EXECUTIVE SUMMARY (ES)

ES 1.0 Project Fact Sheet

Table ES-1. Project Fact Sheet

Name of Project	**PROPOSED CAVITE PROVINCE LAND RECLAMATION AND DEVELOPMENT PROJECT: ISLAND E (324 HECTARES)**	
Project Location	Along the Coastal Waters of Rosario, Within the Jurisdiction of Cavite Province	
Project Category per EMB MC 2014-005	Category A: Environmentally Critical Project (ECP) Major Reclamation Project ≥ 25 hectares	
Project Classification per EMB MC 2014-005	3.3 Reclamation and other land restoration project	
Scope of Project	Horizontal development Only Including Road Networks and Utilities *(Note: separate ECCs will be applied for the vertical development, source of reclamation materials, disposal of dredged materials and all connectors/bridges)*	
Project Area	324 Hectares	
Project Cost	PhP 21.400 Billion	
Summary of Major Components **(Only the "Construction" Phase covered in ECC application, i.e. dredging, reclamation and horizontal development works)**	**Major Components**	**Brief Description**
	One (1) Island	324 ha (Land area allocation for Saleable, Non-Saleable and Government Share)
	Internal Road Network	Composed of main roads, interior secondary roads, roads sidewalks and curb & gutters.
	Storm Surge Protection/ Containment Structure	To consist of sheet piles installed around the perimeter of the proposed reclaimed area; and/or combination with the use of Artificial block armor (Accropode) and Concrete Grid Plate.
	Drainage System	To consist of networks of drainage pipelines (reinforced concrete pipe) and/or covered canals, box culvert, manholes, inlets and other appurtenant structures. General layout will be along/parallel to the internal roads.
	Utilities Water Supply Power Lines Telecommunication	Water supply will be connected to the Manila Water Service Inc. distribution system. Power shall be tapped from Meralco. Telecommunication shall be linked to nearest existing PLDT exchange and also through the mobile telephone/internet companies. The power and telecom lines shall follow the same lines as much as possible.
	Sewerage Facilities	Integrated sewage disposal system
Project proponent	**CAVITE PROVINCIAL GOVERNMENT** **The Honorable Governor Juanito Victor C. Remulla** Office of the Governor Provincial Capitol Compound, Provincial Capitol Building, Trece Martires City Telephone No.: (046) 419-1919	
EIA Preparer / Consultant	**CEnSE Technical Consultancy Services** Unit 405 Yrreverre Square Building, 888 Mindanao Avenue, Quezon City Mobile No.: (0927) 511-6742; Landline: (02) 455-2022; Email add: cense_tech@yahoo.com.ph Contact Person: Engr. Venice Montemayor – Team Leader	

ES 1.1 Project Description Summary

The Environmental Impact Statement (EIS) Report has been prepared as requirement for an application for an Environmental Compliance Certificate (ECC) for the Proposed Project. The ECC application covers only the horizontal development or the reclamation of land, including the construction roads and utilities.The proposed reclamation project covers 324 hectares designated as **Island E** out of a total proposed reclamation area/project of the province of approximately 1,043.28 hectares.

The project will be situated along the coast of Manila Bay within the territorial jurisdiction of Cavite Province fronting the 9 coastal barangays namely Bagbag I, Kanluran, Ligtong I, Muzon II, Sapa II, Sapa III, Wawa I, Wawa II and Wawa III in the Municipality of Rosario.

ES 2.0 Process Documentation of the Conduct of EIA

The content of the EIS report was established during the conduct of Technical Scoping on 17 December 2018 (See **Annex ES-A**). As prescribed by the EMB/DENR under the Revised Manual for Coverage Screening and Standardized Requirements under the PEISS, the appropriate type of documentation for this project is the Environmental Impact Statement (EIS).

As per Section 14 of the DENR Administrative Order No. 2018-14 or the "Guidelines on the Issuance of Area Clearance for Reclamation Projects and Proclamation/Special Patents over Reclaimed Lands", the Operations Phase (Vertical Developments) of the project shall be subjected to a programmatic Environmental Impact Assessment (EIA) requirements. Pursuant to Section 9.6 of the DENR Administrative Order No. 2018-18, the proponent is compliant with the preliminary requirements which was the basis for the Notice to Proceed (NTP) issued by the DENR IV-A dated December 19, 2019, findings of the Composite Team and its current conditional status is presented in **Table ES-1A.**

