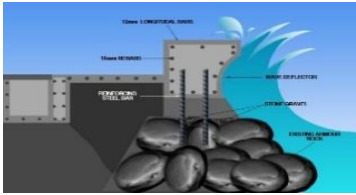





BUOD NG EIS PARA SA PUBLIKO

ES 1.0 Fact Sheet ng Proyekto

Table ES.1. Project Fact Sheet

| | | |
|---|--|--|
| Pangalan ng Proyekto | PROPOSED 286.86 HECTARE PARAÑAQUE RECLAMATION PROJECT | |
| Lokasyon ng Proyekto | Katubigan ng Manila Bay sakop ng Teritoryo ng Lungsod ng Parañaque | |
| Kategorya ng proyekto base sa EMB Memorandum Circular 2014-005 | "Category A-1 New": Environmentally Critical Project (ECP) / MC 2014-005 Major Reclamation Project ≥ 50 hectares | |
| Klasipikasyon ng Proyekto base sa EMB Memorandum Circular 2014-005 | 3.3 Reclamation and other land restoration project | |
| Iskop ng Proyekto | Pahalang na Reklamasyon (<i>Horizontal Development</i>) (Paalala: Hiwalay na ECC ang iaaplay para sa vertical na pagdebelop at sa pangagalingan ng materyales na panambak) | |
| Lawak ng Proyekto | 286.86 Hectares | |
| Kabuuang Halaga ng Proyekto | Php 76.70 Billion | |
| Buod ng mga Pangunahing Bahagi | Major Components | Brief Description |
| | <ul style="list-style-type: none"> One (1) Island | 286.86 ha |
| | <ul style="list-style-type: none"> Access Way/s | 3.00 km viaduct |
| | <ul style="list-style-type: none"> Internal Road Network | Total area of 63.91 ha (more or less); 16.0 meters (m) up to 30.0 m or wider |
| | <ul style="list-style-type: none"> Storm Surge Protection | Typical Wave Deflector  |
| <ul style="list-style-type: none"> Drainage System | A conceptual Drainage System  | |
| Project proponent | PARAÑAQUE CITY GOVERNMENT The Honorable Mayor Edwin L. Olivarez Office of the Mayor San Antonio Avenue, San Antonio Parañaque, Metro Manila Telephone No.: (02) 826 8244 | |
| EIA Preparer / Consultant | CEnSE Technical Consultancy Services Unit 405 Yrreverre Square Building, 888 Mindanao Avenue, Quezon City Telephone No.: (02)455-2022 Cellular No.: 0927-6116742 E-mail address: cense_tech@yahoo.com.ph; cense.consultancy@gmail.com Contact Person: Engr. Venice Montemayor | |



ES 1.1 Maikling Background ng Proyekto

Ang Environmental Impact Statement (EIS) Report ang nagsisilbing unang requirement para sa aplikasyon ng Environmental Compliance Certificate (ECC) para sa planong proyekto. **Ang ECC application na inaapply para sa planong reklamasyon ay para lamang sa pahalang na development (horizontal development), kabilang na ang konstruksyon ng mga kalsada.** Ang vertical development o ang tinutukoy na *Operations Phase* ay mag babase sa mga karapatdapat na requirements ng Philippine EIS System (PEISS) at hindi kasama sa nasabing ECC application.

Ang planong proyekto ay itatayo sa Katubigan ng Manila Bay na sakop ng Teritoryo ng Lungsod ng Parañaque at ang mga apektadong coastal barangays ng nasabing proyekto ay ang Barangay **Baclaran, Tambo, La Huerta, Don Gallo** at **San Dionisio**. Kabilang na din dito ang **Moonwalk, Vitalez** at **Sto. Niño** na magbebenepiso din sa proyekto.

Ang reklamasyon ay may (1) isang isla at may layong humigit kumulang sa 950 meter mula sa pinaka malapit na shoreline ng Manila Bay. Na isa ding reclaimed land (Bayshore Complex).

ES 2.0 Proseso ng Dokumentasyon sa paghahanda ng EIA

- **DOCUMENTATION OF THE EIS**

Base sa EMB Memorandum Circular 2014-005 ang planong reklamasyon ay ayon sa “Category A: Environmentally Critical Project (ECP)” and classified as “3.3 Reclamation and other land restoration project”.

