ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

PROPOSED DEVELOPMENT

ARIA SEYCHELLES

ESIA REPORT VOLUME 1

ECO-SOL
Ecological solutions for a sustainable tomorrow

PREPARED BY: ECO SOL CONSULTING LTD

AU CAP | MAHE | SEYCHELLES

(248) 2723222 | NIMHAN158@GMAIL.COM

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Rev. N	Rev. Date	Content	Prep/Rev by:	Released by:	Signature
1	11.07.25	Development of Aria Seychelles Hotel Project	Mr. Nimhan Senaratne		
	11.07.25		Mr. Sanjay Maniku		

Table 1.0: Documentation Checks

EXECUTIVE SUMMARY

PROJECT SITE AND LOCATION

Aria Seychelles is set to be a contemporary, 75-room, entry-level 5-star beach hotel located on the stunning Beau Vallon Bay, the prime beach on Mahé. Designed to meet international standards, Aria will offer guests exceptional facilities and amenities tailored to enhance their experience. A particular emphasis will be placed on accommodating the needs of families and multi-generational travelers, while also fostering a connection with the local community, ensuring that both residents and visitors can enjoy the hotel's offerings.

It is envisaged that Aria will be a vibrant focal point for the surrounding area, featuring innovative food and beverage options, entertainment, retail, and wellness facilities that will elevate the entire Beau Vallon region.

Architecturally, Aria will showcase a modern, organic design that harmonizes with the natural contours of the site, incorporating cutting-edge sustainable technologies to minimize its ecological footprint.

PROJECT COMPONENTS

The existing site plan and updated masterplan is depicted in the next few pages:

Fig 1.0: Project Location

Zoom into Proposed Location

Fig 2.0: Zoomed in Plots

Parcel Count for the Porject is Listed Beow:

Parcel Number	Size Sqm
V8331	4102
V9062	199
V8736	1732
V8735	103
V8374	115
V8739	169
V8738	88
V8737	1404
V8742	4180
V8741	155
V8740	348
Total Land Area	**12595**

The GoS - Right of Access Parcel V15897 shall be used to Construct the New Access Road as per site plan