Table ES-IA NTP-Findings of the Composite Team and Status

No.	Findings	Status
a	The proposed inner Island A covers an area of 247.28 hectares within the municipal waters of Cavite City and Bacoor Bay side and portions of the territorial waters of Kawit, Cavite. This observation as shown on the sketch submitted may affect seven (7) coastal barangays of Kawit with more or less 3,888 informal settler families; it may also affect foreshore establishment like the First Orient International Venture Corporation and the GLY Van Terminal.	Island A is discussed separately in its EIS Report and is located along Bacoor Bay and coastal waters of Kawit And Cavite City, within the jurisdiction of Cavite Province. No inland establishment will be affected, except for some existing fishnets in Island A which shall be relocated and transferred.
b	In Cavite City, it may affect thirty-seven (37) coastal barangays with an increasing population of informal settlers	The coastal barangays were being considered as our Direct Impact Area (DIA). No inland informal settlers will be displaced.
c	The proposed Island B covers an area of 220 hectares within the coastal waters of Cavite City, Island C covers an area of 205 hectares within the municipal waters of Noveleta, Island D covers an area of 267 hectares is within the municipal waters of Noveleta and Rosario; while Island E with an area of 324 hectares is within the municipal waters of Rosario.	Island B has been relinquished in favor of Sangley Point International Airport (SPIA). The decision was made based on the result of overlapping plots of portion of Island B and SPIA.
d	Noveleta has three (3) coastal barangays while Rosario has eleven (11) coastal barangays directly affected withn the proposed reclamation.	Noveleta's coastal barangays was being considered as our Direct Impact Area (DIA). No inland informal settlers will be displaced.
e	Those coastal areas adjoining the proposed reclamation are inhabited by 2,368 informal settlers/families for Noveleta and 558 informal settlers/families for Rosario.	The coastal barangays were being considered as our Direct Impact Area (DIA). No inland informal settlers will be displaced.
f	Both municipalities have Beach Resorts, Long Beach and Lido Beach Resort for Noveleta and Island Bonita, Mount Sea Resort and Restaurant and a Petron Depot Terminal in Brgy. Wawa, Rosario, Cavite	The preparation of Impact Management Plan (IMP) discussed in Chapter 3 to ensure that every sensitive areas shall be considered, properly addressed and mitigated. The existing resorts are at least 200 meters away from the proposed site.
g	Another municipality adjoining Rosario is Tanza which has twelve (12) coastal barangays with 127 informal settler/families. Establishments along the foreshore area with Foreshore Lease Application are the F and E De Castro Resort, Tanza Oasis Hotel and Resort, Cavite Gateway Terminal, Villa Excellence Beach Resort and the Agripacific Corporation.	Application shall take into consideration that currently FLA application to ensure no conflicts among the applicants and existing establishments.

