



Project Description for Scoping

1.0 BASIC PROJECT INFORMATION

1.1 Project Information

Project Name	Proposed Mandaue 115 Hectares Reclamation Project (*more or less)
Project Location	Mandaue City, Cebu Along Coast of Mactan Channel
Project Category per EMB Memorandum Circular 2014-005	Category A: Environmentally Critical Project (ECP) Major Reclamation Project ≥ 50 hectares
Project Classification per EMB Memorandum Circular 2014-005	"3.3 Reclamation and other land restoration project"
Project Size	115 Hectares More or Less
Project Cost	Initially estimated at Php 20 Billion subject to further refinements.
Project Timeline	Within approximately five (5) years

1.2 Proponent Profile

Project Proponent	City of Mandaue
Proponent Contact Person	The Honorable Mayor Jonas Cabungcal Cortes
Proponent Address and Contact Details	Mandaue Presidencia, Barangay Centro, Mandaue City, Cebu 6014 Office of the Mayor: +63 (032) 320 4500
Project Consultant/EIA Preparer	Technotrix Integrated Services Corp.
Preparer Contact Person	Edgardo G. Alabastro / Hazel A. Victoriano
Preparer Address and Contact Details	Unit 1206 12 th Floor the Trade and Financial Tower 32 nd Street corner 7 th Avenue., Bonifacio Global City, Barangay Fort Bonifacio, Taguig City Telefax No.: (+632) 2115750 Cellular No.: 09178255203 E-mail address: technotrix.tisc@gmail.com

2.0 PROJECT DESCRIPTION

The City of Mandaue is one of the two (2) highly urbanized cities in the Region 7 (Central Visayas), the other one being the City of Cebu. Located right at the heart of the province of Cebu, it is the industrial hub in the region which hosts approximately 10,000 industrial and commercial locators.

The City is strategically located and is within only ten (10) minutes away from the major growth points within the inner corridor of the Metro Cebu Area. It links up mainland Cebu to Mactan Island through the 1st Mandaue-Mactan Bridge and the 2nd Mandaue-Mactan Bridge (Marcelo Fernan Bridge). From the Mactan Cebu International Airport, it is the door to the rest of the cities and municipalities of Cebu and the rest of the Visayas and Mindanao regions.

The reclamation project will be a source of new lands to satisfy the City's need for residential, commercial, institutional, recreational, infrastructure and utilities areas. These will be platforms for economic, business and employment activities to support the growing economy of Mandaue City. The Proposed 115-hectare reclamation project will support the growth of new business, promote tourism and provide an avenue for expansion of the City's vital industries. In addition, the project aims to provide a world class property development responsive to the ever-growing economy and population of the City.

2.1 Project Location, Area and Accessibility

The geographical coordinates in WGS 84 of the site are shown below:

10°19'17.99"N 123°56'28.01"E
10°18'40.23"N 123°55'40.15"E
10°18'30.71"N 123°55'58.41"E
10°19'03.24"N 123°56'43.57"E
10°19'08.46"N 123°56'43.70"E

The proposed Mandaue 115 hectares reclamation project, which is a single-island configuration will be located in **Mactan Channel** along the shoreline of Mandaue City within Barangay's Subangdaku, Looc and Centro Mandaue.

The relevant maps of the project site are provided in **Figure 1-7**.



