VERDE ISLAND PASSAGE (VIP)
MARINE PROTECTED AREA NETWORK (MPAN)
CONTINGENCY PLAN AND SECURITY MEASURES

1. SAFETY PROTOCOLS

1.1 COVID-19 Health and Safety Guidelines

Pursuant to Presidential Proclamation Nos. 922 and 929, Series of 2020 declaring a State of Public Health Emergency and Calamity throughout the Philippines due to COVID-19 and in view of the extended implementation of the Enhanced Community Quarantine (ECQ) and General Community Quarantine (GCQ), the following safety guidelines, supplemental to the existing safety standards, are hereby established for the survey operations of the Domestic Submarine Cable Network (DSCN) project.

1.1.1 Prior to Deployment

Only persons from Twenty-One (21) to Fifty-Nine (59) years of age, without preexisting health conditions, such as, but not limited to, immunodeficiency, comorbidities, other health risks, including any person who resides with the aforementioned; and who did not come into contact with someone with COVID19 shall be allowed to be included in the workforce. Employees or consultants who are Sixty (60) years of age or above may be allowed under GCQ and ECQ guidelines under Omnibus Guidelines on the Implementation of Community Quarantine in the Philippines dated 29 April 2020. Personnel shall be required to undergo any available COVID-19 test, as may be prescribed by DOH, and retested as the need arises. In this regard, consultation with medical doctors (duly accredited by DOH, if possible) prior to the conduct of COVID-19 test shall be made.

1.1.2 During Deployment

Conduct an inventory of works for survey operations sequencing to be followed and undertaken to uphold the required social distancing. Break times shall be conducted in a staggered manner. Employees shall be housed in either onsite or offsite barracks or quarters for the entire duration of the project covered by the ECQ and GCQ. Otherwise, “Prior to Deployment” requirements shall be conducted at every instance of re-entry. Returning workers, who have not been tested for COVID-19, would need to be quarantined in the isolation rooms for 14 days. All contractor’s personnel are always required to wear PPE (masks) during survey operations except when drinking or eating.

1.2 Occupational Safety

In pursuant to Department of Labor and Employment Order (Section 16 (b) of RA 11058 and Section 3 of DO 198-18, as mandated by the law regarding Health and Safety under the Bureau of Working Conditions, and as a prerequisite by MJAS Zenith, all personnel to be assigned in the implementation of the project will be ensured that underwent the mandatory Health and Safety Seminar conducted by World Safety Organization.

2. MITIGATION MEASURES

MJAS Zenith, as its Corporate Social Responsibility for the environment, ensures compliance with the environmental regulation for conserving energy and water together with proper disposal/management of waste and hazardous materials in its effort to reduce the company's carbon footprint.

2.1 Visual Monitoring

During the survey proper, strict monitoring will be done to avoid crossing any environmentally sensitive areas along with the support of the Desktop Study Report.

2.2 Exclusion Zone

Prior to the conduct of the survey activities, navigation will be carefully designed especially in areas with exclusion zones. Design of the survey route will consider the other existing cables and gas pipelines such as the Malampaya Gas Pipeline.

2.3 Equipment Frequency Adjustment

During survey, frequency of the equipment will be adjusted especially in highly sensitive marine areas. Frequency level will be modified in a safety zone and/or maybe disregarded in an exclusive zone to prevent impact on marine mammals.

3. CONTINGENCY PLAN

Verde Island Passage is known as the “Center of the Center of Marine Shorefish Biodiversity” with its 1.4-million-hectare passage housing extremely rich marine biodiversity, being the richest area in the entire Coral Triangle. In accordance with the State policy on Biological Diversity under Executive Order No. 578, an Ad Hoc Task Force on Verde Island Passage was formed “to ensure the protection, conservation and sustainable use of biological diversity in the Verde Island Passage Marine Corridor”.

3.1 Plan Overview

Based on the proposed cable routes for the Domestic Submarine Cable (DSC) Network Project, there are four segments that will pass through the Verde Island Passage (VIP) Marine Corridor: Segment 1 (Ilijan-Batangas), Segment 2 (Pinamalayan-Boracay Island), Segment 3 (Lucena-Boac), and Segment 4 (Boac-Calatrava).