h	Vast mangrove area lush vegetable is likely to be affected by the proposed reclamation project, such that utmost conservation measures must be affected to preserve the integrity of the fragile ecosystem.	Establishment of buffer zone away from the site shall be strictly observed to all sensitive area.
Environmental Issues		
1	The proposed Cavite Reclamation Project consist of five (5) artificial islands to be constructed detached from the shoreline of Manila Bay. The frst four will be sited in succession parallell to the coastline of Manila Bay while the last will be separated from the rest and will be located between the inner confluence of the sandpits where Cavite City rests and maintsined facing Kawit and Bacoor.	The proponent only applies for four (4) artificial islands, relinquishing one (1) island named as Island B, therefore reducing it to first three (3) which will be sited in succession parallel to the coastline and one island will be separated from the rest.
2	These proposed Island-type reclamation will partly enclose the near shores of Rosario, Noveleta, Kawit and Cavite City, al in Cavite Province. Based on studies, the island-type reclamation is more advantageous in terms of reduced adverse environmental impacts compared to peninsular-type reclamation (reclamation that is connected to the mainland/shoreline). However, the proponent must guarantee that the proposed project will not cause potential siltation and reduction of water exchange in the adjacent waterways.	Impact Management Plan (IMP) discussed in Chapter 3 to ensure that siltation will be properly mitigated thru installation of silt curtain thus reducing water turbidity. The separation of islands thus creating three (3) islands instead of one (1) to give way for water exchange, draineg and circulation.
3	There are at least five (5) major sources of seismic activity that may generate severe impact to Manila Bay Region, namely the Valley Fault System (VFS), the Philippine Fault Zone (PFZ), the Lubang Fault and Manila Trench. Movement from these geologic structur4es may bring fort tsunami, ground motion and liquefaction to the bay area.	The assessment derived during the preparation of EGGAR discussed the management measures for the identified seismic forces in the area.
4	Based on the Project Description submitted by the proponent, the project's ECC application being applied for involves only the horizontal phase. The proponent will engage in land reclamation by raising the elevation of the seabed for the sole purpose of creating new land intended for various functional purposes. However, it is crucial that the design and construction of the horizontal phase should need the weight of the intended load to be emplaced at its top in order to withstand hazard such as, earthquakes and tsunakis and othe external forces such as current, waves, precipitation and winds.	The proponent confirms the application only for land development including road and utilities. While it is crucial that the weight or load for future vertical development, we will assure that prior to any vertical construction, another borehole test and geotechnical investigation study shall be done to determine the load bearing capacity of the area. In this way, heights and weight of the structures will be established.
5	More importantly, the developer must foresee how the reclaimed land will likely respond to the weight of the load in order to decipher the fill's performance and functional requirements into measurable properties with special attention on density, strength and stiffness vis-a-vis liquefaction and breaching. With this underlying mechanism, it is imperative that blueprints for construction of vertical and horizontal phases for ECC application be required simultaneously in order to asses both requirements.	All possible hazards such such geologic, hydrologic, and coastal hazards were considered in the study. These studies will help in the preparation of detailed designs. Vertical components including its blueprint is at this point is not feasible to provide.
6	As per result of the MGB on flooding hazard, the large contiguous coastlines fronting the proposed project areas were found experiencing very high to moderate susceptibility to flooding due to interference of the surrounding natural drainage that coincides with the prevailing hydrologic/oceanographic phenomena along Manila Bay region. Moreover, a research study conducted by PAGASA revealed that the shape and height of Natib and Mariveles stratovolcanoes found west of the proposed project produce an orographic effect and dispersive tail of rain clouds. These further discuss the possible behavioral changes of the abovementioned flooding precursors with the proposed construction of the artificial islands vis-à-vis flooding hazards of Manila Bay Region.	Flooding hazard assessment and management measures is discussed in the submitted EGGAR.
7	Based on the results of the MGB on the coastal geo-hazard assessments covering the concerned study area. The whole shoreline stretch of Rosario municipality is experiencing high coastal accretion while the northern portion of Cavite City has occurrences of low accretion. Coastal erosion is almost negligible to low from Noveleta municipality up to Cavite City. It is therefore recommended that the proposed projects be subjected to hydraulic study to assess the negative impacts to coastal geo-hazards. The study may include hydrodynamics and morphological changes via a modeling approach. Of the studies show adverse impacts, then the developer should offer feasible mitigating measures.	Coastal Engineering Assessment or Hydrodynamics Modelling prepared by AMH Philippines is discussed in Chapter 2.2. Likewise, full report is attached in the submitted application for Area Clearance, also attached as Annex 2.2-B.
8	The developer is taking into consideration San Nicolas Shoal as the primary source that will supply landfill materials for the said reclamation projects. The proponent must conduct a separate hydraulic study for this purpose to guarantee that there will be no major interruption to the fragile equilibrium of sediment movement in the littoral cell. The proponent must also determine the potential impacts caused by sediment extraction on coastal geomorphology and hydro dynamics and the consequential beach erosion and accretion on the coastlines of Manila Bay Region.	This was discussed and addressed in the EIS of SNS separately.
9	The developer is also considering "lahar or volcanic ejecta from Mount Pinatubo as optional sources of fill materials. Fine to medium quarts sands are to be preferred ideal materials. The proponent must therefore conduct extensive and comprehensive study as tot eh strength and competence of this material.	Prior to any acceptance of filling materials. Material testing shall be done to ensure that specifications are within required standards. Sources from river dredging in Zambales, Pampanga and Batangas shall also be considered as alternative.

ES 2.1 The EIA Team

The table showing the list of EIA Preparer is provided in Table ES-2 below.

Table ES-2. EIA Team Composition

Team Member	Field of Expertise	EMB Registry No.	Company
Engr. Venice Montemayor	Team Leader	IPCO-260	CEnSE Technical Consultancy Services
Engr. Rodel Olivares	Asst. Team Leader	IPCO-132	CEnSE Technical Consultancy Services
Felixberto H. Roquia Jr., Ph.D.	Sociology	IPCO-028	Independent
Benjamin Francisco	Marine and Fresh Water Ecology (Team Leader)	IPCO-038	Independent
Virgilio Pantaleon	Coral Reef, Seagrass	-	Independent
Michael Francisco	Fisheries	IPCO-040	Independent
Nazario Sabello	Air Quality	IPCO-240	Independent
Neil John S. Tolentino	Geology	-	Independent
Engr. Emerson B. Doralles	Ocenography	-	Independent
Proponent's External Expertise			
• Arch. Armand Alli, EnP – Master Planning • Engr. Ricardo Yuson – Engineering • Engr. Jon Kasilag (AMH Philippines., Inc.) – Oceanography/Modeling • Engr. Lhyman Banganan (FF Cruz) – Topography/Bathymetry • Princess Camille Mercado (THEIDI) – Reclamation Methodology			

The accountability statements of the Prepares and Proponent in **Annex ES-B ans ES-B1**.

