortes, Roatán, Guanaja and El Progreso are able to do this immediately. The other municipalities must submit to an evaluation and accreditation process by SERNA, who will issue a resolution in a period no greater than sixty (60) days upon presenting the request.

2 ENVIRONMENTAL MANAGEMENT PLAN UPDATES

It is recommended to draft Environmental Measures Compliance Reports (Known As ICMA) every six months, these reports gather the results obtained from program execution and the plans defined in the Environmental Management Product, as well as the analysis of the results obtained from the implementation of each measure.

The Environmental Management Plan must be continually revised during the Selective rehabilitation and maintenance stage, for an estimated period of 10 months, and 12 months for the construction phase and 6 months after the execution of programmed measures. This period can be extended if, in light of the obtained results, environmental authorities consider it necessary. The Environmental Management Plan can be adapted to the activities executed during the operation and maintenance stage.

Modifications must be approved by the concessionaire, who will proceed to notify SERNA (Natural Resources & Environment Secretariat) for final approval.

3 ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION COST

Table 10.1 presents the detail and flow of the costs for the Environmental Management Plan.

Table 1-9. Costos de implementación del PGA

No.	Programa del PMA	Entidad Responsable de Ejecución	Frecuencia	Etapa	Costo T [US$
1	Programa de Manejo de Campamentos e Instalaciones Provisionales	Concesionario	Permanente	Ejecución	$
2	Programa de Mantenimiento Preventivo de Vehículos y Equipo de Construcción	Concesionario	Permanente	Ejecución	$
3	Programa de Cumplimiento de Control de Emisiones Vehiculares	Concesionario	Permanente	Ejecución	$
4	Plan de Manejo de Desechos	Concesionario	Permanente	Ejecución	$
5	Plan de Prevención de Riesgos	Concesionario	Permanente	Ejecución	$
6	Plan de Comunicación y Divulgación	Concesionario	Permanente	Ejecución	$
7	Programa para el Control de Emisiones de Polvo y malos olores	Concesionario	Permanente	Ejecución	$
8	Programa de Salud e Higiene para la Prevención de Enfermedades Contagiosas	Concesionario	Permanente	Ejecución	$
9	Programa de Manejo de Tráfico	Concesionario	Permanente	Ejecución	$
10	Programa de Vigilancia y Control	Concesionario	Permanente	Ejecución	$
11	Plan Mon. Amb. - Monitoreo de la Calidad del Aire (laboral)	Concesionario	Semestral (2)	Ejecución	$
			Anual	O/M	$
12	Plan Mon. Amb. - Monitoreo del Ruido (laboral)	Concesionario	Semestral (2)	Ejecución	$
			Anual	O/M	$
13	Plan Mon. Amb. - Monitoreo de Vibraciones (laboral)	Concesionario	Semestral (2)	Ejecución	$
			Bianual	O/M	$
14	Programa de Selección de Proveedores Locales y Regionales	Concesionario	Mensual	Ejecución	$
15	Plan de Educación Ambiental	Concesionario	Permanente	Ejecución	$
16	Plan de Contingencia y Emergencia				$
17	Plan de Participación Ciudadana	Concesionario	Permanente	Ejecución	$
18	Plan de Recuperación Ambiental y de Abandono				$
19	Programa de Auditoría Ambiental	Concesionario	Semestral (2)	Ejecución	$
					$ 30

(2): El análisis de la calidad del Aire, Ruido y Vibraciones se realizará de forma semenstral como mínimo o de acuerdo a como lo determine la UMA o SERNA

Fuente: Elaboración propia.

a. F-02 Form – Evaluation of the Environmental Impact Significance (Matrix)

b. Environmental Management Plan

c. Document of Society Constitution, individual service provider or legal status (N/A)

d - Property or lease deed for the location where the Project will be developed, duly stamped and registered (N/A)

e - Certificate issued by the Municipal Environmental Unit (known in spanish as UMA) which certifies the condition of the Project (N/A)

F- Publication (in a renowned newspaper) notification of receipt by this Secretariat, five days before the presentation of this form and other requirements

(Insert the newspaper publication here)