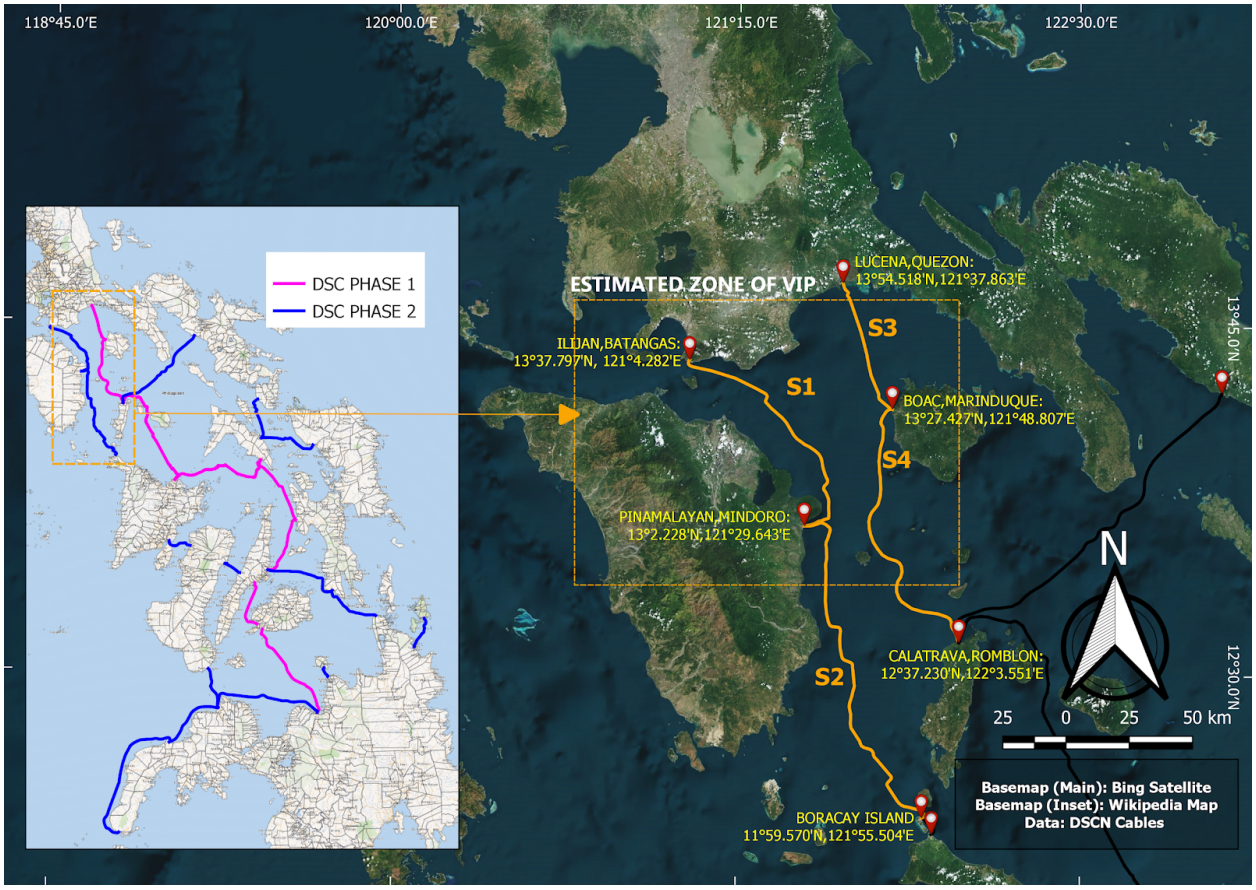

Figure 1. Project Overview in Verde Island Passage (VIP) Marine Protected Area Network (MPAN)

Figure 2. Service Provider for the Domestic Submarine Cable (DSC) Network Project

MJAS Zenith Geomapping and Surveying Services is a local service provider offering mapping solutions, geotechnical engineering and surveying services, started in 2007 as a supplier of Surveying and Geophysical Instruments and Laboratory Test and Equipment. Being the forefront and continuous exposure to innovative products such as modern equipment and application engineering to serve our clientele, MJAS ventures in providing the services.

3.2 Risk Assessment

The Contingency Plan for the proposed marine survey for the Domestic Submarine Cable Network Project is provided to give assurance to the concerned government offices and to the nearby communities along the Verde Island Passage on the emergency preparedness and capacity of MJAS Zenith.

3.2.1 List of Potential Emergencies and Scenarios

3.2.1.1 Severe Weather

The Philippines is situated along the typhoon belt in the Pacific, making it vulnerable to different natural disasters such as typhoons. Because of this, low-lying areas are prone to sea-level rise and storm surges as a result of severe weather.

In the event of marine surveying, there is a possibility of experiencing severe weather while passing through the Verde Island Passage.

3.2.1.2 Earthquake/Tsunami Threat

As mentioned, the geographical setting of the Philippines makes it susceptible to earthquakes that could result in a tsunami. Coastal areas in the Philippines can be affected by tsunamis that are generated by local earthquakes. Batangas is one of the seismically active areas in the country. The Manila Trench, situated offshore west of Luzon Island, and the Lubang Fault, which runs between Mindoro Island and Batangas, have both produced numerous small to large-magnitude earthquakes near Batangas.

