Initial Environmental Examination

August, 2015

LOAN 3173 - VIE: INTEGRATED RURAL DEVELOPMENT SECTOR PROJECT IN THE CENTRAL PROVINCES (Additional Financing)

Subproject: Upgrading Dyke, Rural Road, Drainage and Salt Control Culverts in An Cu, An Hiep, An Hoa Communes, Tuy An District, Phu Yen Province

Prepared by Central Project Management Unit – Agriculture Project Management Board - Ministry of Agriculture & Rural Development for the Asian Development Bank

CURRENCY EQUIVALENTS

(19 August 2014)

Exchange rate:	–	Vietnam Dong (VND)
1.00 VND	=	0.00004707 USD
1.00 USD	=	21.246 VND

ABBREVIATIONS

ADB	Asian Development Bank
CEP	Commitment on Environmental Protection
CPC	Communal People's committee
CPMU	Central Project Management Unit
DARD	Department of Agriculture and Rural Development
DONRE	Department of Natural Resources and Environment
DPC	District People's Committee
IEE	Initial Environmental Examination
LIC	Loan Implementation Consultant
PPC	Provincial Peoples Committee
PPMU	Provincial Project Management Unit
Hhs	Households
SST	Subproject Support Team
CSC	Construction Supervision Consultant
UXO	Unexploded Ordnance

WEIGHTS AND MEASURES

km	–	kilometer
kg	–	kilogram
ha	–	hectare
m	–	meter

NOTES

In this report, "$" refers to US dollars.

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I. INTRODUCTION

1. The Integrated Rural Development Sector Project in the Central Provinces (IRDPCP) is being implemented through a sector loan from the Asian Development Bank (ADB). The Ministry of Agriculture and Rural Development (MARD) is the executing agency of the loan.

2. Due to the success of the project, ADB proposed to provide Additional Financing of $70 million for a second phase of the project, which will be implemented in 6 of the original 13 provinces. The 2nd phase of the IRDSPCP is located in 6 provinces including Ha Tinh, ThuaThien Hue, BinhDinh, Phu Yen, NinhThuan and BinhThuan, aiming to rehabilitate and upgrade medium scale rural infrastructure of the following types:

(1) Upgrading small & medium-sized dams and reservoirs, e.g., spillways, weirs, reservoir embankments, and works to control leakage and water lost;

(2) Rehabilitation of primary and secondary irrigation canals and river banks stabilization. Wherever possible, key strategic investments such as the lining of critical canal segments or the reinforcing of existing water control structures will be chosen;

(3) Rehabilitation of commune to district roads, and inter-commune roads to improve linkages between higher level alignments (provincial and national routes) and lower level roads (commune to village and inter-village). In addressing key issues of sustainability, designs will take into account the increased intensity and frequency of climatic hazards anticipated to result from global climate change, the local geology and terrain, potential change in utilization patterns (type and volume of traffic), and the long-term availability of recurrent expenditures for operations and maintenance (O&M).

3. As part of IRDSPCP – Additional Financing, UPGRADING DYKE, RURAL ROAD, DRAINAGE AND SALT CONTROL CULVERTS OF AN CU – AN HIEP – AN HOA COMMUNES subproject will be implemented in An Cu, An Hiep, An Hoa communes, Tuy An district, Phu Yen province.

4. This Initial Environmental Examination/Commitment on Environmental Protection (IEE/CEP) has been prepared under the environmental safeguards requirements by ADB[1]and the GoV[2]. The IEE/CEP contains the following information:

i. Section I. Introduction
ii. Section II. Subproject description;
iii. Section III. Description of existing environment
iv. Section IV. Environmental impact screening
v. Section V. Environmental Management Plan Outline
vi. Section VI. Public consultation and disclosure activities
vii. Section VII. Conclusions and recommendations.

[1]ADB Environmental Assessment Guidelines (2003)
[2] Law on Environment Protection (Revised) 2006; Decree 29/2011/NĐ-CP dated April, 18th 2011 and circular No. 26/2011/TT-BTNMT dated July, 18th 2011.

II. SUBPROJECT DESCRIPTION

Table 1: General information of the Subproject

DATA ITEM	SUBPROJECT DATA
GENERAL INFORMATION	
Subproject Name	Upgrading Dyke, Rural Road and Drainage and Salt Control Culverts in An Cu – An Hiep – An Hoa Communes.
Subproject Type	Rural transport and irrigation works
Executing Agency	Phu Yen PPC
Sub-project owner	Department of Agriculture and Rural Development, Phu Yen province (DARD)
Sub-project Management Unit	Phu Yen Provincial Project management Unit (PPMU)
Address of PPMU's office	Address: No.77 Phan Dinh Phung, Tuy Hoa city, Phu Yen province.
Name and Title of Head of sub-project owner	Mr. Nguyen Tri Phuong Position: PPMU director
Telephone, fax and email details of Project owner	Telephone: 057.3841869; FAX : 057.3842704
Name of Environmental Officer of PPMU	Mr. Tran Con Son
Telephone and email details of PPMU Environmental Officer	Telephone: 0972 735 248
SUBPROJECT DESCRIPTION	
New sub-project or rehabilitation sub-project?	Rehabilitation and upgrading sub-project
Grade of traffic road (*Technical Standard*)	Grade VI – Delta (TCVN 4054-05)
Designed velocity (km/h)	30 km/h
Designed load	10-ton axis.
Length and width of the road	Length: 9,036.74m; Total width of the road: 6.5m; width of carriageway: 3.5m; width of road shoulders: 1.5m; width of upgraded shoulder is 2m.
Road surface (*lining asphalt, concrete, soil and so on*)	Concrete
Number and length of bridges:	Utilize 2 existing bridges Slab concrete bridge, 150cm height, and 500cm width. Location: Km1+745.05 and Km4 + 074.80;
Number and dimensions of cross culverts	+ Concrete spillway: 1 spillway, from 6 to 10m long + Concrete box culvert [75x75]cm: 16 culverts + Concrete box culvert [100x100]cm: 7 culverts

DATA ITEM	SUBPROJECT DATA
	+ Concrete box culvert 2[250x250]cm: 1 culvert + Concrete box culvert [300x300]cm: 2 culverts. + Concrete box culvert 3[300x300]cm: 1 culvert + concrete box culvert 2[350x550]cm: 01 culvert + Concrete box culvert [120x80]cm: 01 culvert + Concrete pipe culvert D100cm: 2 culverts.
Length of longitudinal ditches	The total length of longitudinal ditches along with the road is 208.70m, including: + Left side ditches: 87.82m + Right side ditches: 120.88m
Number of drainage and salt control culverts	10 new drainage and salt control culverts
Width of site clearance area	The existing carriageway is from 3.5 to 7m wide. The proposed road-base and carriageway are designed with width of 6.5m and 3.5m respectively. Thus, the maximum width of the site clearance area is 3m; some segments do not require site clearance.
Number of other rural roads crossing the subproject road	06 intersections at the road's beginning, which are at pile D0 (Km0+00), pile D81 (Km5+276.19), pile 23 (Km5+217.47), pile 27 (Km5+331.78), pile D5 (Km7+918.87) and the end of DC (Km9+36.74). The road's beginning point (Km0+00) cuts a concrete road in An Cu commune; its ending point (Km9+36.74) cuts the T-junction of the concrete roads in An Hoa commune (heading Highway 1A and An Hai commune).
Number of flows running through the road - River - Lake - Other flows	No major flows running through the road. Road runs along O Loan lagoon (area 17,5Km^2). Water level during rainy season (Sep-Dec) is 1.5-2m, which submerges the road. No other flows running through the road. The main flows running through the road are the cross roads mentioned above.
Number of hills and mountains crossing the road - Hills - Mountains	The proposed road will be upgraded following the existing road running around hills in An Cu-An Hiep-An Hoa communes nearby O Loan lagoon. The upgrading road goes through residential area, salinity paddy field, shrimp ponds, etc. There is neither hill nor mountain passing the road.
CONSTRUCTION ACTIVITIES[3]	
Construction commencement date (month/year)	Oct 1st 2015 (as expected)
Construction completion	April 30th 2017 (as expected)

[3] Source: Basic Design Explanation of Upgrading dyke, rural road and drainage and salt control culverts in An Cu – An Hiep – An Hoa communes Subproject.

<table>
<tr><th>DATA ITEM</th><th colspan="2">SUBPROJECT DATA</th></tr>
<tr><td>date (month/year)</td><td colspan="2"></td></tr>
<tr><td>Number of construction workers</td><td colspan="2">About 100 workers</td></tr>
<tr><td>Necessary camps (Yes/No)</td><td colspan="2">Yes. Camps and storage would be sited at empty locations along the road. It is possible to locate the camps at Km8 where road with drainage and salt control culverts to prevent salt is constructed in An Hiep commune. The empty land area is closed to Km6+400.</td></tr>
<tr><td>Construction in rainy season (Yes/No)</td><td colspan="2">Yes, when the weather is good enough. However construction activities are mainly conducted during dry season to ensure quality of construction schemes.</td></tr>
<tr><td>Asphalt/concrete mixing plants</td><td colspan="2">No</td></tr>
<tr><td rowspan="25">Number of construction vehicles and equipments</td><td>Vehicle/equipment</td><td>Quantity</td></tr>
<tr><td>Excavator (0.8 - 1.25m^3)</td><td>04</td></tr>
<tr><td>Bulldozer 110CV</td><td>02</td></tr>
<tr><td>16 ton compactor</td><td>02</td></tr>
<tr><td>7 ton dump truck</td><td>05</td></tr>
<tr><td>Rammer</td><td>02</td></tr>
<tr><td>1KW vibrator</td><td>01</td></tr>
<tr><td>16 ton self-propelled wheeled compactor</td><td>03</td></tr>
<tr><td>Cutter slot</td><td>05</td></tr>
<tr><td>5KW bending cutting machine</td><td>03</td></tr>
<tr><td>1kw platform vibrator</td><td>03</td></tr>
<tr><td>1.5KW needle vibrator</td><td>02</td></tr>
<tr><td>Air-compressor (600m3/h)</td><td>02</td></tr>
<tr><td>23KW brazing machine</td><td>02</td></tr>
<tr><td>10ton roller</td><td>04</td></tr>
<tr><td>16 ton wheel roller</td><td>02</td></tr>
<tr><td>25 ton vibrator</td><td>02</td></tr>
<tr><td>110CV bladder</td><td>02</td></tr>
<tr><td>50-60m^3/h spreader</td><td>01</td></tr>
<tr><td>250l concrete mixer</td><td>03</td></tr>
<tr><td>500l concrete mixer</td><td>02</td></tr>
<tr><td>Watering truck 5m^3</td><td>02</td></tr>
<tr><td colspan="2">All vehicles and machines are in good conditions and have registration of periodical verification</td></tr>
<tr><td>Location and area of borrow area or description of material source</td><td colspan="2"><u>Temporary and permanent disposal sites:</u>

Construction waste are supposed to be dumped at km9+100, on the left side of the road, average haulage distance is 3km at Tan Hoa village, An Hoa commune. PPMU need to obtain the agreement letter of An Hoa Commune People's Committee for waste dumping on this place. An agreement of transportation and disposal construction and domestic waste for the subproject should be prepared and signed by the contractors and the authority before commencing construction.

<u>Sources of materials:</u>

- Filling soil is exploited from An Hoa borrow pit with an average haulage distance of 2Km; from Phu Tan quarry borrow pit with an average haulage distance of 6Km; and Nui Mot quarry borrow pit with a distance of 2Km.</td></tr>
</table>

<table>
<tr><th>DATA ITEM</th><th>SUBPROJECT DATA</th></tr>
<tr><td></td><td>- Stone from Hoa Da stone quarry (at Km2- provincial road 643) with an average haulage distance of 10km.
- Sand bought or exploited from Ngan Son (at Km1300-QL1A) with an average haulage distance of 9km.
- Cement, steel, asphalt/bitumen, etc. purchase from Chi Thanh town, Tuy An district.
All material quarries is existing ones, and PPMU need to check the permission of material before purchasing</td></tr>
<tr><td>Quantity of cutting and filling soil</td><td>Quantity of different types of filling soil: 64,983.72m^3;
Quantity of dredging organic soil: 13,622m^3
Quantity of unused and disposed soil: 15,061.68m^3</td></tr>
<tr><td>Method on management and balance of excavated soil/surplus soil</td><td>Cutting soil are used for filling and grading on both road sides within the ROW. Surplus soil should be removed and disposed at the regulated dumping site (proposed at disposal area in Tan Hoa village, the agreement with local authority will be obtained on detail design phase)</td></tr>
<tr><td>Type and approximate quantity of raw construction materials</td><td>
<table>
<tr><th>Item</th><th>Unit</th><th>Quantity</th></tr>
<tr><td>Asphalt paper</td><td>m^2</td><td>53,164.6</td></tr>
<tr><td>Ballast type 2</td><td>m^3</td><td>10,533.29</td></tr>
<tr><td>Concrete road surface, 1x2 sized stone</td><td>m^3</td><td>10,632.92</td></tr>
<tr><td>Steel formwork</td><td>m^2</td><td>3,599.57</td></tr>
<tr><td>Wood formwork</td><td>m^3</td><td>9,593.93</td></tr>
<tr><td>Wooden expansion joint</td><td>m^3</td><td>1.8</td></tr>
<tr><td>4x6 sized stone</td><td>m^3</td><td>2,570.98</td></tr>
<tr><td>Ashlars, plastered with cement mortar</td><td>m^3</td><td>92.45</td></tr>
<tr><td>2x4 sized stone concrete.</td><td>m^3</td><td>5,117.9</td></tr>
<tr><td>Triangular warning signs</td><td>warning sign</td><td>46</td></tr>
<tr><td>Rectangular warning signs</td><td>warning sign</td><td>2</td></tr>
</table>
</td></tr>
<tr><td>Quantity of solid waste generated from construction (m^3, calculated monthly)
- Soil, sand, debris, etc
- Domestic waste</td><td>- Estimated quantity of surplus soil generated during construction period is 15,061.68m^3 (according to FS);
- Domestic waste (mainly organic waste or plants): estimated at 0.5kg/day/person (0.5 kg x 30 days x 100) = in total about 1500 kg/month.</td></tr>
<tr><td colspan="2">OPERATIONS AND MAINTENANCE[4]</td></tr>
<tr><td>Allowed velocity</td><td>30 km/h (in limited conditions)</td></tr>
</table>

