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KHANH HOA PROVINCIAL PEOPLE COMMITTEES

COASTAL CITIES SUSTAINABLE ENVIRONMENT PROJECT (CCSEP)

EXECUTIVE SUMMARY

ENVIRONMENTAL-SOCIAL IMPACT ASSESSMENT

NHA TRANG CITY SUBPROJECT

(Draft for Consultation)

September, 2016

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INVESTOR **CONSULTING UNIT**

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CONTENT

ABBREVIATION

CCSEP	Coastal cities sustainable environmental project
CCESP	Costal cities environemntal sanitation project
CSC	Construction consultant supervisor
DOC	Department of construction
DOF	Department of finance
DONRE	Department of natrural resouces and environment
DONRE	Department of natrural resouces and environment
DOT	Department of transportation
EIA	Environmental impact assessment
EMC	Environmental monitoring consultant
ESMP	Environmental-social management plan
EMS	Environmental monitoring system
ESIA	Environmental-social impact assessment
FS	Feasibility study
WB/NHTG	World bank
QCVN	Vietnam regulation
XLNT	Wastewater treatment
NMXLNT	Wastewater treatment plant
CSO	Combined sewer overflow
PS	Pumping station

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CHAPTER 1. PREAMBLE AND PROJECT DESCRIPTION

A. Preamble

1. Nha Trang is a coastal city in Khanh Hoa province, in distance of 1,280km from Hanoi Capital City to the North and 448km from Ho Chi Minh City to the South. It is a political, economic, scientific - technological and tourist center of Khanh Hoa province in particular and the center of the Central - Western Highlands in general. From 2006 to 2014, Coastal Cities Environmental Sanitation Project (CCESP) financed by World Bank (WB) and the counterpart fund of the Government was implemented in the three cities of Nha Trang (Khanh Hoa province), Dong Hoi (Quang Binh province), and Quy Nhon (Binh Dinh province). In Nha Trang, due to limited fund and impact of high inflation in 2007-2009 period, CCESP was only implemented in the central and southern area of the city.

2. After completion, the Project has brought considerable benefits to this area, including a substantial decrease in flooding and significant improvement in environmental sanitation conditions,reducing pollution at the discharge points. However, in accompany with positive changes achieved, the Southern wastewater treatment plant did not perform its full efficiency due to the incompletion of the tertiary sewer network in the center and Southern parts of the city. The decision to remove the Northern part of the city out of initial CCESP agreement has led to the severe flooding in the North caused by the inadequate investment of infrastructure. The wastewater in the northern area has not been collected and treated, water environment, especially at outlets to the sea on Pham Van Dong street and those along Cai river, is seriously polluted. Meanwhile, the northern area is under rapid urban development, social infrastructures such as schools, hospitals, and tourist service areas which have been constructed drastically quickly, resulting in an increase of severe water pollution in the area. Consequently, investment in the drainage system, wastewater collection and treatment in the northern area, construction of the embankment and roads at the two banks of Cai river, and completion of tertiary sewage network in the southern area, is critical to ensure sustainable development in the future.

3. To maintain the environmental investment efficiency and strengthen the institutional reform programs related to environmental sanitation of the participating cities, the Government of Vietnam has proposed to the World Bank to finance a new project, namely Coastal Cities Sustainable Environment Project (CCSEP) in four coastal cities of Nha Trang, Dong Hoi, Quy Nhon, and Phan Rang - Thap Cham.

Project Title: Coastal Cities Sustainable Environment Project (CCSEP) – Nha Trang City sub-project (CCSEP)

Investor: Khanh Hoa Development Project Management Unit

The Employer's Representative: Mr. Chau Ngo Anh Nhan – Position: Director of Project Management Unit.

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B. Project's content and objectives

4. The objective of the project is to ensure the sustainability of investment in environment and to enhance the institutional reform in hygienic sector of the city by:

- Improve the operational capacity of the Southern Wastewater Treatment Plant (WWTP) through an additional investment in completing the tertiary sewer network and odor prevention manholes in the central and southern areas of the city;

- Resolve the flooding and pollution problems in the Northern area of the city
- Improve environmental sanitation and enhance flood drainage and erosion control at the two banks of Cai river in combination with upgrading of the transport infrastructure to meet the development needs of the city as planned;
- Support performance of the project through consultancy services and management in several sectors such as finance, environment, society and resettlement
- Technical supports for investors, management entities, and sector institutional reform.

5. Nha Trang city Sub-project site map is performed in Annex 1. The Sub-project consists of the four following components:

- Component 1 - Sanitation Infrastructure;
- Component 2 - Environmental Infrastructure;
- Component 3 - Resettlement and Site Clearance;
- Component 4 - Technical Assistance and Institutional Reform

6. Total cost of the Sub-project is 72 Mil USD (see detail in Table 1-1) including investment, expenses related to site clearance and resettlement, and taxes. The bank will fund 60.6 Mil USD, comprises of 84.16% total investment.

Table 1-1. Total investment

No	Contents	Cost (USD)	Funding source (USD)				
			% WB	WB		CF	TF
				IDA	IBRD		
I	**Component 1: Hygienic infrastructure**	**32.515.287**		**32.515.287**			
II	**Component 2: Environmental infrastructure improvement**	**11.294.758**			**11.294.758**		
III	**Component 3: Resettlement and site clearance**	**8.250.227**				**8.250.227**	
IV	**Component 4: Technical assistance, capacity enhancement and institutional reform**	**2.516.047**				**2.216.047**	**300.000**
	Initial total	**54.576.319**		**32.515.287**	**11.294.758**	**10.466.274**	**300.000**
V	**Contingency**	**9.141.582**		**6.503.057**	**2.258.952**	**379.573**	
VI	**Sub-total**	**63.717.901**		**39.018.345**	**13.553.709**	**10.845.847**	**300.000**
	VAT: 10%	5.515.674	-	3.901.835	1.355.371	258.468	
VII	**Total**	**69.233.575**		**42.920.180**	**14.909.080**	**11.100.000**	**300.000**
VIII	**Fee and interest rate**	**2.770.920**		**1.302.669**	**1.468.251**		
IX	**GRAND TOTAL**	**72.000.000**	**84.16**	**44.220.000**	**16.380.000**	**11.100.000**	**300.000**

7. The main work items of the project (Component 1, 2) are listed in Table 1-2. Component 3 includes resettlement and site clearance activities. Component 4 includes project management task, technical assistance for the investor and management entities throughout independent consultancies, workshops, trainings, and periodic meetings, supports for institutional reform.

8. As part of project preparation, Nha Trang city conducted an Environmental and Social Impact Assessment (ESIA) study. Separate Resettlement Action Plan (RP) were also prepared to address the resettlement/compensation in line with the WB safeguard policies. This executive summary highlights the salient points in the ESIA report, and also presents relevant information from the separate RP.