Figure 1. Proposed Project Site in a Google Earth Map

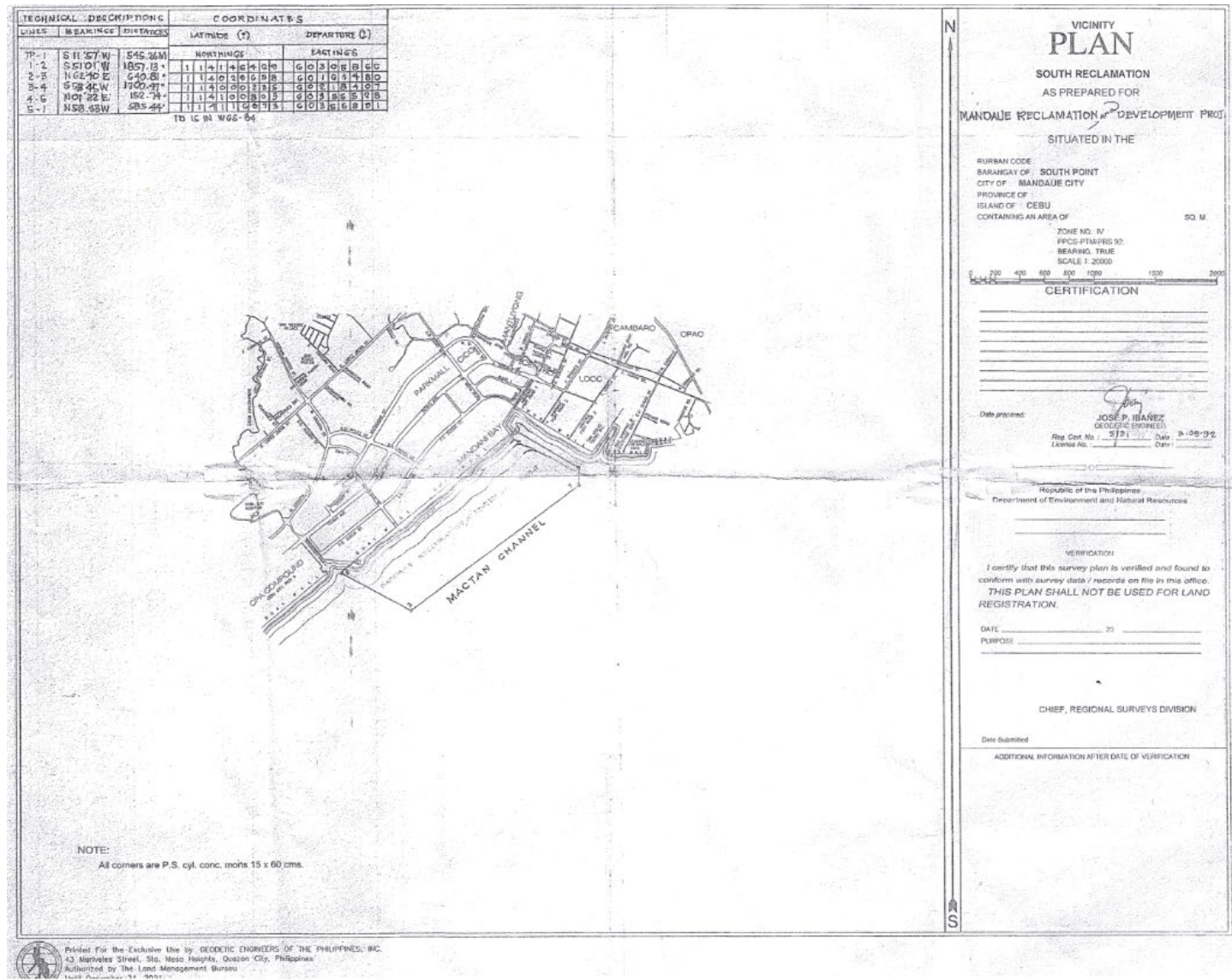


Figure 2. Sketch Plan Signed by a Geodetic Engineer



Figure 3. Proposed Project Site in NAMRIA Map

Proposed Mandaue 115 Hectares Reclamation Project

Mandaue City, Cebu

Along Coast of Mactan Channel

The Vicinity and Important Landmarks is provided in **Figure 4** in which are noted:

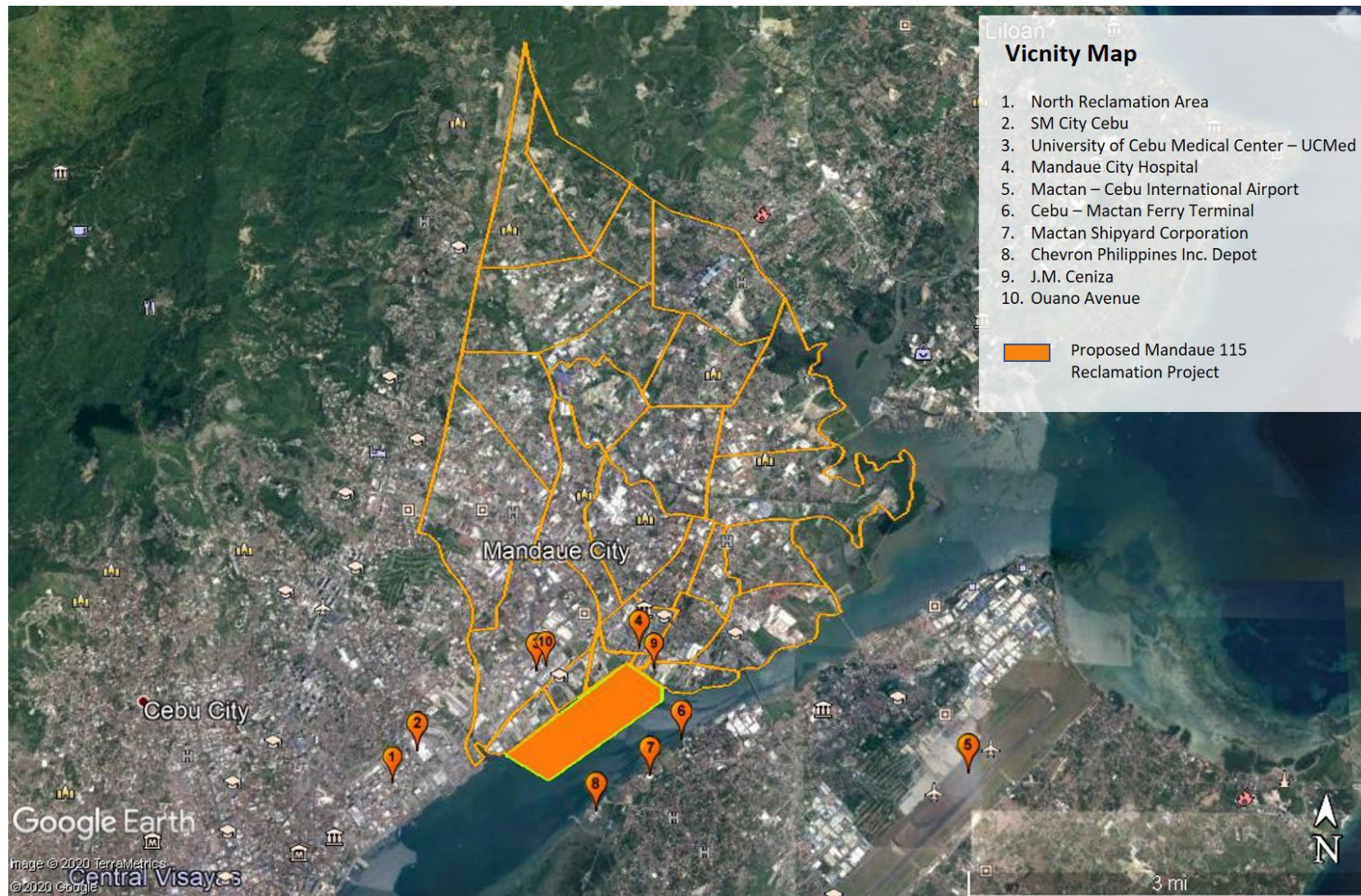


Figure 4. Map of Project Site and Vicinities

Proposed Mandaue 115 Hectares Reclamation Project

Mandaue City, Cebu

Along Coast of Mactan Channel

- A distance of 0.14 km from the shore
- Mactan-Cebu International, located 3.9 km east of the Project
- The nearest major roads
- The existing major and nearby structures off shore
- The North Reclamation Project