ES 2.2 EIA Schedule

The following are the activities that were conducted for this study. Continuing activities will be based on the results of the Review Committee Meetings.

Table ES-3. EIA Study Schedule

ACTIVITY	DATE
Secondary Data Researches	January - March 2018
Marine Study	October - November 2017 and February 2019
Bathymetric Survey	September – December 2017 by F.F. Cruz
Geotechnical Survey	December 2017 – April 2018 By A.M. Geoconsult
Engineering Geological and Geohazard Assessment Report (EGGAR)	24 September 2019
Preliminary Concept Master Plan and Engineering Design	March 2018 – February 2019
Water Quality Sampling	18 October 2017 and 19 February 2019
Air Quality Sampling	12 December 2018 – 1 hr ambient air sampling 18 February 2019 – 24 hr ambient air sampling
SOCIAL PREPARATION UNDERTAKEN	
IEC and Perception Survey (Public participation Documentation provided in **Annex ES-C**)	
Initial Perception Survey	13-19 October 2018
Information, Education and Communication (IEC)	12 October 2018
Focus Group Discussion	22 June 2018 and 10 July 2018
Public Scoping	20-21 November 2018
Technical Scoping	17 December 2018
Perception Survey Coverage: Barangays San Rafael II, San Rafael III, San Rafael IV, Wawa III, Sapa III, Wawa II. Sapa II, Ligtong, Wawa I, Bagbag, Kanluran and Muzon II	January – March 2019

ES 2.3 EIA Methodologies

Table ES-4. EIA Methodology

<table>
<tr><th>Module</th><th>Baseline</th><th>Methodology</th></tr>
<tr><td colspan="3">LAND</td></tr>
<tr><td>Land Use Classification</td><td>Secondary data: Comprehensive Land Use Plan (CLUP) of Municipality of Rosario, Province of Cavite</td><td>Assessment of compatibility of the proposed project in the land use classification, Manila Bay Coastal Strategy, Consistency with the PRA Implementing Rules and Regulations, Relation to the PRA Master Plan for Manila Bay</td></tr>
<tr><td>Geology</td><td>Secondary data: Geologic, seismic, liquefaction, slope hazard maps and evaluation based on government data and maps.
Primary data: Borehole drilling by 3rd party</td><td>Identify and assess project impact in terms of the changed in topography including existing hazard as maybe aggravated

Conduct of EGGA.
MGB Methodology</td></tr>
<tr><td>Pedology / Soil</td><td>Primary data: Geotechnical Investigation</td><td>Physical and chemical properties relevant for design purposes</td></tr>
<tr><td colspan="3">WATER</td></tr>
<tr><td>Hydrology / Hydrogeology</td><td>Secondary data: Existing drainage system. Historical flooding occurrences</td><td>Identify and assess project impact on the change in drainage morphology, local drainage and resulting effects of flooding</td></tr>
<tr><td>Marine Water Quality</td><td>Primary data: Standard Methods for Water Quality Sampling and Monitoring.

Water Body Classification: DENR Class SB
Parameters Considered: Total Coliforms, Fecal Coliforms, Dissolved Oxygen, Oil & Grease, Arsenic, Mercury, Cadmium, Chromium, Lead, pH, Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS)</td><td>Assess impacts on siltation of surface and coastal marine waters DAO 2016-08
Analytical Methods: by CRL Laboratory, recognized by DENR.

Metals : Spectrophotometry AAS
Cold Vapour AAS for Hg
Coliform : Multiple Tube Fermentation
BOD : Azide Modification Winkler
O & G: Gravimetry (n-Hexane extraction)
DO : Winkler/Titrametric
pH : Electrometry
TSS : Gravimetry</td></tr>
<tr><td>Oceanography</td><td>Primary data:
Tide Measurements
Bathymetric data</td><td>Tidal Station

Echo sounder or equivalent</td></tr>
<tr><td>Marine</td><td>Primary data: Abundance / density / distribution of ecologically and economically important species, mangroves, benthism planktons, coral reefs, algae, seaweeds, sea grasses
Presence of pollution indicators</td><td>Transect, manta tow and spot dives surveys, marine resource characterization (e.g. city/municipal and commercial fisheries data), Key informant interview.

Microscopic Examination</td></tr>
<tr><td colspan="3">AIR</td></tr>
<tr><td>Ambient Air Quality</td><td>Primary data: Ambient air quality sampling and testing.