Table 1-2. Investment items of the project

Work Item	Phase	Main specifications	Construction location
Component 1: Sanitation Infrastructure			
Installation of tertiary sewer[1]	1 and 2	Pipe uPVC, diameters of D150-D200-D300mm Total length: 94.6km	Loc Tho, Phuoc Long, Phuoc Hoa, Xuong Huan, Van Thanh, Phuoc Tien, Phuoc Tan, Phuong Sai - Van Thang, Phuong Son, Vinh Nguyen, Tan Lap
Installation of combined sewer	1	Combined sewer, diameter of D600-D1000 Box culverts in diameter of 1x1 to 3x3x2,5 (m) Total length 6,786 m	Wards of Vinh Phuoc, Vinh Tho Vinh Hai
Construction of wastewater pumping station (WWPS) and CSOs	1 and 2	Area of 04 WWPSs (PS1 - PS4): 45 m^2 Area of PS5: 1,650m^2	Wards of Vinh Hoa, Vinh Tho, Vinh Phuoc
Construction of drainage pumping station	2	Total land area: 1.29 ha	Vinh Ngoc Commune
Construction of wastewater sewers	1	Sewers, in dia. D90-D800 Total length: 11,005m	
Construction of WWTP	2	Capacity of 15,000 m^3/day. Effluent satisfactory to QCVN 14:2008/BTNMT Column A Total land area: 3.03 ha	Vinh Ngoc Commune
Construction of balancing lake	1	Area of 1.05 ha, depth of 4.5 m with sidewalk of 1.5m wide, lighting and green trees	Vinh Hai Ward
Construction of school sanitation blocks	1	school sanitation blocks for 04 schools with separated male and female restrooms.	Nguyen Khuyen, Ngo Van So, Dien Bien Phu, Ton That Tung streets
Component 2: Environmental Infrastructure			
Construction of embankment at the northern Cai river bank	2	Length: 423m, accompanied with vegetation as landscape	Vinh Phuoc Ward
Construction of road and embankment at the southern Cai river bank	2	Embankment: 2,026m long Road: 2,064m long, 28m wide	Ngoc Hiep, Van Thang wards
Construction of Chu Dong Tu street	2	Length: 321m 14m wide Sewer, dia. D1500mm in length of 251m, box culvert 2x1.5 (m) in length of 78m, accompanied lighting system, greenery	Vinh Phuoc ward
Construction of Road No. 4	2	Length: 1, 828m, in width of 17-18.5m, accompanied drainage, sewerage, lighting system, greenery	Vinh Hai ward
Component 3: Resettlement and		Including site clearance, compensation, and resettlement of	

[1]Cống thu gom nước thải từ hộ gia đình về mạng lưới cống cấp 1, 2

Site Clearance		impacted households	
Component 4: Technical Assistance and Institutional Reform		Including technical assistance for the Project Management Unit, institutional reform, feasibility report preparation, construction drawing design, bidding document, project management, investigation, mine clearance	

C. Legal basis

9. Environmental Impact Assessment (EIA) Report of the Subproject is conducted in accordance with Law on Environmental Protection No. 55/2014/QH13 issued by the National Assembly of the Socialist Republic of Vietnam dated 23 June, 2014; Decree 19/2015/ND-CP dated 14 February, 2015 issued by the Government on detailing the implementation of a number of articles of the Law on Environmental Protection; Decree 18/2015/ND-CP dated 1 April, 2015 of the Government on environmental protection planning, strategic environment assessment, environmental impact assessment and environmental protection plan; Circular 27/2015/TT-BTNMT dated 29 May, 2015 of Ministry of Natural Resources and Environment on strategic environment assessment, environmental impact assessment and environmental protection plan; as well as other related legal document. The EIA report of the project also conform to safety policy of WB, which is summarized as the following table.

Table 1-3. Compliance with World Bank Safeguards Policies

Safeguard Policy	**Actions**
Environmental Assessment (OP/BP 4.01)	• Category A project. A full ESIA including an Environment Management Plan (ESMP) has been prepared • Social Assessments have been conducted; social impacts were also considered in the ESIA
Physical and Cultural Resources (OP/BP 4.11)	• Environmental screening conducted included screening for PCR. • 2 graves will be relocated • Chance finds procedures for archaeological artifacts found during construction have been prepared and will be included in bidding documents and contracts
Involuntary Resettlement (OP/BP 4.12)	• City-specific Resettlement Plan (RP) have been prepared
Public consultation and disclosure	• Intensive, culturally-sensitive consultations were carried out in all communities in the project areas, and the key comments and project responses are reported in the ESIA. Government and Non-Government organizations were also consulted in public meetings or have sent their written opinion as required by the Government's environmental regulations. The final draft of the ESIA and RP were disclosed prior to project appraisal

CHAPTER 2. NATURAL ENVIRONMENT AND SOCIO-ECONOMIC CONDITIONS OF THE PROJECT AREA

A. Natural environment conditions

10. ***Geographical conditions***: Nha Trang City is located on the Eastern coast at 12°15N and 109°12E, 450km North of Ho Chi Minh City and 1,280km South of Hanoi, the country's capital. Nha Trang City is in the easternmost coastal part of Vietnam with a coastline of over 30km, conveniently linking it with other regions of the whole country and the world. Nha Trang City adjoins Ninh Hoa District to the North, Cam Lam District to the South, the East Sea to the East, and Dien Khanh District to the West. Below is a list of wards and communes where the Project is implemented:

Table 2-1. List of wards and communes where the Project is implemented

Northern area	Central area	Southern area	
Vinh Hoa	Ngoc Hiep	Loc Tho	Vinh Hoa
Vinh Hai	Van Thang	Phuoc Long	Vinh Hai
Vinh Phuoc		Phuoc Hoa	Vinh Phuoc
Vinh Tho		Xuong Huan	Vinh Tho
Vinh Ngoc		Van Thanh	Vinh Ngoc
		Phuoc Tien	

11. *Topographical features:* The typography is relatively plain. Northern part of Cai River (where construction works of Component 1 and embankment of Cai River North of Component 2 takes place) has the altitude from 3-3.5m. The center area (where secondary sewer construction of Component 1 and road and embankment of Cai River South of Component 2 takes place) has the altitude from 3.9-4.2m. The Southern part (where tertiary sewer construction of Component 1 takes place) has the altitude from 2.4-3.5m.

12. *Geographic conditions*:

- Wastewater treatment plant area: the 1st soil layer will be removed, the 2nd, 3rd, and 4th layers are weak for construction which need treatment measures. The 5th and 7th layers have medium to good bearing capacity. The 6th and 8th layers have high bearing capacity.
- Cai River embankment area: Geological layer of the river bed contains mainly segregated fine and medium sand which are susceptible to flow erosion, especially in overflow. The layers from the middle to the fifth layer are pasty mixture of sand and clay mud which is weak with low bearing capacity to the upper pressure.
- Road number 4 construction area and detention basin (Vinh Hai Ward): Geological engineering analysis suggests that the 1st, 2nd and 2A layers are weak and should be removed in construction process. The rests are good layers for construction works with small and medium pressure

13. ***Geo-hydrological conditions:*** The underground water levels measured in the area are from 0.2-1.5m. Specifically, the underground water levels in the WWTP area to the North are measured at 0.2 - 0.9m, and those along Cai river are recorded at 1.5m (Geological Survey Report of the Project)

14. ***Climatic and meteorological conditions***: The air temperatures in Nha Trang remain stable over the past years without significant variations. The highest average temperature is about 30°C in May and June while the lowest temperature is about 24^0C in December, January, and February. The annual average humidity in Nha Trang City is fairly high and

stable, varying from 77% to 80%. The total annual rainfall in Nha Trang between 2009 and 2014 presents great variations, The minimum was 972 mm (in year 2014) and the maximum was 2662 mm (in year 2010). The rainy season starts from September to December and the rainfall comprises nearly 80% annual rainfall. The sunny hours at the city are from 2.492-2.706 in the period of 2009-2014. Storm usually appears in Khanh Hoa Sea from September to December with the average of 0.4-0.8/year. The project site is not in the sea wave prone area. In winter, the prevailing winds in the region are Eastern and Northeastern winds, of which the total frequency in January is about 70 - 80% at an average wind velocity of about 3.25m/s. In summer, Southwestern, Southern and Southeastern wind prevail and an average wind velocity of about 4.4m/s.