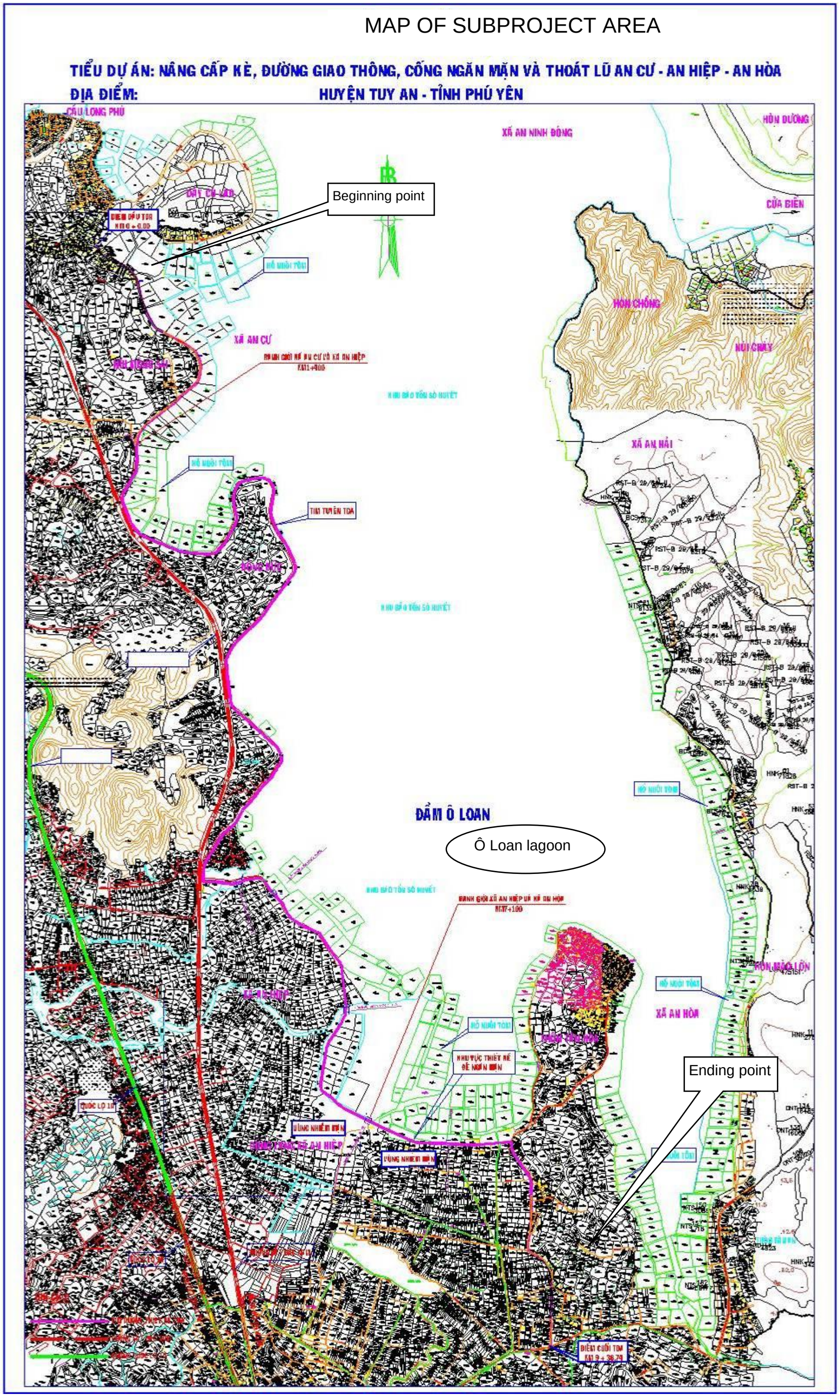
[4] Source: SIR of Upgrading dyke, rural road and drainage and salt control culverts in An Cu – An Hiep – An Hoa communes subproject

DATA ITEM	SUBPROJECT DATA	
Expected load	10 tons	
Expected traffic volumes	50 vehicles per day and night	
Descriptions of periodical maintenance activities	+ Maintenance activities: Fix talus ; cut trees and grass; clear wastes; clean water-plants and mosses for drains and culverts on annual basis; + Medium and major maintenance: Once per 2 – 4 years	
Maintenance activities	- Tuy An DPC is the governmental management unit and assigned the Division of Industry and Trade in Tuy An district to directly conduct O&M. - Regular maintenance: When the SP's construction is completed in comes to its operation period, regular check of surface conditions is necessary to early detect defects and propose suitable remedies to ensure the work's longevity. Minus defects might include: potholes, water logging, etc. Suitable remedies are: fix pot holes, drying water, replacing broken bricks, etc. - Periodical maintenance: once per 5 years for medium maintenance and once per 25 years for concrete roads. Medium and major maintenance activities are carried out in line with current regulations.	
RESETTLEMENT AND LAND ACQUISITION [5]		
No. of affected person	715	
Number of severely affected APs	No	
Number of displaced persons (DPs)	No	
No of displaced electric poles	31 poles	
Total land area to be acquired (ha)	Temporary – m^2	Permanent – 15,823.2 m^2
Agricultural land area to be acquired	Temporary -No	Permanent – 9,386.8 m^2
Forestry land area to be acquired	Temporary -No	Permanent - m^2
Aqua-cultural land to be acquired (ha)	Temporary -No	Permanent – 5,301.1 m^2
Garden land to be acquired (m^2)	Temporary -No	Permanent – 991.76 m^2
Garden land to be acquired (m^2)	Temporary -No	Permanent: - Affected temporary houses: 143.54 m^2 (15 houses)
Other land to be acquired (m^2)	Temporary -No	Permanent -No
Other impacts	Stone well with the diameter of 1m: 2 wells	

[5] The statistics are collected from RP of the SP.

DATA ITEM	SUBPROJECT DATA
	1m height barbed wire fence 215.04 m long Cement yard: 1 m^3
SUBPROJECT COST	
Total subproject cost (VND and USD)	67,921,234,146 VND (equivalent to 3,214,446 USD)

MAP OF SUBPROJECT AREA



III. DESCRIPTION OF EXISTING ENVIRONMENT

Table 2: Existing environment conditions

DATA ITEM	SUBPROJECT DATA
SUB-PROJECT LOCATION	
Commune(s):	An Cu, An Hiep and An Hoa
District:	Tuy An
Province:	Phu Yen
Geographic location:	$109^0$14' – 109^0 17' East longitude $13^0$13' – 13^0 19' North latitude
PHYSICAL ENVIRONMENT CONDITIONS	
Air quality, noise and vibration	The subproject is located in rural area nearby the lagoon without any industrial zones or manufacturing factories or on-going construction works in long time; Main activities of the community in the subproject area are aquaculture and agricultural production, some do servicing and these activities do not cause much dust. Results of air and dust analysis at some locations in Tuy An district in year 2013 (by Phu Yen DONRE) showed that dust indicators are from 10 to 160µg/m^3, SO2 from undetected to 280 µg/m^3, CO from undetected to 1250 µg/m^3, NO_2 (undetected). All environment indicators are within the allowed limit of Vietnamese Standard QCVN 05:2013/BTNMT. The subproject is located in rural area therefore level of noise and vibration is low and at safe level to local community. Level of noise is from 48.6 – 68.7 dBA, which is within the allowance of Vietnamese standard QCVN 26: 2010/BTNMT. Only at the T-junction in the centre of Chi Thanh town, noise level is from 71.2 -76.7 dBA, which has exceed the allowable level.
Climate and natural disasters	The subproject is located in the coast of Central South which is profoundly differentiated dry season and rainy season. - Dry season lasts for 8 months from January to August. Total average annual sunny hours is 2,359 hours. Time for drought started from May to end of August. - Rainy season starts from September to end of December. Average annual rainfall is 2,294.5mm. - Average temperature : T = 26.7°C - Average relative humidity : UCP = 79% - Average annual wind speed : 2.1m/s. There are two main wind directions, which are Northeast monsoon and Southeast monsoon winds. - Average rainfall : Xo = 1,800mm - Average annual evaporation : 1,101mm. Highest evaporation level is March and April Calamity is mainly storms. During storms, the strongest wind speed is 41m/s. Storm season is in line with rainy season, from September to December. Intrusion of sea water is from September to March of the following year.

DATA ITEM	SUBPROJECT DATA
Topography and soils	+ Topography: The subproject area is mainly delta and mountain areas. The topography is leaned from West to East. The road runs along the lagoon, which made it directly prone to flood and tide intrusion. In general, the surveyed area has topography favorable for constructing the work in dry season. + Edaphology: Soil is divided into 05 different layers: The 1st layer is a 1-1.6m thick layer of filling soil, consisting of ballast, send, and clay; The 2nd layer is a 1 - 3.3m thick layer of clay mixed with ballast; the 3rd layer is a 0.5 -3.5mm thick layer of yellow-brown sand; The 4th layer is black-brown clay and 5th layer is clay with arca shell.
Waterbodies	The road runs along O Loan lagoon. The lagoon is a brackish water locating in the east side of Highway 1A under QuanCau Pass. The lagoon is a nationally recognized famous beauty spot of Vietnam. The lagoon is over 15.7km^2 wide, with average depth of 1.2 - 1.4m, in rainy season it is even 3m depth. Cai river and some other small rivers provides water to the lagoon. There is a small rivulet connecting the lagoon to sea. In the lagoon's adjacent area are Dong Chay mountain, Cam mountain and An Hai hillock.
Underground water	Underground water is from 4 to 8m depth and water is often saline. During dry season, there is no underground water available. Currently, underground water is mainly used for domestic purpose at the household level. Tap water is available in PhongPhu village, An Hiep commune and Tan Hoa village, An Hoa commune.
Water quality	- Water quality in O Loan lagoon: According to measurement and analysis in 2013, there are signs of pollution in O Loan Lagoon, some analysis included COD, NH_4^+, Fe, Mn with the value exceeding the standard (QCVN 10:2008/BTNMT) (Source: results of environment measurement in 2013 – Phu Yen province) (Source: results of environment monitoring year 2013 - Phu Yen province) - Domestic water quality: According to the results of bacteriological examination of water and water chemicals at some water supply station in Tan Hoa village, An Hoa commune, Tuy An district of the preventive medicine center in Phu Yen province, all related indicators were under the limit by QCVN 02:2009/BYT.
Flooding	From October - December, water level in O Loan Lagoon is higher causing water logging in the nearby area. Water level in some segments is even 1.5-2m depth.
Terrestrial flora and fauna	Terrestrial flora in the subproject area are mainly crops such as acacia, eucalyptus, banana, mango, rice, corn and vegetables. There are also shrubs. + Terrestrial fauna: wild animals are mostly reptiles, some birds, mice, etc.; Livestock includes cattle, buffalo, pigs, goats, poultry like chickens, ducks, etc. + There is no terrestrial flora and fauna recorded in the Red Book of Vietnam.
Aquatic flora and fauna	The subproject is located next to O Loan lagoon where biodiversity is high. At the lagoon, according to statistics, there are 108 species of fish and 23 species of fishes which have high economic values, 5 species in the Red Book of Vietnam; 2 of 5 animals shells (including oysters and oyster estuaries are defined as native species specialty); There are also species of tiger shrimp, crawfish, shrimp and crabs speckled ... Therefore, special

DATA ITEM	SUBPROJECT DATA
	attention should be paid to construction period to avoid negative impacts on the biodiversity of O Loan Lagoon.
Protected areas	The road runs along O Loan Lagoon – a national beauty sport according to Decision No 2410/QD-VH issued on Sep 27, 1996 by Minister of Culture and Information.
SOCIAL ECONOMIC CONDITIONS	
UXO	Currently there is no possibility of unexploded ordnance around the focal area and in the benefitted area or along the canal as well as local borrow pits because most of the constructions are to upgrade the old constructions.
Land use	According to Decision 211/QĐ-UBND issued by Phu Yen PPC on the planning of using land in Tuyen An district. Total natural land area (2010) in Tuy An district is 41,499.98ha in which 24,099.70 ha is agricultural land; 6,155.67ha is non-agricultural land; 11,244.61ha is unused land; 1.439,75ha is urban land and 3.069,60ha is rural residential land. - An Hoa commune: agricultural land: 1433ha and forest land: 108.9ha. - An Hiep commune: agricultural land: 716.5 ha. Forest land area in 2013: 10ha. A part of agricultural land area in the commune has been affected by salt.
Nearest residential land	Works pass some residential areas in My Phu I, An Hiep commune. The nearest distance from a house to the route is 5-10m.
Rural infrastructure; Access to Water Supply & Sanitation and Solid Waste Management	- Education: The subproject communes have intensively invested facilities and equipment for teaching and learning activities. There are kindergarten school, primary and secondary schools in the area. - Power: For all communes under the subproject, national electricity grid is available. - Water: Mainly use water from drilled well in the area. Only Phu Tan village, An Cu commune and Phong Phu village in An Hiep commune use clean water from Canh Bac Water Company in Tam Giang pass, Chi Thanh town. The remaining commune are lacking of domestic water from May to August. - Water drainage: The current status of water drainage system in the subproject area is not complete with some problems. - Environment sanitation: + In the area of An Hoa commune, in 2013 a total of 16 waste collection sites in 08 villages have been recognized. + In the area of An Hiep commune, 35% of household has been recorded to have lavatory, only Ben hamlet where the subproject passed through only 20% of the household have lavatory. Waste collection service has been newly implemented in commune along with Highway 1 including My Phu I, My Phu II, Phong Phu. In the area of subproject, the service is not available.
Agriculture and aquaculture	+ *Agriculture:* - Crop: There are three rice crops including Winter Spring, Spring Autumn and crop 10. In addition, there are also some other different crops including corn, sugarcane, vegetables, green bean, peanut, soybean and etc. - Livestocks: Include cow, pig, horse, chicken, duck and etc + *Aquaculture:*

DATA ITEM	SUBPROJECT DATA
	- From March – May and July – September are main time for aquaculture raising in O Loan Lagoon, mainly lobster and different types of shrimp and etc - There is additional activity related to fishery in the lagoon and in the sea
Population	- An Hiep commune: Total number of household: 2152. Poor household: 277 (according to the report of CPC - 2013) - An Hoa commune: total population of 11,222 (2012)
Ethnic minorities	There is not any ethnic group living in the subproject area;
Livelihoods	Main activity is breeding livestock, fishery, crop. Also there are other activities including industry, handicraft such as clothing, carpentry, rice paper making, bamboo, sedge, processed seafood such as dried fish, dried squid, fish sauce and etc. Number of household exploiting fish in O Loan Lagoon: An Cu:270, An Hiep: 88, An Hoa: 225. In the area of An Hiep commune there is production forest land area with 10ha; and 108.9 ha in An Hoa commune.
Physical and cultural heritage	Temple for famous Le Thanh Phuong in My Phu village, An Hiep commune is 1km far from the subproject site. Linh Son Pagoda is located in An Thach commune, Tuy An district 2km far from the subproject site. However, there is no impact on this pagoda during construction phase because all vehicles of material transportation and construction machines don't pass through this area. On every January 7, a traditional boat competition is organized in An Cu commune.
Public health	The health service in the area is rather good. In the area of An Cu, An Hiep and An Hoa health care centers are available to take care of health to local community. Due to sanitation condition, it was observed that diarrhea, dengue fever pneumonia, influenza, bronchitis and etc occurred in the area.
Traffic and transportation characteristics	- Transportation: 5 roads along with O Loan Lagoon with the length of more than 15km made transportation smooth status. Roads which were used to transport construction materials to sites were mainly inter-village concrete roads or gravel road with the load of no more than 8 tons. + The volume of vehicles is small, only local travelling in the area; + Main traffic types: pedestrians, bicycles, motorcycles; + Percentage of concrete road in An Hiep commune is 50%. + There is a location where drainage was under railway in Ben villge with the limit of height <3.5m.

IV. ENVIRONMENTAL IMPACT SCREENING

Table 3: Environmental impact screening

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
Pre-Construction Stage Impacts					
Environmentally responsible procurement and SEMP preparation	Yes	N/A	N/A	N/A	Including environmental requirements in biding documents and civil work contracts will take importance role to fully reflect environmental protection cost of the civil works and engage the environmental responsibilities of civil contractors. Any missing of environmental management cost will create high risks of implementing mitigation measures during the construction phase due to lack of resources and capacity thus, environmental protection cost and responsibility need to involved at the beginning. More Site Environmental Management Plan (SEMP) will help the contracts deeply understanding on environmental requirement and preparing detail/specific mitigation action on the site, therefore, the an appropriate SEMP will help to implement actual mitigation measures and identify any unanticipated environmental impacts and propose additional mitigation measures
Plan construction materials management	Yes	N/A	N/A	N/A	Materials Management Plan (MMP) detailing arrangements to be made to facilitate the timely production and supply of construction materials to avoid impacts due to unnecessary stockpiling outside the Project site.
Plan Spoil and Waste Disposal	Yes	N/A	N/A	N/A	Waste Management and Spoil Disposal Plan is prepared for handling, storage, treatment, transport and disposal of solid and liquid wastes, hazardous materials, hazardous wastes and excavation spoils. Ensuring disposal of excavation spoils will not cause negative visual impacts. The plan will also provide details of a trip ticket system to ensure that contractors dispose excavation spoils in approved areas. Such system will be designed so that the PPMU and construction supervisors could readily monitor the volume and disposal site of excavation spoils, and to ensure that the total volume of spoils disposed will not exceed the maximum capacity of disposal site (landfill). Domestic waste collection and management also need to set plan during this phase to avoid missing implementation resources and sanitation issues on the site.