Table 2.0: Tabulated Land plots and Areas

Site Plan

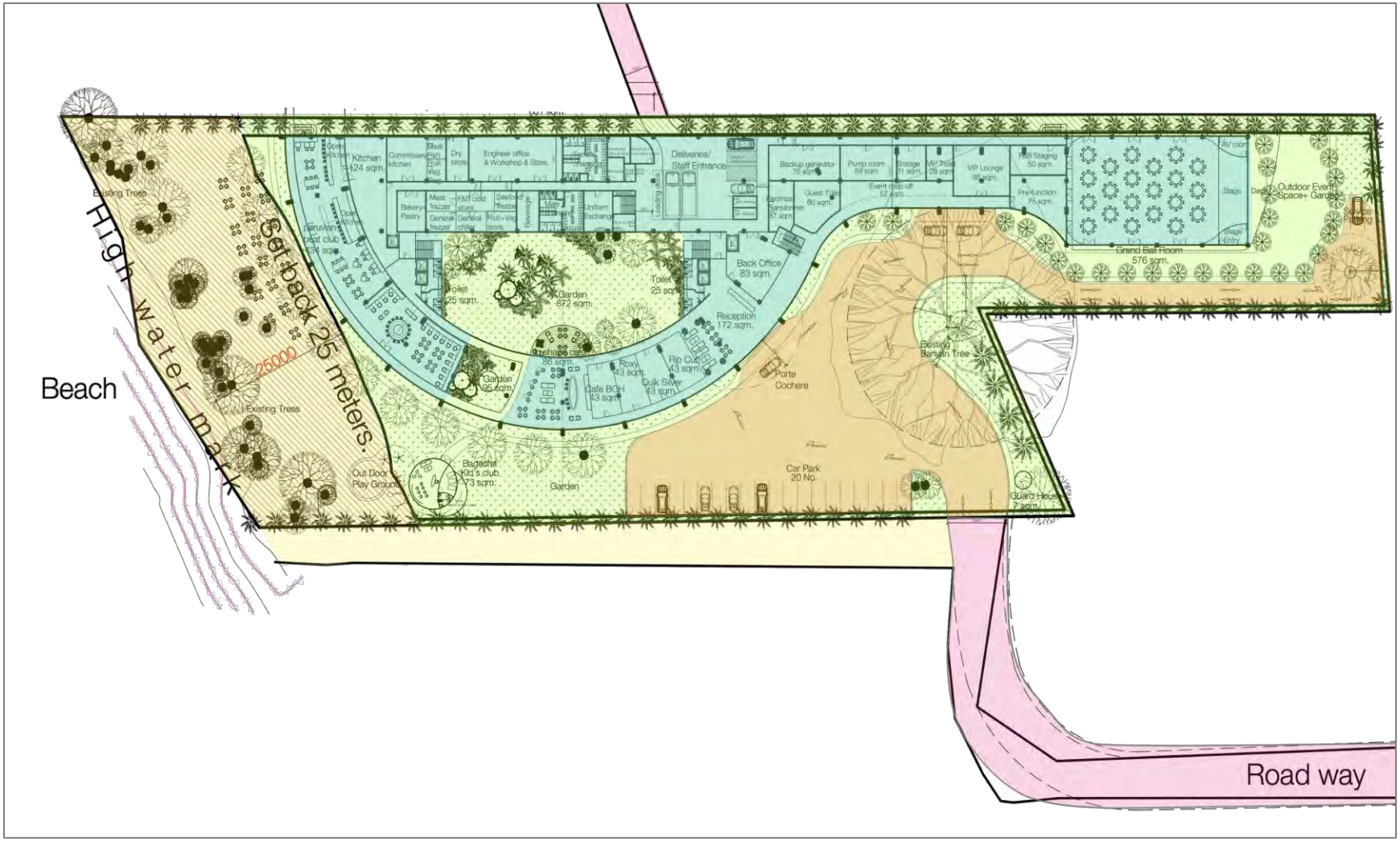


Fig 3.0: Site Plan

Room Configuration

Room Components	Net Area Requirements
20 Deluxe Rooms	40 sqm
35 Superior Rooms	50 sqm
12 Family Rooms	70 sqm
5 One-Bedroom Suites	80 sqm
2 2-bedroom Suites	100 sqm
1 Presidential Suite	150 sqm

Table 3.0: Tabulated Room Configuration

PUBLIC IMPACT ASSESSMENT

Meaningful public participation entails that consultation processes are open, transparent, inclusive, and conducted in a timely manner. Due to the Class I classification of the Environmental Impact Assessment (EIA), initial consultations were held with key government stakeholders, followed by engagement with the general public and communities most affected by the identified impacts. A hybrid scoping meeting took place on March 5, 2025, at 9:00 AM, attended by over 20 participants, including the appointed environmental consultants, Eco Sol. This was succeeded by a site visit with government officials.

During the meeting, relevant authorities raised several important recommendations and concerns. The need to reroute a major sewer line running through the project site and recommended a dedicated access route to the existing pump station was emphasized. The Ministry of Agriculture, Climate Change and Environment (MACCE) stressed the importance of detailed assessments to address drainage and flood mitigation, given the site's position between two hotels and surrounding waterlogged areas and proposed a 4-6 weeks terrapin survey prior to road construction.

Additional infrastructure recommendations included improving lifeguard facilities which are currently encroached on the property. The developers displayed a show of good faith by willingness to integrate and upgrade the existing lifeguard facilities. Mitigation measures for the construction phase were outlined, including noise and dust control, public beach access maintenance, and proper drainage systems.

A public meeting for the project was held on March 27, 2025, starting at 2:30 PM, which also saw participation from more than 20 individuals, including representatives from Eco Sol, the client, the project architect, and Universal Enterprises and residents of the area. During the meeting, several environmental, infrastructural, and community-related concerns were raised. Key topics included proximity to the PUC pump station and the risk of flooding, with the developer confirming plans to reroute the existing sewer line and implement a comprehensive flood mitigation design. This includes wetland restoration, sedimentation ponds, and improved drainage infrastructure. Parking provisions were also addressed, with the hotel set to include 70 parking spaces. Concerns about constructing underground parking in a flood-prone area were countered with assurances of pumps, sumps, and elevation to prevent water ingress. Moreover, similar underground areas have been done in nearby Story Hotel with same wetlands proximity.

Further discussion focused on public beach access, compliance with the 25-meter coastal setback, and community integration. Developers reaffirmed that access to the beach would remain open and that the hotel would be inclusive of the local community, featuring public spaces and cultural engagement initiatives. Concerns about the degradation of nearby wetlands and broader environmental impacts were acknowledged, with restoration efforts contingent upon regulatory approvals.