15. *Nha Trang Cai River*: The river is 75 km in length, starting from Chu Tgo mount to Cua Lon estuary. The downstream part in Nha Trang is 10 km in length. Average annual flow rate is 56.5 m^3/s with the minimum flow discharge of 5.1 m^3/s. This is the receiving source for the effluence of the wastewater treatment plant in the Northern part of the city. Receiving channel is located in the northern bank of Cai River with a distance of 3 km to the estuary

16. *Quan Truong River (or Quan Tuong River)*: This is a small river system with the length of 15km which meet the sea at Cua Be estuary. Quan Truong river and Tac river function as the receptacles of treated wastewater from the Southern WWTP of the city which was constructed under CCSEP. The lowest flow rate of the river is 39.1m3/s.

17. The tides of Nha Trang's waters are of an irregular diurnal regime, the average amplitude of high tides is 1.2 to 2m , Tidal water levels range from -1.37m to + 1.03m, Salinity varies on a seasonal basis between 1 and 3.6%. salinity intrusion into Cai River may reach as far as nearly 10km (up to the area close to Vinh Phuong weir).

18. *Air quality and noise*: The analysis results of parameters of particulate matters, noise, SO_2, CO, NO_2, H_2S, HC, and micro meteorology show that air quality of the project site is relatively good. All parameters meet the national technical regulation on ambient air quality and national technical regulation on hazardous substances in ambient air (QCVN 05:2013/BTNMT and QCVN 06:2009/BTNMT). Some areas such as the one at the Bong village bridge abutment along the road 2/4 have noise level exceeding the regulation due to the crowded traffic.

19. *Surface water quality:* The analysis results show that surface water samples at Cai River and channels has Cl- concentration exceed the regulation from 2.8-10.6 (except the samples at the Vo Canh supply water plant). Surface water in this area is saline (salinity of the samples is around 1.6-6.8‰). There are also sights of pollution in other parameters such as oil, iron, BOD_5, ammonia. The reason is that the river is the receiving reservoir for a large amount of untreated wastewater and solid waste from residential areas and other production and service buildings

20. *Domestic wastewater quality:* The analysis results show that BOD5 is 1.3-20.1 times higher than regulation, NH_4^+ is 2.6-15.3 times higher, total oil and grease is 4-21 times higher, Coliform is 6-190 time higher than regulation QCVN 14:2008/BTNMT – column A. Those are from the untreated domestic wastewater from the residential areas.

21. *Underground water quality:* There are sights of pollution for the parameters of Cl-, NH_4^+, TDS, Mn, SO_4^{2-} following the regulation QCVN 09-MT:2015/BTNMT. This might cause by the unhygienic environment which then penetrated into the underground water bodies. The samples at the provincial administrative center has high salinity.

22. *Soil and sediment quality:* The soil and mud samples at the project sites meet the regulation QCVN 03-MT:2015/BTNMT – National technical regulation on heavy metal in soil

for residential land. The salinity of samples at Cai River and provincial administrative center runs from 2.7-3.5‰, makes it 5-9 times higher than other samples. This suggests that the dredged sediment is saline at medium level.

23. There are a number of protected areas, mangrove forests and coral reefs in the province but these are all distant from the Project area. Some of these are: Nha Phu Lagoon area (16 km from the Project area), Cam Ranh Bay (40km), Van Phong Bay (approximately 85km), Nha Trang Bay (5km from the Project area and 10km from the NorthernWWTP), Hon Ba Nature Reserve (25km), Hon Mun Island (15km), and Thuy Trieu lagoon (Cam Lam district) (15km). The rare plant and animal species most concentrated in these areas.

24. *Terrestrial biodiversity at the project site:* There is no research document on the biological system of the area. According to the community consultation and field investigation, there is no unique species or restricted red book ones. The land of the project site are mainly used for residence, urban land, agriculture, open spaces which is impacted from human activities. Vegetation cover of the plant comprises of mostly bushes, acacia, coconut, Malabar almond. Animals are mainly domestic livestock such as chicken, duck, dog, and cat. Along the Cai River southern bank there are coconut and bamboo planted by local people.

25. *Aquatic biodiversity at the project site:* The biocenose structures and the changes of aquatic creatures express the impact of brackish to saline water environment. The water has quality of medium nutrient. The channels nearby the wastewater treatment plant and along the Cai River to the estuary were effected by human activities. Domestic wastewater along the river is discharged directly to the river, meanwhile domestic wastewater in Vinh Ngoc commune is discharged to the channel. There is encroachment to the river bank by shops, resident houses, enterprises such as Son Thuy shipbuilding workshop, I-resort. Hence, the area is not an important natural habitat for aquatic creatures. There is also no unique species or restricted red book ones, no natural aqua plant cover with poor biodiversity.

26. There have been no official research studies of a quantitative nature on aquatic creatures in Cai river. Existing data and documents provided by DONRE and the Department of Agriculture and Rural Development of Khanh Hoa Province fail to provide any information on the aquatic ecosystem of Cai river or Quan Truong river. Opinions collected from local residents do not present any records on the appearance of rare fish or other aquatic animals in Cai river or Quan Truong river, of which the genes need to be preserved.

27. From exchanges of information among experts from the Institute of Ecology- the National Academy of Sciences, statistical studies on fish species living in domestic freshwater areas in Central Vietnam show that popular natural species living in the Central plains are mainly carps, rohu, grass carps, major caps, catfish, anabases, and eels. Some species are raised in their natural habitat such as carps and anabases. Fish species living in water bodies of big rivers are more abundant, including 54 species belonging to 6 orders and 19 families. Among these, carps are of the largest order with 27 species, while there are 12 species of catfish, and 10 species of striped bass. The fishes living in the river are mainly freshwater fish species, some of which are typical of fluvial-marine species of the *Gobiidae* family, or the *Sardinella tawilis* sp., etc. There has been no recorded information on fish species which need to be protected or migrating fishes in the rivers of Nha Trang city.

B. Socio-economic conditions

28. Nha Trang city is classified as class 1 city and it comprises of 19 wards communes . According to the 2014 Statistical Yearbook of Nha Trang city, the total population of the city is 412,112 with an average density of 1,632 person/km^2. Land resource for urbanization is

limited so that the city has to make use of the land surround the mountains and agricultural land for construction.

29. Nha Trang city is one of the national strategic centers for tourism which has international reputation. It is being invested to become ecotourism coastal city.

