



The Department of the Environment (DOE)

Ministry of Natural Resources and the Environment

NATIONAL ENVIRONMENTAL GUIDELINES ON OVERWATER STRUCTURES



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National Environmental Guidelines On Overwater Structures

Overwater Structures, depending on their size and locations, could have significant impacts on the Environment, and as such they may be required to carry out an Environmental Impact Assessment (EIA). In order to streamline the environmental screening for these types of proposals, and in order to make these environmental guidelines more effective, all stakeholders agreed to firstly have a set of criteria for entertaining any proposal that includes overwater structures. Below please find the criteria and guidelines agreed to by all consulted stakeholders. These will need to be complied with in order to proceed with the environmental screening. Only after meeting the criteria will the subsequent environmental guidelines be required to be complied with prior to receiving environmental clearance from the DOE.

1.0 PROCEDURAL ISSUES

- 1.1 The construction of any overwater structure will be required to first obtain the following permits, the process which will be coordinated and facilitated by the granting of Environmental Clearance by the Department of the Environment:
 - Note: The issuance of a permit from one agency does not imply that the other has to be granted.
 - 1.1.1 Environmental Clearance from the Department of the Environment;
 - 1.1.2 Permit from the Department of Lands and Survey for use of the seabed and or sixty-six (66) feet reserve;
 - 1.1.3 Construction Permit from the relevant building authority in whose jurisdiction the proposed structure falls;
 - 1.1.4 If project lies near or within a navigational channel, permit is required from the Port Authority for clearance;
 - 1.1.5 If dredging is required a Permit from the Petroleum and Geology Department for any dredging or removal of material.
 - 1.1.6 If so required a Permit from the Belize Tourist Board for cabañas intended as hotel rooms.
 - 1.1.7 Permit/Approval from the Fisheries Department where the project is located within a Marine Protected Area.
- 1.2 Any permit issued will be in the name of the duly registered applicant(s), and for permits to remain valid, any transfer of ownership will require permits to be renewed with the names of new owner(s).
- 1.3 If during the operational phase any change of ownership and/or management occurs, be it due to sale of or rental /lease of or any combination thereof, will require permits be renewed with the name(s) of new owner(s) and/or management for permits to remain valid.

- 1.4 Fees: As has been the requirement for some time now, each application will be subject to:
 - 1.4.1 An Environmental Processing fee.
 - 1.4.2 An annual Environmental Monitoring fee.
 - 1.4.3 An annual rental fee.
 - 1.4.4 An annual license fee.
 - 1.4.5 Construction application fees.
- 1.5 The applicant must show proof of ownership of seafront property in front of which these overwater structures are being proposed.
- 1.6 In relation to the overwater structure and the remainder of the project, the applicants will have responsibilities for the following:
 - 1.6.1 To comply with all relevant laws and conditions of the permits;
 - 1.6.2 To meet all costs associated with the permit assessment and subsequent installation and operation of the overwater structure;
 - 1.6.3 To provide indemnity and adequate insurance coverage against death, personal injury, and property damage; and, to take any action necessary to protect the environment and users of the facility should any problems arise with the structure.
- 1.7 During application, an Environmental Management Plan will be required that provides details of the proposed installation and its subsequent operations.
- 1.8 The Environmental Management Plan must include:
 - 1.8.1 Identification of potential environmental impacts;
 - 1.8.2 Details on how activities will be managed to reduce these impacts;
 - 1.8.3 A monitoring program;
 - 1.8.4 Emergency response plans, including the removal of the structure as result of damage by fire, hurricane or other natural disaster or at the end of its useful life;
 - 1.8.5 A management plan for the use of the public areas;
 - 1.8.6 An Operational plan;
- 1.9 As a precaution, the cost of removal or cleanup of the structure as a result of an accident or an act of nature or abandonment, must be covered by a bond provided by the applicants, which will be lodged with the Department of the Environment in perpetuity or until the structure is removed from the public water body.
 - 1.9.1 The bond amount will need to be reviewed on an annual basis to ensure it keeps abreast of: inflation, costs for removal, and any other changes which may affect its appropriateness.
 - 1.9.2 The size of the bond will be equivalent to the estimated cost of construction of the facility, less the cost of material, and shall be determined by a certified valuer.

2.0 SITE LOCATION

In general, attention to selection of sites with the “maximum natural physical benefits” can help to avoid alterations and continual maintenance associated with dredging. To address this issue, following are some guidelines.