Ang nilalaman ng EIS Report ay base sa kinonduct na Technical Scoping noong 04 Hulyo 2019 (See **Annex ES-A**). As prescribed by the EMB/DENR under the Revised Procedural Manual (RPM) protocol, the appropriate type of documentation for this project is the Environmental Impact Statement (EIS).

For the Operations Phase (Vertical Developments) of the Project which will involve various locators both from the public and the private sectors, the activities thereof will be subject to the appropriate guidelines under the PEISS; Programmatic EIS may be applicable and be considered.

ES 2.1 Uri ng Dokumento para sa ECC Appliation at Mga Generic na Nilalaman

Ang Environmental Impact Statement (EIS) Report ay ang pinaka-angkop na dokumento para sa Konstruksyon / Reclamation Phase ng proyekto. Ang iba pang mga proyektong reklamasyon na ipinagkalooban ng Environmental Compliance Certificate (ECCs) ay ginamit din ang format ng isang EIS Document. Para sa Operations Phase ang Programmatic EIS (PEISS) ay isang option.

Proseso ng Dokumentasyon sa paghahanda ng EIA

ES 2.2 The EIA Team

Ang komposisyon ng EIA Team na may pagsunod sa EMB MC 2011-005 ay ipinapakita sa **Table ES.2**. Ang mga Expert Companies ay nakibahagi din at nakalista dito.



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Table ES.2. EIA Team Composition

| Team Member | Field of Expertise |
|---|--|
| Engr. Venice Montemayor | Team Leader |
| Dr. Felixberto Roquia | Sociology Module |
| Benjamin Francisco | Marine and Fresh Water Ecology (Team Leader) |
| Virgilio Pantaleon | Coral Reef, Seagrass |
| Engr. Emerson Darroles | Oceanography |
| Jose Rene Villegas | Marine Team |
| Ernie Fontamillas | Marine Team |
| Michael Francisco | Fisheries |
| Nazario Sabello | Air Quality |
| Neil John S. Tolentino | Geology |
| Proponent's External Expertise | |
| <ul style="list-style-type: none"> • Arch. Armand Alli, EnP – Master Planning • Engr. Ricardo Yuson – Engineering • Engr. Jon Kasilag – Oceanography/Modeling • Engr. Leonarda Gustillo – Topography/Bathymetry • Princess Mercado – Reclamation Methodology | |

ES 2.3 Iskedyul ng Aktibidad para sa EIA

Ang mga sumusunod ay ang mga aktibidad na isinasagawa para sa pag-aaral na ito. Ang mga susunod pang mga aktibidad ay magbabase sa Review Committee Meetings.

Table ES.3. EIA Study Schedule

| ACTIVITY | DATE |
|--|-------------------------------|
| <ul style="list-style-type: none"> • Secondary Data Researches | October 2017 |
| <ul style="list-style-type: none"> • Marine Study | February 2020 |
| <ul style="list-style-type: none"> • Bathymetric Survey | Year 2018 |
| <ul style="list-style-type: none"> • Geotechnical Survey | Year 2018. By A.M. Geoconsult |
| <ul style="list-style-type: none"> • Engineering Geological and Geohazard Assessment Report (EGGAR) | August 2019 |
| <ul style="list-style-type: none"> • Preliminary Concept Master plan and Engineering Design | September-October 2017 |
| SOCIAL PREPARATION UNDERTAKEN | |
| ACTIVITY | DATE |
| IEC and Perception Survey (Public participation Documentation provided in Annex 3) | |
| <ul style="list-style-type: none"> • Initial Perception Survey | January 2018 |
| <ul style="list-style-type: none"> • Information, Education and Communication (IEC) | 26 January 2018 |
| <ul style="list-style-type: none"> • Focus Group Discussion | 16 July 2018 |
| <ul style="list-style-type: none"> • Public Scoping | 27 February 2019 |
| <ul style="list-style-type: none"> • Technical Scoping | 04 July 2019 |
| <ul style="list-style-type: none"> • Perception Survey <ul style="list-style-type: none"> ✓ Barangay Baclaran ✓ Barangay Tambo ✓ Barangay La Huerta ✓ Barangay Don Gallo ✓ Barangay San Dionisio ✓ Barangay Moonwalk ✓ Barangay Vitalez ✓ Barangay Sto. Niño | 01-09 August 2019 |