Community scoping exercises for the project were conducted to capture a broad range of views. Establishments within the identified impact area were categorized based on proximity to site, highlighting key establishments of social significance, such as residences, tourism establishments and public services. Special attention was given to those closest to the project site. During the scoping sessions, stakeholders received an overview of the proposed project and were invited to share their opinions. Stakeholders expressed concerns about noise, vibration, and dust, recommending delayed construction start times and dust control measures. Flooding risks, and the impact of pipeline rerouting on existing infrastructure were also highlighted, along with calls for clear protocols during construction. Overall, support was shown for the project, with interest in benefitting from access as well as amenities and facilities to be provided by the hotel.

SUMMARY OF CONSTRUCTION

The ARIA Hotel, a four-storey development in Seychelles, will be constructed in seven carefully phased stages to ensure quality, safety, and environmental compliance. The Pre-Construction Phase includes detailed site surveys, geotechnical assessments, and site mobilization, including fencing, site offices, utility setup, and a logistics plan.

Starting with Road Access Construction as part of the recommendations by Government, Excavation and Basement Works will follow, involving groundwater control, bulk excavation, raft foundation construction, and installation of underground services. The Superstructure Works entail building a reinforced concrete frame with sequential slab casting, stair and lift shaft construction, and ramps.

MEP First-Fix Installation occurs in parallel, embedding conduits and risers during structural work for efficient system integration. The Building Envelope and Internal Finishes phase includes constructing external walls, installing glazing and cladding, and completing all internal partitions, flooring, ceilings, doors, and second-fix MEP components. External Works and Landscaping involve creating hardscape features, planting, and completing utility connections. Finally, the Testing, Commissioning & Handover stage ensures all systems are inspected,

SUMMARY OF ENVIRONMENTAL STUDIES

Biodiversity and Vegetation Assessment

Detailed vegetation assessments were conducted on the 10th January and 13th February 2025 to map and identify the principal vegetation types and habitats that occur inside the land parcels consisting of V8331, V8742, V9062, V8737 and V8736 that will form part of the Aria Hotel project site at Beau Vallon. The vegetation assessments were conducted inside the five land-parcels that will accommodate the main hotel building and its associated infrastructures. No developments will be allowed inside land-parcels V8735, V8734, V8738, V8739, V8740 and V8741 which falls inside the high-water mark and also inside the 25m coastal setback line where no major development projects are allowed due to the sensitive nature of the native coastal belt vegetation that provides the beach front protection from coastal erosion and are vital habitats for a number of land-birds and seabird species. No developments will also be undertaken inside land-parcels V8745, V8744 and V15897, which forms part of a 1 metre road way setback between the project site boundary.

A detailed fauna survey concentrating on the absence/presence of the critically endangered Seychelles terrapins were also conducted for a period of four weeks starting from the 12th March 2025 to 9th of April 2025 for Phase 1 of the monitoring surveys concentrating on the proposed road access that will pass alongside the wetland areas and serve as a transport link to the proposed Aria project. The biodiversity assessments concentrating on the critically endangered Seychelles terrapins were conducted to provide the information needed to assess and record the biological conditions on site and identify any potential impacts of the proposed road access construction and ways to mitigate these impacts. Furthermore, the biodiversity assessments conducted was aimed at providing baseline biodiversity data regarding the population status of the critically endangered Seychelles terrapin population in the specific proposed development areas inside the small wetland body that is located close to the Aria Hotel project site.

This Biodiversity and Vegetation assessment provides biodiversity data to facilitate informed decision-making, and for the planning of the future developments. The biodiversity assessment concentrating on the flora inside the five project plots that will form part of the proposed Aria Hotel construction areas, was also conducted to provide the information needed to assess and record the biological conditions on site and identify any potential impacts of the proposed development and ways to mitigate these impacts. The flora and fauna biodiversity assessments were conducted to provide the information needed to assess and record the biological conditions on site and identify any potential impacts of the proposed development and ways to mitigate these impacts.

Vegetation surveys inside the proposed Aria Hotel construction areas

The groups covered in this survey are mostly the vascular plants. Within these groups, all species listed as Key Biodiversity Area (KBA/rare species) in Seychelles and all endemic species were recorded. Exotic and invasive species were also listed. Data for characterizing and mapping different vegetation-types were also collected.

Field visits were undertaken throughout 10th January to 13th February 2025.

The Rapid Inventory method (Senterre et al., 2013) was used for the inventory in each different type of habitat. Each habitat-type was geo-referenced by taking a GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795).

Plant species and their abundance were estimated by collecting semi-quantitative data through the 5-levels system 'ROFCA' (i.e. R=Rare, O=Occasional, F=Frequent, C=Common, A=Abundant).