- 2.1 Overwater structures will not be allowed to be constructed over the Belize Barrier Reef or any living coral reef structure(s).
- 2.2 Overwater structures should be sited in sandy, muddy, or coral rubble areas to avoid impacts on sensitive environments and conflicts with other uses of the area.
- 2.3 Sites should have a minimum set back distance of 550 meters from the Belize Barrier Reef or any atoll. In the instance of pontoons serving as launch pads for snorkeling and viewing of corals, a minimum set- back distance of 100 meters could be allowed.
- 2.4 Overwater structures should have a minimum setback distance of 50 feet from shore to minimize impacts on shoreline processes by boats and to minimize impacts on potential usage of beaches. For shoreline without beaches and which have mangroves and other littoral forest a minimum set back of 20 feet should be required.
- 2.5 Sites should be selected that would prevent any clearance of fringing mangroves or other riparian vegetation offering coastal protection to shoreline property.
- 2.6 Construction of overwater structure should preferably be carried out on the leeward side of an island whenever possible.
- 2.7 Overwater structures intended to be accessed by boats should select areas of least currents and avoid sea grass beds and corals.
- 2.8 Piers allowing boat access to overwater structures and vice versa, should extend out far enough to reach depths of at least 10 feet in which dredging will not be required and intended boat traffic would have sufficient draft to prevent re-suspension of silt by propellers, providing that this does not pose a threat to navigation.
- 2.9 Overwater structures shall not be built within known navigational channels or route.
- 2.10 The location of an overwater structure must not conflict with zoning objectives, Management Plans, or other management measures within a zoned area.

3.0 DESIGN

- 3.1 Overwater structure must be appropriately designed for its intended purpose, including for example: stability, structural integrity, life span, corrosion resistance, maintenance, ease of access, ease of removal, and its ecological role and impact.

- 3.2 The design of the overwater structure and any associated support system will need to be certified by a suitably qualified and experienced professional structural or civil engineer.
- 3.3 The design of overwater structure shall not be permitted to have solid foundations but would have to be built using support piles to reduce the effect of the structure on water circulation.
- 3.4 The deck of the overwater structure should be constructed high enough above the beach ridge to allow light to reach the water surface to reduce the impacts of shading on the ecology of the area. (A narrow structure extending from north to south will not produce as much shade as a wide structure running from east to west.).
- 3.5 The height of the deck shall be at least two (2) feet above the height of the beach ridge. In this regard, light-penetrating elevated walkways can be used for preventing habitat damage where access to a sensitive or critical area is required. These structures prevent erosion and protect underlying vegetation, allowing vegetation recovery while providing access.
- 3.6 The design and outlay of the overwater structure should be such that it blends with the natural surroundings and maintains a tropical look.
- 3.7 The design of the overwater structure will be such that all electrical conduits, water, wastewater and butane pipes, would be shielded from view and would need to meet the highest code of international standard.
- 3.8 The overwater structure shall be limited to one storey level.
- 3.9 Only floating breakwaters in water deeper than 20 feet and no closer than 50 feet from the shoreline will be permitted for wave attenuation in docking areas.

4.0 MATERIALS

- 4.1 Over water structure must be constructed of light, strong, non-corrodible, durable materials that are either natural or have the appearance thereof, and which:
 - 4.1.1 Suite the objective of the Structure (restaurant, bar or living quarter);
 - 4.1.2 Are clean and are not toxic;
 - 4.1.3 Will not easily fragment; and
 - 4.1.4 Will not immediately, or through decomposition, harm or injure wildlife or the ecology of the area.

- 4.2 Materials used should be those that do not further degrade baseline conditions. Hence, materials used in the construction of an overwater structure must not have been recently (within 3-5 years) treated with toxic compounds such as **anti-fouling paints containing TBT (tributyltin) or CCA (chromated copper arsenate)**.
- 4.3 It is recommended that some aspects of the sub-structure can be re-enforced concrete, such as columns and floor beams so as to be able to withstand a **Category 3 hurricane**; while the rest of the structure can be constructed as per Guideline 5 below.
- 4.4 No coral rubble and coralline sand shall be used for the construction of any overwater related structure.
- 4.5 The materials proposed for installation of overwater structure must be inspected and approved as per the **Approved Materials Construction List** by the Planning Authority and DOE prior to the structure being installed.