ES 2.4 EIA Methodologies

Ang mga sumusunod na pamamaraan ay isinasaalang-alang sa pagtatag ng baseline information ng mga lugar na maaapektuhan ng proyektong ito:

Table ES .4. EIA Methodology

| Module / Section | Baseline | Methodology |
|--------------------------|--|--|
| LAND | | |
| Land Use Classification | Secondary data: City Comprehensive Land Use Plan (CLUP) of Parañaque | 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 |
| Geology | Secondary data: Geologic, seismic, liquefaction, slope hazard maps and evaluation based on government data and maps. Primary data: Borehole drilling by 3 rd party | Identify and assess project impact in terms of the changed in topography including existing hazard as maybe aggravated Conduct of EGGA. MGB Methodology |
| Pedology/Soil | Primary data: Geotechnical Investigation | Physical and chemical properties relevant for design purposes |
| WATER | | |
| Hydrology / Hydrogeology | Secondary data: Existing drainage system. Historical flooding occurrences | Identify and assess project impact on the change in drainage morphology, local drainage and resulting effects of flooding |



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| Module / Section | Baseline | Methodology |
|----------------------|--|--|
| Marine Water Quality | <p>Primary data: Standard Methods for Water Quality Sampling and Monitoring.</p> <p>Water Body Classification: DENR Class SB</p> <p>Parameters Considered</p> <ul style="list-style-type: none"> • BOD • Fecal Coliforms • COD • Lead • Total Coliforms • Hexavalent Chromium • Total Suspended Solids • pH • Oil and Grease • DO • Fecal Coliforms • Nitrate • Phosphate • Arsenic • Mercury • Cadmium • Color • Chromium • Chloride • Temperature • Ammonia • Boron • Fluoride • Selenium • Sulfate • Barium • Copper • Iron • Manganese • Nickel • Zinc • Benzene • Cyanide as free cyanide • PCBs • Phenols/Phenolic Substances • Surfactants • Total Organochlorine Pesticide <p>Secondary data: BFAR Report on Manila Bay</p> | <p>Assess impacts on siltation of surface and coastal marine waters</p> <p>DAO 2016-08</p> <p>Analytical Methods: by CRL Laboratory, recognized by DENR</p> <p>Metals : Spectrophometry 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</p> |
| Oceanography | <p>Primary data: Tide Measurements 2/6/2018– 19/6/2018. Bathymetric data</p> | <p>Tidal Stations</p> <p>Echo sounder or equivalent</p> |