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
Disturbance of UXO	No				The road is upgraded on the existing route. Therefore, there will be no possibility of UXO
Effects on households from loss of residential or agricultural land	Yes	Minor	Negative	Permanent	**Description:** According to statistics, the agricultural land area was permanently acquired 25,503.35m^2, mainly the area of salty land with low agricultural productivity. Additional 5301.1m^2 of the area of shrimp breeding was acquired. Temporary 143.54m^2 with the quantity of 15 houses were located along the subproject, mainly the area of garden land. **Location:** An Cu, An Hiep and An Hoa commune. **Objects:** Local households **Affected level:** The impact is considered not significant since there are no significantly affected households, no one that will require physical relocation, no production land loss of more than 10% of the total. The affected households will received support and compensation for their acquired land from the subproject. **Time of impact:** Permanent
Construction Stage Impacts					
Erosion or sedimentation caused during clearing or earthworks	Yes	Minor	Negative	Temporary	**Description:** runoff of rain water during site clearing or earthworks. Earthwork activities will change soil structure and raise the amount of unconsolidated sediments. When it rains, runoff of rain water will take away them into the surrounding water bodies causing sedimentation and erosion also. **Location**: Along the road especially at the location close to shrimp pond (from the beginning to Km2, Km5+276.19 to Km6+106.66; and dyke to prevent salt from Km5 to Km8. Other locations included An Hoa soil quarry, Mot mountain and Phu Tan 2. **Affected objects:** • Shrimp ponds along the road. • Surface water of water bodies along the road • Local peoples living along upgrading road **Affected level**: The scale is small due to the fact that the construction time was mainly conducted during dry season hardly raining which could cause soil erosion. In addition, bidders can control the situation by implementing proper construction measurements; **Time of impact**: estimated 18 months during construction phase

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
Pollution of waterways, aquatic environments or groundwater	Yes	Medium	Negative	Temporary	**Description**: waste, chemicals, effluent or disturbance of contaminated soils during construction phase if domestic waste of worker or leakage oil from machine which generated during construction phase is not managed properly, it will affect to quality of surface water and groundwater. **Location**: All parts of the road nearby O Loan Lagoon (except for the part to Ben hamlet, My Phu village, An Hiep commune and to Tan Hau village, An Hoa commune). Locations to construct drainage and salt control culverts is from Km5 - Km8 included An Hiep and An Hoa communes. **Affected Objects:** • Local peoples living along the proposed road • Water quality of O Loan lagoon. **Affected level**: The scale is at medium. Amount of unused soil, waste water was not much and could be well controlled by proper mitigation measures. **Time of impact**: estimated 18 months during construction phase
Soil contamination	Yes	Minor	Negative	Temporary	**Description**:from spillage of oil or other chemical substances **Location**: fuel and chemical storage, chemical; gathering, palace of repairing, and maintaining machineries, equipment. **Affected Objects**: • Local peoples living along proposed road • Soil quality a long the proposed road and nea the fuel storage **Affected level**: the impact is minor and could be controlled due to the fact that there was not many machinery and construction fuel was put on the position which is not permeable to water. **Time of impact**: estimated 18 months during construction phase
Air pollution and impacts on safety traffic	Yes	Minor	Negative	Temporary	**Description**: from temporary storage on site for construction materials. **Location**: storage site for materials is along roads in Dong Duc, My Phu, Phong Phu and Tan Hau villages. **Affected Objects**: • Local peoples living near the material storages along proposed road • Soil and water quality near the materia storages **Affected level**: The storage site for materials could cause dust or affect the traffic safe. However, the impact is minor because the storage site is far from

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					residential area and clear. **Time of impact**: estimated 18 months during construction phase
Air pollution	Yes	Medium	Negative	Temporary	**Description**: dust and exhaust fume from materials exploitation and transportation. **Location**: At the soil quarry of An Hoa village, Phu Tan village and Nui Mot; along with materials transportation roads from Highway 1A through cement concrete road and gravel road at Hoa Da, Phu Hoa, Tan Dinh village in An Hoa communes; My Phu, Phong Phu villages in An Hiep commune and Phu Tan, Dong Duc villages in An Cu commune; Roads for waste transportation to Tan Hoa village, An Hoa commune; Also at the location with on-going construction activities along the road. **Affected Objects:** • People living along proposed road in An Hoa Phu Tan, Nui Mot hamlets • People living along the material transportation roads at Hoa Da, Phu Hoa, Tan Dinh villages in An Hoa communes; My Phu, Phong Phu villages in An Hiep commune and Phu Tan, Dong Duc villages in An Cu commune. **Affected level**: + Dust pollution arises during extraction process at the quarry, transportation and embankment at the drainage and salt control culverts. However, because the borrow pits are located near headwork, construction area which is far from the residential area, the impact is minor. + In addition, almost all parts of the road along with the lagoon only pass through some residential area in Phu Tan, My Phu and Tan Hau villages therefore there was a temporary impact at medium level of dust and air pollution and those can be mitigated. **Time of impact**: estimated 18 months during construction phase
Clearing or resource extraction from areas of sensitive vegetation	No				Rice, crops and other types of plants were planted along the subproject. No sensitive vegetable at the borrow pits and surrounding area of the subproject.
Changes of surface water hydrology flooding situation and irrigation works used for surface water	No				The upgraded road is based on the old one. Almost all drainage schemes have been fully invested therefore the construction activities were able to make sure that flood could be escaped as current situation. The upgraded road did not negatively impact to irrigation schemes in the area of subproject.

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
exploitation					
Changes of groundwater dynamics	No				The upgraded road was based on the old one with the depth at organic layer at about 20-30cm therefore it has no impact to underground water in the area.
Noise	Yes	Minor	Negative	Temporary	**Description**: activities of construction equipment, machineries and transportation vehicles **Location**: On-going construction part, material transportation road and waste transportation road. **Affected Objects**: • People living along proposed road in An Hoa, Phu Tan, Nui Mot hamlets • People living along the material transportation roads at Hoa Da, Phu Hoa, Tan Dinh villages in An Hoa communes; My Phu, Phong Phu villages in An Hiep commune and Phu Tan, Dong Duc villages in An Cu commune. **Affected level**: Impact of noise is minor because the construction activities have been spread all over and many different types of construction materials have been transported in different parts of the road. The route is mainly along with the lagoon with a few of households nearby. The volume of transported materials as stones, sand, cement…is not much therefore impact level is not high and can be minimized by appropriate mitigation measures. **Time of impact**:estimated 18 months during construction phase

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
Changes to road safety / traffic movements, trading activities property access	Yes	Minor	Negative	Temporary	**Description**: Construction activities can affect on traveling, transporting goods for local people, disturbance to individual households and cause risk for safety traffic in process transport raw materials. **Location:** In the whole road; material transportation road and waste transportation road **Affected Objects:** • People living along proposed road in An Hoa, Phu Tan, Nui Mot hamlets • People traveling on the proposed road and material transportation roads at Hoa Da, Phu Hoa, Tan Dinh villages in An Hoa commune; My Phu, Phong Phu villages in An Hiep commune and Phu Tan, Dong Duc villages in An Cu commune and traffic means. **Affected level:** minor Currently, the density of traffics on the road is rather small. Main vehicles are on foot, bicycles, motorcycles. However, construction activities might generate negative impact to the transportation during fishery harvesting time. Along the road through residential area in Ben hamlet, My Phu and Tan Hau villages, the current road is rather narrow therefore it would generate negative impact to the transportation. Level of impact to the possibility of property access is small because the construction activities were conducted part by part and local community could still travel by to do their daily production activities. **Time of impact**: estimated 18 months during construction phase
Impacts on environmental sanitation	YES	Minor	Negative	Temporary	**Description:** construction of the road, as well as operations of the worker's camp is expected to generate solid waste such as spoil excavation soil and other construction waste mortar, sand, stone, cement packing, commodity goods packaging, etc. and domestic waste from worker's camp which if not regularly collected and properly disposed of, may be carried away by surface run-off into O Loan lagoon. Excess soil and debris that gets into the productive agricultural land may reduce the productive areas. If domestic waste from worker's camp is not regularly collected, it may cause health problems for workers and people living near the worker's camp. **Location:** Workers' camps, along the road, and material stores, and construction sites along the road. **Affected Objects:** • Temporary dumping site • Disposal sites • Workers at camp sites and construction sites • Local people who live near construction sites and

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					camp sites **Affected level:** minor Solid wastes were mainly from unused stone, cement bags and etc. According to the design, the volume of unused waste stone is not much and would be dumped at the disposal location in Tan Hoa village therefore the impact would be rather small and could be under the control. **Time of impact**: estimated 18 months during construction phase
Affect rural infrastructure system such as communication system, electricity and water-supply, etc.	Yes	Minor	Negative	Temporary	**Description**: construction activities and materials transportation may affect on rural infrastructure system **Location**: Inter-village roads at My Phu, Tan Hau, Phu Tan villages; drainage schemes, electricity system. **Affected Objects:** • Commune's roads, drainage and electricity systems in the construction area in An Cu, An Hiep, An Hoa communes. **Affected level**: Current cross drainage culverts (25 locations for culverts) and 02 slab bridges could be negatively impacted by the truck load during their transportation; 31 electricity poles would be removed which would impact to the availability of power during the settlement. Quality of inter-village roads would be impacted from the transportation of construction material due to heavy load over the limit (<8 ton). In addition, 1 culvert through the railway station should be ensured their height <3.5m to prevent collision. In addition, there was no impact to other infrastructure schemes. Level of impact is rather small and could be controlled by applying mitigation measures. **Time of impact**:estimated 18 months during construction phase
Effects on cultural buildings or historical monuments.	NO				There are not any cultural buildings or historical monuments nearby the construction site
Risks of natural calamity	YES	Medium	Negative	Temporary	**Description**: rain-storm, flood may cause risk **Location:** Along with the road especially at Ben hamlet where big flood annually occurred. **Affected objects:** • People living along the road in Tan Hau, Phong Phu, Quan Cau, My Phu, Dong Duc, Phu Tan

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					villages in An Cu, An Hiep and AnHoa communes and their infrastructure. **Affected level**: Annually, from September to November (lunar year), it means October – December (solar year) the water level in O Loan Lagoon is very high. Also, stormy rain could generate negative impacts on the quality of schemes especially upgraded parts. Therefore, there should be developed proper measures and mitigation measures to cope with possible natural disasters. **Time of impact**: From September – December
Impacts on fishery breeding in the area of O Loan Lagoon.	YES	Minor	Negative	Temporary	**Description**: waste or machinery oil or mud may effect to fishery breeding **Location:** Shrimp ponds nearby the road in Phu Tan, Dong Duc, My Phu, Phong Phu villages of An Cu, An Hiep and An Hoa communes. **Affected objects:** • Shrimps and water creatures in O Loan lagoon. • Farmers **Affected level**: small In the area of subproject, local farmers harvested two seasons of shrimp from March – May and July – September (solar calendar). During the construction, quality of water could be negatively impacted because of the increasing of waste or machinery oil or mud. Also, there could be an impact to current culvert for the intake of salty water into the lagoon. Some construction parts overlapped a part of area causing activities of raising shrimps. Upon arrangement and construction measures the level of impact varied however this can be controlled **Time of impact:** estimated 18 months during construction phase which possibly impact 3 seasons of breeding.
Impacts on biodiversity and landscape	YES	Minor	Negative	Temporary	**Description**: land clearance activities, digging, waste, domestic water waste may effect to biodiversity and landscape. **Location:** O Loan Lagoon; sites nearby quarry of An Hoa, Nui Mot and Phu Tan 2 villages. **Affected objects:** • O Loan lagoon and its water creatures **Affected level:** small Due to the fact that the road is along with O Loan pond therefore the construction activities might generate negative impacts on biodiversity and landscape due to land clearance activities, digging, waste, domestic water waste. However, the impact is rather small and could be controlled.

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					It could be changed landscape at soil quarries if there is no plan for land return. **Time of impact**: estimated 18 months during construction phase
Employment or livelihood benefits from employment of local people	YES	Minor	Positive	Temporary	**Description:** Contractors will use local laborers for simple works such as smooth the road, moving soil, give priority to poor families, female householders, woman if they need jobs. It aims to raise their income, create more jobs and contribute to hunger elimination and poverty alleviation for community **Location:** An Cu, An Hiep, An Hoa communes. **Affected Objects**: • Local people in An Cu, An Hiep and An Hoa communes. **Affected level**: Minor because the number of local workers who have qualified skills that satisfy requirements of work is not many. The local workers can mainly implement some simple tasks such as material transportation. **Time of positive impact**: estimated 18 months during construction phase
Risks to health and safety of local people and construction workers	YES	Minor	Negative	Temporary	**Description**: dust, air pollutants, disease, accidents at work and traffic have direct affects on health of workers and local residents. Material transport and construction activities on the existing road may create the risk of affects on traffic safety and houses structure on road sides. Sewage from construction activities and domestic use of workers. This causes some respiratory diseases for local people as well as workers. Accidents may occur if during the construction, workers are not provided with safety equipment and obey construction regulations. **Location:** Tan Hau, Phong Phu, Quan Cau, My Phu, Dong Duc, Phu Tan villages in An Cu, An Hiep. An Hoa communes. **Objects:** • Local peoples living along road in Tan Hau, Phong Phu, Quan Cau, My Phu, Dong Duc, Phu Tan villages in An Cu, An Hiep and An Hoa communes • Workers working at the construction sites **Affected level**: small There may be unsafety or impacts to workers' health during working process due to lack of warning signs, lighting equipment at night or careless actions and so on. However, the level of impact is small and can be minimized by appropriate measures. - Number of transportation vehicle remain not many with small load and not frequent. - Workers are required to have good health and regularly trained on health protection.