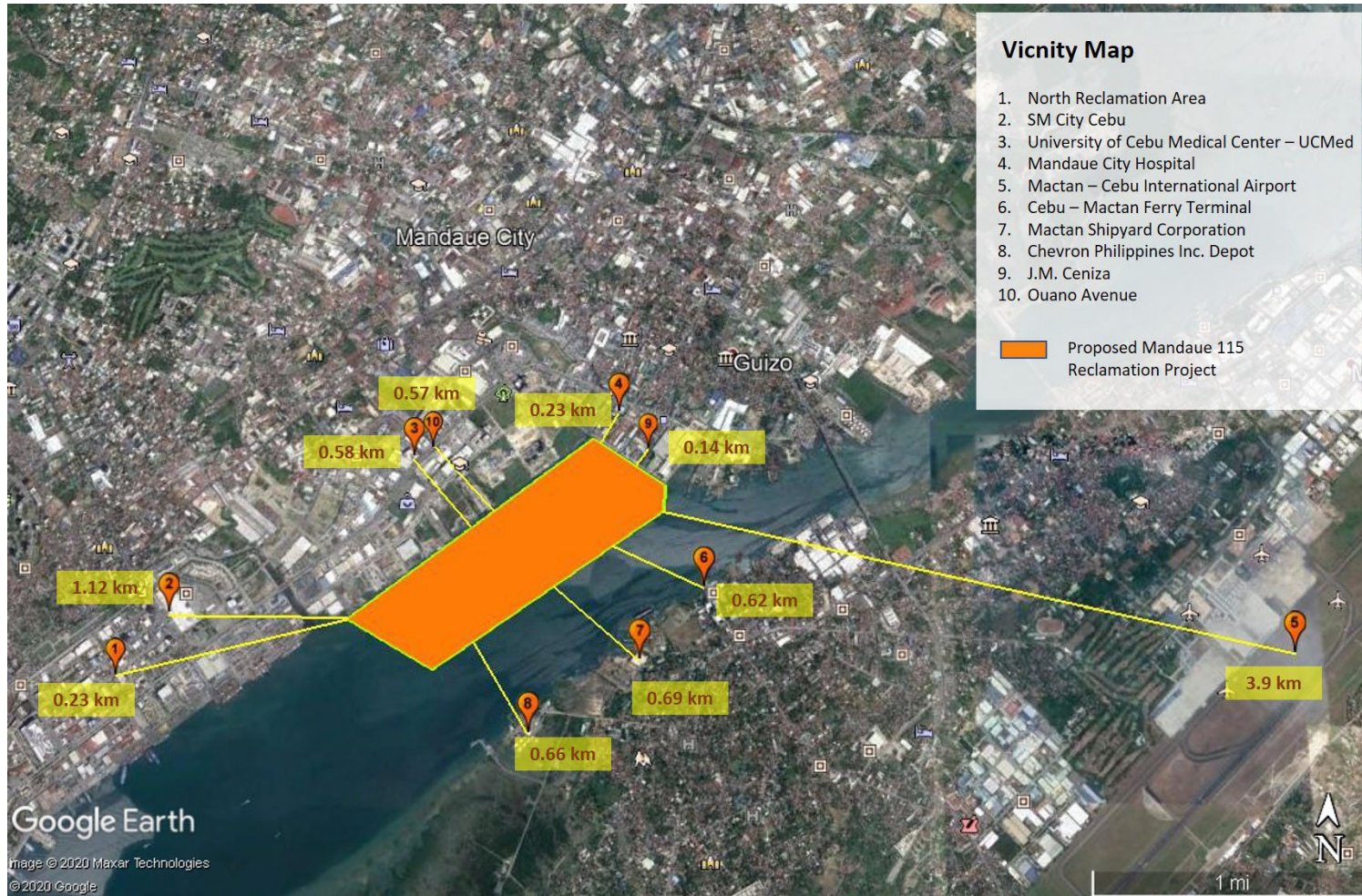


Figure 5. The Proximity of Project Site to Important Landmarks

Proposed Mandaue 115 Hectares Reclamation Project

Mandaue City, Cebu

Along Coast of Mactan Channel



Figure 6. Map Showing the Major Roads Adjacent to the Project Site

Proposed Mandaue 115 Hectares Reclamation Project

Mandaue City, Cebu

Along Coast of Mactan Channel

The political boundaries indicating the impact barangay, the City of Mandaue and adjacent other Cities are shown below.