30. Labors working in agriculture, aquaculture, forestry, and fishery are 30,386 people (13.9%); in industry, handy craft and construction are 39,295 people; in service, commercial, administrative offices are 149,475 people. Poor people are 10.2%, medium income are 41.1%, above medium are 48.7%. In the project area, there is relatively equality between men and women in taking decisions of major issues in the households as well as participation of community activity. The role of women is increasingly improved

31. The city has relatively completed transportation system with the road, railway, waterway, and airways. 100% of wards and communes are provided with electricity. Supply water system is completed with 2 plants providing 68,000m^3/day and the influent point is far from the project site (10-12 km). The connection rate to the supply water system is 97.5% in which all schools are connected to the system. A wastewater treatment plant existed in the Southern part of the city with the productivity of 20,000 m^3/day (conducted by CCESP project). In the Northern part, wastewater is not collected but it is discharged directly to Cai River or to the sea. The drainage and sewerage systems are degraded with many defected part or without sewer. Some areas are flooded in heavy rain as Bau market, Dien Bien Phu street, and SOS village.

32. In Nha Trang city, total of about 120,000 tons (2015) solid waste is collected at the sanitary landfill Luong Hoa in Vinh Luong commune which is 8 km away from the city center. There are two units having the license for transportation of hazardous waste.

33. *Cultural, historical and religious works:* In the Project area, the relics of Po Nagar Temples are located adjacent to the sewer construction line on 2/4 street, the embankment to the north of Cai river and Chu Dong Tu Street (50m from the nearest construction site). This is a crowded area with a lot of tourists and heavy traffic. Ba Lang parish is located about 50m from the wastewater sewer construction line on Pham Van Dong Street and Duong Hien Quyen Street

34. *Specific social environment conditions at project sites:*

- Vinh Ngoc commune: This is the area to construct the wastewater treatment plant. Residential houses are in the distance of 100-300 m from the plant in the southwest. The plant is 50m from the Vinh Ngoc elementary shool. The plant will encroach the existing road and Vinh Ngoc community house. Along this line there are water pipes of I-resort and supply water plant of Vinh Ngoc commune.
- Along the 2/4 road: The drainage and sewerage system is located in the 2/4 road, Son Thuy, Bau market, PS2 and PS3 pumping station, combined sewer overflow (CSO) CSO3. The sewers in this area are degraded and they will be re-constructed. The area is polluted by wastewater. There are some sensitive sites along the 2/4 roads which are Thap Ba monument, Bau market, An Ton church (very close to the construction sites).
- Along embankment line - Pham Van Dong: The work items including combined sewer D300 along the embankment line, CSO4, CSO5, CSO6. The area has high population density, especially at Pham Van Dong street with numbers of hotels and restaurants.
- Along the railway (from Nguyen Khuyen junction to 2/4 road junction): This is the construction site for road number 4, detention basin, square concrete sewer parallel to the railway, connecting sewer from Nguyen Khuyen discharge gate to the detention basin,

pumping station PS5, pressured sewer from pumping station to WWTP. In the land use planning, this area is utilized for urban development but it has low density at the moment. Majority of the land is now open space with bushes and weed. There are several sensitive sites such as the railway along the planned road number 4, two tombs need to be removed (next to Nguyen Xien street).

- Duong De-Vinh Hoa residential area and Ba Lang discharge gate: This is the construction site for sewer system, pumping station PS1, PS4. The environmental sensitive points are the market at the junction of Duong Hien Quyen - Dien Bien Phu (close to the construction site), Ba Lang parish at T-junction Duong Hien Quyen - Pham Van Dong (20 m away from the construction site), vinh Hoa 2 elementary school at Ngo Van So street (toilet construction), Mai Xuan Thuong secondary school at Mai Xuan Thuong street (next to the sewer construction site).
- Along the northern and southern bank of Cai River: There are road construction, embankment at the northern and southern bank of Cai River, Chu Dong Tu street. The area has high population density which leads to large amount of wastewater and solid waste to pollute the river as well as estuary. The sensitivity sites are Thap Ba monument (northern bank of Cai River) which is 50m away from the construction site, Ngoc Thuy pagoda house (next to the southern bank of Cai River).

CHAPTER 3. ASSESSMENT AND ANTICIPATION OF SOCIAL AND ENVIRONMENTAL IMPACTS OF THE PROJECT

35. Environmental-social impact assessment for Quy Nhon city subproject investment were developed based on document reviews, meetings with key agencies, field visits to project sites and collection of environmental data (air, noise, vibration, sediment, sludge analysis, etc). A checklist method was used to identify key issues. In addition to the ESIA report, Resettlement Plan report (RP), Social Assessment report (SA) for Quy Nhon city subproject, have also been prepared in line with relevant WB's safeguard policies. Below will summarize positive and negative impacts of the project, during the site clearance, construction and operation phases of the project

3.1. Positive impacts

36. In general, the project is going to bring about positive impacts to the natural and social environment. The capacity of collection, treatment and mitigation of wastewater of Nha Trang city will be improved by completing the collecting network in the south and constructing the treatment plant in the north. The construction of drainage system, pumping stations, and detention basin will mitigate the flooding and environmental pollution of the city north. Capacity to avoid flooding and erosion of Cai River banks is enhanced by embankment activities in both banks of the river. The construction of new road will provide with more connection inside the city which reduce the traffic pressure of city road network and promote socio-economic development for the region. The hygiene condition in the area is improved leading to the improvement of public health related to environment

3.2. Risk and potential negative impacts

37. Project will cause negative impacts to the environment and community through activities such as (1) land acquisition, site clearance; (2) construction activities of the project; (3) some activities after completing project. Type and nature of impact change significantly according to the nature and scale of three activities mentioned above. However, construction works of the project are in medium and small scale with almost of temporary and localized negative impacts. Therefore, those impacts is completely able to mitigate through applying mitigation measures and management (will be presented in chapter 5). Impact level of the project will be presented respectively in the Table 3.1 below

Table 3-1. Level of negative impacts from Project implementation

Work items	Physical elements			Biological elements		Social elements				Others		Notes
	Air, noise, vibration	Soil, water	Solid waste, dredged sludge	Forest, natural ecosystem	Fish, aquatic species	Land acquisition, resettlement	Native ethnic groups	Tangible culture resources	Livelihood, disturbance to residential community	Localized flooding, traffic, safety	Impacts from outside project area	
Storm water and wastewater pipelines, CSOs, stormwater and wastewater pumping stations												
Preparation	L	N	N	N	N	M	N	N	L	N	N	- Small and medium scale works with small impacts (see Notes (2) below for further information)
Construction	M	M	L	N	N	N	N	L	M	M	L	
Operation	N	N	L	N	N	N	N	N	N	L	N	
Northern and Southern embankments of Cai river												
Preparation	L	L	L	N	N	H	N	L	H	N	L	- Large-scale works with significant impacts (see Notes (2) below for further information)
Construction	M	M	M	L	L	N	N	L	L	M	L	
Operation	N	N	N	N	N	N	N	N	N	N	N	
Traffic roads												
Preparation	L	L	L	N	N	M	N	L	M	L	N	- Medium-scale works with medium impacts (see Notes (2) below for further information)
Construction	M	M	M	N	N	N	N	L	L	M	L	
Operation	M	N	N	N	N	N	N	N	N	N	L	