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					- Traffic safety could be ensure by fully equipping warning signs, fences, and raising community awareness. However, some parts through narrow road with high density of local community in Tan Hau and My Phu communes should be taken care of. - Construction activities should not be too much complicated. Workers are recommended to use labor safety clothes to avoid the possibility of accidents. **Time of impact**: estimated 18 months during construction phase
Impacts in operation stage					
Increases access to markets, schools, employment, health centers' and other facilities?	Yes	Significant	Positive	Permanent	**Description:** The completed subproject will enhance the possibility to market access and different services, reduce transportation time and cost for agriculture products. Also, it helps to increase the services of biodiversity tourism to O Loan Lagoon thanks to good transportation. **Location:** along the road in An Cu, An Hiep and An Hoa communes **Objects:** • Local peoples living along the road especially Ben hamlet, My Phu, Tan Hau, Dong Duc and Phu Tan villages.
Changes to road safety	Yes	Minor	Negative	Permanent	**Description:** Road with good quality will facilitate the travelling of residents. Traffic volume will be increased together with the economic development in the area. The number of motorbikes, bikes, cars and trucks will be increased; therefore, traffic unsafely possibly happens Location: Along the road including An Cu, An Hiep and An Hoa commune **Affected objects:** • Local peoples living along the road especially Ben hamlet, My Phu, Tan Hau, Dong Duc and Phu Tan villages. **Affected level**: Small However, road signs along the road can mitigate traffic accidents so this impact can be controlled and will be insignificant level
Noise and vibration impacts, changes in dust levels or air quality	Yes	Minor	Negative	Permanent	**Description:** Road with good quality will facilitate the travelling of residents. Traffic volume will be increased together with the economic development in the area. The number of motorbikes, bikes, cars and trucks will be increased; therefore, Exhaust gas, noise and vibration will increase. This will affect households living along the route. **Location:** Along the road especially parts to residential areas in Tan Hau village, Ben hamlet, My

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					Thuan village. Affected objects: • Local peoples living along the road especially parts to residential areas in Tan Hau village, Ben hamlet, My Thuan village **Affected level:** Small This impact is insignificant because (i) residential areas have low traffic volume; (ii) vehicles on road are mainly motorbikes; transport trucks mainly serve agriculture production, the time follow the season; and serve transport for construction at a small scale; therefore, dust and vibration affects will be unremarkable;
Changes risk of environmental damage from accidents involving spills of chemicals or other hazardous substances	No				Road is used for travelling of local people in the villages. Also, the road is used for the transportation of agricultural products, fishery products. There is no transporting chemicals on the road.
Risks caused by natural disaster	YES	Significant	Positive	Permanent	**Description**: The effects of rain-storm, flood, salt water can be reduced **Location:** Along the road especially at the location of road with dyke to prevent salty water. **Affected objects:** • Local peoples living along the road especially at the location of road with dyke to prevent salty water and their infrastructure and farms **Affected level**: Upgrading the road and spillway, cross and longitudinal drainage system will improve the situation of drainage during flooding season reducing damages due to natural disaster. According to the calculation results, tide level in O Loan Lagoon taking into account sea level rise due to climate change is 2.45m. Plot lines in place to prevent the embankment salt 3.25m and to prevent penetration of sea salt affecting agricultural production in communal areas of Dong Lang in An Hiep commune, and salty paddy field in An Hoa commune. **Time of impact**: During flooding season and rising season;
Changes to community structure through severance by road corridors	No				Residential areas of the village have been living along the route. According to the population growth, the number of houses along the road is likely to increase over time, however, the operation of small business in the area and the number of small houses

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					on roadside could not make a change in community structure;
Creation of stagnant water sites and damages during the operation.	YES	Minor	Negative	Permanent	**Description:** In areas of low-lying, poorly drained, inappropriate drainage placement may occur stagnant water sites affecting traffic movement and quality of roads. **Location:** In the area of Ben hamlet; road combination with salty prevention dyke **Affected objects:** • Road and local people living along the road and travelling on the road **Time of impact**: during annual rainy season.
Changing the form of irrigation patterns using surface water or flooding patterns	No				Because roads are upgraded on an existing road, the drains were stationed along the route. Better drainage conditions should not change the status quo in the form of irrigation, drainage, groundwater than current situation;
Rice yields are improved by reducing salt water intrusion	YES	Significant	Positive	Permanent	**Description:** The salty combination road helped to renovate fields and 187ha of land area for farming in the area Dong Lang village, An Hiep commune and salinity areas in Phong Phu village, Tan Dinh and Tan Hau village of An Hoa commune, increasing productivity from crop 1 to 2 from 5 ton/ha to 12 tonnes/ha/year. **Location:** Dong Lang village of An Hiep commune, and Phong Phu, Tan Dinh and Tan Hau villages of An Hoa commune. **Objects:** • Local farmers living in An Hiep and An Hoa communes
Changes in living conditions and / or public health activities through improved traffic	YES	Significant	Positive	Permanent	**Description:** Traffic system in An Cu, An Hiep, An Hoa communes is favourable helping local transportation and faster goods exchange activities helping to develop the economy, improve income and living standards. In addition, access to health services is also helping to strengthen health care. **Location**: An Cu, An Hiep and An Hoa communes **Objects:** • Local peoples living along the road in An Cu, An Hiep and An Hoa communes
Change access to natural resources	No				The repairing and upgrading of the road does not affect any natural resources near the subproject area.
Changes to visual amenity / landscape values	YES	Significant	Postive	Permanent	**Description** : Completed construction route will minimize dust, mud, road slopes landslides during the rainy season, the system contributes to sustainable infrastructure and improved

IMPACTS	POTENTIAL IMPACT				BRIEF DESCRIPTION OF IMPACT LOCATION AND SCOPE
	YES /NO?	MINOR OR SIGNIFICANT	POSITIVE OR NEGATIVE	TEMPORARY OR PERMANENT	
					environmental landscape scenic area national monuments. **Location:** Along the road **Objects:** • Local peoples living along the road in An Cu, An Hiep and An Hoa communes and tourists
Impacts on ethnic minorities	No				No ethnic minority groups living in the project area.

V. OUTLINE OF ENVIRONMENTAL MANAGEMENT PLAN (EMP)

5.1. Environmental Mitigation Plan

Table 4: Environmental Management Plan

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
Pre-Construction Stage				
Environmentally responsible procurement and SEMP preparation	▪ EMP is included in tender documents to ensure that mitigation measures are budgeted and to prepare the contractors for environmental responsibilities. ▪ Specify in bid document that Contractors shall engage capable and trained staff or site agent(s) to take responsibility for the environmental management and safety issues at the working level and to monitor the effectiveness and review mitigation measures as the sub project proceeds. Contractors recruit qualified staff to oversee implementation of environmental and safety measures specified in the EMP. ▪ Any recent recommendations and initiatives from DONRE or other local environmental authorities will be incorporated in the EMP and updated as necessary. Before contracting based on the requirements of the IEE, contractors should prepare SEMPs for implementation by contractors. Such SEMPs shall not be in conflict with any provisions of the EMP in the IEE: Waste Management and Spoil, Disposal Plan, Materials Management Plan, Drainage Management Plan, Erosion Control Plan, Tree-cutting and Replanting Plan, Temporary Transport Management Plan, Utilities and Irrigation Reprovisioning Plan, Noise and Dust Control Plan, and Workers and Public Safety Plan.	Design Consultant, PPMU, Contractor, Environmental Consultant		Included in the contract
Plan construction materials management	As planed in design documents, the main construction material will be taken from existing quarries as: ▪ Filling soil is exploited from An Hoa borrow pit, Phu Tan quarry borrow and Nui Mot quarry borrow pit. ▪ Ashlars, industrial stone from Hoa Da stone quarry (at Km2- provincial road 643). ▪ Sand bought or exploited from Ngan Son (at Km1300-QL1A). ▪ Cement, steel, asphalt/bitumen, etc. purchase from Chi Thanh town, Tuy An district. In case that, above material sources will be changed, an appropriate material management plan should includie the following:	Design Consultant, PPMU		Included in the contract

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
	▪ Required materials, potential sources and estimated quantities available; ▪ Material supply manners: preferring to purchase from existing material quarries. ▪ Agreement with the local authorities ▪ Check with environmental permission/certification of the quarries to ensure that environmental impacts and mitigation measures have been considered by owners. ▪ Environmental recovery plan ▪ Material transportation manner plans and schedules ▪ Program for delivery of quarry and borrow material			
Plan Spoil and Waste Disposal	▪ Re-use of waste materials & spoil disposal locations included in bid and contract documents. ▪ Select an properly treatment manners, preferred of for fill up the site of other projects activities/purposes ▪ Determine waste materials & spoil disposal locations. The expectation is that construction waste will be stored temporarily along the proposed road, domestic waste will be stored in rubbish bins and then will be collected and treated by the local authority and contractors will be responsible for paying the bill ▪ Agreement with the local authorities need to be obtain during detail design or before starting construction activities; ▪ Environmental recovery plan since construction activities completed ▪ Waste materials transportation manner plans and schedules ▪ Establishment of complaints management system for duration of the works	Design Consultant, PPMU		Included in the contract
Effects on households from loss of residential or agricultural land	Implement mitigation measures as presented in Subproject resettlement plan	PPMU		Included in resettlement plan
Construction stage				
Erosion or sedimentation caused during clearing or earthworks	▪ Install sediment fences and/or sediment traps at drainage ditches at the construction sites near O Loan lagoon. ▪ Properly site design and work schedule to avoid identified locations and flooding seasons ▪ Organic soil should be moved once it is	Contractor	Sediment fences, traps and drainage ditches;	Included in the contract

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
	dredged. ▪ Conduct rolling and compacting in parallel with earth-filling. ▪ Gather material, soil far from overflows which cause sedimentation. ▪ Make temporary drains, deposit pits to different directions avoiding water sources areas		drains	
Pollution of waterways, aquatic environments or groundwater	▪ Store chemicals in secure area, gather material, fuel at the area with high concreted ground with roof ▪ Avoid spilling material when refuelling, changing fuel, maintaining machineries. Ensure construction equipment and vehicles are maintained in good conditions to avoid leakage. ▪ Location of worksites, load construction material at least 200 m from watercourse to ensure that materials do not fall into water bodies ▪ Dug soil would be gathered neatly in the dump site located in Tan Hoa village, An Hoa commune. ▪ Regularly clean construction site. No waste water is drained directly to O Loan lagoon area. ▪ There should be coffer dam in the drainage and salt control culverts construction site ▪ Covering material storage areas during rainy times. ▪ Provide rubbish bins at camping sites and containers at construction sites. ▪ Install sanitary toilets with septic tanks following sanitation regulation and washing facilities at construction camps. ▪ Including all water protection requirements into tender documents.	Contractor	Tanks for storing chemicals, sanitary toilets, rubbish bins and containers	Included in the contract
Soil contamination	▪ Gather material, fuel at the area with high concreted ground with roof. ▪ Avoid spilling material when refueling, replacing fuel, maintaining machineries. ▪ Waste oil, oily rags should be collected separately for reuse or proper treatment. ▪ Gather neatly soil at temporary storage site. Clean construction site regularly. ▪ Prevent soil contamination requiring contractors to instruct and train their workforce on storage and handling of materials and chemicals that can potentially cause soil contamination.	Contractor	Fuel tanks, concrete floor	Included in the contract
Air pollution and impacts on safety traffic	▪ Machineries and equipments must have adequate safety registration and environment protection documents according to Decision No 35/2005/QD-BGTVT	Contractor	Canvas, watering facilities,	Included in the contract

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
	▪ All transportation trucks should be provided with canvas for covering materials ▪ Maintain machineries and equipment regularly to ensure proper operation. ▪ Vehicles' loading capacity should not be exceeded ▪ Keep suitable speed when vehicles pass through residential areas and the sites to limit rolled dust. ▪ Watering twice per day in dry and hot weather at any locations where a lot of dust is generated along to the road. ▪ Timber and rubber are forbidden as a kind of fuel in the site ▪ All material storage areas and material production areas shall be located at least 50 meters from any residence such as Tan Hau, Ben and My Phu villages. Cover sand loads with nets or sheets if materials are stored within 50 m from houses ▪ Reasonably arrange locations for material gathering and gather materials neatly along the construction road. ▪ Minimize spillage of material to surrounding area beyond the boundary. ▪ Materials should be stored properly, i.e cement, iron and steel should be placed in the area with high round and covered by canvas.		net, sheet	
Noise	▪ Maintain machineries, equipment and transportation trucks regularly. ▪ Select routes for transportation and avoid crossing residential areas whenever possible ▪ Arrange the number and transportation time, reasonable speed as passing residential area. ▪ All noise generation activities shall be undertaken using minimum impact intensity and only during the hours of 07:00 to 17:00, and shall be located at least 300 metres from any residence; ▪ Provision noise protection equipment for worker; ▪ Operation schedule of noise generation equipment must be approved by construction supervision. ▪ - In case that, noise generation equipment need to run during night time nearby the resident areas, the detail schedule will be considered and approved by construction supervision before could be applied.	Contractor, District Support Team, CPC, DPC	Noise protection equipment	Included in the contract
Changes to	▪ Consult authorities and people to locate	Contractor,	Signboard	Included in

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
road safety/traffic movements, trading activities property access	transportation route reasonably. ▪ Reasonably arrange transportation frequency on routes, especially those crossing Tan Hau, Ben and My Phu villages. Avoid transporting in rush hours. ▪ Limit speed of material transportation vehicles travelling on the road ▪ Put construction signboard at headwork locations, warning signs, traffic guidance signboard in construction site and wherever there is safety risk along the road. ▪ Reasonably organize construction activities and locate bypasses. ▪ Gather material and machineries neatly along the road. ▪ Inform the authorities and villagers about construction plan and time. ▪ Install signal lamps at night	District Support Team	, warning sign, signal lamp	the contract
Impacts on environmental sanitation	▪ Categorize waste. Non-recyclable waste and waste soil and stone will be moved to dump site in Tan Hoa village, An Hoa commune. ▪ Recyclable materials such as cement pack cover, scrap iron, wood pieces will be collected and gathered neatly for reuse or sale. ▪ Waste need to be collected, transported by adequate manners and treated in approval landfill sites by local authorities ▪ Workers will be boarded with local families' houses to minimize number of workers living out of the camps. Domestic waste will be collected and treated together with that of the households. ▪ Construct toilets with sanitation standards, bathrooms (for male and female separately), locate kitchen for workers at their camps. ▪ Place waste bin at workers' camps (02 bins per camp). Remind workers to not throw domestic waste to surrounding area, especially O Loan lagoon area. ▪ Collect and properly process domestic waste using combustion method. ▪ Locate reasonably domestic drain system at the construction site and cleanse frequently. ▪ Prioritize hiring local workers to reduce the number of workers living in camps. ▪ - Dismantle and clear all temporary works after completing the construction.	Contractor	Toilet, waste bin, drain system	Included in the contract
Affect rural infrastructure	▪ Consulting the sub-project engineering staff to minimize physical impacts on public infrastructure and disruption to	PPMU		Included in the contract

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
system such as communication system, electricity and water-supply, etc.	services ▪ Transport material under the limit loading capacity on the roads (inter-village concrete road – capacity of 7 tons, transverse culvert in Ben hamlet – height limit less than 3.5m). ▪ Ensure the proper loading capacity and avoid existing cross drains and bridges. ▪ Confirm the status of access roads in hamlets under An Cu, An Hiep and An Hoa communes before constructing and commit to return as current status if any damage occurs.	Contractor/CPCs of An Cu, An Hiep and An Hoa communes		
Risks of natural calamity	▪ Prepare plans to cope with the risks that may occur as heavy rains, storms and floods which can cause landslide and flood works. ▪ Arrange construction time reasonably, avoid construction in location prone to landslide and flood in wet season (from September to December). ▪ Build and maintain temporary drainage ditches within and surrounding construction sites to ensure surface runoff is drained efficiently ▪ Place grid for prevention of wastes from entering drains	Contractor	Drainage ditches, grid	Included in the contract
Impacts on fishery breeding in the area of O Loan Lagoon.	▪ All road sections which are next to the lagoon should be constructed in dry season, avoid raising calendar or place diversion canal to minimize impacts. ▪ During construction time, prohibit any direct waste disposal to the lagoon.	Contractor		Included in the contract
Impacts on biodiversity and landscape	▪ Implement construction within allowed boundary. ▪ Prohibit the exploitation of natural resources in the subproject area, avoid causing any damage to landscape of O Loan lagoon surrounding area. ▪ Restore site, re-plant trees or change using purposes in material quarries of An Hoa, Nui Mot and Phu Tan 2. ▪ Prohibit workers from cutting trees for any purpose. ▪ Upon completion of site works, remove construction camps and return the area to preconstruction condition	Contractor		Included in the contract
Risks to health and safety of local people and construction workers	▪ Register temporary residence for workers from other places with police department under An Cu, An Hiep and An Hoa communes to coordinate management. ▪ Consult village leaders of Tan Hau and My Phu villages regarding arranging houses for workers and local regulations and customs. ▪ Remind workers to avoid conflicts with	Contractor	Safety equipment such as masks, shoes, hats,	Included in the contract