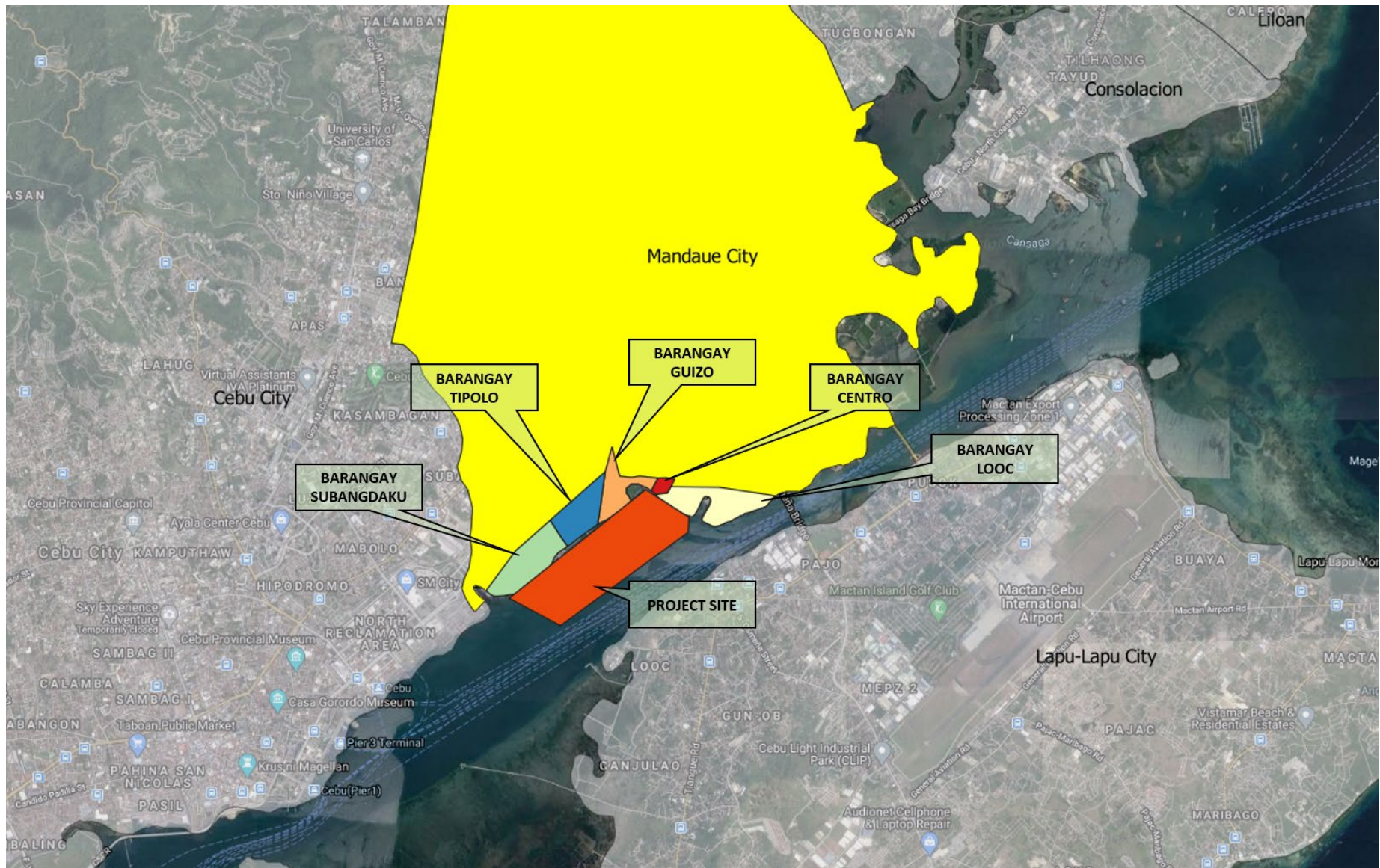


Figure 7. Map Showing the Adjacent Impact Barangays

2.1.1 Location and Political Boundaries

The site is within the political jurisdiction of the City of Mandaue in the Province of Cebu. Shown in **Figure 8** are the adjacent municipalities, cities and other political territories.

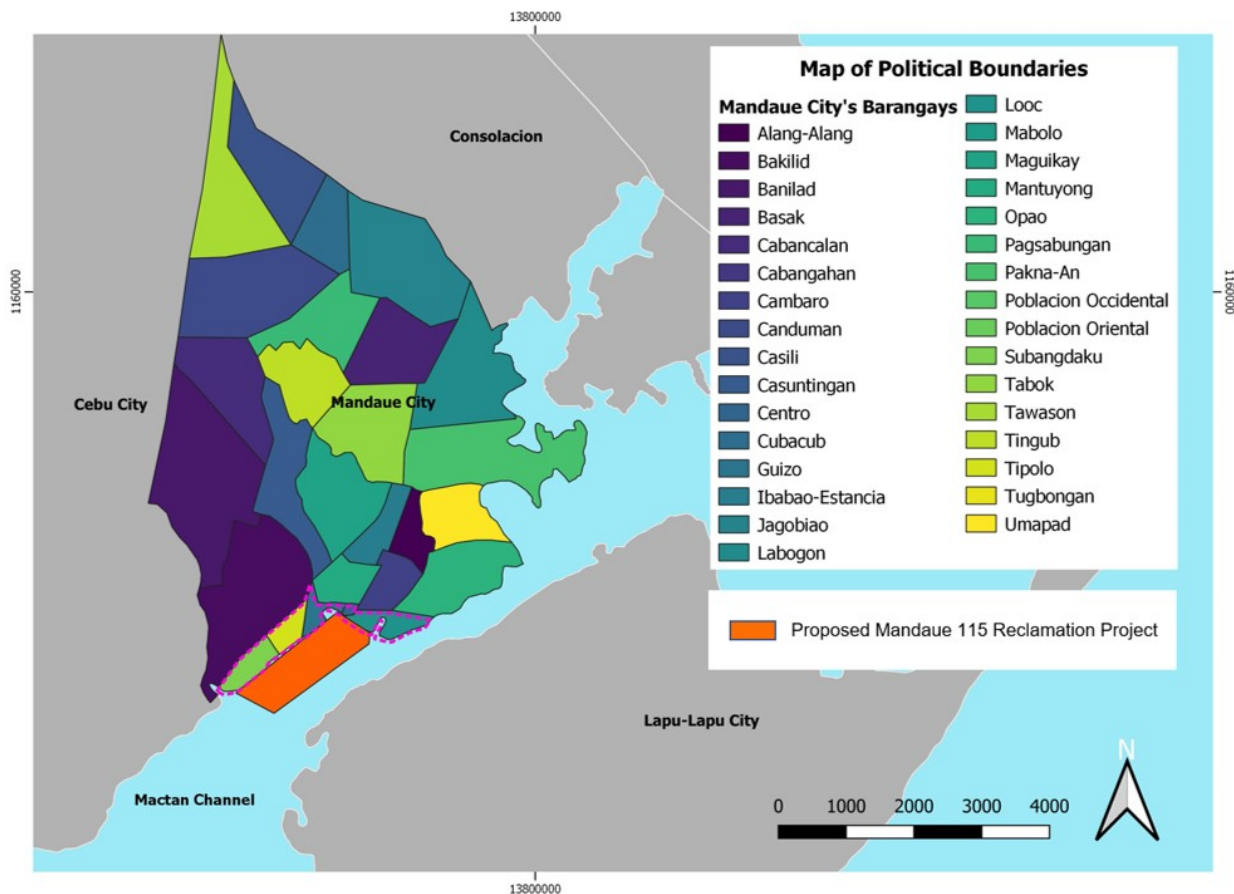


Figure 8. Map of the Political Boundaries

2.1.2 Accessibility

The site accessible by roads shown in **Figure 6**, by sea through the Mactan Channel, by air by helicopter or through the Mactan International Airport from which it is approximately 3.9 km away.

Adjacent Landmark or Nearest Vicinity

Some of the important landmarks adjacent to the project site are:

- ❖ SM City Cebu
- ❖ University of Cebu Medical Center – UCMed
- ❖ Mandaue Hospital
- ❖ Mactan – Cebu International Airport
- ❖ Cebu – Mactan Ferry Terminal
- ❖ Mactan Shipyard Corporation
- ❖ Chevron Philippines Inc. Depot

2.1.3 The Pre EIS Impact Areas

Guidelines Based on DAO 03-30

Direct impact area (DIA) is ... the area where ALL project facilities are proposed to be constructed/situated and where all operations are proposed to be undertaken. For most projects, the DIA is equivalent to the total area applied for an ECC.