Wastewater treatment plants												
Preparation	L	L	L	N	N	M	N	N	L	L	L	- Medium-scale works with medium impacts (see Notes (2) below for further information)
Construction	M	M	M	N	N	N	N	N	M	M	M	
Operation	L	N	M	N	N	N	N	N	L	L	M	
Notes: (1) The following criteria are used to assess the level of impacts: None (N) – No impacts; Low (L) – Small work, small impacts, localized, reversible, temporary; Medium (M) – Small works in sensitive/urban areas, medium-scale with medium impacts, reversible, able to be mitigated and managed, localized, temporary; High (H) – Medium-scale works in small sensitive/urban areas, large-scale works with significant impacts (social and/or environmental), many of which are irreversible and require compensation. Both M and H require monitoring and implementation of mitigation measures as well as an appropriate institutional capacity in terms of safety. (2) Most impacts of small and medium scale works are localized and temporary and can be mitigated through the application of technical solutions and good construction management practice with strict supervision, inspection and consultation with the local community.											

38. The following parts will analyze the impacts of the project including: (1) Impacts revealed from site clearance and resettlement in Table 3-2; (2) Negative impacts due to construction activities in Table 3-3; (3) Impacts from operation process of the project in Table 3-4; (4) Impacts to physical cultural resources; (5) Impacts to the ecosystem; (6) Cumulative impacts of the project.

39. Impacts revealed from site clearance and resettlement: Table 3-2 shows the number of impacted households, area of land for clearance, removed tombs, number of resettled households. Besides, 5 other entities are impacts including Vinh Ngoc elementary school (lost part of the school yard), Vinh Ngoc commune community house (totally lost), parts of the Welfare Center, shipbuilding workshop, and Khanh Hoa electricity joint stock company are also reclaimed.

Table 3-2. Summary of impacts revealed from site clearance and resettlement

Work item		Impacted land (m2)			Impacted item			Number of impacted household	Number of resettled household	Number of impacted Business household	Severe impacted household	Vulnerable household
	Total impacted area	Residential land	Agricultural land	Transportation and irrigation land	Building (m2)	Graves	Others					
Component 1	51903.3	3893.2	39269	8741	2725	0	272.5	80	16	0	22	
Component 2	114188	71677	22085	20426	50174	2	5017	372	125	20	32	69

40. Impacts during the construction phase of the project is showed in Table 3-3. Noted that the Cai River area has 94,000 m^3 dredged mud, the treatment plant areas has 25,252 m^3 saline removed soil; the construction area crossing the railway should be paid more attention to safety.

Table 3-3. Overall impacts from the Project

Types of impact	**Causal construction activities**	**Affected subjects**	**Level, duration**
Construction stage			
+ Air pollution: - Exhaust gases, dust, noise + Impacts on traffic +Scatters of materials on roads	Demolition for site clearance Material disposal & transportation Dredged & excavated material disposal Excavation & dredging activities	Workers on site Residents, tourists in construction area	Medium, able to be limited; Through construction stage
Pollution of surface water sources: - Increased turbidity - Increased concentration of other pollutants - Organic contamination - Pollution from	Soil excavation and backfilling: Mud & soil from site flowing into water sources Mud, sediment, saline water from site Domestic wastewater from temporary tent area Petroleum and hazardous substances in stormwater contaminating water sources Stagnant stormwater	Cai River, ditch next to WWTP	Low, controllable; Through construction stage

hazardous waste - Other types of contamination			
Risk of erosion & sedimentation	Excavated soil, bulk materials, and waste from construction site and disturbed areas swept away by stormwater into water sources; Total amount of excavated soil: 184,690 m^3 Total amount of backfilling soil: 193,465m^3	Cai River	Medium, able to be limited; Through construction stage
Flooding & inundation risk	Ground heave or material stockpiling at site, hence altering ground elevation or interrupting existing drainage line and possibly causing inundation of adjacent areas; Existing elevation of plant: -0.8 to +5m Design elevation: +3.8m	Area of Road No. 4 (Vinh Hai ward), Northern WWTP (Vinh Ngoc ward)	Medium, able to be limited; Through construction stage
Solid waste generation	Soil excavation: 18,4690m^3 Dredging: about 9,4000 m^3 Unused Leftover construction materials Domestic waste from tents	Workers on site, local residents Water environment (Cai River), soil environment, trees (salinized materials)	Average, able to be controlled; Through construction stage
Hazardous waste generation	Estimated quantity: Used gasoline & oil: 114 l/month Rags, packaging materials smeared with chemicals / additives: 50kg/month	Soil environment, water environment	Low, able to be controlled
Risk of land subsidence and landslides	Deep excavation activities: foundation pits, construction trenches for relatively large size drains, slopes formed after foundation bed heave	Houses along 2/4 Street and Bau market	Average During construction of pipelines at great depths
Urban landscapes affected	Temporary stockpiling of materials and construction debris; site during construction; Material and waste disposal possible causing scatter of materials and waste on transport routes; Pumping stations and temporary open excavated ditches during construction on streets	General city landscapes	Medium, able to be limited
Landscape changed	Gathering of materials; site demolition	General city landscapes	Medium During

			construction stage
Living creatures affected	Increased turbidity, sludge dredging, riverbank solidification Trees on the streets possibly affected during construction of manholes and tertiary sewer network	Aquatic life of Cai River	Low, short-term; During construction stage
Disrupted traffic or increased risks of traffic accidents	Operations of gathering materials, waste, and construction operations narrowing the pavements or reducing visibility on roads; Cargo handling; temporary gathering of materials possibly disrupting traffic	Traffic on 2/4 Street, Nguyen Khuyen Street, Nguyen Xien Street, etc.	Medium, able to be controlled
Railway traffic safety	During construction of pressure sewer pipelines crossing railway, Road No. 4	Workers and train passengers	Average, controllable; Risks during construction stage
Safety risks for workers	Unfinished excavation, loading and unloading operations, temporary gathering materials and fuel, operation of cranes ... Construction tasks in area near water surface for embankment of Cai River; deep excavation for sewers; Construction of overhead work items (e.g. tanks in WWTP); Temporary storage and/or use of materials and fuels like petrol, electricity, gas; particular construction operations such as welding of steelworks, water pipes	Workers	Medium, able to be controlled; During construction stage
Safety risks for communities	Unfinished excavation, loading and unloading operations, temporary gathering materials and fuel, operation of cranes ... Power lines for construction, gas tanks or combustibles, likely to cause fire, explosion or other accidents	Residents living in the area	Medium, able to be controlled; During construction stage
Interruption of existing services	Construction operations damaging or forcing the relocation of water supply pipes, power lines	Local communities	Medium, controllable Through construction stage
Social disturbance	Concentration of workers from other regions to construction sites; Construction activities disturbing local	Social security	Medium, controllable

	people's living and livelihoods or causing bad impacts on the environment and the landscapes		During construction stage
Income of business households affected	Drop of clienteles of shops and service establishments near or close to construction sites; Total number of affected households: 20; Impacts on business activities	Business households along 2/4 Street and Pham Van Dong Street	Medium During construction stage
Tourism operations and festivals affected	During construction near the relics of Po Nagar Temples and other cultural and historical destinations	The relics of Po Nagar Temples	Medium During construction stage
Access to waterways interrupted	River embankment construction preventing some households from boarding their fishing boats	Households with boats moored at construction site	Low Residents can access from the dike road.
Fire and explosion hazards	Storage and use of materials and fuels necessary for construction such as electricity, gas, petrol, etc.	Workers, tents on site	Medium, controllable During construction stage
Safety risks and impacts on learning activities of pupils/students	Construction of school sanitation block	Students, teachers	Medium, controllable During construction stage
Archaeological objects uncovered and damaged	Dredging, excavation, backfilling, ground leveling	Archeological objects	Medium, during construction stage