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
	local people and follow a healthy lifestyle. ▪ Propagation of HIV / AIDS and other sexually transmitted diseases; raise awareness about social evils like gambling, theft, etc. ▪ Impose labor regulations, curfew hours and request for staff and workers' strict observation. ▪ Receive community feedback regularly and closely coordinate with subproject communes during the construction process. ▪ Recruit workers within working age and in good health. ▪ Equip protection clothing for workers as masks, shoes, hats, gloves, clothing ... and remind them to use while working. ▪ Equip first-aid kits, fire extinguishers in camp areas, fuel storage. ▪ Raise workers' awareness on working safety. ▪ Set up restriction signs on the construction site; warning signs, barriers in areas prone to insecurity. ▪ Standing water will not be allowed to accumulate in the temporary drainage facilities or along the roadside to prevent proliferation of mosquitoes ▪ Temporary and permanent drainage facilities will be designed to facilitate the rapid removal of surface water from all areas and prevent the accumulation of surface water ponds.		gloves, clothing, first-aid kits, fire extinguishers, restriction signs, drainage	
Environmental recovery	Before construction is completed, the contractor will move all construction wastes and unused materials from the sites to approved sites Monitoring environmental recovery at: - Construction waste disposal location - Material quarries and borrow areas - Working sites Monitor survival of trees / shrubs and grass in bioengineered slopes (e.g. at landslides, also transplanted / compensatory planting trees) and replant, as necessary.	Contractor		Included in construction cost
Operation stage				
Changes to road safety	▪ Raise awareness of people in transportation activities using village's loudspeaker. ▪ Install and maintain road warning signs and markings. ▪ Provide appropriate road cross section for local residents ▪ Undertake road safety awareness campaigns or local residents and other	Tuy An Department of Industry and Trade/ CPCs under the subproject		Included in operation cost

Potential Impact	Mitigation Measure	Responsibility	Treatment facilities	Cost
	road users			
Noise and vibration impacts, change in dust levels or air quality	▪ Install warning signs on limited load and speed on the road. ▪ Restrict time travelling to vehicles with heavy load from 8 PM to 6 AM.	Tuy An Department of Industry and Trade/ CPCs under the subproject		Included in operation cost
Creation of stagnant water sites and damages during the operation.	▪ Work management units in subproject communes will regularly check to detect damages, inundated areas and adopt remedial measures timely. ▪ Regularly and periodically conduct operation & maintenance in accordance with applicable regulations.	Management units in subproject communes		Included in operation cost

5.2. Environmental Monitoring Plan

5.2.1. Environmental Impact monitoring

5. Environmental impact monitoring is carried out to exaquarry impacts of project to ambient environmental conditions.

6. Construction Supervision Consultant will supervise compliance of contractor with measures to mitigate environmental impacts during construction phase. In addition, LIC will conduct spot check monitoring to assess environmental impacts caused by the subproject.

Table 5: Monitoring plan for environmental impacts[6]

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
Construction stage						
Minimization of noise generation	Noise level	1. Residential area of Ben hamlet, My Phu village, An Hiep commune 2. Residential area of T-junction in Tan Hoa hamlet, An Hoa commune, near the construction area of dike-road. 3. Residential area in the headwork location in Phu Tan hamlet, An Cu commune.	Observation/ Use noise meter	Every week during the construction stage or when receiving feedbacks from the community about high noise level	CSC/ PPMU/ Community monitoring unit	Include in the contract. No margin cost;
Minimization of dust generation	Dust level	1. Residential area of Ben hamlet, My Phu village, An Hiep commune 2. Residential area	Visual Observation/ Sampling and	Weekly or when there's strong wind	CSC/ PPMU/ Community monitoring unit	Include in the contract. No margin cost;

[6]Monitoring location map is presented in the Annex 4

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
		of T-junction in Tan Hoa hamlet, An Hoa commune, near the construction area of dike-road. 3. Residential area in the headwork location in Phu Tan hamlet, An Cu commune.	analysis upon complaints raised			
Control of water quality	Volume of the sediment, litter, oil or visible polluted fume. Parameters: pH, COD, BOD5, TSS, salinity, Zn, Cd, Pb, Coliform	1. Surface water site at Ben hamlet, My Phu village, An Hiep commune. 2. Surface water site at drainage and salt control culverts to prevent salnicity Km6+400. 3. Water in shrimp breeding pond at O Loan at the border site of An Cu and An Hiep communes.	Observation/ Sampling and analysis when allowed	Weekly or when there is heavy rain or receiving feedback from local communities	CSC/ PPMU/ Community monitoring unit	Include in the contract. No margin cost;
Control of soil quality	Waste, oil and grease	At the site of camps, equipment storage, fuel storage.	Observation	Weekly or when local complaints raised	CSC/ PPMU/ Community monitoring unit	Include in the contract. No margin cost;
Operation stage						
Air quality	- TSP; NO_x; SO_x; CO - In comparison with QCVN 05:2009/ BTNMT	1. Residential area at Ben hamlet, My Phu village, An Hiep commune. 2. Residential area at the intersection of Tan Hoa commune, An Hoa commune close to the construction sites with dyke. 3. Residential area at the beginning point of the subproject at Phu Tan village, An Cu commune.	TCVN methodology	Every one time/year in the first 2 years of operation	Tuy An's Department of Industry and Trade, Phu Yen province	Phu Yen provincial budget
Level of noise	- Noise at day and at night (dBA) - In comparison with QCVN 26:2010/BTNMT	1. Residential area at Ben hamlet, My Phu village, An Hiep commune. 2. Residential area at the intersection of Tan Hoa commune, An Hoa commune close to the construction sites with dyke.	Use noise meter	Every one time/year in the first 2 years of operation	Tuy An's Department of Industry and Trade, Phu Yen province	Phu Yen provincial budget

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
		3. Residential area at the beginning point of the subproject at Phu Tan, An Cu commune.				
Traffic safety	Number of traffic accidents and reasons and level of dangers	Along the road	Consulting with local authorities	Every one time/year in the first 2 years of operation	Tuy An's Department of Industry and Trade, Phu Yen province	Phu Yen provincial budget

5.2.2. Environmental Compliance Monitoring

7. Environmental compliance monitoring is carried out to test compliance with operating procedures, technical standards and/or contractor specifications in the EMP. CSC, safeguard officer of PPMU and environmental consultant of CPMU are responsible for monitoring appliance of contractors with requirement, presented in the table 6 below.

Table 6: Environmental Compliance Monitoring

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
Pre - Construction Stage						
Environmentally responsible procurement and SEMP preparation	Inclusion in bid docs	All road alignment and bridge	Checking documents	Bid preparation, before start of civil works	PPMU	Project preparation
Plan construction materials management	Meting minutes and agreement with local authorities	All road alignment and bridge	Checking documents	Prior to start of site works and throughout construction phase	PPMU	Project preparation
Plan Spoil and Waste Disposal	Meting minutes and agreement with local authorities	All road alignment and bridge	Checking documents	Prior to start of site works and throughout construction phase	PPMU	Project preparation
Effects on households from loss of residential or agricultural land	Compensation implement	All road alignment and bridge	Checking documents, interview, observation	Every six months	PPMU, Resettlement Consultant	Project preparation
Construction Stage						
All mitigation measure of erosion and sedimentation control	Accommodation of site design and work schedule. Site sanitation condition	At the whole site of the subproject	Observation	After big rainfall, flood	CSC	Include in the contract. No margin cost;

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
All mitigation measures to control pollution in the flow and aquatic environment	Materials storages is located properly. Site sanitation condition Materials is gathered neatly Collection of waste	At the whole site of the subproject	Observation	Weekly	CSC	Include in the contract. No margin cost;
All mitigation measures of soil contamination	Material gathering Waste collection Site sanitation condition	At the whole site of the subproject	Observation	Weekly	CSC	Include in the contract. No margin cost;
All mitigation measures of Air pollution and traffic impacts	Adequate safety registration and environment protection documents Noise, dust and emissions;	Along transportation road Area of operations; repairing and oil changing area	Observation Check safety records	Every day	CSC	Include in the contract. No margin cost;
Noise mitigation measures	Noise level	At the whole site of the subproject	Observation Interview local people	Every day	CSC	Include in the contract. No margin cost;
All measures of Changes to road safety / traffic movements, trading activities property access	Warning signs, traffic guidance signboard, lightning system	At the whole site of the subproject	Observation	Every day	CSC	Include in the contract. No margin cost;
All mitigation measures of risks of natural calamity	Temporary drainage Consistence of work schedule	At the whole site of the subproject	Observation Check work schedule	Every week	CSC	Include in the contract. No margin cost;
All mitigation measures of impact on aquaculture activities in O Loan lagoon	Sanitation condition Waste collection	All sites of the subproject	Observation	Every week	CSC	Include in the contract. No margin cost;
All mitigation measures of effects on public infrastructure: communication system, transportation roads and drainage system, etc	Capacity of road Capacity of transportation vehicles	Existing road on site	Observation	Every day	CSC	Include in the contract. No margin cost;

Mitigation Measure	Parameters	Location	Methods	Frequency	Responsibility	Cost
Construction camp conditions	Cleaning; waste disposal sites available; general conditions	All camps	Observation	Every week	CSC	Include in the contract.
Access to property	Rearrangement of short term and long term road	The location of temporary road along with the entire project route	Observation	Once during construction and once after the construction	CSC	Include in the contract. No margin cost;
Waste disposal	Condition and cleanliness of the project; temporary waste storage area	At the whole site of the subproject	Observation	Every week	CSC	Include in the contract. No margin cost;
Stagnant water site	Stagnant water	At the whole site of the subproject	Observation	Every week during rainy season	CSC	Include in the contract.
Material exploitation sites	Environmental approval relating to Material exploitation sites	Quarries of An Hoa, Nui Mot and Phu Tan 2	Review related documents	Before starting the exploitation of natural resources	PPMU	Operation cost from PPMU
Environmental recovery	Sanitation condition	Construction site; borrow areas, material quarries	Observation	Before construction is completed	Construction supervision and PPMU	Include in the contract. No margin cost;
All mitigation measures of control effect on social aspect	Worker healthy Social security Site sanitation	At the whole site of the subproject	Observation Check the health of worker every 6 months	Every 6 months	Construction supervision and PPMU	Include in the contract. No margin cost;
Operation phase						
Erosion or sedimentation, landslides of water resources, area of digging and covering	Landscape conditions; stability of the digging area	At some representative parts along the road	Observation	Every 6 months during the first two years of operation	DARD and/or operation company	Include in the operation cost
Drainage and flooding	Conditions of drainage, culverts of flooding in nearby land area	At some representative parts along the road	Observation	Every 6 months during the first two years of operation	DARD and/or operation company	Include in the operation cost
Creation of water holes on the road	Evidence of stagnant water sites	At some representative parts along the road	Observation	During rainy season in the first two years of operation	DARD and/or operation company	Include in the operation cost

5.3. EMP Implementation Arrangements

Table 7: EMP Implementation

Organization	Roles and Responsibilities		
	Subproject Preparation	***Subproject Implementation***	***Subproject Operation***
CPMU	- Recruit consultants and take responsibility of the preparation of IEE/CEP and submit ADB for NOL. - Provide advice to PPMU Safeguards Officer on IEE/CEP and IEE/EIAR preparation - Review and provide "no-objection" on IEE/CEPs or IEE/EIARs submitted by PPMUs	- Provide advice to PPMU Safeguards Officer on EMP implementation during construction - Monitor progress during construction - Consolidate PPMU environmental reporting	- Provide advice to PPMU Safeguards Officer on EMP implementation during first two year of operation - Monitor progress during first two year of operation - Consolidate PPMU environmental reporting
PPC	Sign-off on environmental assessment documents prior to submission for approval	Project owner with ultimate responsibility for environmental performance of subproject during construction	Project owner with responsibility for operation stage environmental performance including implementation of EMP during operation
DONRE	Provide advice and guidance on environmental issues as required during subproject preparation	Monitoring implementation of EMP through their own internal monitoring system	Monitoring implementation of EMP through their own internal monitoring system
PPMU	- Engage consultant and have overall responsibility for IEE/CEP or IEE/EIAR preparation and submission for approval - Ensure staff are adequately trained in environmental issues	- Responsibility for EMP implementation during pre-construction and construction - Ensure that contract specifications and bud documents include environmental requirements - Undertake inspections and monitoring of environmental issues during construction - Coordinate quarterly environmental monitoring reporting to CPMU	- Responsibility for EMP implementation during first year of operation - Undertake inspections and monitoring of environmental issues during first year of operation - Assist project owners to incorporate environmental requirements into infrastructure O&M procedures
DPCs	Approval of subproject CEPs in accordance with GOV legislative requirements	Monitoring implementation of EMP through their own internal monitoring system	Monitoring implementation of EMP through their own internal monitoring system
LIC	Prepare IEEs/CEPs	Recommend for PPMU about environmental issues needed to integrate during implementation progress; Conduct spot check	n/a

Organization	Roles and Responsibilities		
	Subproject Preparation	***Subproject Implementation***	***Subproject Operation***
		environmental monitoring.	
District Subproject Support Teams (SST)	Assist in IEE/CEP preparation as required	Day to day supervision of contractors' in district including compliance with environmental management requirements Undertake environmental monitoring and coordination of local community environmental monitoring activities	Undertake environmental monitoring and coordination of local community environmental monitoring activities for first two years of operation
Commune Supervision Board (CSB) and local community members[7]	Involvement in consultation and participation activities to prepare IEE of subprojects. Ability to comment on environmental assessment documentation upon disclosure	Involvement in environmental monitoring activities under the direction of SSTs	Involvement in environmental monitoring activities under the direction of SSTs
Construction contractor	n/a	Prepare detailed Site EMP to meet the Subproject EMP general requirements Allocate adequate resources to meet the requirements and obligations of Site EMP	n/a

5.4. Monitoring and Reporting System

Table 8: Monitoring and Reporting System

Project Phase	Type Of Report	Frequency	Responsibility	Submitted To Whom
Construction	**Site Environmental Performance Report** indicating compliance with Site EMP and monitoring results	Monthly	CSC	PPMU
	EMP Compliance Report indicating compliance with subproject EMP and monitoring results	Quarterly	PPMU	CPMU
	EMP Compliance Report indicating compliance with subproject EMP and monitoring results	Every 6 months or twice during construction phase	CPMU	ADB

[7]CSB is established according to Decision 80/2005/QD-TTg of Prime Minister of GOV. Article 8 of this decision provides the community with opportunities to inspect compliance, monitor implementation and evaluate the results of investments in the commune, including environmental impacts.