Guidelines Based on DAO 2017-15, Sections 10.1 and 10.2

10.1 (b) DIA for Water Quality & Quantity Impacts

- The extent of water body/ies areas where the water quality may exceed the ambient standards based on relevant worst-case scenario based on modeling studies (sediment and pollutant discharge)

10.1 (c) DIA for Impacts on Land

- Areas directly vulnerable to potential flooding or inundation that may be caused by the project

For the proposed project, the DIAs are:

- o The reclamation area itself wherein the construction activities will be undertaken. This area is currently the body of water which will eventually be covered by the planned landform. There are no structures or fishing activities and settlers at the DIA.
- o Barangays Subangdaku, Looc, Tipolo, Guizo and Centro fronting the site and hosting onshore establishments are considered DIAs for socio-economic aspects and perhaps for environmental/risks aspects as well, principally regarding perceptions of flooding and storm surges.
- o The CPA navigational lanes in the vicinity of the project site shown below:



Figure 9. Map showing the CPA navigational lane (in red dashed lines)

Indirect Impact Area (IIA) ...an IIA can be the stretch of the surface waters, e.g. river/s or creeks OUTSIDE the project area but draining towards the project site which can potentially transport Total Suspended Solids and other discharges from the project towards downstream communities.

Based on DAO 2017-15

10.2 The IIA shall be delineated for impacts on people and shall include those in the vicinity of the DIA who will either benefit or be affected indirectly by the project.

For the proposed project, the IIA are:

- o The communities fronting the project site
- o Navigation lane of dredging and fill materials transport vessel.

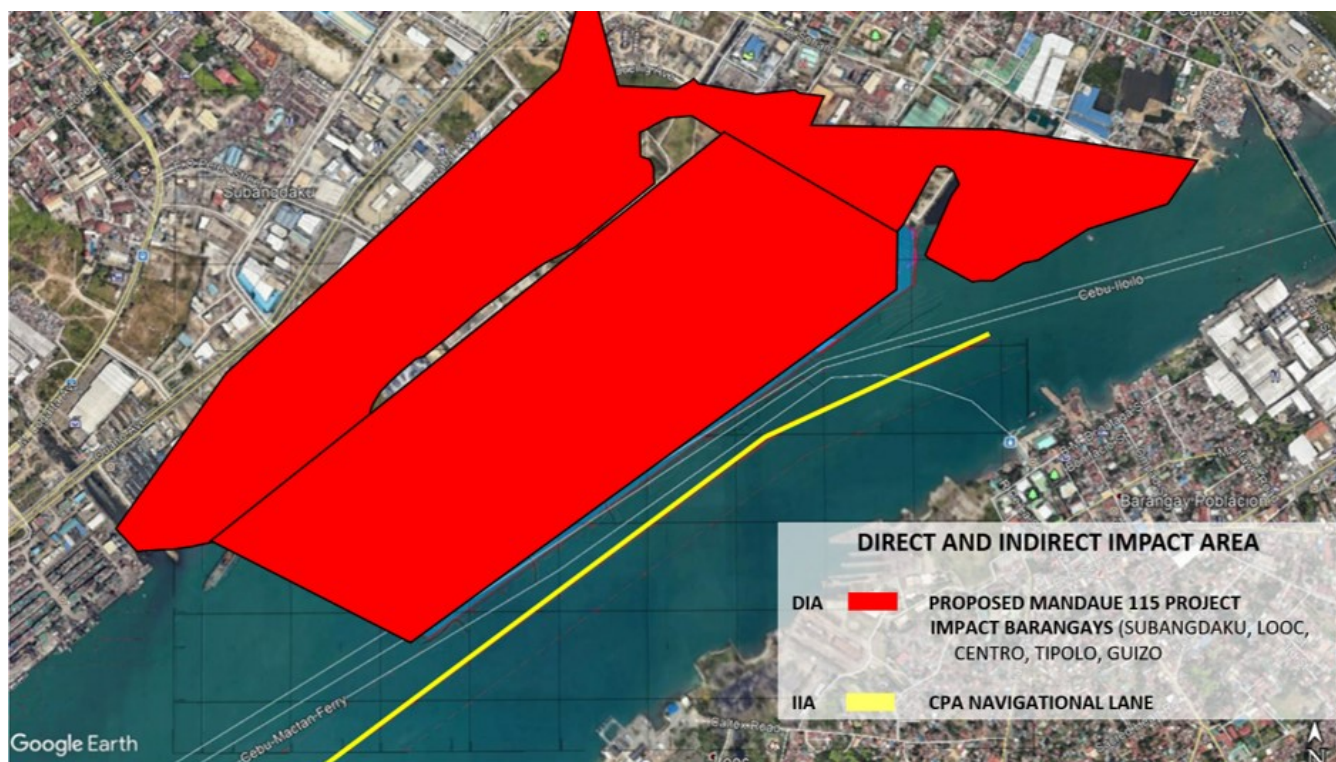


Figure 10. The Direct and Indirect Impact Areas

DIA is the red shaded area; IIA the yellow shaded area

The Buffer Zone

To date there are no clear technical definition of the “buffer zone” in the RPM. For purposes of this Project following guidelines are adopted:

In general terms, a “buffer zone” is a geographical area that serves to avert or minimize the adverse environmental effect of an activity or a project from a neighboring region or area. It is a designated area situated around the periphery of the activity or project that may potentially cause adverse environmental influences thus serving as a protective “layer”.

The E-Nipas Act stipulates the following:

“SEC.8 Buffer Zones. – When necessary, the DENR Secretary, upon the recommendation of the PAMB, may designate areas surrounding the protected areas as buffer zones for the purpose of providing extra layer of protection where restrictions may be applied: Provided, That, in cases where the designated buffer zone would cover private lands, the owners thereof shall be required to design their development with due consideration to the protected area management plan.”

The E-NIPAS protected area is shown in Figure 11.

Accordingly, the buffer zone is tentatively illustrated in Figure 12.