5.0 CONSTRUCTION

- 5.1 A plan detailing the process for construction and installation of the overwater structure, addressing possible affects on the environment, must form part of the information submitted to DOE for its consideration.
- 5.2 Land disturbing activities should be scheduled to occur during the dry season (conditions) to prevent excessive storm run-off, and erosion.
- 5.3 Sedimentation control measures, such as sediment traps, shall be used to minimize water quality impacts from land based activities. Best practices during removal of sediment traps including filter specs, shall also be followed.
- 5.4 “In-water” constructions should be scheduled during the periods of reduced currents to avoid excessive sedimentation of surrounding ecosystem.
- 5.5 Staging of required vegetation clearance is recommended so that cleared sections are re-vegetated while some sections remain with its natural vegetation to minimize the proportion which has been cleared to be easily eroded.
- 5.6 Where the only access to the construction site is by means of water, a temporary stable pontoon type pier should be constructed that would allow access by barge to offload equipment and material.
- 5.7 Where access is by means of land requiring the construction of a new access road, the environmental issues associated with the impacts of this road will be addressed in the project proposal submitted to DOE for its consideration.

- 5.8 The placement of the structure relative to the sun, as well as the height and width of the deck of overwater structures, is an important factor to consider during design and construction.
- 5.9 Only pole piling will be allowed. The number and diameter of pilings must be minimized, as appropriate, without reducing structural integrity.
- 5.10 The placement of pilings should be properly evaluated to reduce impacts on water current and ecology of the area, while still permitting the requisite structural integrity of the overwater structure.
- 3.11 No construction material, except piles and other support structures, will be permitted to enter the waterway during construction.
- 5.12 Any stain, paint or preservative to be applied should be completely dried/ cured on land before installation. Notwithstanding this, the use of stains and paints are strongly discouraged on overwater structures.
- 5.13 Painting underwater surfaces should be avoided, since its thought that overwater structures “provide additional substrate for the growth of fouling communities.” Painting of underwater surfaces encourages such growth.
- 5.14 Piles near coral and other sensitive ecosystems shall not be installed by means of hydraulic water jets. Low-pressure jettying techniques may be permitted in other coastal areas, as well as auger drills for areas having shallow bedrock.
- 5.15 The installation of piers near coral and other sensitive ecosystems shall utilize silt curtains around the work area to lessen the potential impact of sedimentation on these ecosystems.
- 5.16 Any pier or ramp connecting the overwater structure will be elevated above the beach crest and be no wider than eight (8) feet.
- 5.17 For the purposes of maintaining exclusiveness and a managed environment, a maximum size for the different types of overwater structures is being established. These are:
1. Cabanas/ Dwelling - 750 square feet maximum
 2. Restaurant - 1,500 square feet maximum
 3. Bar and Dive Shop - 500 square feet maximum

6.0 SHADING

Light is very important in the life of organisms. Overwater structures shade aquatic habitat and limit ambient light penetration, affecting macrophyte and phytoplankton primary production. This shading could result in a decreased survival rate, or at least promote behavioral changes in various components of the biological community. Lighting associated with these structures may possibly alter fish species behavior, posing increased risk of predation and causing disruption of fish migration patterns.

- 6.1 In instances where structures wider than 6 feet are constructed above mangroves or other aquatic vegetation, they should be required to include grating or translucent panels such that light under the structure is at least 60% of ambient open water light.
- 6.2 Moorage piers and boats will be spaced so that the shadow cast by the boat/pier combination will not reduce light by more than 60% of ambient.
- 6.3 Boats will be moored in water deep enough so that they never ground out or prop wash the bed in the moorage or channel area.

7.0 LIGHTING

The purpose of these guidelines is to control beach front lighting and lighting of overwater structures, in order to protect nesting of sea turtles and their hatchlings. For these purposes:

- 7.1 Exterior light fixtures shall be designed and positioned so that: point source of light, or any reflective surface of the light fixture, is not directly visible from the beach.
- 7.2 Areas in front of the beach dune shall not be directly or indirectly illuminated.
- 7.3 Exterior light fixtures with direct line sight of the beach should have their bulbs and non-reflective interior surface completely shielded down light or must be recessed and be of low wattage (≤ 50 Watts), and yellow “bug” type lights or red lights.
- 7.4 All fixtures must be mounted as low in elevation as possible through use of low mounted wall fixtures, low bollards and ground level fixtures.
- 7.5 Floodlights, up-lights or spotlights that are directly visible from the beach shall not be used.
- 7.6 Exterior light used expressly for safety or security purposes shall be limited to the minimum number and configuration required to achieve their functional roles.