41. Impacts during the operational phase of the project is showed in Table 3-4. It should be noted that in case of break-down, 15,000m^3 wastewater from the treatment plant will be discharged to the Cai River. According to the analysis, in the lowest level of the river, its receiving capacity for BOD_5, COD, TSS and Fe is 0.7 days, 1.5 days, 8.2 days and 12.7 days respectively.

Table 3-4. Impacts during operational phase

Impact types	**Operational work**	**Impacted objective**	**Level, time**
Operation stage			
Risk from flooding in the plant and the road surround the plants	In case the pumping stations do not work in heavy rain		Small, during operation
Break-down case in the plant	Break-down treatment plant	Pollution of receiving source (Cai	Medium, during operation

		River)	
Chlorine leak	Chlorine adding for sterilization	Dangerous for operators	Medium
Odor	Break-down of odor treatment system	Vinh Ngoc elementary school	Medium

42. *Influeneces to belief, cultural and historical works:* There are 2 graves in the Project area to be displaced upon the construction of Road No. 4 (Group 22 – Vinh Hai ward). This is a religious and spiritual issue very likely to spark conflicts if compensation is not satisfactory.

43. *Impacts to the ecosystem*: According to the assessment, the project components do not cause negative impact to the ecosystem. All eco-sensitive objectives such as protected areas, swamps, lakes, bays are far away from the project site (15-80 km) which do not get any impact from the project. The Cai River has no protected species or reserved migrated fish, besides it was already impacted by human activities, so the impact from the project is rather small.

44. *Cumulative impact:* There are some other projects might be considered to have combined impacts with the project, including: (i) Coastal Cities Environmental Sanitation Project (CCESP) - Nha Trang Sub-project; (ii) Construction of infrastructure for Ngoc Hiep resettlement Project (2016-2018); (iii) Infrastructure for Hon Ro 2 resettlement Project. CCESP project has completed in 2014 which create no cumulative impact during construction work. However, CCSEP is the continual project of CCESP in which some work items are related to the project in order to completely solve the environmental problems to ensure future sustainable development. For those two resettlement projects, cumulative impacts are mainly social impacts due to the allocation of households from CCSEP project into these two areas. Other physical environmental impacts are almost eliminated because the construction phase are different and the distance is relatively large (about 5 km).

45. Impacts at the typical sites are showed in Table 3-5

Table 3-5. Summary of environment sensitive sites during construction phase of the project

No	Name of works	Location	Particular impacts needed special attention
1	Relics of Po Nagar Temples	2/4 Street, near Xom Bong bridge (50m from construction site)	Risks of accidents to tourists Affected landscape of Po Nagar Temples Dust and smoke affecting tourists
2	An Ton church	2/4 Street (10m from construction site)	Hindrance to access to the church
3	Bau market	2/4 Street (5m from construction site)	Flooding in market area Risks of accidents to traders &customers Interrupted business activities
4	Market	Intersection of Dien Bien Phu Street and Duong Hien Quyen Street (on construction route)	Affected business Risks of traffic accidents to the passers-by and traders during construction
5	Ba Lang Parish	Duong Hien Quyen Street (30m from construction site)	Affected area landscape (due to indiscriminate gathering of materials)

6	Vinh Hoa 2 Primary school	Ngo Van So Street (construction of school sanitation block)	Smoke, dust and noise affecting pupils' health Lessons affected by noise and vibration Risks of accidents to teachers and pupils
7	Mai Xuan Thuong Junior Secondary School	Mai Xuan Thuong road (30m from the construction site)	Smoke, dust and noise affecting students' health Lessons affected by noise and vibration Risks of accidents to teachers and students
8	Vinh Hoa 1 Primary School	Dien Bien Phu Street (construction of school sanitation block)	Smoke, dust and noise affecting pupils' health Lessons affected by noise and vibration Risks of accidents to teachers and pupils

46. Compliance with environment and safety regulations at mines: Overall, licensed mines have been complied with environmental safeguard policies, occupational safety and ensured environmental deposit procedures in line with Vietnam laws.

CHAPTER 4. ANALYSIS OF ALTERNATIVES

47. The project's proposed investments are in line with the cities' master plans which have been approved by the Government. Alternatives were considered in the preparation of the master plans, which are also subject to review by environmental authorities as per Vietnamese law.

48. In the feasible study, alternatives are analyzed for the item WWTP about the treatment technology as presented in the following parts. For other items, there is no alternative for technology or site selection because of no proper alternative could be found (work items of road, Cai River embankment, detention basin, collection drainage and sewer). Besides, environmental protection factor is already considered in the construction design, or in some cases it is due to the insignificant of impacts (such as for the tertiary sewer). The no-action (or zero project) alternative is also considered in this Chapter.

49. Analysis of the no-action alternative shows that existing environmental problems will increase with the development of the city: the northern part will be polluted by wastewater due to the lack of treatment plant, wastewater is directly discharged into the sea, Cai River will be polluted by BOD_5, N, P, TSS, grease and oil, etc. Flooding at some sites in the north will not be improved, there will be odor pollution from the wastewater in channels, more pressure of traffic will be in the city center.

50. Alternatives for the treatment plant in the north :

- Site: The selected site fits with the detail construction plan 1/2000 for the area of Hon Nghe southwestern part. There is no alternative site for the WWTP in the north. Besides, this site will create the least number of impacted households (12 households)
- Technology: 4 treatment technologies were considered. In comparison to the other 3 options (trickling filter, sequencing batch reactor, UASB technology), oxidation ditches technology was selected based on some criteria: (i) capability in Nitrogen treatment, (ii) no additional chemical, (iii) simple operation, resistance to overburden shock, (iv) low investment cost, it was used in the Southern WWTP, (v) no sedimentation tank, no sedimentation tank required, (vi) easy to combine with odor treatment system. The effluent water meet the regulation QCVN 14:2008/BTNMT column A

CHAPTER 5. MITIGATION MEASURES FOR NEGATIVE IMPACTS AND ENVIRONMENTAL INCIDENTS

51. Mitigation measures for negative impacts are researched and proposed in three phases of the project include: preparation, construction and operation phase. In detail design process, negative impacts will be minimized as much as possible through combining with designs, bidding documents and contract with construction contractors. Bidding documents and contract will reflect (i) general mitigation measures (ECOPs – see Paragraph 54 below); (ii) mitigation measures for each type of works; (iii) site-specific mitigation measures. Detail in (i), (ii) and (iii) are presented in ESIA report of CCSEP project – Nha Trang city subproject

52. Solutions to renovate landscape, environment, energy saving and safety during the process of works operation have been proposed in FS and will be synthesized in detail design.