DENR Classification Ambient Air and Noise Classification: Class B – Commercial Area

Parameters Considered: TSP, PM10, SO_2, NO_2</td><td rowspan="2">Methodology: Standard Methods for Ambient Air Quality Sampling by Volume Sampler
<table>
<tr><td>TSP</td><td>Grase by High Volume Sampler</td><td>Gravimetric</td></tr>
<tr><td>PM10, PM 2.5</td><td>Grase by High Volume Sampler</td><td>Gravimetric</td></tr>
<tr><td>So_2</td><td>Gas Bubbler Sampler</td><td>Pararosaniline</td></tr>
<tr><td>NO_2</td><td>Gas Bubbler Sampler</td><td>Griess Saltzman</td></tr>
<tr><td>Noise</td><td>Type 2 – Sound Level Meter</td><td>Instantaneous reading</td></tr>
</table></td></tr>
<tr><td>Ambient Noise Quality</td><td>Primary data: Noise Meter</td></tr>
<tr><td>Contribution in terms of GHG</td><td>Data on Greenhouse Gases</td><td>Estimation of projected greenhouse gasses (GHG)</td></tr>
<tr><td colspan="3">PEOPLE</td></tr>
<tr><td>Demographic Profile / Baseline</td><td colspan="2">Primary data: Conduct of Public Perception Survey, Public Scoping
Secondary data: Comprehensive Land Use Plan (CLUP) of Rosario</td></tr>
</table>

ES 2.4 Public Participation Activities

ES 2.4.1 Information, Education and Communication (IEC) Activities

IEC activities were conducted with the concerned stakeholders on 12 October 2018 at Roofdeck Noveleta Public Market, attended by twenty-three (23) stakeholders, 22 June 2018 at Mount Resort, Municipality of Rosario attended by eleven (11) participants and 10 July 2018 at Cofftea Zone, Cavite City and Municipal Hall of Noveleta attended by forty-five (45) participants. Among these invited were LGU Officials, Government Offices, Non-Government Organizations (NGO) / People's Organization (PO), Private Offices and Impact Barangays. Provided below in Table ES-5 are the top key issues raised during the IEC and FGD conducted. **Annex ES-C1 for the documentation of the the conducted IEC Activiities**.

Table ES-5. Key Issues and Concerns raised during IEC and FGD conducted

Sector or Representative Who Raised the Issue/ Suggestion	Issues/Suggestions Raised by Stakeholder	How it was Addressed in the EIS
Mr. Alex Maniago Municipality of Rosario	Source of Filling Materials	The alternatives for the sources of materials are presented in Chapter 1. Current best option is San Nicholas Shoal. Other options include lahar from Pampanga, river dredging, etc.
Mr. Alex Maniago Municipality of Rosario Resident of Barangay 8 Cavite City Councilor Cris Go of Municipality of Rosario	Impacts on Fisherfolks; near coast fihing areas will have to move further offshore	This is discussed under Chapter 2.2 Marine Ecology. Few fishers, as well as gleaners for macro-invertebrates in the proposed reclamations islands will be dislocated momentarily during reclamation activities but will ultimately resume fishing operations in coastal waters past the reclaimed area. It is noted however, that a sizeable nearshore fishing ground will be lost to reclamation affecting largely small-scale fishers. On the other hand, effects on demersal fisheries productivity will be minimal as no benthic fish habitats will be affected or altered due to the extreme silt and muddy sediments currently deposited in the area. However, schools of Sardinella that normally enter inshore waters can be disturbed and move away from the reclamation site. Tilapia and sardines fisheries in this area will be dislocated and loss of income from fishing will be felt during reclamation activities. Fisheries operation in fishing grounds offshore of the reclamation and generally in the mouth Manila Bay will not be affected as fishers will move to new fishing grounds further away from the reclaimed area where seawater will probably be less polluted and pelagic fish more abundant. However, this will require modifications on fishing gears used. It is likewise noted that there are no permanent or stationary lift nets or "sapras" directly inside the proposed reclamation site. Provision of new fishing paraphernalia to enable affected small-scale fishers to move to deeper fishing grounds past the reclamation area; Provision of alternative livelihoods to affected fishers.
Ms. Vivian Tolentino Municipality of Kawit	Impacts on nearby municipalities	The various reclamation prjects in the Province as well as in other parts of Manila Bay are complementary to each other. The PRA, DENR and other agencies who review and approves various pertinent permits see to it that this is so. In Chapter 1 - Project Description, the project's location is described relative to important landmarks, other reclamation projects, protected areas, etc. Relative to this, the impact areas as well as the potential effects are described.
Representative from Philippine Coast Guard	Navigability of channels between island projects	The 3 island projects on the other side of Bacoor Bay will be separated by 200m channels which are navigable. This is discussed under Chapter 2.2 Water - subsection on circulation modeling. The reclamation project will ensure that adequate seawater channels in between islands are designed and maintained open to boat navigation. Such channels will be adequately engineered to ensure suitable depth and seawater flow.
Councilor Cris Go of Municipality of Rosario	Estimate Project Timeline	The Implementation Schedule is provided as a gantt chart under 1.7.3. Construction (including consolidation and stabilization) will take approx 5 years, while site development will take about 2 years for a total of 7 years. This will only start after a Notice to Proceed is issued by the PRA.
Philippine Coast Guard	Impacts on Flooding	This is discussed under Chapter 2.1.3 - Geological Hazards and under Chapter 2.2 Oceanography. Numerical modeling was done and it showed that the island will not cause nor aggravate flooding susceptibility in the municipalities fronting or near the island.