For the vegetation data collection and mapping exercise, explorations were done to identify and map the different vegetation-types within the proposed development zones by taking a GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795) was used to record waypoints for each vegetation-type. Vegetation-type classes were distinguished based on the universally accepted classification system of The Nature Conservancy–UNESCO (Grossman et al., 1998).

Data collected and analysis

The following data were collected:

i. Species inventory: Plant species presence and abundance (rare, frequent, occasional, common, abundant). Species status (endemic, indigenous, exotic).
ii. Dominant and rarest species.
iii. Vegetation-types (mixed forest, mostly native woodland, grassland etc.)

The data were analyzed using Microsoft Excel. All mapping was done using Quantum GIS 2.14.

Aquatic/wetland inventory

One specific wetland area which falls inside the V9559 plot and V15897 which will be traversed by the proposed road construction that will act as transport link to the main project site connecting to plot which falls within plots V8742, were surveyed for the presence/absence of terrapins during the month of March to April 2025 (Phase 1) for the terrapin surveys. The surveys were concentrated along these specific proposed development areas, with the trapping areas selected for accessibility and unhindered placement of the fish-traps inside these survey areas.

In order to estimate population sizes, a mark-recapture trapping system was used with baited modified fish-traps. The fish-traps were specifically built smaller than the normal commercial fish-traps due to the low-water level of the wetland which would have prevented the fish-trap entrance from being submerged completely if

the commercial fish-traps were used to allow the terrapins or other aquatic species from accessing the fish baits located inside the fish-traps. Each new location and movement of the fish-traps were recorded on a GPS for identification of the trap no. whenever fish or terrapins are caught. All this information was recorded on a map (Figure 1 & Figure 2). Raw chicken parts were used as bait in all the traps, with only terrapins and caught in the fish-traps. Traps were placed along the wetland banks, set approximately 5m. The trapped terrapins were sexed and examined for any obvious signs of damage, and all taxonomically useful external characteristics (Bour, 1983) were recorded to the nearest millimeter. Females have short tails, reaching forward to the suture between the 11th and 12th marginal, and a concave anal notch; whereas males have longer tailed, reaching to the 10th-11th marginal, and a straight sided anal notch. Individuals over 10cm straight carapace length could be sexed in this way, whereas those below this size cannot be sexed with confidence and are categorized as 'juveniles. The study sites were categorized as lowland habitat and categorized as open with no vegetation cover or invaded (covered by Bred Lanmar or other wetland plants such as water lettuce or water hyacinth). Any obvious pollution (e.g. rubbish and organic waste) was noted. Phase 1 of the study was undertaken in March and April 2025 which is considered the dry season in Seychelles. The four weeks of trappings for the Phase 1 surveys were intensive with traps re-baited every day with new baits.

Results

A total of 21 species: 19 plant species and 2 animal species were inventoried. This includes 5 native plant species and 16 exotic plant species (5 natives and 16 exotics in total). The 2 animal species were two species of endemic Seychelles terrapin species consisting of Black Mud terrapin P. castainoides and Yellow-Bellied Mud terrapin P. subniger.

Discussion & Conclusion

The proposed hotel development that forms part of the proposed Aria Hotel development at Beau Vallon, falls within areas that are dominated by mixture of exotic and native plant species consisting of Mango, Gliricidia, Zanblon, Albizia, Kasi, Calice Du Pape and Takamaka. The sensitive native coastal belt vegetation that is located within the 25m setback line and which acts a native coastal buffer zone, will not be touched or altered due to their sensitivity with regards to coastal zone protection from erosion and other ecological services that they offer. This native coastal belt is dominated by mature Takamaka and Badamier trees on the beach front, with Coconut and smaller Badamier trees located more inland.

Mitigation measures with regards to the protection of the wetland areas due to the proposed road construction activities, minimizing noise and dust via mitigation measures due to the increase in construction vehicles moving in and out of the active construction zone located inside the wetland areas found inside plot V9559 to ensure minimal noise and dust pollution will be put in place with regards to the proposed new road that will act as a link to the main hotel project plots consisting of V8331, V8742, V9062, V8737 and V8736. The results from our fauna survey in March and April 2025 has shown the presence of a small terrapin species consisting