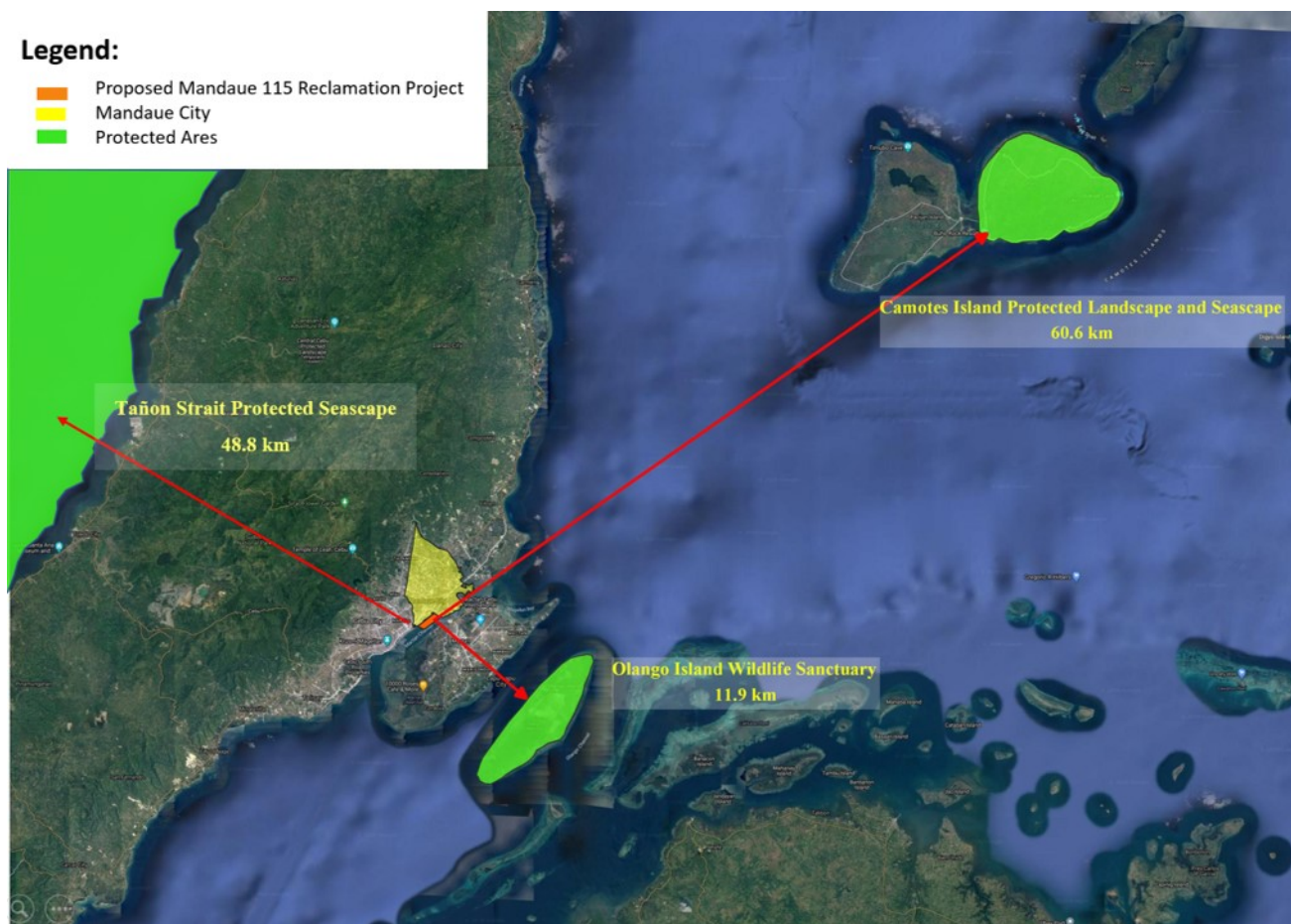


Figure 11. The Project Site Relative to the E NIPAS Protected Areas



Figure 12. The initially-delineated Buffer Zone (in the boxed yellow dotted lines)



2.2 Project Rationale

Given the City's

VISION

Mandaue 2020: Home of High Value Manufacturing Serving the Global Market.

MISSION

Create an environment for sustainable growth and liveable society through responsive governance and multi-sectoral involvement.

VALUES

Excellence, Transparency, Resourcefulness, Accountability, Integrity and Teamwork

The Proposed Reclamation Project falls within the heart of the above aspirations of the city. Translated into doable actions and initiatives, it will create a mixed use commercial, residential, industrial, institutional, and tourism estate. It will bring about the much needed well-planned property expansion and generates substantial revenue for the City and create more employment for the City's constituents.

Additionally, the other miscellaneous major financial and economic benefits that Mandaue City and the National Government will derive from the Project are:

1. Ownership of portions of the new land at cost to the City/National Government consisting of roads and public parks and saleable areas;
2. Recurring real estate taxes on the new taxable land;
3. Taxes and permit fees on the reclamation and horizontal development works estimated at several billions;
4. Building permit fees in the potential building floor area of several hundred hectares;
5. Economic impact of the construction of vertical structures during the Operations Phase;
6. Employment opportunities that will be generated by all the construction activities emanating from the Project.
7. Stimulation of the local economy in the light of the pandemic
8. Direct support to President Duterte's **Build-Build-Build** Programme.
9. Conversion portion of the Mandaue Bay into more productive and enhanced purposes

2.3 Project Components

The major components which will be declared in the Environmental Compliance Certificated (ECC) being applied for are:

The Reclamation Island

Number: One (1)

Area: 115 hectares more or less

Major Components

They are summarized in **Table 1**.