INITIAL SURVEY WITH THE COMMUNITIES NEAR THE PROJECT SITE

The results of the initial surveys covering the communities near the project site are presented in **Annex ES-C2**. The said surveys were conducted as part of the Information, Education and Communication (IEC).

The Preliminary Perception Survey was conducted last October 13-19 2018 with a total of 270 respondents, to assess the socio-cultural economic situation of the communities that are to be affected by the proposed reclamation, particularly the 9 barangays in the Municipality of Rosario, namely: Bagbag II, Kanluran, Ligtong I, Muzon II, Sapa II, Sapa III, Wawa I, Wawa II and Wawa III.

For the perceived benefits, top answers are on livelihood and business opportunities, improvement of roads and other infrastructure, additional tax, good service of the government and water services. On the other hand, perceived adverse impacts are traffic, water pollution, loss of job, tsunami, corruption, loss of fresh air from the Manila Bay, flood, death of marine species and loss of view.

ENHANCED PERCEPTION SURVEY

Further and enhanced household perception surveys were made after the IEC activities on January to March 2019 with a total of 3,095 respondents from 9 barangays in the Municipality of Rosario.

For **perceived beneficial and adverse impacts**, top answers are on employment and livelihood, additional tax, road construction, good service of the government and development of the barangay and municipality. On the other hand, perceived adverse impacts are health concerns, traffic and water and air pollution.

ES 2.4.2 Public Scoping

The Public Scoping's conducted on 20 November 2018 at Youth Crisis Center, DSWD Compound, San Roque, Cavite participated by seventy-two (72) stakehodlers and 21 November 2018 at Roof Top Noveleta, Public Market and Mount Sea Resort, Municipalaity of Rosario and was attended by Ninety-one (91) participants from different sectors. Among those invited were LGU Officials, Government Offices, Non-Government Organizations (NGO) / People's Organization (PO), and others. The Summary of Participants during the Public Scoping is provided in **Annex ES-C3**.

Summary of Issues and Concerns Raised during Public Scoping Activity

The objective of the conducted Public Scoping Activity and other continuing IEC to be conducted is to ensure that the Environmental Impact Assessment (EIA) will address the relevant issues and concerns of the stakeholders and that it will be consistent with the Philippine Environmental Impact Statement System (PEISS). Issues and Concerns raised during the Public Scoping Activity is provided in Table ES-6 below.

Table ES-6. Major Issues and Concerns during Public Scoping Activity

Sector or Representative Who Raised the Issue/ Suggestion	Issues/Suggestions Raised by Stakeholder	How it was Addressed in the EIS
Marcos Aristotle P. Alvarez	Source of Filling Materials	The alternatives for the sources of materials are presented in Chapter 1. Current best option is San Nicholas Shoal. Other options include lahar from Pampanga, river dredging, etc.

Sector or Representative Who Raised the Issue/ Suggestion	Issues/Suggestions Raised by Stakeholder	How it was Addressed in the EIS
Michael L. Del Rosario Kap. Jomer M. Bumatayo Mayor Jose V. Ricafrente III	Impact on artificial coral reefs and fishing grounds	All observations recorded muddy substrate mixed with coarse sand and shellfish carapace across the entire "Island D" reclamation site. The benthic observations did not encounter coral colonies, soft corals, algal assemblages or significant underwater rocky structures that can serve as habitats for demersal species of fish, macro-invertebrates and crustaceans. The spot dives conducted in four stations to verify alleged claims by boatmen that rocky substrate occur in the area yielded negative results – only mud and silted sand were encountered. Elsewhere in the reclamation site, extensive systematic snorkeling around shallow portions of the sea where corals can normally thrive revealed the same absence of coral life forms. Impacts on fishing discussed under Table ES-5 above.
Congressman Michael Del Rosario	Impacts on drainage system	Project is at sea about 200m offshore, will not impede or block drainages
Alex Mañago Sr.	Employment opportunities for residents	As discussed in Chapter 2.4-People, hiring of local residents will be given priority for as long as there are qualified individuals locally. This is also discussed under Manpower requirements in Chapter 1.
Devina M. Cenizal Resident of Tanza, Cavite	Impacts on nearby municipalities	The various reclamation prjects in the Province as well as in other parts of Manila Bay are complementary to each other. The PRA, DENR and other agencies who review and approves various pertinent permits see to it that this is so. In Chapter 1 - Project Description, the project's location is described relative to important landmarks, other reclamation projects, protected areas, etc. Relative to this, the impact areas as well as the potential effects are described.
Pipo Nipomoceno	Impacts on archeological/historical sites	In Chapter 2.1, conflict in landuse issues, this is discussed in connection with coordination with government agencies to acquire LONOs, wherein their specific conditions and concerns are addressed. The proponent shall be coordinating with the National Museum Authority and other concerned agencies in this regard.
Randy Legaspi	Impacts on subsidence, storm surge and other geological hazards	As discussed under Chapter 2.1, the project will not induce natural geological hazards. For storm surge and/or tsunamis, the island can potentially serve as protection or shield for the coastal areas.