Project Phase	Type Of Report	Frequency	Responsibility	Submitted To Whom
	Subproject Environmental Report indicating overall subproject environmental performance and EMP compliance	At completion of subproject	CPMU	ADB
Operation	**EMP Compliance Report: Operation** indicating compliance with subproject EMP commitments during operation	Every six months for first two years of operation. On-going frequency to be based on review after 2 years	DARD and/or TuyAn's Department of Industry and Trade, Phu Yen province	ADB

5.5. EMP Budget

Table 9: Budget for EMP implementation

Item	Marginal Costs for Pre-Construction	Marginal Costs for Construction	Marginal Costs for Operation	Marginal Costs Sub-Total
Mitigation				
Compensation and land clearance	In a separated item on project compensation and resettlement	Contractor has responsibility to implement if raising effects	No	Included in other items
Monitoring				
PPMU's Internal monitoring	Included in management cost of PPMU	Included in the Contract with Contractor and CMC as well as in PPMU's management cost	Local and provincial budget	Included in contracts or other operation capital sources
Community monitoring	Not available (n/a)	Local budget (as in Decision No.80/2005/QĐ-TTg)	Local budget (as in Decision 80/2005/QD-TTg)	Local budget
LIC monitoring		Include in the contract with CPMU	n/a	
Training on capacity enhancement on environmental monitoring capability	n/a	n/a	n/a	n/a
Public disclosure	Defined in consultancy contract on IEE		n/a	

VI. PUBLIC CONSULTATION AND DISCLOSURE ACTIVITIES

6.1. Description of Activities to Date

Table 10: Public consultation and disclosure activities

CONSULTATION METHOD AND CONTENTS	DETAILS OF ACTIVITIES	
Method: - Use Participatory Rapid Appraisal, interview and group discussion methods - Based on the work plan of the Consultant, PPMU sent official letter to Cat Hung CPC to inform consultation schedule and invite the participitation. ***Content:*** - The design consultant presented some basic information aboout the subproject such as items, scale, site etc - Environmental consultant presented contents related to environmental impacts and mitigation measures during pre-construction stage, construction stage and operation stage of the subproject. - Disscussed and received all comments of the officials and local people. Recorded the minute of consultation.	*Date*	May 14 2014
	Location	An Hoa and An Hiep's communal hall
	Invitees	- Mr Huynh Van Phuc – President of An Hoa CPC. - Mr Bui Van Phuong – President of An Hiep CPC. - Representatives organizations of An Hiep and An Hoa communes such as Women's Union, Farmers Organization, National Front. - Representatives of design company - D-R-B design and consulting Ltd. - Representatives of Phu Yen PPMU. - Representatives of the households in the affected areas, beneficiaries of the rural communes of An Hiep and An Hoa. - Safeguard policy international consulting group.
	Agenda attached (Yes / No)	YES
	Minutes of meeting attached (Yes / No)	YES
	Number of participants	54 (the minutes of consultation attached)

6.2. Outcomes of Public Consultation to Date

Table 11: Community Consultation Results

Description of Issue Raised	By Whom?	Reference in IEE/CEP	Required Follow-up Actions?
Impacts of material transportation vehicles on the commune road structure.	Local people in An Hoa commune	Impacts on puplic infrastructure works	Construction contractor should: (i) use transportation vehicle which cart load under 7 tonnes (ii) commit to return as current status of the road if any damage occurs.
Inappropriate locations of drainage and salinity prevention system could generate negative impacts on the capacity of water drainage in the area	Local people in An Hoa and An Hiep communes		Consult with local people on the location of drainage and salinity prevention system to ensure efficient work

Around Sep-Nov according to lunar calendar, the rising of water level in O Loan Lagoon might affect the quality of work causing erosion.	Local people in An Hiep commune	Risks related to natural disasters	Arrange reasonable execution time. It needs to ensure that technical design and construction measures are appropriate in the key locations.
Impacts on the current status of surface water during the rainy season.	Local people at Ben hamlet, My Phu village, An Hiep commune	Impact on infrastructure system of public transportation, drainage	Survey the current state of the construction on the route. During construction, it does not affect the existing drainage works.
Impacts on aquaculture breeding (two seasons: from March – May and July – September)	Organization of farmers in An Hiep and An Cu communes	Impacts on aquaculture breeding in the area of O Loan Lagoon	It is to make sure the drainage system for the lagoon and avoid affecting water quality in the lagoon.
Safety issues at the location of culverts through the railway in Ben hamlet	Local people in My Phu village, An Hiep commune	Impacts on community infrastructure	Height of vehicles is <3,5 m while moving through the railway culvert.
Traffic safety during construction	Women's union	Changes to traffic safety / traffic safety activities.	Neatly gather construction materials; limit speed and installation of warning signs.
Security safety without causing a fight	Presidents of An Hoa and An Hiep CPC	Social impacts due to the presence of construction workers in the area.	Temporary living registration and close incorporation with local people during the construction.

6.3. Future Public Consultation Activities

Table 12: Expected community consultation activities

Activity	Participants	Expected Outcomes	Schedule	Cost Estimate
Kick-off meeting prior to construction commencement	PPMU, the Contractor, CMC, community representatives at project area	- Publicize construction contents, schedule and plan for water supply - Collect ideas and agree mitigation measures during construction.	1 week prior to construction commencement	Included in contract signed with parties
Periodical meetings	Contractor, CMC and representatives of local authority, organizations and community at project area	- Periodically check mitigation activities and arising problems - Propose treatment alternatives and reach agreement on implementation	Once every three month from construction commencement	Included in contract signed with parties

VII. CONCLUSIONS AND RECOMMENDATIONS

8. The subproject “upgrading dyke, rural roads, salinity prevention culverts and drainage and salt control culverts in An Cu-An Hiep-An Hoa” as a part of Integrated Rural Development Project in central provinces - additional loan which is managed by the Phu Yen PPMU.

9. The implementation process will affect some temporary housing area, and area of wet rice cultivation, ponds and several structures on the route. The impact has been specified in details in the RP of the subproject.

10. Some major environment impacts should be notified during the construction, as follows:

a) Air pollution due to dust, emissions and impacts on traffic from transport activities, gathering materials and construction of work items

b) Impact on infrastructure such as roads, drainage and salt control culverts, slap bridges and culverts across the current railway;

c) Impact on O Loan Lagoon water quality, landscape and aquaculture activities of rural people in An Cu, An Hiep and An Hoa communes.

d) The impact on construction activities and construction quality due to natural disasters.

11. During the operation phase, the positive impact of the subproject is huge by improving traffic conditions, goods traffic, and access to health services, commercing; minimizing saltwater intrusion in the field; improving productivity and reducing risks caused by natural disasters. However, there are some negative effects such as traffic accidents due to increased travelling density, stagnant water or damaged construction works and etc.

12. However, the influence and impact of the construction and operation of works are predicted and the appropriate mitigation measures include: arrangement of suitable transportationin accordance with the load limit and the existing structures and bridges; covering with canvas and speed limit; gathering materials neatly; reasonable arrangement of construction activities; collecting and processing entire waste; installingwarningsigns, barricades; temporary living registration; plans to prevent and respond to risks of natural disastersand incidents that may occur during the implementation process, etc.

13. The environmental monitoring activities will be carried out regularly by the construction supervision consultant; safeguard officers of PPMU, LIC performs periodical monitoring. The results of the monitoring activities will be reported to PPMU and CPMU.

Accordingly, environmental issues that might arise during construction preparation, construction and operation of works and mitigation measures and monitoring systems have been fully mentioned in the report of IEE/CEP

It is recommended that ADB, CPMU, PPMU and Tuy An district soon review and approve IEE/CEP to the subproject to ensure the implementation and effectiveness of the subproject

Annex 1: Current status of irrigation system and ambient environment & proposed environmental monitoring locations

Photo 1. Measurement site for surface water at the construction of drainage and salt control culverts to prevent salt at Km6+400, An Hiep commune.

Photo 2. Air measurement site at the intersection of Tan Hoa village, An Hoa commune.

Photo 3. The beginning point of the subproject, An Cu commune.

Photo 4. Culvert through the railway at Ben hamlet, My Phu village, An Hiep commune.

Photo 5. Residential area at hamlet, My Phu village, An Hiep commune.

Photo 6. Close to the railway in Dong Duc village, An Hiep commune.

Photo 7. Shrimp pond nearby the subproject.

Photo 8. Current status of pond side along the subproject with domestic wastes from local people.

Photo 9. Consultation meeting with local people at the communal hall in An Hoa commune.

Photo 10. Consultation meeting with local people at the communal hall in An Hiep commune.

Annex 2. Public consultation activities

Public consultation contents

1. Participants: Safeguard policies consultants, local leaders (communal and district levels), affected households and other local people living near project area;

2. Objectives: Project disclosure and public consultation on potential environmental impacts and proper mitigation measures during project's implementation;

3. Meeting content

3.1. Safeguard policies consultants introduced on basic information on project, construction items and their parameters;

3.2. Main environmental impacts and their mitigation measures were defined as by safeguard policies consultants, including:

+ Environmental impacts, social impacts before construction, consist of popular impacts such as land occupy, plants and tree removal, UXO area determination and their mitigation measures;

+ Environmental impacts during construction implementation such as dust, noise, safety for transportation as well as safety for local people on traffic roads, other impacts on agricultural activities; water, soil pollution, etc. and their mitigation measures;

3.3. Collecting contribution from local people on other potential environmental impacts before construction implementation, during construction stage and on operation, maintenance stages;

3.4. Safeguard policies consultants introduced in general on Environmental System Management in Viet Nam that to be applied in this subproject such as responsibilities of DONRE, DARD, DPC, CPC, Construction Management Consultants, Contractors and especially local Community Environmental Management Board;

The details will be described in meeting minutes as written following. People's contribution on environmental impacts and mitigation measures were presented in detail at "Table 11. Public consultation results".

Meeting minutes at public consultation and lists of attendance in the public consultation meeting at An Hiep commune

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

An Hiệp, ngày 14 tháng 5 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP

CÁC TỈNH MIỀN TRUNG - KHOẢN VAY BỔ SUNG

BIÊN BẢN HỌP THAM VẤN CỘNG ĐỒNG

Về các chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: Nâng cấp kè, đường giao thông, cống ngăn mặn và thoát lũ An Cư - An Hiệp An Hòa

Xã An Hiệp, huyện Tuy An, tỉnh Phú Yên

I. Thành phần tham dự:

- Ông/Bà Hoàng Hồng Hạnh, Chức vụ Tư vấn giới và sự tham gia cộng đồng
- Ông/Bà Đinh Kiều Oanh, Chức vụ Tư vấn tái định cư
- Ông/Bà Nguyễn Thị Thu Thảo, Chức vụ Tư vấn môi trường
- Ông/Bà Bùi Xuân Phương, Chức vụ Chủ tịch UBND xã
- Ông/Bà Võ Chí Tín, Chức vụ Phó chủ tịch UBND xã
- Ông/Bà Ngô Đình Thiên, Chức vụ Giám đốc Ban QLDA tỉnh
- Ông/Bà Nguyễn Doãn Duy, Chức vụ Phó giám đốc Ban QLDA tỉnh

- Đại diện những hộ bị ảnh hưởng ..... người, trong đó .....nữ, chiếm....(%) , Dân tộc thiểu số.....người, chiếm....%

II. Nội dung

2.1 Các nội dung phổ biến:

- Cung cấp các thông tin về dự án như địa điểm, quy mô, các thông số kỹ thuật cơ bản ....

- Chính sách an toàn của dự án bao gồm: Chính sách về giới và sự tham gia của cộng đồng; Kế hoạch hành động giới; Chính sách môi trường, Chính sách Tái đinh cư và kế hoạch phát triển người dân tộc thiểu số.

2.2 Tham vấn cộng đồng:

- Tham vấn các vấn đề giám sát và tham gia của cộng đồng trong các giai đoạn chuẩn bị, thực hiện, vận hành tiểu dự án, các vấn đề về giới và lồng ghép giới, nhóm dễ tổn thương, hộ bị ảnh hưởng nặng...

- Tham vấn các vấn đề về môi trường, tác động môi trường tiềm năng của dự án bao gồm tác động lên môi trường tự nhiên và xã hội của khu vực dự án và những biện pháp giảm thiểu các tác động tiêu cực;

1

- Tham vấn các vấn đề về tái định cư, các tác động dự kiến, quyền lợi của người bị ảnh hưởng, các biện pháp giảm thiểu tối đa nhằm có ít tác động nhất đến người bị ảnh hưởng.

- Tham vấn nhu cầu đào tạo của các hộ bị ảnh hưởng.

III. Ý kiến thảo luận

III.1.Các vấn đề về giới, tham gia cộng đồng

- Người dân đề nghị tạo điều kiện thuê nhân công địa là người địa phương
- Ban giám sát cộng đồng do người dân bầu ra cần có trách nhiệm giám sát chặt chẽ quá trình thi công
- Phụ nữ thường ít tham gia lớp tập huấn nên đề nghị chỉ tiêu giới cần cụ thể khi lập danh sách tham gia
- Cần kết hợp chặt chẽ với địa phương trong quá trình thực hiện dự án

III. 2. Các vấn đề về môi trường

- Các ảnh hưởng có thể có trong quá trình thi công ở khu vực kênh dự án, đặc biệt là có thể ảnh hưởng đến việc mưa trong khuôn viên của người dân địa phương
- Công nhân thi công cần được yêu cầu khai báo tạm trú, bảo đảm trật tự an toàn xã hội, vệ sinh môi trường

III.3. Các vấn đề về tái định cư và dân tộc thiểu số

- Ảnh hưởng về đền bù giải phóng mặt bằng trong thực việc tiểu dự án không lớn.
- Người dân hoàn toàn ủng hộ dự án, nếu việc thực hiện các qui trình đền bù giải phóng mặt bằng trong dự án được thực hiện theo đúng các qui định của pháp luật.

IV. Kết luận

Chính quyền và người dân địa phương đồng tình cùng hỗ trợ thực hiện dự án trên địa bàn xã và mong muốn dự án sớm triển khai.

Dự án mang lại nhiều lợi ích thiết thực hiệu quả tốt. Nhưng cần kết hợp chặt chẽ với chính quyền và tham vấn người dân để thi công thuận lợi.

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

An Hiệp, ngày 14 tháng 5 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG – KHOẢN VAY BỔ SUNG

DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

(Tham vấn cộng đồng về chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: Nâng cấp kè, đường giao thông, cống ngăn mặn và thoát lũ An Cư – An Hiệp – An Hoà

Xã An Hiệp, huyện Tuy An, tỉnh Phú Yên

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
01	Trần Thị Bi	Nữ	Phó chủ tịch mặt trận		
02	Nguyễn Thị Kim Tài	"	Nóc phú D		
03	Nguyễn Thị Diện	"	"		
04	Lê Thị Liễn	"	"		
05	Nguyễn Thị Nhàng	"	"		
06	Nguyễn Thị Bài	"	"		
07	Hà Thị Thanh Lan	"	"		
08	Bùi Thị Mỹ Dung	"	chủ tịch Hội PN xã		
09	Nguyễn Thị Tử	"	Nóc phú D		
10	Hồ Thị Mai Nguyệt	"	Kế toán UBND xã		

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
01	Trần Văn Dũng	Nam	Mỹ Phú I - An Hiệp		
02	Phan Tạo	"	"		
03	Nguyễn Trớt	"	"		
04	Trần Thiện	"	"		
05	Nguyễn Ngọc Thạch	"	"		
06	Nguyễn Văn Hiếu	"	Cán bộ địa chính xã		
07	Lê Hồng Phong	"	Chủ tịch Mặt trận xã		
08	Nguyễn Văn Thuận	"	Chủ tịch Cao tuổi		
09	~~Nguyễn Văn Thành~~	"	~~cán bộ địa chính xã~~		
10	Lê Hồng Tâm	"	Phó chủ tịch UBND xã		
11	Võ Chí Tình	"	Phó chủ tịch UBND xã		
12	Võ Văn Trốn	"	Phó bí thư Đảng ủy xã		
13	Nguyễn Thái Thành	"	CB - địa chính		
~~14~~	~~Lê Hồng Tâm~~	"	~~P.Ctịch UBND xã~~		
14	Phan Văn Chính	"	Văn phòng Đảng ủy		
15	Lê Văn Hiếu	"	Trưởng Thái Phong NLC		
16	Nguyễn Văn Bình	"	Chủ tịch HĐND xã		
17	Bùi Xuân Phương	"	Chủ tịch UBND xã		
18	Lê Khắc Xướng	"	Mỹ Phú I		
19	Nguyễn Văn Hòa	"	"		

Cuộc họp các bên thống nhất và kết thúc vào lúc .....ngày..14..tháng.05....năm 2014

Đại diện cộng đồng

Lê Hữu Phụng.