of both the Black Mud terrapin Pelusios subniger and Yellow-Bellied Mud terrapin Pelusios castainoides that will be protected from the proposed road construction activities. A capture programme with fish-traps will be put in place 4-6 weeks before the commencement of the road construction works to capture all the terrapins and relocate them in a temporary enclosure for protection. After the road construction is finalized, the terrapins will be released back into the wetland. Mitigation measures consisting of the construction of a sedimentation pond before the outlet point of the drainage network that leads out to sea during heavy rainfall events will be vital to protect the beach front from sedimentation sludges and sediments during the proposed excavation works that will be vital for the road construction works. It is also important to address the issue of soil staining of the small road that starts from the V15898 private property and leads out onto the main road. The removal of loamy wetland soil with dumper trucks will lead to staining of the small road due to the water inside the soil. Road cleaning and maintenance should be addressed as this is a touristic area. In terms of suitable areas identified for the purposes of development, all the development zones mentioned are of low sensitivity in terms of rare and endemic plant and animal species, with the forest structure comprising of the upper, lower and ground cover all dominated by mostly exotic plant species.

In conclusion, the proposed Aria Hotel development project on plots V8331, V8742, V9062, V8737 and V8736will not damage the natural assets of the proposed development zones, which are mostly dominated by exotic trees consisting of Gliricidia, Zanblon, Albizia, Kasi and Calice Du Pape. Measures will be put in place to ensure that the environment is not polluted and that all terrestrial ecosystems will not be interfered with. The removal of all terrapin species present inside the small wetland bodies and relocation in a temporary enclosure for their protection will be undertaken 4-6 weeks before the commencement of the road construction works to ensure their safety. Appropriate mitigation measures will be put in place to ensure that the wetland, beach areas and the neighboring tourism establishments are protected from the proposed road construction works.

Summary of Hydrology

The Hydrology assessment covers the hydrology, hydraulics and storm water management survey component towards the arising from the proposed Aria Hotel at Beau Vallon. The main body of proposed project sits on 4 plots of land at Beau Vallon, being V8742, V8737, V8736 and V8331. The land plots are situated between the Coral Strand Hotel and Berjaya Beau Vallon Beach Resort, being within close proximity to the Beau Vallon Beach. The current plots of land are all vacant with minimal to medium vegetation overgrowth and no existing built infrastructures.

The proposal looks to build around the existing key natural features on the site such as the banyan tree, the wetland and the beach front, while at the same time look to enhance these features so that they bring maximum benefit to the hotel whilst at the same time preserve and enhance the natural state of these features. The project shall be an open-styled development with a large central garden to encourage the blending of the buildings with the natural environment.

It presents detailed analyses and recommendations towards an effective storm-water management viz. the proper channeling, evacuation and safe discharge of flow such that 1) the proposed development is not affected adversely by unprecedented flow of water either from foreign flow or incident rainfall and 2) the proposed development does not pose as a new environmental threat to adjacent plots and existing water bodies (wetland) in terms of storm water runoff either from covered surfaces or river/stream diversion. The baseline study also touches upon alternatives to management of local storm water runoff in the form of water harvesting and recycling.

Site Topography

Site topographical survey exercise reveals a very flat terrain throughout the area of development, with an average height of 2.4m above mean sea level. The area itself falls outside of any distinct main watershed. The area is generally void of any large boulders or protruding rock outcrops. The low lying nature of the site that forms the wetland, which means that vegetation matter and silt are also present, however, to a much lesser extent. The silt and decomposed vegetation matter forms a layer of loam soil, which discourages absorption of surface water. However, this soil type is mainly found within the wetland bed and close proximity to the wetland outlet channel.

The lack of a distinct slope within the area makes it unfavorable to propose lengthy open drainage systems. However, due to the close proximity of the site from the sea outfall, the evacuation of surface flows from the built areas can easily make use of this. The presence of the wetland is an added advantage in the proposal of surface flow evacuation system. As the aim of the development looks to enhance the existing water features on site, it is proposed that most of the surface flows within the area be fed into the wetland.

Site Vegetation

Two types of vegetation cover can be found on the site. The predominant vegetation types are mainly in the form of ground covers and ferns. The ground cover layer is dense and hampers the absorption of surface flow into the ground. However, this can easily be removed during project implementation to make way for construction. The ground cover is also found mainly within the bank of the wetland and channel outlet. To a lesser extent, the site consists of sparse trees which poses no significant influence on the hydrology of the area. The notable vegetation of course, is the existing banyan tree, which is situated on the edge of the wetland.

Existing Wetland

The main component of the flood mitigation measure for the Aria Hotel development comprises of the proper management of the existing wetland. The Existing wetland serves as the main water body within and adjacent to the Aria Hotel premises, stretching adjacent to the Berjaya Hotel and follows the natural profile of the land into the Aria Hotel site.