ES 3.0 EIA Summary

ES 3.1 Summary of Alternatives

Territorial Jurisdiction

- Must not be in or conflict with ECAs or Protected Areas as declared in the NIPAS, principally the LPP Wetland Park and mangrove communities
- The site should be legally within the juridical jurisdiction of the LGU-Proponent, which for this project is Province of Cavite. Conflict on jurisdiction with other LGUs should be avoided.

ES 3.2 Summary of Main Impacts and Residual Effects after Applying Mitigation

Table ES-7. Summary of Main Impacts and Residual Effects

Activity / Resource Likely	Potential Impact	Options for Prevention or Mitigation* or Enhancement	Target Performance/ Efficiency
CONSTRUCTION PHASE- DREDGING ACTIVITY/OPERATION			
Removal of unwanted seabeds and silt	Water pollution brought about by silt disturbance within the project area	Installation of silt curtains around the dredging vessel and around the perimeter area of dredging area/activities	100 % Compliant to RA 9275 and DAO 2016-08 standards outside the silt curtain area
Transport of dredged material to disposal site	Water pollution due to accidental spillage of dredged materials	The hauler shall ensure that vessels used for transporting are in good condition to prevent dredged materials from leaking or spilling	100% Compliant to RA 9275 and DAO 2016-08 standards outside the silt curtain area
Dumping of dredged material to disposal site (Inland)	Soil and water Pollution due to disposal of dredged materials	Installation of high-density polyethylene (HDPE) liner and/or clay for the spoil disposal site to prevent soil and water (ground and surface) contamination and zero discharge	100% No soil contamination and 100% Compliant to RA 9275 and DAO 2016-08

Activity / Resource Likely	Potential Impact	Options for Prevention or Mitigation* or Enhancement	Target Performance/ Efficiency
Dredging of filling material for reclamation	Water pollution due to turbidity	• Installation of silt curtains around the dredging vessel and/or dredging area	100% Compliant to RA 9275 and DAO 2016-08 standards
Barging of fill materials for reclamation	Water Pollution due to possible spillage of dredged materials during barging Increase of suspended solids affecting the settlement of marine species in the dredging and reclamation areas	• Provision of containment facility to prevent spillage • Provision of control measures when transporting filling materials	100% Compliant to RA 9275 and DAO 2016-08 standards 100% no proliferation of suspended solids
RECLAMATION ACTIVITY/OPERATION			
Construction of containment wall system/revetment structures Installation of containment wall system combination of rock dike, accropode wick drains, sand bag, and grid plate shall be used along certain areas along the perimeter of the project area	Water pollution/ Increase turbidity of adjacent areas due to Infrastructure /Construction Activities of adjacent areas	• Installation of a silt curtain 50m away from the working area, surrounding the area to be filled with reclamation materials and in the containment wall system/revetment structures area. • Provision of geotextile membrane on the containment structures throughout the perimeters of the project area.	100% Compliant to RA 9275 and DAO 2016-08 standards 100% no freshwater quality degradation and loss of freshwater species particularly Ylang Ylang River and 100% no cutting of mangroves
Filling the project area with reclamation materials Delivery of filling and other construction materials through barges	Water pollution /Increase turbidity due to filling materials near reclamation areas	• Installation of a silt curtain 50m away from the working area, surrounding the area to be filled with reclamation materials and in the containment system area. • Silt curtains shall be removed after filling inside the containment system. • Installation of silt curtains within the 50m away from the barge (for comments of the proponent) • Provision of permeable geotextile membrane to prevent sediments during high and low tide outside the project area	100% Compliant to RA 9275 and DAO 2016-08 standards
Hauling of filling materials	Increase in Noise generation	• Use of very efficient silencers on equipment and other noise dissipating device on all equipment to be used. Prior to project implementation, the proponent shall submit inventory of noise dissipating devices such as silencers that will be installed in each heavy equipment and corresponding noise level. • Avoid use of heavy machinery during night hours. Activities should be strictly done from 8:00 AM to 5:00 PM only. • Installation of noise barriers along haul roads that will be used by heavy equipment.	100% compliant to Noise Standards
	Dust pollution due to vehicle movements: -Along the road leading to the reclamation area -Within the project area activities	The project proponent shall ensure its haulers have appropriate mitigating measures to address the impact of dust pollution such as: ▪ Sprinkling of water using water tanker at least four times a day along all possible roads leading to the reclamation area, especially during dry season. ▪ Covering all loaded trucks properly/fully using tarpaulin throughout the hauling period. • All trucks shall be road-worthy.	100% compliant to RA 8749 in terms of air quality standards
	Health and Safety due to exposure to Construction Hazard	Implement wearing of PPE's at all times when inside the project site	100% compliant to PPEs and Zero accident
LAND DEVELOPMENT ACTIVITY/OPERATION			
	Land	• Liquefaction due to improper compaction	100 % No liquefaction