Earthquakes occur without warning, thus encountering it during the marine survey is possible.

3.2.1.3 Oil Spill

The Verde Island Passage is a popular route for hundreds of passenger and cargo boats from Cebu making their way to Batangas International Seaport, the second largest port in the country. The increased marine vessel traffic puts the Verde Island Passage at risk of oil spills from passing vessels, some of which are transporting crude oil to several oil and gas industrial plants.

Possible risk factors that may result to oil spill on the conduct of marine survey are the following:

a. Risk-causing factors
    - Collision
    - Heavy vessel traffic
    - Grounding
    - Hazards to navigation
    - Negligence if the operator
    - Size/type of vessel
b. Factors affecting risk

    The following factors listed may increase the risk:
    - Density and movement of ships including concentration of fishing and tourist vessels
    - Areas with a high level of difficulty of navigation
    - Sea conditions including tidal flow, current, sea state, weather, wind, and temperature
    - Capacity and capability of response team

Based on the Manila Bay Oil Spill Contingency Plan, areas that are at risk due to oil spill are categorized based on the ecological, economic, and social importance as well as its sensitivity.

This section discusses the possible risks that may be encountered during the course of the marine survey.

Areas Sensitive to Oil Spill	**High**	**Moderate**	**Low**
Ecologically Important Areas	) Mangroves) Mudflats) Seagrass beds	) Coral reefs) Sheltered rocky shores) Sandy beach) Gravel beaches and riprap	) Exposed rocky cliffs, seawalls, and wave cut platform
Economically Important Areas	) Oil refinery and depots) Fisheries and	) Manufacturing) Shipyards	-

	aquaculture Ports Sea lanes Power plants	Naval Installations	
Socially Important Areas	Tourist and recreational sites Cultural and historical sites	Residential areas	-

3.3 Strategic Policy

3.3.1 Response Techniques

3.3.1.1 Severe Weather

If pre-warning is available, preparation can be done by the staff. However, if the warning was issued in a short period of time, the vessel's handling is dependent on the crew's expertise and skills. Listed below are some precautions that should be taken when severe weather is encountered in the waters.

a. Steering Control

- It is advisable to shift to a manual control instead of auto pilot mode. It is also recommended to use both motors to get the maximum available torque.
- Oil levels and other parameters must be monitored in the steering room.
- Sufficient manpower should be present in the bridge.

b. Machinery Control

- All parameters in the main propulsion plant and auxiliary power plant machineries should be monitored.
- Main engine control setting must be put on a rough weather mode.
- Level of all the important tanks must be monitored.
- A standby generator must be kept on load until the severe weather stops.
- Watertight doors in the machinery spaces should be closed.

c. Other Precautions

- The crew and other passengers onboard should not go out onto the open deck.
- All openings in the deck and accommodations must be kept closed.
- Everyone must be aware of their duties outlined in the muster list.

3.3.1.2. Earthquake/Tsunami Threat

In the event that the vessel is in the middle of surveying, and a tsunami warning has been issued in the area, do not return to the port.

The following considerations must be weighed if the vessel is in a port and there is time to move the vessel to deep water:

- The large ports are often under the control of a port authority, which directs the operations should there be a tsunami expected that requires increased readiness which may include movement of vessels if necessary. A closed contact must be maintained with the port authorities in the area.
- Smaller ports can be possibly not under control of any port authority. If you are aware of the tsunami warning and have enough time to move the vessel to deep water, you may opt to do so in consideration of other vessels. Small boats may be left at the port, and crews as well as other onboards should move to a higher ground.

Damaging tsunami or wave activities can affect the ports for a long period of time following the initial wave on the coast. Make sure to verify first with the port authorities to see if the condition at the port is safe for navigation and berthing.

3.3.1.3. Oil Spill

The appropriate response for an oil spill event is based on the concept of the *Tiered response*, which is widely used. The response needed is determined by the extent of the spill and the proximity of the spill to a response center.

Tier	Amount	Response
1	Up to 10 m^3	Company or Ship Response Organization/District Response Organization
2	Up to 1000 m^3	First Tier Response plus National Response Organization
3	Greater than 1000 m^3	Total National Resources, with additional Foreign Resources

a. Tier 1 - associated with local events where response should be done locally. External resources are not required.

b. Tier 2 - a larger spill than of Tier 1 that may occur at the vicinity of a nearby response center or a smaller spill at a distant location that requires several sources, such as industry and government resources.

c. Tier 3 - the largest spill which may involve large tanker accidents or offshore blowouts. This situation usually calls for national oil spill response resources and may even call on international assistance.