- 7.7 The use of motion detection that keep lights off, except when approached, and switch lights “on” for the minimum duration possible are preferred.
- 7.8 Only low intensity lighting shall be used in parking areas within line of sight of the beach, and these lights must be positioned or shield so that the light is cast downwards.
- 7.9 Tinted glass shall be installed on all windows and glass doors on structures within the line of sight of the beach.

8.0 POLLUTION CONTROL AND PREVENTION

Construction Phase

- 8.1 During construction, all construction waste that could pollute ground and water resources must be properly disposed in an approved manner.
- 8.1 During construction work the workers’ camp must provide portable latrines, they are to be routinely emptied and waste disposed of properly. Failure to comply will result in fines and/or cancellation of permit(s).
- 8.3 Provided that the area is suitable for gray water disposal, camp for construction workers must ensure that gray water is properly disposed through leach fields built in areas containing vegetation to allow for uptake of nutrient.
- 8.4 During the construction phase, all dry organic waste may be composted, mulched, or burnt in metal containers, and ash collected and properly disposed.
- 8.5 Noise from construction must be maintained to a minimum and in areas where noise may produce a nuisance and be disruptive to the fauna of the area work must be scheduled to cause the least disturbance possible.
- 8.6 No waste material will be allowed to enter any water body during construction and removal of temporary structures.

Operational Phase

- 8.7 Sewage from the facility shall be treated by means of a wastewater treatment system which meets or exceed the following standards: biological oxygen demand less than 20 mg/l; Ammonia nitrogen 2-4 mg/l, total coliforms 50 /100ml MPN and suspended solids 20 mg/l.
- 8.8 Only vacuum sewer line systems will be permitted to minimize impacts associated with leaks.

- 8.9 Treated effluent shall be discharged away from beaches and recreational waters by means of leach fields, utilizing vegetation having high evapo-transpiration rate for the uptake of nutrients, or through deep well injections with the prior approval of DOE.
- 8.10 The siting of the sewage treatment system must be located on-land in an area designated for utilities that is removed from the main facility areas and located down wind, where issues associated with odor and noise would be minimized.
- 8.11 Gray-water may be recycled or used for garden and landscape irrigation. Excess gray-water may be discharged through the leach field system or used to flush toilets only.
- 8.12 Only phosphate free, biodegradable detergents, degreasers and cleaners shall be used within the over the water structures.
- 8.13 All facilities having overwater structures are required to have a recycling program for metal cans, glass and plastic bottles. For this purpose these facilities will be required to incorporate incinerators, bottle crusher or compactors to their operations.
- 8.14 Decaying organic matter such as wooden piles and board walk lumber may promote a reduction in dissolved oxygen in the overlying water and the generation of toxic sulfide compounds affecting benthic communities. Therefore, these items must be properly disposed of on-land.
- 8.15 All vessels docking within the facility having over water structure will be prohibited from discharging bilge water or any types of liquid waste while docked within the facility.

9.0 ENERGY GENERATION

- 9.1 All facilities currently having or proposing to have overwater structures, and which are unable to access the national energy grid, will be required to meet up to 50% of their electrical demand by means of renewable energy such as solar, wind etc.
- 9.2 Thermal (diesel/gas) generators will be permitted only as backup or for a maximum of 50% energy needs.

10.0 BOATING ACTIVITIES

- 10.1 Fuel Dispensing Services, Boat Storage and Boating Activities are strictly prohibited on structures associated with Over Water Structures.

11.0 SITE INSPECTION/MONITORING

- 11.1 Existing shoreline conditions (e.g., riparian and shallow-water) must be documented by videotaping and properly measured by the developer prior to construction of overwater structures. This will facilitate detection of impacts on shoreline and assist in determining effectiveness of mitigation measures being implemented.
- 11.2 A post-installation monitoring program by the developer shall be required to confirm whether mitigation measures are achieving intended objectives and not resulting in unacceptable impact.
- 11.3 Monitoring of the installation and operation of an overwater structure should include monthly site inspection during construction phase by the relevant building authorities and bi-annual site inspection by a team consisting of key agencies such as the DOE, Fisheries Department, Forest Department, Department of Lands and Surveys, and Coastal Zone Management Authority, Port Authority, Belize Tourism Board, etc.
- 11.4 A Monitoring Consultant or Environmental Site Supervisor will be required during the installation/ construction of any overwater structures.
- 11.5 The Monitoring Consultant or Environmental Site Supervisor must be funded by, but independent of, the applicant/developer, and there must not be any conflict of interest.
- 11.6 All incremental costs associated with the environmental monitoring by the key government agencies shall be borne by the applicant/developer at a level established by the Department of the Environment.