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| Module / Section | Baseline | Methodology | | | | | | | | | | | | | | | | | | |
|--|--|---|-----------------|-----------------------------|--------------|-----------------|-----------------------------|-----------------|--------|-----------------------------|-----------------------|-----------------|---------------------|--------------|-----------------|---------------------|-----------------|-------|----------------------------|-----------------------|
| Marine | <p>Primary data: Abundance / density / distribution of ecologically and economically important species, mangroves, benthism plantons, coral rees, algae, seaweeds, sea grasses</p> <p>Presence of pollution indicators</p> | <p>Transect, manta tow and spot dives surveys, marine resource characterization (e.g. city/municipal and commercial fisheries data), Key informant interview.</p> <p>Mircoscopic Examination</p> | | | | | | | | | | | | | | | | | | |
| AIR | | | | | | | | | | | | | | | | | | | | |
| Ambient Air Quality | <p>Primary data: Ambient air quality sampling and testing.</p> <p>DENR Classification Ambient Air and Noise Classification: Class B – Commercial Area</p> <p>Parameters Considered: TSP, PM10, SO₂, NO₂</p> | <p>Methodology: Standard Methods for Ambient Air Quality Sampling by Volume Sampler</p> <table border="1" style="width: 100%;"> <tr> <td>TSP</td> <td>Graseby High Volume Sampler</td> <td>Gravimetric</td> </tr> <tr> <td>PM10</td> <td>Graseby High Volume Sampler</td> <td>Gravimetric</td> </tr> <tr> <td>PM 2.5</td> <td>Graseby High Volume Sampler</td> <td>Gravimetric</td> </tr> <tr> <td>SO₂</td> <td>Gas Bubbler Sampler</td> <td>Pararosanine</td> </tr> <tr> <td>NO₂</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> | TSP | Graseby High Volume Sampler | Gravimetric | PM10 | Graseby High Volume Sampler | Gravimetric | PM 2.5 | Graseby High Volume Sampler | Gravimetric | SO ₂ | Gas Bubbler Sampler | Pararosanine | NO ₂ | Gas Bubbler Sampler | Griess Saltzman | Noise | Type 2 – Sound Level Meter | Instantaneous reading |
| TSP | Graseby High Volume Sampler | Gravimetric | | | | | | | | | | | | | | | | | | |
| PM10 | Graseby High Volume Sampler | Gravimetric | | | | | | | | | | | | | | | | | | |
| PM 2.5 | Graseby High Volume Sampler | Gravimetric | | | | | | | | | | | | | | | | | | |
| SO ₂ | Gas Bubbler Sampler | Pararosanine | | | | | | | | | | | | | | | | | | |
| NO ₂ | Gas Bubbler Sampler | Griess Saltzman | | | | | | | | | | | | | | | | | | |
| Noise | Type 2 – Sound Level Meter | Instantaneous reading | | | | | | | | | | | | | | | | | | |
| Ambient Noise Quality | <p>Primary data: Noise Meter</p> | <table border="1" style="width: 100%;"> <tr> <td>SO₂</td> <td>Gas Bubbler Sampler</td> <td>Pararosanine</td> </tr> <tr> <td>NO₂</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> | SO ₂ | Gas Bubbler Sampler | Pararosanine | NO ₂ | Gas Bubbler Sampler | Griess Saltzman | Noise | Type 2 – Sound Level Meter | Instantaneous reading | | | | | | | | | |
| SO ₂ | Gas Bubbler Sampler | Pararosanine | | | | | | | | | | | | | | | | | | |
| NO ₂ | Gas Bubbler Sampler | Griess Saltzman | | | | | | | | | | | | | | | | | | |
| Noise | Type 2 – Sound Level Meter | Instantaneous reading | | | | | | | | | | | | | | | | | | |
| Contribution in terms of GHG | Data on Greenhouse Gases | Estimation of projected greenhouse gasses (GHG) | | | | | | | | | | | | | | | | | | |
| PEOPLE | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Demographic Profile / Baseline | <p>Primary data: Conduct of Public Perception Survey, Public Scoping</p> <p>Secondary data: Comprehensive Land Use Plan and Socio Demographic Profile of Parañaque City</p> | | | | | | | | | | | | | | | | | | | |

ES 2.5 Pamublikong Pakikilahok

ES 2.5.1 Information, Education and Communication (IEC) Activities

- IEC AND FGD WITH THE CONCERNED STAKEHOLDERS**

Ang mga IEC activities ay isinagawa kasama ang mga concerned stakeholders noong 20 Pebrero 2018 sa San Dionisio Sports Complex at noong 16 Hulyo 2018 sa Parañaque City Hall. Ang mga imbitado sa nasabing mga IEC activities ay Opisyal ng LGU, Mga Opisina ng Gobyerno, Mga Organisasyon ng Non-Government

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Organization (NGO) / Organisasyon ng Mga Tao (PO), Apektadong Barangays at iba pa. Ang mga Barangay Officials ay napag-alaman na ang kanilang mga barangay ay makikinabang sa mga oportunidad sa kabuhayan at trabaho ng nasabing proyekto. Bukod dito, pinahalagahan ng mga opisyal ng barangay ang IEC bilang pagkakataon na mag-ukol ng mga isyu at puna. Ang pagpapupulong ay nagbigay ng background at pag-unawa sa ipinanukalang proyekto pati na rin ang mga potensyal na epekto na maaaring lumabas. Ibinigay sa ibaba ang mga pangunahing isyu na nakataas sa panahon ng IEC na isinasagawa.