Detailed site investigations show that there are no significant overland flows feeding into the wetland. However, as with most coastal freshwater wetlands, the absence of a surface flow usually indicates underground flow feeding into the wetland. Due to the permanent nature of the wetland, it is assumed that the underground feeding flow is perennial and is very likely to be a branch of the overlying Sullivan River. There are no surface flow connections between the Sullivan River and this wetland.

The wetland also serves as a sink for excess water from incident rainfall as well as from nearby covered surfaces such as the Berjaya hotel parking area, being the closest covered surface to the wetland. A system of lined concrete drains (although currently in poor structural state) connects the Berjaya car park to the wetland.

The current state of the wetland is such that it is heavily vegetated and silted up, which is a significant factor in reducing the water retention capacity thereof. Any flood mitigation proposal in areas where wetlands a present, makes recommendations to maximize the water retention capacity of the wetland without affecting the current ecosystem balance therein.

As a result of the silt accumulation and other debris within the wetland, the other significant factor affecting the water retention capacity of the wetland is its loss of a defined edge/boundary. This is the case especially closer to the project site, where human activity, sediment deposition and over-vegetation has breached into the flood buffer zone of the wetland. The usual approach towards the re-defining of the boundary of the wetland is through the excavation for de-silting of the wetland, using de-silted material to form an earth bund around the bank thereof and re-enforcement of the bund through hard or soft engineering approaches, depending on the soil type.

Sea Outfall

Finally, the wetland outlet channel consists of an open-to-sea earth channel, discharging excess water from the wetland to the sea via a sandy beach front. As is the case with virtually all open channel to the sea in Seychelles, the issue of sand accumulation is prevalent within the channel. In cases where flow from these channels are not permanent, irregular or of small volume, the sand accumulation tends to overwhelm the flow of the channel, such that manual sand removal is required for the removal of the sand. In this case however, a delicate balance has been established between the rate of sand accumulation and the rate/volume of flow

within the wetland. This is due to many factors such as the location of the outlet being in a bay area with relatively low sand movement, the flow frequency and volume from the marsh and the angle of the mouth of the outlet in relation to the beach front. As such, any proposals towards the mitigation of sand movement within the channel should be minimal at most, in order not to disturb this delicate balance.

Influence of Upper Watersheds

The results of the watershed analysis indicate that most of the upper watersheds are discharged into a sea outfall by well-defined river channels. The main river channels that evacuates these watersheds are Mare Anglaise River, Sullivan River, Grand St. Louis River, Manmzel Anna River and Athanase River, all of which flows directly to the sea. The area of proposed development falls outside of the boundary of these watersheds and therefore the latter pose as no direct hydrological influence on the Aria Hotel development site. As a result, the proposal of flood mitigation measures for the proposed site shall not take into account the management of flows from these watersheds.

Recommendations

The proposed main entrance (guest) road to the Aria Hotel shall be connected to the main road at Beau Vallon and shall run parallel to the Berjaya Hotel main entrance road. The existing situation is such that water flows from the main road onto the access road of Berjaya hotel. This is due largely to 1) the main road camber towards that entrance and 2) the lack of a proper water capture system such a grille within that junction. As a result, there is water flow from the main road ending up into the Berjaya premises. It is foreseen that a similar scenario will occur with the new access guest road of Aria Hotel can result unless adequate mitigation measures for road surface runoff from the main road be introduced in that junction such as a grille system across the same.

The wetland pocket adjacent to Berjaya heavily vegetated and silted up. For optimal flow and water retention capacity, it is recommended that periodic de-silting and de-vegetation be carried out. The de-vegetation does not include the removal of large trees – rather low, bushy shrubs that hamper flow. All excavated material shall be utilized to form bunding of wetland bank for better delineating of wetland perimeter. There is a proposal for the developer to also adopt this wetland through a memorandum of understanding with the Seychelles Ministry of Environment. The proponent shall ensure periodic de-silting and de-vegetation of the same.

In regards to the wetland bank and outlet, it is proposed that a rock armouring system be constructed at the bank of the outlet to mitigate the onset of sand degradation and for optimal flow. No sand barrier system or engineered outlet system required as outlet is self-cleansing. As for the inland part of wetland channel itself, there is a need for widening, bank reinforcement and de-vegetation/cleaning. It is proposed that a 2m depth x 4m top width be adopted to match the width of the outlet.