12.0 SAFETY

- 12.1 The applicant or owner of facility, his assigned or agent is responsible for ensuring that they take all appropriate measures to address the safety of life and property of its employees and guests in accordance with applicable laws.

13.0 PUBLIC AWARENESS AND ENVIRONMENTAL EDUCATION

- 13.1 Educational Signs to sensitize the public about pollution and its prevention must be posted and maintained on permanent signs in conspicuous areas.
- 13.2 Signs need to be simple and easily understandable to the general public.

14. GENERAL CRITERIA

- 14.1 The construction of Overwater Structures in coastal Urban Areas (Corozal Town, Belize City, Dangriga Town, Punta Gorda, San Pedro East Coast, Caye Caulker East Coast, St. George's Caye East Coast and Placencia East Coast) will not be allowed/ permitted. Where extreme/vital need arises, proper justification for such an individual case will need to have been legislated for within Local Master Plans, must be low density (not more than 10 boat slips or 4,000 square foot), and will also be required to first have the written approval of the Local Planning Authority or Local Government, following a public consultation. This must be complied with before proceeding to obtaining the pertinent permits as specified in Guideline 1.1 below. These permits shall not be issued for a project within the above-mentioned urban areas unless it has written approvals mentioned above.
- 14.2 No overwater structures will be allowed to be built over any section of the Belize Barrier Reef or other coral reef structure; and, Over Water structures will be severely restricted within the Marine Protected Areas, where each proposal will be reviewed on a case by case basis.
- 14.3 All overwater structures will be required to conform to the highest environmental standards for the prevention of pollution and are intended to be a high end facility.
- 14.4 Only persons owning (titled) sea-frontage properties shall be permitted to construct overwater structures.
- 14.5 To discourage proposals aimed at compensating for 'land shortage,' all proponents will be required to leave as land reserve/open space, an area of land equivalent to or bigger than the area of the footprint of the overwater structures to be located on the sea frontage of the property.
- 14.6 The impact of habitat loss has been identified as one of the greatest threats to fisheries resources. Permitting agency should **implement a policy of no-net-loss** of certain critical habitats, such as riparian and littoral forests, fringing mangroves, corals and sea-grass beds, **and policies intended to prevent the introduction or spread of exotic species and the over-exploitation of fishery resources.** Thus, habitat restoration measures (either onsite or offsite and either in-kind or out-of-kind, of an area equivalent to the area disturbed or altered) should be used to compensate for unavoidable habitat impacts at the expense of the developer.
- 14.7 To lessen the visual impact on the natural landscape, a maximum of 20% of the total **length** of sea frontage would be permitted for overwater structures; and, the footprint of the overwater structures **area** shall not exceed 20% of the developer's property.
- 14.8 No person will be allowed ownership of the land (sea bed) where overwater structures are being constructed, but would be permitted to have long-term licenses or

concessions. The length of the licenses would not exceed 25 years. The owner(s) will have the option to apply for renewal of the license. Should the owner(s) want out of the license and has no intention of transferring to a third party or continue the operation of such overwater structure, then he will be responsible for the proper dismantling of such overwater structures.

- 14.9 An annual rental fee equivalent to 5% of the market value for an equivalent area of beachfront property shall be paid to the Department prior to starting operations of these overwater structures. Failure to pay the annual fee shall be grounds for revocation of the license and use of these structures.
- 14.10 No overwater private dwellings will be allowed/ permitted.
- 14.11 In accordance with the license conditions, the direct access to the overwater structure itself may be restricted. For example, a gate may be placed on the connecting deck at a distance no greater than 10 feet from the structure only for security purposes, and public access to the remainder of the dock during emergency situations and at reasonable time shall be permitted. Failure to permit public access as stipulated in the license shall be grounds for revocation of the license.
- 14.12 All overwater structures will be required to be kept in good repair, and ensure its proper maintenance at all times by the developer.
- 14.13 In order to maintain the exclusivity, and hence the uniqueness and strength of the niche market being targeted, the numbers of overwater structures allowed for any individual project will be kept at a minimum and properly managed by the Department of the Environment.
- 14.14 Proper signage approved by the relevant building authorities, such as Lands & Survey Department, DOE, Port Authority) shall be posted on each structure within two months of construction to clearly define public and private access areas for each structure and other supporting structures. Failure to comply with this condition shall be grounds for revocation of the license.