Activity / Resource Likely	Potential Impact	Options for Prevention or Mitigation* or Enhancement	Target Performance/ Efficiency
Compaction/Soil stabilization of the project area	Noise pollution due to heavy equipment operation	• Use of very efficient silencers on equipment and other noise dissipating device on all equipment to be used. Prior to project implementation, the proponent shall submit inventory of noise dissipating devices such as silencers that will be installed in each heavy equipment and corresponding noise level. • Avoid use of heavy machinery during night hours. Activities should be strictly done from 8:00 AM to 5:00 PM only. • Installation of fences/noise barriers along the perimeter of the project area. Corresponding areas to be monitored shall be submitted to EMB.	100% compliant to RA 8749 in terms of air quality standards
	Air pollution emission of dust due to heavy equipment operation	• Sprinkling of water using water tanker at least four times a day within the project area especially during dry season. • Providing adequate water spraying device per hauling unit to water along all possible roads leading to the reclamation area.	100% compliant to RA 8749 in terms of air quality standards
Construction of horizontal structures such as follows: A. Road networks B. Drainage system C. Water distribution D. Power and telecommunication lines	Land pollution due to indiscriminate /improper dumping of solid wastes and toxic substances	The proponent shall ensure that its contractors shall practice on-site segregation and establish storage facility of the following: • Construction debris such as used drum, used tires, wood cuttings, iron bar cuttings, etc. • Hazardous wastes such as used oil, busted lamps, oily rags, etc. The above waste materials shall be hauled and disposed of by a DENR accredited hauler and treater. Biodegradable materials shall be used for composting. Compost materials shall be used for greening activities.	100% compliant to the following: • RA 9003 • DAO 1992-29 and DAO 2013-22 and its Revised Procedural Manual
	Generation of untreated/ improper disposal of domestic wastewater	Personnel stationed at the reclaimed land will be provided with on-site portable toilets and washrooms. Collection and disposal will be done by an DENR accredited hazardous waste hauler and treater	100% Zero discharge of domestic waste to Bacoor Bay
	Water Pollution due Increase storm water run-offs surrounding the Areas	▪ Drainage system should to lead to settling ponds ▪ Provision of storm water collection system	100% Compliant to RA 9275 and DAO 2016-08 standards
	Dust pollution emanating from open areas	▪ Sprinkling of water along all possible routes leading to the reclamation area, at least four times a day, especially during dry season. ▪ Open areas should be covered with greeneries such as grass, shrubs, etc.	100% compliant to RA 8749 in terms of air quality standards
	Health and Safety due to exposure to Construction Hazard	▪ Implement wearing of PPE's at all times when inside the project site ▪ Implement SDP in terms of priority for local hirees	100% compliant to PPEs and Zero accident 100% SDP implementation

ES 3.3 Risks and uncertainties relating to the findings and implications for decision making

The advance reclamation methodologies and the engagement of experienced reclamation contractor will significantly reduce project risks and uncertainties. The containment wall design and construction is a significant aspect in the reduction of risks and uncertainties that could otherwise challenge the integrity of the reclaimed land.

The Detailed Engineering and Design (DED) requirements of the Philippine Reclamation Authority which are complied with post ECC and in the application for a Notice to Proceed (NTP) are another aspect of risk and uncertainty minimization.

The dredging activities to be undertaken at the source of the fill materials, presumably the San Nicholas Shoal (SNS) must necessarily be backed up the expertise in dredging and by complete knowledge of the characteristics (particularly geologic) of the San Nicholas seabed.