See **Annex ES-B1**.

Mga Pangunahing Isyu at Mga Alalahanin na itinaas sa panahon ng IEC na isinasagawa:

- Impact sa LPPCHEA
- Impacts sa Kabuhayan

PAUNANG SURVEY SA KOMUNIDAD NA MALAPIT SA LOKASYON NG PROYEKTO

Ang mga resulta ng mga paunang survey na sumasakop sa komunidad na malapit sa lokasyon ng proyekto ay inilahad sa **Annex ES-B2**. Ang mga nasabing mga survey ay isinagawa bilang bahagi ng Information, Education and Communication (IEC).

ES 2.5.2 Aktibidad ng Pampublikong Scoping

Ang Public Scoping na isinagawa noong 27 Pebrero 2019 na ginanap sa Barangay San Dionisio Sports Complex, Lungsod ng Parañaque at dinaluhan ng mga kalahok mula sa iba't ibang sektor. Ang mga concerned stakeholders, lalo na ang mga kilala na may hadlang na pananaw sa mga proyekto ng reklamasyon, pati na rin ang mga matatagpuan sa mga lugar na apektado ay inanyayahan lumahok. Kabilang sa mga inanyayahan ay mga Opisyal ng LGU, Mga Opisina ng Gobyerno, Mga Organisasyon ng Non-Government Organization (NGO) / Organisasyon ng Mga Tao (PO), at iba pa. Sa kabilang banda, mayroon ding mga kalahok na hindi kasama sa opisyal na listahan ng mga inanyayahan ngunit dumalo sa nasabing public scoping. Ang buod ng mga Kalahok sa panahon ng Pampublikong Scoping na ibinigay sa **Annex ES-B3**.

Napansin na ang sapat na oras ay ibinigay sa mga inanyayahan. Para sa anumang mga indibidwal na may dahilan siguro para sa kanilang kawalan ng kakayahan na dumalo, ang mga stakeholder ay patuloy na kinonsulta sa petsa para sa kanilang mga alalahanin, kung mayroon man. Ang mga Letters of No Objection (LONO) sa katunayan ay nakuha mula sa ilang mga ahensya tulad ng ipinapakita sa ibaba at nakalahad sa **Annex 1.7**.

- a. Philippine Reclamation Authority (PRA) dated 17 October 2018
- b. Department of Information and Communications Technology (DICT) dated 09 January 2019
- c. Philippine Navy (PN) dated 22 January 2019
- d. Philippine Ports Authority (PPA) dated 20 February 2019
- e. Department of Energy (DOE) dated 5 March 2019
- f. Philippine Coast Guard (PCG) dated 19 March 2019
- g. Bureau of Fisheries and Aquatic resources (BFAR) dated 18 September 2019

Buod ng mga Isyu at Mga Alalahanin na Itinaas sa panahon ng Pampublikong Aktibidad

Ang pakay ng natapos na Public Scoping at mga susunod pang pagpapahayag sa publiko ay para tiyakin na ang EIS Report ay tutugon sa lahat ng agamgam ng mga tao at publiko.



Mga mahahalagang isyu noong Pampublikong Aktibidad

- Saan manggagaling ang panambak at ano ang epekto sa San Nicholas Shoal
- Makakaepekto ba sa pag ikot ng tubig karagatan
- Magkakaroon ba ng erosion
- Anong mga barangays ang maaapektuhan
- Magkakaroon ba ng daluyong o storm surge
- Pangamba sa pagbaha ay ipinahayag din sa ibang pulungin
- Tataas ba ang lebel ng Manila Bay
- May kinalaman ba sa pagbabago ng Klima
- Paano ang mga basura
- Magdudulot ba ng mabigat na trapiko
- Epekto sa LPPCHEA o Las Pinas Paranaque Wetland Park
- Epekto sa patakaran ng paglilinis at pagrerehabilita ng Manila Bay

Ang kumpletong Report ng Pambublikong Aktibidad ay makikita sa **Annex ES-B3**.