Đại diện UBND xã

CHỦ TỊCH

Bùi Xuân Phương

Đại diện Ban QLDA tỉnh

GIÁM ĐỐC

Ngô Đình Thiện

Đại diện tư vấn

Nguyễn Thị Thu Trang

Meeting minutes at public consultation and lists of attendance in the public consultation meeting at An Hoa commune

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

..An Hòa..., ngày 14 tháng 05 năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP

CÁC TỈNH MIỀN TRUNG - KHOẢN VAY BỔ SUNG

BIÊN BẢN HỌP THAM VẤN CỘNG ĐỒNG

Về các chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: Nâng cấp kè, đường giao thông, cống ngăn mặn và thoát lũ An Cư An Hiệp - An Hòa

Xã ..An Hòa.., huyện ..Tuy An.., tỉnh ..Phú Yên..

I. Thành phần tham dự:

- Ông/Bà ..Trương Anh Kiệt.., Chức vụ ..Phó phòng viên Ban QLDA tỉnh
- Ông/Bà ..Huỳnh Văn Phúc.., Chức vụ ..Chủ tịch UBND xã
- Ông/Bà ..Ng Thị Thân.., Chức vụ ..Chủ tịch Hội phụ nữ xã
- Ông/Bà ..Ng Thị Tiến.., Chức vụ ..Chủ tịch Hội nông dân xã
- Ông/Bà ..Đỗ Thị Nhàn.., Chức vụ ..Chuyên gia Môi trường
- Ông/Bà ..Lê Thị Mộng Phượng.., Chức vụ ..Chuyên gia giới và cộng đồng
- Ông/Bà ..Đoàn Văn Định.., Chức vụ ..Chuyên gia tái định cư

- Đại diện những hộ bị ảnh hưởng ..... người, trong đó .....nữ, chiếm....(%) , Dân tộc thiểu số.....người, chiếm....%

II. Nội dung

2.1 Các nội dung phổ biến:

- Cung cấp các thông tin về dự án như địa điểm, quy mô, các thông số kỹ thuật cơ bản ....

- Chính sách an toàn của dự án bao gồm: Chính sách về giới và sự tham gia của cộng đồng; Kế hoạch hành động giới; Chính sách môi trường, Chính sách Tái đinh cư và kế hoạch phát triển người dân tộc thiểu số.

2.2 Tham vấn cộng đồng:

- Tham vấn các vấn đề giám sát và tham gia của cộng đồng trong các giai đoạn chuẩn bị, thực hiện, vận hành tiểu dự án, các vấn đề về giới và lồng ghép giới, nhóm dễ tổn thương, hộ bị ảnh hưởng nặng...

- Tham vấn các vấn đề về môi trường, tác động môi trường tiềm năng của dự án bao gồm tác động lên môi trường tự nhiên và xã hội của khu vực dự án và những biện pháp giảm thiểu các tác động tiêu cực;

1

- Tham vấn các vấn đề về tái định cư, các tác động dự kiến, quyền lợi của người bị ảnh hưởng, các biện pháp giảm thiểu tối đa nhằm có ít tác động nhất đến người bị ảnh hưởng.

- Tham vấn nhu cầu đào tạo của các hộ bị ảnh hưởng.

III. Ý kiến thảo luận

III.1.Các vấn đề về giới, tham gia cộng đồng

Quá trình thiết kế cần có sự kết hợp chặt chẽ với chính quyền và người dân địa phương.

Phụ nữ nhưng ít tham gia vào các công tác xã hội để đảm bảo được tiếng nói của họ cần có kế hoạch và thông báo cụ thể cho địa phương.

Ban giám sát cộng đồng tham gia vào công tác giám sát chất lượng công trình cần có lớp huấn để nâng cao năng lực.

III. 2. Các vấn đề về môi trường

Người dân nhiệt chung hoàn toàn ủng hộ dự án, mong muốn đẩy nhanh tiến độ dự án. Tuy nhiên người dân cũng đề nghị nhà thầu vận chuyển vật liệu sao cho không làm ảnh hưởng đến đường. Trong giai đoạn thiết kế, đơn vị thiết kế phải bố trí cống tiêu thoát nước ở những vị trí thích hợp để đảm bảo việc thoát lũ và ngăn mặn tốt.

III.3. Các vấn đề về tái định cư và dân tộc thiểu số

- Các diện tích đất, tài sản bị ảnh hưởng cần được kiểm đếm cụ thể và đền bù đúng theo quy định
- Không có người dân tộc thiểu số trên địa bàn xã

IV. Kết luận

- Chính quyền và người dân địa phương đồng tình ủng hộ dự án, sẵn sàng tạo điều kiện để dự án triển khai thuận lợi.
- Dự án mang lại nhiều lợi ích thiết thực, bà con rất mong muốn sớm triển khai thực hiện.
- Quá trình thực hiện đảm bảo đúng theo các quy định và tránh ảnh hưởng đến đời sống người dân.

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

.....An Hoà.., ngày 14...tháng 05.năm 2014

DỰ ÁN PHÁT TRIỂN NÔNG THÔN TỔNG HỢP CÁC TỈNH MIỀN TRUNG – KHOẢN VAY BỔ SUNG

DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

(Tham vấn cộng đồng về chính sách an toàn: Môi trường, Tái định cư, Giới và Dân tộc thiểu số

Tên tiểu dự án: Nâng cấp kè, đường giao thông, cống ngăn mặn và thoát lũ An Cư An Hiệp An Hoà

Xã...An Hoà....., huyện.....Tuy An....., tỉnh.....Phú Yên.....

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
1	Trần Thị Kim Cúc	Nữ	Tân Hoà	Cúc	
2	Ng Thị Nghệ	"	Tân Hoà	Nghệ	
3	Ng Thị Minh Trở	"	Tân Hoà	Trở	
4	Ng Thị Kim	"	Tân Hoà	Kim	
5	Lê Thị Sương	"	Tân Hoà	Sương	
6	Ng Thị Thuỷ	"	Tân Hoà	Huệ	
7	Huỳnh T. Lan Huyền	"	UBND xã	Lgr	
8	Nguyễn T. Tuyết	"	UBND xã	Tuyết	
9	Đinh T Thu Vân	"	Tân Hoà	Vân	
10	Nguyễn Thị Xuân Tình	"	UBND xã - Tân Hoà	Xuantinh	

STT	Họ và tên	Giới tính	Địa chỉ	Ký tên	Ghi chú
1	Trương Tới	Nam	Tân Hoà	Tới	
2.	Huỳnh Sinh	"	"	Sinh	
3.	Phương Dũng	"	"		
4.	Phạm Cò	"	"	Cò	
5.	Trần Lạc	"	"	Lạc	
6.	Nguyễn Toán	"	"		
7.	Trần Hùng	"	"	Hùng	
8.	Nguyễn Quang	"	"		
9.	Trần Quang Hùng	"	"		
10.	Dương Thái	"	"		
11.	Lê Ngọc Ân	"	"	Ân	
12.	Châu Ngọc Phẩm	"	"		
13.	Bạch Đàn	"	"		
14.	Bùi Thanh Nam	"	"		
15.	Nguyễn Ngọc Thọ	"	"		

Cuộc họp các bên thống nhất và kết thúc vào lúc .....ngày 11...tháng. 05.năm 2014

Đại diện cộng đồng

Đại diện UBND xã

CHỦ TỊCH

Huỳnh Văn Phúc

Đại diện Ban QLDA tỉnh

GIÁM ĐỐC

Ngô Đình Thiện

Đại diện tư vấn

Vũ Hoàng Lân

Annex 3. Data sources used in the Preparation of IEE/ CEP

1. SIR of the subproject "Upgrading dyke, rural road and drainage and salt control culverts in An Cu – An Hiep – An Hoa communes".
2. Report on the summary of the implementation of social-economic development, national defence – social security in 2013 and implementation orientation in 2014 by An Hiep commune.
3. Report on the summary of the implementation of social-economic development, national defence – social security in 2013 and implementation orientation in 2014 by An Hoa commune.
4. Analysis results of domestic water at the water supply station in Tan Hoa village, An Hoa commune by Preventive Medicine Center – Phu Yen Department of Health.
5. Summary table of results of environmental monitoring (2013) in air, surface water, groundwater, coastal water quality, soil environment provided by Phu Yen PPMU.

Annex 4: Environmental monitoring forms

Environmental Compliance Monitoring Form for Construction Package

Part A: General Project Information

Subproject Name:_____

SIR Code:_____ Subproject Package #:_____ Activity Sector:_____

Province:_____ Districts: _____

Design and Supervision Consultant Firm:_____

Construction Company Name:_____ Contract Date: _____

Contract Amount:_____ Contract Duration (days)_____

Person Responsible: _____ Phone _____

PPMU EMO:_____ Phone _____

Part B: Monitoring checklist

Performance Indicator 1. Design and Preparations

The PPMU to complete 1-4 in conjunction with the subproject design consultant at the time the project is tendered.

Date of Monitoring:_____

	Yes	No	Remarks
1. Have all UXO been cleared prior to commencement of construction?			
2. Does the subproject design meet applicable engineering safety and public health standards?			
3. Have the resettlement provisions been disclosed to the affected communities and compensation made to affected persons or households?			
4. For the applicable subproject type:			
a. Roads, embankments, irrigation works and coastal protection: does the design provide cross drainage to prevent flooding?			
b. Markets: does the design provide washing facilities and toilets in the market area?			

The construction Supervision consultant (CSC) to complete 5-10 with the PPMU and construction contractor at the time of start-up. Date of Monitoring:_____

5. Has the contractor prepared a SEMP?	Yes	No	Remarks
6. Has the contractor posted a public notice regarding the nature, extent and cost of the project?			
7. Are locations for mixing plants sufficiently distant from houses, schools and hospitals?			
8. Are agreements in place with owners for temporary use of land for worker camps and construction yards?			
9. Have spoil disposal sites been selected in consultation with local authorities?			
10. Are official permits on record for quarry sites and borrow pits?			
Score (1-10; 10 total)			(%)

Performance Indicator 2. Worker Provisions

The CSC to complete 11-16 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring:_____

	Yes	No	Remarks
11. Were local authorities consulted in the planning for the location of construction worker housing?			
12. Are supervisors or other site personnel trained in basic first aid emergency response measures?			
13. Are first aid kits readily available to workers at the job site along with instructions for use?			
14. Has the contractor or Inspector from the Department of Health undertaken an awareness program for communicable diseases/HIV-AIDS?			
15. Has the contractor provided safety equipment (hard hats, ear plugs, dust masks, safety boots and glasses) to workers and training in use?			
16. Are construction camps equipped with adequate water supply, sanitary toilets, washing facilities and facilities for waste collection and storage?			
Score (11-16; 6 total)			(%)

Performance Indicator 3. Biodiversity

The CSC should complete 17-21 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring:_____

	Yes	No	Remarks
17. Does the project avoid encroaching on natural forests or wetlands?			
18. Does the project avoid adverse effects on flow of natural streams and water quality?			
19. Are worker camps located outside of forested areas and has the contractor restricted access of workers to forests, fishing and hunting?			
20. Does the contractor obtain fill materials only from pre-existing quarries, or from borrow pits within the strict limits of the construction zone?			
21. For irrigation sector projects, are effects on agricultural biodiversity limited through use of integrated pest management?			
Score (17-21; 5 total)			(%)

Performance Indicator 4. Community Based Monitoring

The CSC to complete 22 and 23 in conjunction with the PPMU and construction contractor following commencement of construction. Date of Monitoring:_____

	Yes	No	Remarks
22. Has the contractor posted a public notice regarding complaints from the community?			
23. Has there been a public consultation regarding construction, environmental impact, and the community complaints system?			
Score (22-23; 2 total)			(%)

Outcome of Public Consultation:

Date: _____ Location: _____

Topics covered in presentation: _____

_____

Comments from Attendees:

Performance Indicator 5. Community Values and Safety

Items 24 – 35 should be inspected quarterly. Date of Monitoring:_____

	Yes	No	Remarks
24. Is temporary access provided to adjacent properties as needed?			
25. Is permanent access to adjacent properties reinstated on completion of a segment of work?			
26. Are construction hours adjusted around houses, hospitals and schools to minimize disturbance?			
27. Does the contractor limit the scope of construction in progress to minimize community impacts?			
28. Are physical impacts on public infrastructure and service disruption minimized?			
29. Are materials transported on approved haul routes?			
30. Are construction equipments maintained in good condition?			
31. Do vehicles operate within legal speed limits?			
32. Are material loads traveling on public routes covered?			
33. Is dust suppressed by watering exposed surfaces?			
34. Has the contractor installed signs and lighting in vicinity of works on public roads?			
35. Is access to the construction site restricted to the public?			
Score (24-35; 12 total)			(%)

Performance Indicator 6. Hydrology/Water Pollution

Items 36 – 43 should be inspected quarterly. Date of Monitoring:_____

	Yes	No	Remarks
36. Are construction camps maintained in a clean and hygienic condition?			
37. Are oil, fuel and chemicals stored in enclosed areas (dyked or covered)?			
38. Is discharge of waste water into water bodies used for water supply avoided?			
39. Is clearing activity suspended during rains?			
40. Does the contractor prevent discharge of concrete trucks to water ways?			
41. Have existing drainage patterns been maintained during construction?			
42. Are areas of standing water in the construction area drained and backfilled?			
43. Are sediment controls installed upslope of waterways?			
Score (36-43; 8 total)			(%)

Performance Indicator 7. Project Completion

Items 44 – 50 should be inspected prior to finalizing the construction works.

Date of Monitoring:_____

	Yes	No	Remarks
44. Have drainage fixtures, curbs, road shoulders and ditch slopes been finished out to prevent hazard to the public during use?			
45. Are ground surfaces in the project area graded to prevent water from collecting?			
46. Have all construction debris, tree cuttings, excess dirt, rubble and scrap been removed from the construction zone?			
47. Have all pits been filled in and graded to drain, underground tanks (including septic tanks) removed and holes backfilled?			
48. Are all waste products removed from the construction site, equipment yards and worker camps, including oil waste, scrap			

materials and equipment, building materials and domestic waste?			
49. Have all points of access (drives, walks) and utilities (water supply, power, communications) to public and private property been restored to original condition?			
50. Have all complaints by the local community and individuals been resolved by the Contractor?			
Score (44-50; 7 total)			(%)

Performance Tracking

Performance Tracking consists of three sections:

a. Performance Follow-up, where performance shortfalls noted in prior monitoring are listed and checked against current monitoring results.
b. Community Complaints, where issues raised by the affected community are registered, tracked and outcomes recorded.
c. Performance Indicator Results, where environmental performance against indicators are recorded.

Section 1: Performance Follow-up

Column 1	Column 2	Column 3	Column 4	Column 5
Performance variable (#) / Date Observed	Reason for negative rating	Was agency responsible notified? / Date	Was problem corrected before next monitoring?	Was performance indicator adjusted?

Section 2: Community Complaints

Column 1	Column 2	Column 3	Column 4	Column 5
Person Registering Complaint / Date	Summary of Complaint	Was agency responsible notified? / Date	Was problem corrected before next monitoring?	Was Person satisfied with Action?

