



## Summary of Coral Relocation Considerations and Recommendations

This document refers specifically to the Benthic Habitat Characterization Survey for the George Town Harbour Berthing Program Executive Summary: CSA-WIM-FL-15-1004-2890-01-ES-01-FIN and discusses the results of this survey in conjunction with the proposed VERDANT ISLES PORT PARTNERS (VIPP) proposals and presentations on the George Town Harbour (GTH) dock/pier project.

In my review of the CSA Executive Summary, and its relation to the planning for coral relocation activity (which is currently a very broad proposal that has been proposed by the VIPP group to date), I would like to highlight the following and make a few recommendations:

- 1) The CSA was contracted to conduct a Benthic Habitat Characterization Survey that included both ecological and geophysical surveys to support the proposed dredging and land reclamation in GTH.

Therefore, the CSA Benthic Habitat Survey was not a survey to assess the potential for relocation and therefore a comprehensive survey must still be planned. The CSA survey should not be used to plan for relocation. The survey did not evaluate the population of benthic organisms for relocation potential. Without a survey that is specific to address the potential for relocation we cannot evaluate the potential for success that is being promoted by the VIPP. Relocation of this level, as indicated in a Cayman Compass Article (dated 18<sup>th</sup> November 2019) requires geologists, ecologists, engineers, local authorities who are experts in the ecology of the local reefs and surveyors inputting to create a robust overview of the potential successes and threats to the environment, based on empirical evidence and data. <https://www.caymancompass.com/2019/11/18/scientists-urge-caution-over-coral-relocation/>

The level of work that is required to assess the potential for successful relocation has therefore not been completed in the CSA study. While the group has indicated that a detailed survey, map, geotechnical workup will need to be completed, we believe this level of work should take place before the referendum. Additionally, the risks associated with relocation as outlined in the EIA must be fully addressed with a specific mitigation plan to recompense in the event of failure. We should have guarantees that these issues are addressed if a referendum is passed, as our concerns to date have not been responded to with concrete plans/outcomes by the VIPP team. Therefore, with much of this survey and planning work not done, it is impossible to evaluate the relocation plan and whether using \$10M of the funds for the project will lead to success. We believe a better plan to evaluate whether the assertions regarding relocation are remotely possible, is imperative.

- 2) There are several issues and published misrepresentations that have led us to our current concerns with the project, including: the assertion of no net biodiversity loss; the assumption of success in relocating 5 acres of corals; and the proposed capabilities of the project to restore and regrow our reef via microfragmenting, which has never been done before on this scale and with this level of ecosystem services at stake.



We believe a more comprehensive study of the coral reef donor and recipient sites must be completed prior to a decision on whether relocation, as they have suggested, will be successful. At this point, there is not enough data and no convincing plans have been provided for the relocation program. We outline a few additional reasons that the EIA must be updated by the VIPP with more current knowledge, additional planning, and with a focus on addressing the many critical concerns already outlined in the EIA. Here are a few discrepancies that suggest the group has important items to address before being allowed to proceed and before voters can assess the potential great harm or great benefit of this project:

- a. In the interview in the Cayman Compass with one of the world's leading coral restoration specialist (18/11/2019), we learned that it will take 30-50 divers, 9 months working 7 days a week to move the corals. The current group indicated a smaller team (20) and a shorter duration (4-5 mo) suggesting they have not assessed the full scope of what they will be required to do. We believe this is because the VIPP group does not have all of the data they will require to proceed. However, with additional data, they will and can provide a more comprehensive plan. This will not guarantee success, but will help better understand the plan as well as clarify the potential sacrificed to biodiversity and functional and ecological connectivity of the reefs.
- b. As of November, VIPP have broadly categorized stony corals and group them into rare and abundant corals based on their prevalence, then indicate they will move 100% of the rare corals and 30% of the abundant corals over a certain size. It should be noted that the group proposes **no net loss to biological diversity**. This is one of several major flaws in the VIPP group plans that could result in loss of biodiversity and loss in ecological function of our reefs along this critically unique reef system (which extend from the south end of Seven mile beach all the way to the south end of the Island, beyond Eden Rock).
- c. The VIPP group assert that they will move corals over a certain size. A number of coral species that are significant parts of the biological diversity of a reef never get larger than 10cm. Neither the CSA, nor the VIPP group have completed a comprehensive survey to define the coral populations specifically for relocation as the plans have changed. Again, broad assumptions of our coral community such as moving only corals over a certain size can be devastating the biological diversity and connectivity between the reef along the entire south west reef area (35+Acres).
- d. The data that VIPP has been presenting in public forums erroneously indicates that there are 28 species of corals in Cayman when there are 60 species in the Cayman Islands (and throughout most of the Caribbean). This clearly indicates that there is a need for the VIPP team to improve their understanding of our reefs.