3.3.2. Response Resources

Agency/Sector	Role
Department of Environment and Natural Resources - Environmental Management Bureau (DENR-EMB) and regional offices at Regions IV-A and IV-B	• Responsible for environmental management. • Provides data on the resources within the Verde Island Passage. • Provides advice on sensitive resources in the subject area.
Department of Environment and Natural Resources -Protected Area Management Bureau (DENR-PAMB) and regional offices at Regions IV-A and IV-B	• Responsible for protected areas, habitat, and wildlife response. • Provides data on the resources within the Verde Island Passage.
Local Government Units (LGUs)	• Manage coastal resources within the municipal waters. • Responsible for identifying sensitive resources and preparation of local oil spill contingency plans.
Philippine Ports Authority (PPA)	• Primary government agency responsible for port operations. • Initiates oil spill response in their facilities.
Maritime Industry Authority (MARINA)	• Maintains database of Philippine registered vessels. • Sets safety standards for vessels.

Department of Energy (DOE)	• Reviews oil spill prevention measures through the Oil SPill Prevention, Control and Response Training.
Department of Agriculture - Bureau of Fisheries and Aquatic Resources (DA - BFAR)	• Responsible for identifying fishing grounds and other aquaculture areas.
Disaster Coordinating Councils (Cities, Provincial, Regional)	• Serves as a coordinating and monitoring body in their jurisdictions.

3.4. Expected Results

3.4.1 Results of Topographic Survey

The landfall and inshore survey will include a topographic map from the ground data obtained with the use of GNSS RTK and an aerial image from UAV. It will also incorporate the result of thermal resistivity test from the land samples

3.4.2 Results of Marine Survey

As for the Marine survey, results will involve deep water survey charts, continental shelf and inshore survey charts from the survey results of the Multi-beam Echo Sounder, Sub-Bottom Profiling, Side Scan Sonar, Magnetometer, Current Velocity Measurement and thermal resistivity test.

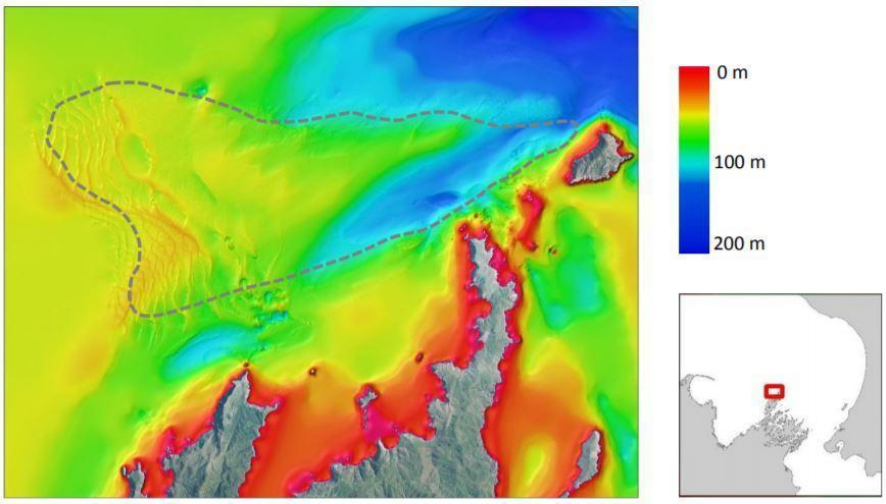

Figure 3. Sample Bathymetry Data using Multi-Beam Echo Sounder revealing the shape and depth of the seafloor. (National Institute of Water and Atmospheric Research)

References:

Revised DAO 04-36. Retrieved from http://119.92.161.2/embgovph/Portals/8/DENR%20Administrative%20Order%20No.36%20Series%202004%20.pdf

Contingency Planning for Marine Oil Spills. Retrieved from https://www.itopf.org/fileadmin/data/Documents/TIPS%20TAPS/TIP_16_Contingency_Planning_for_Marine_Oil_Spills.pdf

Contingency Planning Guidebook (2020). Retrieved from https://drive.google.com/file/d/1vxXDte3BFjrjzY6D2zRdwaIZfwDCHXAe/view

Manila Bay Oil Spill Contingency Plan. Retrieved from http://pemsea.org/sites/default/files/manilabay-oilspill-plan.pdf

What to do When Ship Encounters Rough Weather? (2019). Retrieved from https://www.marineinsight.com/marine-safety/what-to-do-when-ship-encounters-rough-weather/

What Should You Do In The Event Of A Tsunami?. Retrieved from https://www.ocean.washington.edu/courses/oc101-emerick/EQ&TsunamiSafety.pdf