Section 3: Performance Indicator Results

Project Name:_____ SIR No.:_____ Package #:_____Province:_____

Project Start Date:_____

	Startup	Rev.	Q1	Q2	Q3	Q4	Average	Completion	Rev.	Final
Recording Date:										
1. Design and Preparations										
2. Worker Provisions										
3. Biodiversity										
4. Community Based Monitoring										
5. Community Values / Safety										
6. Hydrology/Water Pollution										
7. Project Completion										

Submittal Date:_____ For Calendar Quarter: _____

Inspector:_____

(Signature)

Annex 5: Environmental impact mitigation measure to include into Bid documents of Upgrading dyke, rural road and drainage and salt control culverts in An Cu – An Hiep – An Hoa communes Subproject

Sub-project Activity	Potential impacts	Proposed Mitigation Measure
Site clearance Earthworks	Erosion or sedimentation	▪ Install sediment fences and/or sediment traps at drainage ditches at the construction sites near O Loan lagoon. ▪ Properly site design and work schedule to avoid identified locations and flooding seasons ▪ Organic soil should be moved once it is dredged. ▪ Conduct rolling and compacting in parallel with earth-filling. ▪ Gather material, soil far from overflows which cause sedimentation. ▪ Make temporary drains, deposit pits to different directions avoiding water sources areas
Material gathering Earthworks Excavate activities and worker camp establish on sites	Pollution of waterways, aquatic environments or groundwater	▪ Store chemicals in secure area, gather material, fuel at the area with high concreted ground with roof ▪ Avoid spilling material when refuelling, changing fuel, maintaining machineries. Ensure construction equipment and vehicles are maintained in good conditions to avoid leakage. ▪ Location of worksites, load construction material at least 200 m from watercourse to ensure that materials do not fall into water bodies ▪ Dug soil whould be gathered neatly in the dump site located in Tan Hoa village, An Hoa commune. ▪ Regularly clean construction site. No waste water is drained directly to O Loan lagoon area. ▪ There should be coffer dam in the drainage and salt control culverts construction site ▪ Covering material storage areas during rainy times. ▪ Provide rubbish bins at camping sites and containers at construction sites. ▪ Install sanitary toilets with septic tanks following sanitation regulation and washing facilities at construction camps ▪ Including all water protection requirements into tender documents
Oil and chemical storage Construction and domestic waste Material gathering	Soil contamination	▪ Gather material, fuel at the area with high concreted ground with roof ▪ Avoid spilling material when refueling, replacing fuel, maintaining machineries ▪ Waste oil, oily rags should be collected separately for reuse or proper treatment. ▪ Gather neatly soil at temporary storage site. Clean construction site regularly. ▪ Prevent soil contamination requiring contractors to instruct and train their workforce on storage and handling of materials and chemicals that can potentially cause soil contamination

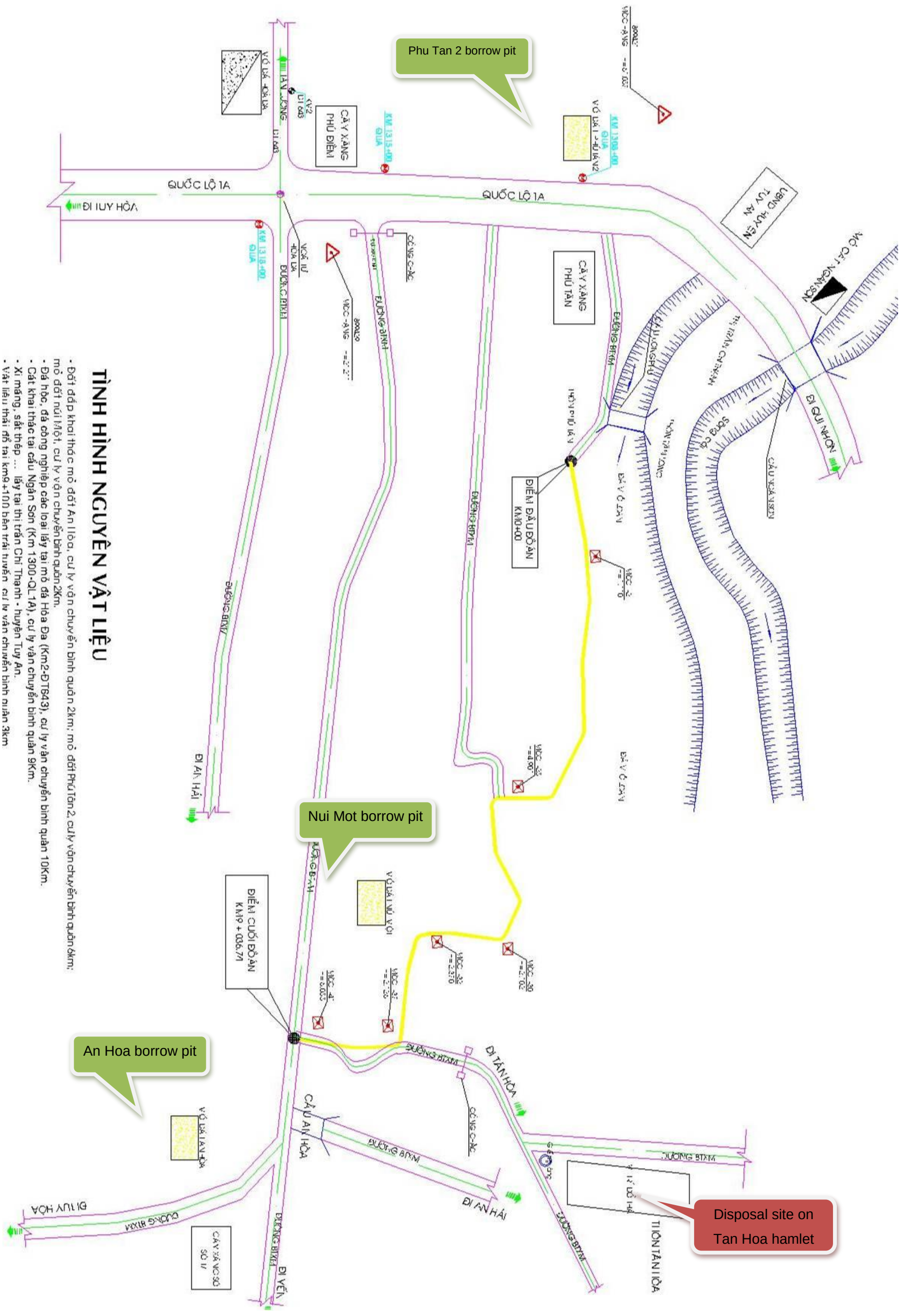
Sub-project Activity	Potential impacts	Proposed Mitigation Measure
Earthworks Concrete embankment Waste and material transportation Construction machinery operation	Air pollution and impacts on safety traffic	▪ Machineries and equipments must have adequate safety registration and environment protection documents according to Decision No 35/2005/QD-BGTVT ▪ All transportation trucks should be provided with canvas for covering materials ▪ Maintain machineries and equipments regularly to ensure proper operation. ▪ Vehicles's loading capacity should not be exceeded ▪ Keep suitable speed when vehicles pass through residential areas and the sites to limit rolled dust. ▪ Watering twice per day in dry and hot weather at any locations where a lot of dust is generated along to the road. ▪ Timber and rubber are forbidden as a kind of fuel in the site ▪ All material storage areas and material production areas shall be located at least 50 meters from any residence such as Tan Hau, Ben and My Phu villages. Cover sand loads with nets or sheets if materials are stored within 50 m from houses ▪ Reasonably arrange locations for material gathering and gather materials neatly along the construction road. ▪ Minimize spillage of material to surrounding area beyond the boundary. ▪ Materials should be stored properly, i.e cement, iron and steel should be placed in the area with high round and covered by canvas ▪ All excavated soil should be reused for levelling low areas where applicable such as excavated soil could be used for levelling existing sites for construction of access road surface
Earthworks Concrete embankment Waste and material transportation Construction machinery operation	Noise and vibration generation	▪ Use modern and new construction machines and equipment to meet standards of exhaust, noise, and vibration as regulated by the Government. The Contractor needs to submit the Engineer documents proving that all construction vehicles, equipment, and machines are checked and meet requirements concerning noise and vibration generation of the current Vietnam standards as QCVN 26:2010 for noise level and QCVN 27:2010 for vibration emitted by construction works ▪ Maintain machineries, equipments and transportation trucks regularly. ▪ Select routes for transportation and avoid crossing residential areas whenever possible ▪ Arrange the number and transportation time, reasonable speed as passing residential area. ▪ All noise generation activities shall be undertaken using minimum impact intensity and only during the hours of 07:00 to 17:00, and shall be located at least 300 metres from any residence; ▪ Provision noise protection equipment for worker; ▪ Operation schedule of noise generation equipment must be approved by construction supervision.

Sub-project Activity	Potential impacts	Proposed Mitigation Measure
		▪ In case that, noise generation equipment need to run during night time nearby the resident areas, the detail schedule will be considered and approved by construction supervision before could be applied ▪ Local communities must be informed about construction schedules and time through informal public consultation or any local people meetings and notice board; ▪ Strictly implementing noise control measures as noted above through sampling and taking adequate corrective actions if needed
Transport vehicle activities Construction machinery operation Material gathering Excavation	Changes to road safety/traffic movements, trading activities property access	▪ Consult authorities and people to locate transportation route reasonably. ▪ Reasonably arrange transportation frequency on routes, especially those crossing Tan Hau, Ben and My Phu villages. Avoid transporting in rush hours. ▪ Limit speed of material transportation vehicles travelling on the road ▪ Put construction signboard at headwork locations, warning signs, traffic guidance signboard in construction site and wherever there is safety risk along the road. ▪ Reasonably organize construction activities and locate bypasses. ▪ Gather material and machineries neatly along the road. ▪ Inform the authorities and villagers about construction plan and time. ▪ Install signal lamps at night
Sludge excavation, Worker camp establishment, Waste generation	Impacts on environmental sanitation	▪ Catergorize waste. Non-recyclable waste and waste soil and stone will be moved to dump site in Tan Hoa village, An Hoa commune. ▪ Recyclable materials such as cement pack cover, scap iron, wood pieces will be collected and gathered neatly for reuse or sale. ▪ Waste need to be collected, transported by adequate manners and treated in approval landfill sites by local authorities ▪ Workers will be boarded with local families' houses to minize number of workers living out of the camps. Domestic waste will be collected and treated together with that of the households. ▪ Construct toilets with sanitation standards, bathrooms (for male and female separately), locate kitchen for workers at their camps. ▪ Place waste bin at workers' camps (02 bins per camp). Remind workers to not throw domestic waste to surrounding area, especially O Loan lagoon area. ▪ Collect and properly process domestic waste using combustion method. ▪ Locate reasonably domestic drain system at the construction site and cleanse frequently. ▪ Prioritize hiring local workers to reduce the number of workers

Sub-project Activity	Potential impacts	Proposed Mitigation Measure
		living in camps. ▪ Dismantle and clear all temporary works after completing the construction
Construction activities	Affect rural infrastructure system such as communication system, electricity and water-supply, etc	▪ Consulting the sub-project engineering staff to minimize physical impacts on public infrastructure and disruption to services ▪ Transport material under the limit loading capacity on the roads (inter-village concrete road – capacity of 7 tons, transverse culvert in Ben hamlet – height limit less than 3.5m). ▪ Ensure the proper loading capacity and avoid existing coss drains and bridges. ▪ Exaquarry, confirm the status of access roads in hamlets under An Cu, An Hiep and An Hoa communes before constructing and commit to return as current status if any damage occurs
Natural calamity such as flood, storm…	Risks of natural calamity	▪ Prepare plans to cope with the risks that may occur as heavy rains, storms and floods which can cause landslide and flood works. ▪ Arrange construction time reasonably, avoid construction in location prone to landslide and flood in wet season (from September to December). ▪ Build and maintain temporary drainage ditches within and surrounding construction sites to ensure surface runoff is drained efficiently ▪ Place grid for prevention of wastes from entering drains
Excavation Construction activities Waste generation	Impacts on fishery breeding in the area of O Loan Lagoon	▪ All road sections which are next to the lagoon should be constructed in dry season, avoid raising calendar or place diversion canal to minimize impacts. ▪ During construction time, prohibit any direct waste disposal to the lagoon
All construction activities	Impacts on biodiversity and landscape	▪ Implement construction within allowed boundary. ▪ Prohibit the exploitation of natural resources in the subproject area, avoid causing any damage to landscape of O Loan lagoon surrounding area. ▪ Restore site, re-plant trees or change using purposes in material quarrys of An Hoa, borrow pit, Nui Mot and Phu Tan 2.quarry ▪ Prohibit workers from cutting trees for any purpose. ▪ Upon completion of site works, remove construction camps and return the area to preconstruction condition
Poor management at worksites	Risks to health and safety of local people and construction workers	▪ Register temporary residence for workers from other places with police department under An Cu, An Hiep and An Hoa communes to coordinate management. ▪ Consult village leaders of Tan Hau and My Phu villages regarding arranging houses for workers and local regulations and customs. ▪ Remind workers to avoid conflicts with local people and follow a healthy lifestyle.

Sub-project Activity	Potential impacts	Proposed Mitigation Measure
		▪ Propagation of HIV / AIDS and other sexually transmitted diseases; raise awareness about social evils like gambling, theft, etc. ▪ Impose labor regulations, curfew hours and request for staff and workers' strict observation. ▪ Receive community feedback regularly and closely coordinate with subproject communes during the construction process. ▪ Recruit workers within working age and in good health. ▪ Equip protection clothing for workers as masks, shoes, hats, gloves, clothing ... and remind them to use while working. ▪ Equip first-aid kits, fire extinguishers in camp areas, fuel storage. ▪ Raise workers' awareness on working safety. ▪ Set up restriction signs on the construction site; warning signs, barriers in areas prone to insecurity. ▪ Standing water will not be allowed to accumulate in the temporary drainage facilities or along the roadside to prevent proliferation of mosquitoes ▪ Temporary and permanent drainage facilities will be designed to facilitate the rapid removal of surface water from all areas and prevent the accumulation of surface water ponds
Environmental recovery	Odour generation, unsafety and sanitation condition to local people	Before construction is completed, the contractor will move all construction wastes and unused materials from the sites to approved sites Monitoring environmental recovery at: ▪ Construction waste disposal location ▪ Material soil pit and borrow areas ▪ Working sites Reinstate and ensure good condition for any effected public facilitates Monitor survival of trees / shrubs and grass in bioengineered slopes (e.g. at landslides, also transplanted / compensatory planting trees) and replant, as necessary.

Annex 6: Map of Construction plan and Disposal site



TÌNH HÌNH NGUYÊN VẬT LIỆU

- Đất đắp khai thác mỏ đất An Hòa, cự ly vận chuyển bình quân 2km; mỏ đất Phú Tân 2, cự ly vận chuyển bình quân 4km; mỏ đất núi Một, cự ly vận chuyển bình quân 2Km.
- Đá hộc, đá công nghiệp các loại lấy tại mỏ đá Hòa Đa (Km2-ĐT643), cự ly vận chuyển bình quân 10Km.
- Cát khai thác tại cầu Ngân Sơn (Km 1300-QL1A), cự ly vận chuyển bình quân 9Km.
- Xi măng, sắt thép ... lấy tại thị trấn Chí Thạnh - huyện Tuy An.
- Vật liệu thải đổ tại km9+100 bên trái tuyến, cự ly vận chuyển bình quân 3km.

Annex 7: Map of sampling location during construction and operation phases