- 3) Public presentations with assertions about the success of Polaris scientists restoring the West Bay reef on Grand Cayman have led to enormous concern about the “context of success” when discussing restoration/relocation activity. Polaris have pointed to successful restoration activity as evidence to support the dock project on GTH, citing projects where they know that very little of the destroyed reef could be restored - as evidence of success. Regarding the West Bay restoration site, only a small percentage of corals could be recovered and even though this restoration was successful, it was a very limited area. Overall, the site sited for restoration success was wrecked and even with their restoration efforts remained futile with the lowest coral cover (1.8%) that can be found. For laypeople, who do not know or understand the context of the measurements of success, this is misleading.
  - a. Relocation plans need to be clear and transparent so the residents of the Cayman Islands fully understand the parameters for risk to the environment. Will they sacrifice 69% of the corals because the 100% of the rare corals probably make up only 1 % of the total population? They clearly indicate that they are relocating only 30% of the abundant corals. The ‘abundan’t corals happened to be one of the more threatened species (*Orbicella*) and any small corals (less that 25cm) that are sacrificed that are this species, for example, must be protected.
- 4) Whether the group has experience in successful large-scale relocation is still in question. Of great concern is that the proposed destination sites that are being proposed as recipient sites for the relocated corals are risky. It is not clear as to whether they have considered significant factors that might lead to success or failure.
  - a. For example, one site is adjacent to where turbidity from dredging will be high and therefore they have selected a second site which is located near reefs that appear to already be under stress. While the structure at the first site is comparable to the reef structures in GTH, the group is already questioning their capacity to survive.
  - b. The GTH reefs are unique because they are located where the geologic structures are rugose. A complex network of caverns and cavities formed by past sea level events occurs. It is doubtful that a similar recipient site on the west side of the island, that is far enough away from the turbidity plumes, exist. However, further work needs to define criteria that have led to successful relocation in the region. The criteria for the recipient sites should be rigorously evaluated and approved by local experts. Before the referendum, we suggest that sites have comprehensive surveys of the geology, fish and benthic communities, as well as models to understanding current hydrodynamics before being chosen.
  - c. The second biggest threat to the coral reef ecosystem is mortality after a \$10M relocation program. Therefore, before the team continues to make the assertions that they can succeed in relocation, it is incumbent on the experts to provide a comprehensive plan that is reviewed and approved by our own experts who cumulatively have well over 100 years of training and expertise in the Cayman Islands (scientists from the DOE and scientists who have worked with the



DOE in the past on similar projects). An investment in the pre-planning to reduce the risk of losing the GTH corals is needed.

- d. The VIPP group has advocated that they would never go ahead if they thought they were going to harm our reefs or beaches. First, they should be willing to put in place an insurance plan to guarantee that they will not harm our reefs. The insurance plan would compensate the Cayman Islands after they destroy the GTH reefs if the relocation fails within the term of the loan payoff. Second, they should be willing to invest in long term monitoring of the relocation site with annual reports to the government along with monetary restitutions if the reefs begin to fail.

A handwritten signature in black ink that reads 'Carrie Manfrino'.

Carrie Manfrino, PhD

President