In regards to the large Banyan Tree within wetland pocket adjacent to proposed Aria Hotel, this shall remain for added stability to wetland and for aesthetic purposes. The recommendation is to dredge and de-silt the wetland within this area and around the banyan tree and use excavated material as bunding. The rock armouring system proposed in the previous paragraph shall stretch all the way inland to the area around the banyan tree.

The existing road access serving as back of house entrance to proposed Aria Hotel is in adequate structural condition. However, it is proposed that a self-absorbent swale system be constructed adjacent to this road access to ensure proper evacuation of road surface runoff.

As for the existing concrete road access to Chez Nella Guesthouse, this consists of a proper roadside drainage. As such, no flow from this road surface is entering the wetland pocket at Aria Hotel. However, for optimal flow evacuation, it is proposed that a grille system be installed across the junction of this road to the Coco D'Or road. The proposal shall ensure that no surface flows from this road enters the Aria hotel premises as well as to maximize the efficiency of this drain. The proposal however should be a Government undertaking and not placed as Onus on Client given distance from Development.

Finally, the main road to Coco D'Or is seen lacking in roadside drainage on left side of road, even though the road cambers 2 ways. The lack of roadside drainage causes local ponding of water in the area, which can be an inconvenience for users of the back of house road of Aria hotel. A roadside drainage is being proposed to allow effective evacuation of the surface runoff of the road access to Chez Nella Guesthouse so that same does not influence the wetland at Aria Hotel. The proposal is within Government's jurisdiction.

Summary of MEP

The hotel's design adheres to internationally recognized standards to ensure efficiency, safety, and sustainability across all engineering disciplines. The HVAC system is designed per ASHRAE, SMACNA, AMCA, ANSI, and NFPA standards, ensuring thermal comfort (ASHRAE 55-2017) and indoor air quality (ASHRAE 62.1-2022). Energy efficiency is guided by ASHRAE 90.1 and local codes. Water systems follow IPC, ASPE, NSF, and OSHA standards, with cold water storage designed for one-day capacity (150 m^3) and hot water sized at 225 L/day per person for up to 112 guests.

The gravity-based drainage system connects to an STP, and fire protection complies with NFPA, ANSI, and UL standards, with a 285 m^3 fire water tank, fire pump, and integrated alarm system. Electrical design follows PUC, NEC, and IEC standards. Systems include surge protection, earthing, UPS for critical loads, and BMS integration for energy and maintenance efficiency. The lighting design meets CIBSE and IES guidelines.

The power infrastructure includes an 11kV/33kV medium voltage supply, 400/230V low voltage distribution, and a total demand load of 1,054 kVA, backed up by a 1,200 kVA generator and transformer. All systems are tailored for Seychelles' tropical climate and ensure long-term operational reliability and capacity for future growth.

Summary of Risk assessment

A comprehensive assessment of the key risks associated with the development of the Aria Hotel has been undertaken. The evaluation covers multiple domains including construction, environmental, and regulatory risks. Critical risks identified include delays in construction timelines due to potential contractor issues or supply chain disruptions, as well as dust and noise pollution. Environmental concerns, such as the impact on surrounding ecosystems were also flagged as significant. Additionally, reputational risks associated with public opposition or community relations were highlighted as areas requiring proactive stakeholder management.

Risks associated during construction were also examined, particularly relating to staffing, technology integration, and health and safety standards. The report emphasizes the importance of securing qualified personnel early, implementing robust property management systems, and ensuring adherence to industry health regulations to mitigate potential disruptions. Recommendations such as strong contractor oversight, and the establishment of a project risk register with regular monitoring to ensure effective risk mitigation throughout the project lifecycle are highlighted.

Key Risks observed, noted by Scoping exercises and as a result of field surveys are listed below:

1. Minor Wetlands Reclamation due to Road Access
2. Sedimentation potential from Wetlands Desilting and General Hotel construction
3. Disturbances to current Public Access to beach front
4. Creation of Positive Benefit through New Access Road and New Public Access to beach
5. Lowering Flood Risk by construction of connective wetlands channel and Drainage to sea
6. SignficnatWelthan d Employment Generation in a place currently overridden with petty crimes, drug abuse and other social ills

SUMMARY CONCLUSION

The construction of the Aria Hotel is not anticipated to result in any significant adverse environmental impacts, as the project proponent has committed to implementing a comprehensive set of mitigation measures identified by the ESIA consultant. These measures are designed to prevent and minimize potential negative effects on the surrounding environment and have been thoughtfully integrated into the project's planning and design.