ES 3.0 Buod ng EIA

ES 3.1 Summary of Alternatives

Ito ay tinatalakay sa **Section 1.3** kung saan ang mga parameters ay ang mga sumusunod:

Territorial Jurisdiction

- Ang lugar na napili ay hindi dapat maka apekto sa ECAs o Protected Areas na idineklara ng NIPAS lalo na ang LPP Wetland Park and mangrove communities.
- The site should be legally within the juridical jurisdiction of the LGU-Proponent, which for this project is Parañaque City. Conflict on jurisdiction with other LGUs should be avoided.
- Hindi dapat maka apekto sa marine reources
- It should not be in conflict with Presidential Proclamations e.g. Presidential Proclamation 41.

The options for the appropriate landforms are also discussed in **Section 1.3**.

Ang landforms ng reklamasyon ay dapat isaalang alang ang epekto sa kaikasan, sirkulasyon ng tubig at sediment transport

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

Ang buod ng mahahalagang epekto ay makikita sa **Table ES.5**.



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Table ES.5. Summary of Main Impacts and Residual Effects

| Activity / Resource Likely | Potential Impact | Options for Prevention or Mitigation* or Enhancement | Residual Effect |
|--------------------------------|---|---|--|
| I. PRE-CONSTRUCTION | | | |
| Site Clearing | Displacement of lift nets | <ul style="list-style-type: none"> • Avoidance or • Thru agreements with fisherfolks | Nil. |
| II. CONSTRUCTION PHASE | | | |
| Dredging and Reclamation Phase | Impacts on ECA | Not Relevant ECA distant from site | Nil |
| | Solid Waste Generation | <ul style="list-style-type: none"> • Domestic garbage from construction crews segregated and collected onboard ship and disposed onshore per RA 9003. No garbage disposal to Manila Bay. • Inventory of solid wastes, principally garbage through records of amount of garbage | Nil |
| | Disturbance of Marine Species Silt Dispersal | <ul style="list-style-type: none"> • Provision of silt curtains where sediment streams are likely to occur and escape. • Installation of silt and sediment weirs around reclamation equipment and barges; • Monitoring of sediment fluxes and application of more stringent control measures when necessary; or temporary cessation of activities • Sediment canals in reclaimed areas will be installed to divert sludge into filters and weirs that capture sediments and fugitive reclamation filling materials at source. | Nil. After applying of mitigating measures |



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| Activity / Resource Likely | Potential Impact | Options for Prevention or Mitigation* or Enhancement | Residual Effect |
|----------------------------|---|---|---|
| Land Stabilization | Inducement of natural hazards such as floods, subsidence, liquefaction, tsunami, storm surge, land subsidence | <ul style="list-style-type: none"> • Reclamation platform itself with wave deflector gives sheltering effect. • Appropriate structure to be selected in DED stage. Current best option is the use of wave deflector for tsunamis/storm waves; soil compaction/stabilization for liquefaction & subsidence; sufficient drainage system & retention/storage areas for floodwaters, among others. • Structural defense options are: seawalls at breakwaters wave deflectors, other similar defenses such as revetment; angled bypass walls. • Monitoring of ground level will be done during the period of soil stabilization (before vertical development) to determine quantitative surface movements with respect to both spatial and temporal rates. • Design of evacuation routes • Public education, awareness and preparedness campaign to include each of the known hazards. This will include evacuation drills, placing of signage, and establishing alert systems. This will be done in coordination with agencies like NDRRMC, PHIVOLCS, PAGASA, Project NOAH, etc. vis-a-vis the Disaster/Risk Reduction and Management Plan of the government. | Nil Reclamation will not cause floods, subsidence, and other natural hazards |
| | Soil Erosion | <ul style="list-style-type: none"> • To prevent erosion on the seaward portion of the project, the construction of the seawalls shall be implemented in the initial phase of the reclamation. Consideration shall be given to forming a bund after the construction of the sea wall and placement of filter material, using selected granular material where possible, along the line of and immediately behind the sea wall. Such a bund assists in stabilizing the sea wall and its foundation if mud waves occur during filling. | Nil |
| Dredging and Reclamation | Change in Seabed properties | <ul style="list-style-type: none"> • Reclamation technology to minimize | Nil |