A. Peparation phase

53. Mitigation of impacts related to site clearance and resettlement: A resettlement plan is prepared for the sub-project which meets all requirements from WB policy and Vietnam legislation. The impacted households will be appropriately compensated. The resettled households will be allocated in Ngoc Hiep, Hon Ro 2, Dat Lanh resettlement areas. Budget estimation for the Resettlement plan of the sub-project is **184,186,316,572** (equivalent to 8,250,227 USD with the exchange rate of 22.235 VND = 1 USD).

B. Construction phase

54. The general mitigation measures and impact management in construction phase is applied to mitigate the main following impacts. (Be noted that we have the permission from Khanh Hoa province People'committee to dispose saline soil from Cai River at the provincial administrative center due to the demand of land leveling of the area. Besides, the salinity of this soil is equivalent to the one at the filling site)

- Impacts from dust, smoke, noise, bad odors and vibration,
- Wastewater,
- Solid waste,
- Hazardous waste,
- Water pollution,
- Impacts on living creatures and aquatic species,
- Impacts on urban beauty and landscape,
- Flooding, erosion and sedimentation,
- Subsidence,
- Traffic safety issues,
- infrastructural works and existing services,
- Social impacts,
- religious and cultural works,
- Community health and safety,
- Safety and health of workers.

55. Work item based mitigation measures: Mitigation measures includes (i) for sewerage system, (ii) for the WWTP, detention basin, (iii) for the pumping stations, (iv) for the toilets at schools, (v) for the road, (vi) for the embankment. They are proposed in detail in the ESIA report of the project. Those mitigation measures will also be integrated in the contracts to the contractors for each of work items together with the general mitigation measures.

56. Some other mitigation measure for specific construction sites are also proposed, especially for the sensitive sites such as school, monuments, market, religious works (church, meditation house) in the ESIA report. These measures are going to be included in the contracts with contractors.

57. Mitigation measures for accumulative impacts: carrying out fully mitigation measures proposed in ESIA report will partly mitigate accumulative impacts for CCSEP project.

58. The report also proposes guidelines in the case of chance find procedure: Suspend construction activities in the area of chance find procedure → Protect these area → Announce to local authorities, supervisor consultant, PMU → Announce to Department of Culture, Sports, Tourism for finding resolution.

C. Mitigation measures to control pollution during operation phase

59. Mitigation measures during operation phase are mainly considered for the WWTP including sludge treatment, mitigation and reaction measures for break-down cases, for chemical leak, for odor treatment system break-down, and measures for fire protection. For other work items, the main measure is periodic monitoring and maintenance. The sewerage system also need to be sledged frequently.

CHAPTER 6. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PROGRAM

60. On the basis of the assessment of negative impacts presented in Chapter 4 and the measures of impact mitigation recommended in Chapter 5, this Chapter will present the Coastal Cities Sustainable Environment Project (CCSEP) - Nha Trang city Sub-project. The Environmental Management Program will identify the activities/actions to be implemented in the city of Nha Trang Sub-project, including the environmental monitoring program and its implementation schedule, taking into account the compliance with the provisions of the Government's EIA and safety policies of the World Bank (WB).

6.1. Environmental management program

61. To ensure that all sources of pollution arising from the Project activities during the preparation stage and the construction stage as well as in the operation period will not cause any negative impacts on the environment and public health, it is compulsory that the management, monitoring and supervision of environmental quality be executed in a scientific, systematic and regular manner.

62. ESMP's mitigation measures are divided into 3 basic parts: (1) ECOPs, (2) mitigation measures for the Project's components, and (3) site-specific mitigation measures for each location of the Project's items.

63. The first, this ECOP will outline impacts of a typically low level which may occur in a series of project construction operations. An ECOP includes measures to mitigate those impacts and is a procedure to be integrated into contractors' construction contracts. The mitigation measures in this ECOP will be developed and integrated into all the construction contracts under this Project. Typical common impacts which will be minimized by mitigation measures defined in ECOP include: (1) Dust, exhaust gases, noise and vibration; (2) wastewater management; (3) Solid waste management; (4) Hazardous waste; (5) Water pollution management; (6) Impacts on aquatic species and terrestrial ecology; (7) Management of impacts on urban landscape and beauty; (8) Management measures of sedimentation, erosion and flooding; (9) Subsidence and slide management; (10) Traffic safety management; (12) Management of impacts on social activities; (13) Management of impacts on cultural and religious works; (14) Measures to secure community health and safety; (15) Measures to secure worker's health and safety.

64. The second, Mitigation measures for project's components will describe specific mitigation measures for the Project's components and are included in the contracts for corresponding packages.

65. The third, All those impacts specific to each position of the Project of which mitigation measures are not included in the general ECOPs or take place at a level that necessitates other measures.

66. Measures to mitigate impacts from land acquisition and resettlement are mentioned separately in the Resettlement Plan (RP) and those measures will be carried out and supervised separately.

67. The operator units of the road, WWTP, drainage and sewerage system, pumping stations, school toilets, embankment of Cai River have to ensure the require budget for implementing environmental impact mitigation measures during the operation phase. Provincial People's Committee will provide guiding institution and policy as well as monitoring the implementation.

6.2. Organizational structure and stakeholder roles

68. Environmental management responsibilities were identified in the related EIA and EMP reports. Details on the responsibilities of PMU, contractor, construction supervision, independent environmental monitoring units are presented in the EIA report. The following part is the

summary of roles and responsibilities of main stakeholders and their relationships in conducting environmental protection plan.

- PMU is responsible for implementing the EMP during the detailed design and construction stages. EMP implementation during operation stage is the responsibility of the facilities operators. PMU will set up an Environmental and Social Unit (ESU) to ensure timely and effective implementation of the EMP, including preparation of reports on safeguard compliance as required by the Vietnamese Government and WB.
- Contractors will be responsible for implementing mitigation measures. These measures will be included in bidding documents and their costs are to be included in construction bid packages.
- CSC will be responsible for monitoring the day-to-day implementation of mitigation measures. Related costs are included in the CSC service contract.
- IEMC will be responsible for overall environmental monitoring which includes support to the PMU in implementing environmental supervision and monitoring, and responsible for reporting on the implementation through monitoring reports.

69. The PMU will prepare reports twice per year for submission to the World Bank, including the compliance with the EMP. The report will contain the monitoring results and assessments of the IEMC that show project progress and the state of implementation of the EMP

6.3. Environmental monitoring program

70. It is essential to design the monitoring program and monitoring frequency appropriately to be able to record both the overall performance of the project works as well as the short-term impact due to construction activities. The environmental monitoring program will be implemented during the pre-construction and construction phases at 3 levels:

- Monitoring the level of compliance with mitigation measures,
- Community-based monitoring, and
- Monitoring the environmental parameters set out in the EIAs.

6.4. Capacity building and environmental management

71. Training programs will be developed and implemented by a team of Technical Assistance for the implementation of safety policies for PMU. PMU / IEMC with the help of the Technical Assistance Team will provide training for contractors, CSC and other groups.