Table 1. Summary Matrix of the Major Project Components

Land Mass	Dredging/filling, containment structure and soil stabilization
Infrastructure	Access way(s) from reclaimed island to shore.
Utilities	Drainage system, water supply system, sewerage system, Sediment/silt management system through method statement, power supply system and telecommunications systems Options for drainage system to be finalized.
Road Network	Main roads, interior secondary roads, coastal roads, sidewalks and curb & gutters (<i>under design/architectural planning</i>). With trees planted alongside portion of roads (Illustrated hereunder)



2.4 Project Phases, Key Environmental Aspects, Wastes, Issues, Built-in Measures

<i>Project Phase / Environmental Aspect (Project Activity Likely to Impact the Environmental Component)</i>	Environmental Component Likely to be Affected	Potential Impact Residual Effects (When applicable)	Options for Prevention or Mitigation* or Enhancement	Responsible Entity
LAND				
Dredging of Seabed to Remove and Replace Unwanted Sub Bed Soils	Geology/Soil	Residual effects - Changes in seabed properties	Reclamation technology to minimize seabed soil removal.	Proponent /Contractor
		Disturbance of sediment materials that may result to fugitive silts dispersal to adjoining areas of Mactan Channel	Silt curtain enclosure around work areas.	
		Potential contamination by dredged materials if containing hazardous substances, e.g. deleterious metals	Pre-testing of seabed materials. (Prelim tests have been done but will conduct another testing just before construction to firm up findings. Implement pretreatment if DIVs (Dutch Intervention Values) are exceeded.	
			Use of sand bags to contain fills.	
			Maximize reuse of dredged materials to minimize waste generation. Disposal to EMB pre-approved sites	
		Erosion/sedimentation	Containment structure technology to be based also on geotechnical studies.	Proponent through Engineering Consultants
Domestic Activities of Construction Crew Based on Vessels	Solid Wastes	Solid waste generation (debris and garbage) during construction phase	Domestic garbage from construction crews segregated and collected on board ship and disposed on shore per RA 9003. No garbage disposal to Mactan Channel	3rd Party Contractor
			Inventory of solid wastes (mainly garbage) through records of amount of garbage disposed onshore.	
			Spent oil from maintenance, if any, to be disposed onshore	3rd Party Contractor

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Disposal of unwanted seabed soil		Solid waste generation	For purposes of the EIS the unwanted seabed soil not usable for reclamation is considered as solid wastes	3rd Party Contractor
Phased Filling - the creation of platform / landform	Natural/Geologic Hazards	Perception of flooding onshore as a result of reclamation.	Flooding has occurred even without reclamation projects	Not Applicable
			Reclamation itself provides protection against storm surges and thus against floods (inland incursion).	
			Project is >3km offshore. It will not block nor disturb existing drainage system and waterways	
			IEC, awareness campaign & emergency hazard preparedness trainings	Project EHS Team
		Erosion/sedimentation	Engineering design to include mitigation of impacts of water circulation changes on particle movements.	Proponent through Engineering Consultants
			Containment structure technology to be based also on geotechnical studies.	
			Updating in-depth study (including simulations) on prevailing and predicted sedimentation patterns, wave transformation, longshore currents, tidal currents, wind patterns, bay morphology and bottom topography, etc.	
			Some areas in the vicinity will be shielded from erosion because the project will serve as barrier against strong waves that can cause erosion.	
		Storm surges/ waves/ tsunamis and flooding on land and impacts of the proposed project during typhoons	May occur with or without the project. Reclamation platform itself with wave deflector gives sheltering effect.	Proponent through engineering consultants & Reclamation Contractor

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			Other similar defenses such as breakwaters, revetment, angled bypass walls to be included in DED. Appropriate structure to be selected. Current best option is wave deflector.	
			Engineering intervention: design and minimum height of platform to withstand wave force, provision of structures/drainage ways against water incursion	
			Layout of the landuse and structures in the entire reclaimed land with provisions for easy "evacuation routes" in case of early and swift evacuation to elevated areas to be incorporated in	
			the final master development plan	Project EHS Team
			IEC, awareness campaign & emergency preparedness trainings	
		Subsidence/Settlement Residual effects. None if with proper engineering and reclamation technology	A natural phenomenon occurring with or without the project. The increase in rate in recent years is due to underground water extraction which will not be undertaken by the Project	Proponent through Engineering Consultants & Reclamation Contractor
			Engineering intervention. based on geotechnical studies. Rocks to be used in containment structures	
			Fill materials will be fully engineered and compacted/densified. The soil remediation process will increase the N-value to be advanced to the bottom of pre-existing alluvium.	
			Buildings and structures to be constructed will be founded on the solid bedrock or dense layer and appropriate foundation design will be put in place	
			Settlement criterion was calculated, which include settlements that will develop in the natural subsoil and those that will develop in the reclamation fill from project handover to the end of project life. To be updated in DED.	

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			Monitoring of ground level will be done during the period of soil stabilization (before vertical devt) to determine quantitative surface movements with respect to both spatial and temporal rates. Known accurate measuring techniques include: IFSAR satellite imagery - timeseries techniques; GPS surveys; leveling surveys; optical leveling; LIDAR; and field observations.	
		Ground shaking and liquefaction	Engineering intervention: structural and engineering designs to withstand ground shaking and liquefaction. Use of armor rocks in containment structure	Engineering Consultant
			Will utilize computed "g" values of 0.611g in the design of structures and also serve as guide in the degree of soil remediation/compaction	
			To follow Philippine Building Standards and Codes	Reclamation Contractor
			Soil densification/compaction and use of armor rocks to improve ground conditions	Reclamation Contractor
			IEC, awareness campaign & emergency preparedness trainings	Project EHS Team
WATER				
Project Phase / Environmental Aspect (Project Activity Likely to Impact the Environmental Component)	Environmental Component Likely to be Affected	Potential Impact Residual Effects (When applicable)	Options for Prevention or Mitigation* or Enhancement	Responsible Entity
Dredging of seabed to remove unwanted materials	Marine Water Quality	Disposal of unwanted dredged materials	Unwanted silt materials will be considered as solid waste but could be recycled	Reclamation Contractor
			Maybe reused either partially or fully	
			If disposed outside of project area, subject to appropriate clearances e.g. Phil Coast Guard, DENR, etc.	