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| Activity / Resource Likely | Potential Impact | Options for Prevention or Mitigation* or Enhancement | Residual Effect |
|--|---|---|---------------------------|
| Phase | Perceived Permanent loss of 286.86 Hectare Manila Bay Waters of the City of Parañaque, Change in Bathymetry | seabed soil removal e.g. by maximum reuse of existing through surcharges derived from SNS; possible use of sand bag technology, etc. | Permanent residual effect |
| | Change in water circulation | <ul style="list-style-type: none"> Final design and alignment of landform to be based on the mathematical modeling for the landform layout. Will include in modeling other approved projects. | Minimal |
| | Disruption in water circulation pattern and coastal erosion and deposition | | Minimal |
| | Overall impact on whole Manila Bay circulation pattern and dispersion behaviours of existing outfalls and discharges | | Nil |
| | Inducement of Flooding | <ul style="list-style-type: none"> Project will not block or disturb existing drainage system | Nil |
| | Degradation of marine water quality | <ul style="list-style-type: none"> Silt curtains and containment structures Pre-screening of filling materials; most possible source is from Manila Bay (San Nicolas Shoal) itself Install liquid waste management system ensuring modern waste retrieval and treatment system. Treatment and disposal of liquid waste at point source will involve collecting liquids of point source origin; directing waste into integrated multiple waste streams facilities or collecting vessels, and application of treatments. Any fluid effluent to be discharged at sea will be monitored and tested before discharging. Installation of latrines and waste receptacles; collection facilities; Collection of shipboard wastes. Adoption of clean practices by all project operating units and personnel; Implementation of an efficient waste retrieval system; Greening of reclamation area. Adoption of an oil and grease recovery and treatment system; Implementation of rigid policies against indiscriminate disposal of oily waste and marine vessel bilge water. | Nil |
| Threat to existence and/or loss of important local species and habitat | <ul style="list-style-type: none"> Support appropriate stock enhancement measures e.g., re-seeding of appropriate species; Support closed seasons to enhance reproduction capacity of sardines and recruitment of stocks. Provision of alternative livelihoods to affected fishers | Nil after applying of mitigating measures | |

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| Activity / Resource Likely | Potential Impact | Options for Prevention or Mitigation* or Enhancement | Residual Effect |
|----------------------------|--|--|--|
| | Sea Level Rise | <ul style="list-style-type: none"> Elevated platform is a mitigating measure | Nil |
| | Potential accidents and damages to marine ecosystems during transport of dredging vessel | <ul style="list-style-type: none"> Sea worthy vessels Navigational Devices Proper training Avoid transport during inclement weather Compliance with PCG and International regulations | Nil |
| Horizontal Development | Fugitive Dust Generation from construction equipment and vehicles | <ul style="list-style-type: none"> Construction Methodology | Nil |
| | Increase of Ambient Air and Noise Quality | <ul style="list-style-type: none"> Construction works distant from ESRs Short term only Sea is buffer zone itself to population onshore | Nil |
| | Emissions if power generating sets used and fossil fuel using equipment | <ul style="list-style-type: none"> Proper preventive maintenance of gensets; replace leaking valves, fittings, etc. | Nil |
| Land Stabilization | Essentially none – no settlers to be displaced because the area is uninhabited | | |
| | Livelihood and employment opportunity | <ul style="list-style-type: none"> Positive effects of the proposed project | Long term positive impacts/enhancement |

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

The risks and uncertainties considered relevant are those related to natural hazards; e.g. earthquakes, liquefaction, strong typhoons, storm surges and floods. These are discussed in Section 1 and summarized in Table ES.6.

Table ES.6. Summary Table of Major Risks and Uncertainties

| Risks Uncertainties relating to the findings in the EIS Report | Implications to the proposed project |
|--|---|
| Damage to containment walls due to seismic activities | Redesign and reconstruction |
| Potential risk to LPP WPP | Re plan of navigational lane |
| Flooding resulting from the project | Flood control measures to be adopted |
| Potential damage to fishing structures | Compensation plans Resettlement plan |
| As a generic requirement of the PEISS Abandonment/Decommissioning Plans will be instituted as compelling reasons may arise | |