G- Breakdown of the global investment amount for the activity, work or project

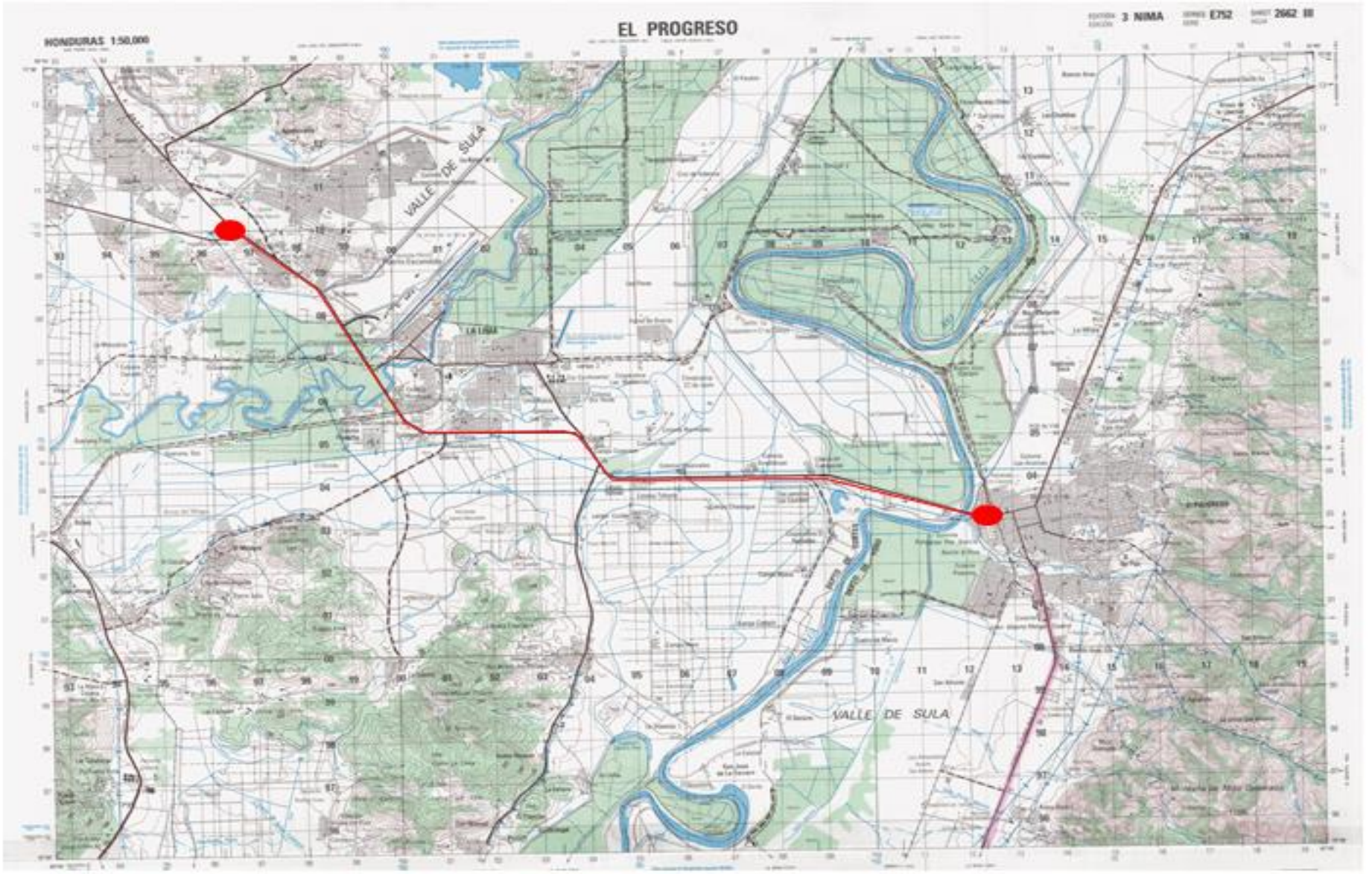
The capital costs for the project are estimated as follows:

Section	Length (Km)	Basic (US$)			Optional (US$)	
		Construction costs	Tuning	Bridges	Construction costs	Tuning
El Progreso - Camalote	6	8 831 457,25			9 615 255,66	
Camalote - Chindongo	6	5 951 217,09	691 324,09			
Chindongo - El Aguacate	18,1	20 938 870,12	2 160 339,25			
El Aguacate - La Mulera	21,6	24 497 796,57	2 002 394,23			
La Mulera - Tela	16,9		1 490 618,26		16 334 406,80	
Santa Rita - El Progreso	26		5 148 198,42	5 500 732,63	29 467 495,33	
La Barca - Santa Rita	11				10 421 908,86	
San Pedro - El Progreso	17,5		3 044 748,76	2 988 500,00		
Tela - La Ceiba	95					5 677 334,73
		3 010 967	726 881	424 462		
Implementing Environmental Management Plan		1 000 000,00	-			
Transfer Utility Networks		1 000 000,00	1 000 000,00			
Join And/Or Transfer Of Fiber Optic Networks		1 000 000,00	-			
Studies And Designs		886 000,00	-		110 000,00	475 000,00
Weighing Stations And Tolls		3 000 000,00				
Total (Usd 2012)		70 116 308,03	16 264 504,01	8 913 694,63	65 949 066,65	6 152 334,73

Source: Client

The basic design of the site, is based on a general plan for the activity, work or project to be developed (N/A)

Copy of the map sheet in which the AP is located


EL PROGRESO
HONDURAS 1:50,000
3 NIMA
E752
2662 III
VALLE DE SULA
LA LIMA
VALLE DE SULA

Certificate issued by the consultant responsible for the Geotechnical and Civil Engineer Situation of the Terrain (N/A)

Certificate issued by the consultant - regarding the Geological, Geomorphological, Hydrogeological and Natural Threats (N/A)

Certificate issued by the consultant responsible for the archeological situation of the terrain where the project is located

CERTIFICATION

The General Secretary of the Honduran College of Civil Engineers of Honduras (CICH) hereby certifies that the company Ingeniería y Ambiente de Sula is duly registered in this College and according to our records is allowed to execute Consulting Activities, being represented by Engineer Carol Yisel Perdomo CICH No. 02293, with both parties being up-to-date with the corresponding obligations.

As a consequence, the company Ingeniería y Ambiente de Sula S. de R.L. de CV is allowed to participate.

This college declares that any other firm associated with Ingeniería y Ambiente de Sula is not allowed to intervene separately in any bidding process unless participating jointly.

Honduran Institute of Anthropology and History

TECHNICAL OPINION No. 055-SGP-2013

The Deputy Manager of the Heritage Office of the IHAH certifies that it received Technical Inspection Report No. 30-RN, on July 10th of 2013, as presented by the Northern Regional IHAH - representative Aldo Zelaya, and his archaeologist assistant, Melvin Evenor Fuentes, as requested by Carol Perdomo from Ingeniería y Ambiente de Sula for the project Tourism Corridor coordinated by the Transportation and Civil Works Secretariat (SOPTRAVI).

The inspection was done in the following road tranches where the highway will be expanded to have four lanes:

La Barca-El Progreso with an extension of 36.5 kms

El Progreso-Tela with an extension of 68.8kms

These tranches can be found in the following map sheets:

2661 III Rio Lindo

2662 VI Villanueva

2662 III El Progreso

2662 II Ocote Paulino

In the tranches of San Pedro Sula.Progreso (17,5 kms) and Tela-La Ceiba (97 kms) there was no inspection because the dirt road will not be expanded and no crevasses will be built, there will only be repair of pot holes, general maintenance and cleaning over a terrain that has been asphalted or paved.

According to the report, since the inspection took place on an existing road "there was an ocular inspection of the tranche and camp areas that were previously used for maintenance and parking of machinery", there was also "a review of archaeological records in the Northern Regional project laboratory for site identification".

Having reviewed the records of previous archaeological projects no damage to infrastructure was found in these tranches and the inspection did not show "any archaeological site in danger of being damaged or destroyed in the expansion of the road from La Barca to La Ceiba", as per the quoted report.

In tenor of articles 1,2,3,9,19 and 22 of the Law for the protection of Cultural Patrimony of the Nation, Decree 200-97, the Deputy Direction of Patrimony finds:

1. There is no presence of archaeological sites or remains in danger of being damaged or destroyed in the areas for maintenance and expansion of the Tourism Corridor, tranches San Pedro Sula-Progreso, La Barca- El Progreso, El Progreso-Tela, and Tela-La Ceiba.
2. The responsible for the Tourism Corridor Project are required to notify the IHAH in case of any archaeological or paleontological finding in the area.
3. This formal opinion is subject to change if an archeological or paleontological site or remains are found.

Signed in the City of Tegucigalpa, Municipality of the Central District, on the 30th of July of 2013.

[SIGNATURE AND SEAL – ROLANDO CANIZALES VIJIL]