72. The scope of the technical assistance would cover support from experts and training that would cover both the knowledge on safeguards requirements and procedures for the project as well as training that covers both specific knowledge on safeguard procedures and requirement for the project staff, consultants, and national contractor would be important. This would include, for example, assistance in the preparation of documents and implementation of training program on environmental management and environmental monitoring for contractors, CSC and relevant staffs of PMU (environmental staffs and coordinators of packages) to do their tasks. It would also include assisting the PMU's environmental staff with the review of contract documents on the bidding packages for construction items of the project to ensure compliance with environmental protection policies and impact mitigation and monitoring requirements as well as provide general environmental guidance as requested by the PMU to enhance overall project implementation and performance.

6.5. Total Estimates

73. The following table provides a cost estimate for the implementation of environmental management plan (EMP). The cost of EMP[2] implementation will include (i) the costs of implementing mitigation measures by the contractor, (ii) expenses supervised by CSC, (iii) cost of the independent environmental monitoring consultant (IEMC), (iv) the costs of environmental quality monitoring, (v) the cost of safety management for the PMU, including both technical assistance in implementing safety policies and training programs. The costs of implementing mitigation measures during construction will be a part of the value of construction contracts, while the costs for a site-specific environmental monitoring plan (SEMP) by the construction supervision consultant (CSC) will be provided in construction supervision contracts. The costs of the PMU operations relating to EMP are allocated from the project management budget of the PMU, including safety training programs, and basic allowances to participants in the monitoring programs.

74. The following table 6.1 provides the estimated costs for environmental quality monitoring and IEMC (in accordance with national practices) for reference purposes. However, final costs will be updated in the detailed design phase.

Table 6-1. Estimated costs of EMP implementation (USD million)

	Items of Quy Nhon Sub-project (million USD)	**Funded by**
(a) Mitigation during construction	As a part of the contract	WB
(b) Monitoring safety policies during construction	As a part of the cost for Construction Supervision Consulting (CSC)	WB
(c) PMU's units in charge of environmental safety policies	As part of the costs for the PMU	Counterpart funds
(d) Environmental quality monitoring	0.019	WB
(e) Independent environmental monitoring consulting (IEMC)	0.037	WB

6.6. Mechanism of Solving Complaints

75. Complaints relating to any Project's problems will be solved through negotiations to achieve the consensus. A complaint will go through three stages before it can be transferred to the court. The enforcement unit will pay all administrative and legal fees relating to the acceptance of complaints. This cost is included in the project budget.

76. Complaining procedure and solving process is performed in detail in the ESIA report.

[2]Excluding costs for RP implementation and independent monitoring the performance of RP/EMP

CHAPTER 7. PUBLIC CONSULTATION AND DISCLOSURE

77. Community consultation was conducted as required by Vietnamese and WB policies, including two consultations with local community and local government by document .

A. Consultation with commune/ward People's Committee and sectoral departments

78. PMU of Khanh Hoa province issued the document No. 312/BQL-KT dated 30/6/2016 to get the consultation from commune/ward People's Committees in the project sites on environmental protection and impact mitigation measures of the project. The Committees support the implementation of the project and request the owner to fully comply with environmental protection regulation.

79. A consultation meeting on social environment protection with sectoral management organizations took place in 28/4/2016 with the participation of representatives of PMU, Center for Land development of Khanh Hoa province, Department of Labor, War Invalids, & Social Welfare, Environmental Protection Administrative, Nha Trang Department of Urban Management, Nha Trang city Fatherland Front, Department of Natural Resources and Environment, Department of Land Price, Department of Construction. The participants all agreed to support the project.

B. Public consultation

80. There were 2 public consultations established at local area. Details of the meeting are presented in ESIA report and summarized in Table 7-1.

Table 7-1. Synthesis of local authorities' opinion

Subproject	Date	Purpose	Community's opinions
The first public consultation			
19th Feb 2016 to 25th Feb 2016 (444 people)		- To share all information proposed project activities with the community and stakeholders living in the project areas - To collect opinions; understand the concerns and sensitivities of local authorities and communities	- Community completely agrees with investment project - Environmental sanitation issues will be resloved when project completed. - It is necessary to carry out fully environmental protection measures during construction process of the proejct - Set up compensation policies adequately to the local people - There are no species in Red book or endangered species, which are recored in the construction area of project
The second public consultation			
4th July 2016 to 12th July 2016 (474 people)		- World Bank and the consultants sought opinions of leaders, unions, and organizations, and representatives of residents living in the Project-affected areas on the contents of draft environmental impact	- Community completely agrees with impacts and mitigation measures mentioned in ESIA report - It is necessary to compensate adequately to the affected households. Carrying out an adequate compensation for the land acquistion at Ngoc Thuy

Subproject	Date	Purpose	Community's opinions
		assessment	monastic and Xuan Ngoc cultural house. - Fully carry out environmental protection measures mentioned in ESIA report - There is a segment of alley, which need to be restored road surface after finishing construction. It is necessary to avoid construction for along time, which affect people's daily living activites. - Quickly carry out project progress - Ensure traffi issues and reduce impacts of dust to local people

C. Disclosure

81. The draft EIA report will be published at the offices of Quy Nhon City People's Committee and the People's Committees of Wards/Communes on.../.../2016. Information on the release date will be posted on the website of Quy Nhon City People's Committee. Basing themselves on the contents of the EIA report, local people could get hold of Project information and contribute their opinions/comments on environmental issues of the Project.

82. The final version of this EIA report will be sent to World Bank and released on Infoshop .

CONCLUSION, RECOMMENDATION AND COMMITMENTS

1. Conclusion

83. The Project will contribute to improving drainage conditions, overcoming inundation, bettering the natural environment and hygienic conditions in the areas Nha Trang city. In the process of urbanization and modernization of the city, the implementation of this Project proves to be necessary, thereby contributing to the sustainable development of Khanh Hoa province in general and the city of Nha Trang in particular

84. The contents of EIA report comply with the current requirements for environmental impact assessment stipulated by the Vietnamese Government and WB's policies. The report will be one of the key documents to be submitted to State management agencies in charge of the environment to determine the location and scope of the work as a basis for applying for a project investment license. In addition, this is also an important document helping in project appraisal and in the negotiation and signing of the loan agreement between the Government of Vietnam and the World Bank.

2. Recommendation

85. This is an environmentally significant project, aiming at future sustainable development, and also one of the prerequisites of socio-economic development in Khanh Hoa province in general and Nha Trang city in particular. Therefore, the Owner would like to propose for DONRE's appraisal and approval of the EIA report of the Project as well as WB's approval for timely and prompt deployment of the project

3. Commitment

86. The Client commits to carrying out environmental protection and mitigation measures as mentioned in Chapter 5 and implementing the environmental management and monitoring program for the Project as mentioned in Chapter 6, and fulfilling commitments towards the communities specified in Chapter 7. The Owner also commits to make compensation and overcoming environmental pollution once environmental incidents and risks occur during the implementation of the Project, and taking steps of environmental recovery in accordance with to legal regulations on environmental protection when project operation has been completed.