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Dredging and Placement of Sand Fills	Marine Water Quality	- Increase in siltation/sedimentation loading in coastal waters; increase in turbidity and suspended solids; - Reduction in photosynthesis and primary productivity - Suffocation of bivalve veliger in soft bottom	Provision of silt curtains where sediment streams are likely to occur & escape	Proponent/ Reclamation Contractor
	Benthic communities of marine organisms.		- Collection & trans-location of macro-invertebrates found within the reclamation area	Project EHS Team
		benthos; - Disruption of fish and benthos larval growth;	- Mangrove reforestation in nearby areas	
Phased Filling (Creation of Landform)	Oceanography	Impacts on changes in water circulation, which may cause erosion, deposition and sedimentation on the reclamation islands and adjacent areas. Residual effects: Loss of part of Water Body at Site - Irreversible	Final design and alignment of landform to be based on the mathematical circulation modeling and sediment transport modeling.	Proponent/Engineering Consultant
		Sea Level Rise	SLR is due to global climate change and not to the reclamation project	Not Applicable
			Project does not impact on sea level rise but it has cumulative effects on natural geohazards, which are considered in design.	
Phased Filling: use of fill materials imported from other areas	Marine Water Quality	Potential contamination with deleterious substances in filling materials	Pre-screening of filling materials; most possible source is from Tubigon Bohol.	Proponent/ Reclamation Contractor
Domestic Activities of Construction Crews	Water Quality	Seawater Contamination from accidental oil leaks, domestic wastes from construction workers and vessel crews	Onboard vessel oil containment and recovery equipment	Reclamation Contractor
		Wastewaters emanating due to influx of reclamation workers can add to marine pollution and negatively affect benthic communities of macroinvertebrates; plankton community It can cause coastal water pollution, loss of macro-invertebrate population, impairment in fish and shellfish reproductive physiology.	Onboard vessel toilet facilities, Disposal on land by accredited 3 rd party 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	

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			Temporary portable latrines during soil stabilization	
			Adoption of clean practices by all project operating units and personnel;	
			Efficient waste retrieval system;	
			Greening of reclamation area	
Use of Oil in engines, which may accidentally leak		Residual effects Nil to Insignificant	Bilge Water Mgt, which includes oil-water separation units, collection & Recovery system	Reclamation & Dredging Contractors
			Implementation of rigid policies against indiscriminate disposal of oily waste and marine vessel bilge water.	
Navigation of TSHD	Fish lifts near navigation lane	Potential accidents and damages to marine ecosystems during transport of dredging vessel	Ensure vessels used are sea worthy	Dredging Contractor
			Navigational Devices	
			Proper training of crew	
			Avoid transport during inclement weather	
			Compliance with PCG and International regulations	
			Adherence to navigational safety standards at all times	
AIR				
Project Phase / Environmental Aspect (Project Activity Likely to Impact the Environmental Component)	Environmental Component Likely to be Affected	Potential Impact Residual Effects (When applicable)	Options for Prevention or Mitigation* or Enhancement	Responsible Entity
Use of Heavy Diesel Fuel Oil	Air Quality	Air Pollution Residual Effects: Nil	Use of quality fuel	Reclamation Contractor
			Compliance w PCG	
			Construction works distant from ESRs	
			Short term only	
			Sea is buffer zone itself from onshore ESRs	
			Proper maintenance of gensets	

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PEOPLE				
Project Phase / Environmental Aspect (Project Activity Likely to Impact the Environmental Component)	Environmental Component Likely to be Affected	Potential Impact Residual Effects (When applicable)	Options for Prevention or Mitigation* or Enhancement	Responsible Entity
Removal of unwanted solid wastes / scraps / debris at site	People: Fishermen, sapra & mussel farm operators (fisheries & mariculture livelihoods)	Displacement of fisher folks, lift nets (sapras) and/or mussel farms. Current inventory: 6 lift nets plus others who fish within the project site regularly or occasionally	Detailed inventory of existing lift nets and mussel farms within the project site and vicinities	Proponent / Project ComRel Team
Placement of Silt Curtains on Active Area			Provide alternative livelihood	
Dredging of unwanted sediments at sea bed			Conduct of FGDs/consultation with affected stakeholders to come up with 'win-win' solutions	
Phased Filling - creation of landform			Transfer of lift nets to areas with equal/better productivity at cost of Proponent	
Horizontal Development	People: Vendors	Perception of adverse impacts on small vendors	Ambulant and indigent people at the Bay walk will not be displaced on account of the reclamation project	Proponent / Contractor
		Residual effects: Nil	Livelihood and employment opportunity to locals	
Soil Stabilization	People: City residents	Positive effects of the proposed project to locals particularly to indigent		Proponent / Contractor

2.5 Project Cost

2.5.1 Indicative Project Cost (Subject to Final Determination)

Table 2. Project Cost Estimate

	Component	Indicative Cost
A	Pre-development and Reclamation Works (115 has) @Php10,800/sqm	Php 12,420,000,000.00
B	Horizontal Development	Php 7,475,000,000.00
C	Miscellaneous Cost	Php 309,000.00
	Total	Php 19,895,309,000.00

The firm cost estimates will be determined during the engineering design state which is post ECC

2.5.2 Proposed funding/financing

- Funding will be sourced from equities of private sectors/investors and loans from banks syndication.
- No funds will be provided by local or national government.



2.6 Project Timeline

The proposed Mandaue 115 Hectares Reclamation Projects is a stand-alone project. The proponent will implement the project independently that will be generated after the conduct of the more detailed investor feasibility study, the private proponent will commence with the reclamation activities upon issuance by the PRA of the Notice to Proceed (NTP) inclusive of all the necessary approvals and reclamation and development permits by appropriate government offices and agencies that has jurisdiction over the reclamation project. The preliminary and indicative implementation schedule is presented as follows:

Table 3. Project Implementation Schedule

ITEMS OF WORK	DURATION (Quarters)															
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
1. PRELIMINARIES																
2. DREDGING and RECLAMATION WORKS																
3. CONTAINMENT STRUCTURE WORKS																
4. SOIL CONSOLIDATION and IMPROVEMENT WORKS																
5. LAND DEVELOPMENT WORKS																
6. UTILITIES INFRASTRUCTURE WORKS																
7. CONNECTING BRIDGES																
8. ENGINEERING and PROJECT MANAGEMENT																
9. CONTINGENCIES																

A) The Implementation Schedule is reckoned from receipt of the Notice to Proceed from the Philippine Reclamation Authority

B) The time frame for Items 2,3,4 will be finalized by the dredging contractor that will be engaged for the project.

3.0 Aerial Photographs of Project Site