To ensure the successful delivery and long-term sustainability of the project, continuous engagement with the district's local government, community stakeholders, and relevant regulatory authorities—particularly MACCE—will be essential throughout the implementation phase. Ongoing public sensitization efforts during construction will help to reduce social disruption, manage expectations, and minimize risks such as accidents or community grievances.

In light of the ESIA findings, the proposed Aria Project is deemed environmentally sound and socio-economically beneficial. The proponent has demonstrated a clear commitment to implementing all necessary mitigation measures, most of which are already embedded in the project design. On this basis, the project is deemed feasible, contingent upon full adherence to the Construction Environmental Management Plan (CEMP) and applicable national laws. With appropriate safeguards in place and residual risks reduced to acceptable levels, the project is expected to contribute positively to national development objectives, generate local employment, and stimulate economic activity in the region.

ACRONYMS

Abbreviation	Full title
CDB	Convention on Biological Diversity
CEMP	Construction Environmental Management Plan
DA	District Administration
EDGE	Evolutionary Distinct and Globally Endangered
E.I.A	Environmental Impact Assessment
E.S.I.A	Environmental and Social Impact Assessment
EAPS	Environmental Authorisations and Permits Section
EHS	Environment Health and Safety Guidelines
EMPS	Environmental Management Plan of Seychelles
EPA	Environment Protection Act
ISS	Integrated Safeguards System
LWMA	Landscape and Waste Management Agency
MACCE	Ministry of Agriculture, Environment and Climate Change
MHILT	Ministry of Habitat, Infrastructure and Land Transport
MLGYSC	Ministry of Local Government, Youth, Sports and Culture
NBS	National Bureau of Statistics
NCCS	National Climate Change Strategy
NSB	National Statistics Bureau
OS	Operational Safeguards
P.U.C	Public Utilities Corporation
PAPs	Project-Affected Persons
S.B.S	Seychelles Bureau of Standards
S.O.P	Standard Operating Procedures
SAA	Seychelles Agriculture Agency
SLTA	Seychelles Land Transport Agency
SPA	Seychelles Planning Authority
T.C.P.A	Town and Country Planning Act
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

ACKNOWLEDGEMENTS

Special thanks go to the Government of Seychelles, notably the Environment Impact Section and the associated environmental authorities for their guidance throughout the ESIA process and unfailing attendance at the scoping meetings.

We gratefully acknowledge the contributions of the project proponents for their appreciation of the findings of this ESIA and willingness to incorporate the latter into refined final designs to take the needs of the local terrain and community into consideration.

Eco-Sol and team demonstrated boundless passion for environmentally sustainable development by conducting numerous site visits, scoping exercises and providing high end quality surveys.

1. INTRODUCTION

1.1 OVERVIEW

Aria Seychelles will be a modern 75-room, entry-level 5-star beach hotel designed to meet international standards. Targeting families and multi-generational travelers, it will serve as a vibrant hub in the Beau Vallon area. The hotel will feature innovative dining, entertainment, retail, and wellness offerings aimed at enhancing both guest experiences and the surrounding community. Aria will feature a modern, organic architecture that flows with natural contours of the hotel site and incorporates the latest in sustainable technologies to reduce its ecological footprint.

1.2 PROJECT OBJECTIVES AND PURPOSE

The primary objective of developing Aria Seychelles is to respond to the evolving dynamics of global tourism, where travellers increasingly seek well-rounded, experience-driven stays that combine quality accommodations with cultural and recreational depth. The Seychelles tourism market, while strong in the luxury segment, faces a gap in offerings that provide upscale comfort at a more accessible entry-level 5-star tier. Aria is positioned to fill this gap by delivering both elevated physical amenities and service standards.

Beyond addressing market needs, the hotel aims to become a focal point for the Beau Vallon area. By introducing innovative food & beverage concepts, curated entertainment, wellness facilities, and boutique retail, Aria will enhance the vibrancy of the area and uplift the surrounding community

Apart from this increased government revenue, the development promises the creation of employment with new personnel additions, wealth for the local community and an enhanced appeal for Seychelles as a tourism destination.

1.3 OBJECTIVE OF THE ESIA

The ESIA is aimed at assessing potential environmental and social impacts of developing and operating the project components and propose mitigation recommendations. Specifically, the study aims to:

- Conduct baseline environmental investigations at the project site
- Conduct consultations with relevant stakeholders, including potentially affected persons, to obtain their views and suggestions regarding the environmental and social impacts of the proposed project
- Propose mitigation measures to address potential negative impacts; and
- Prepare an EIA report incorporating results of environmental and social findings

The EIA process in the Seychelles is depicted the sketch of figure 1.3_1.

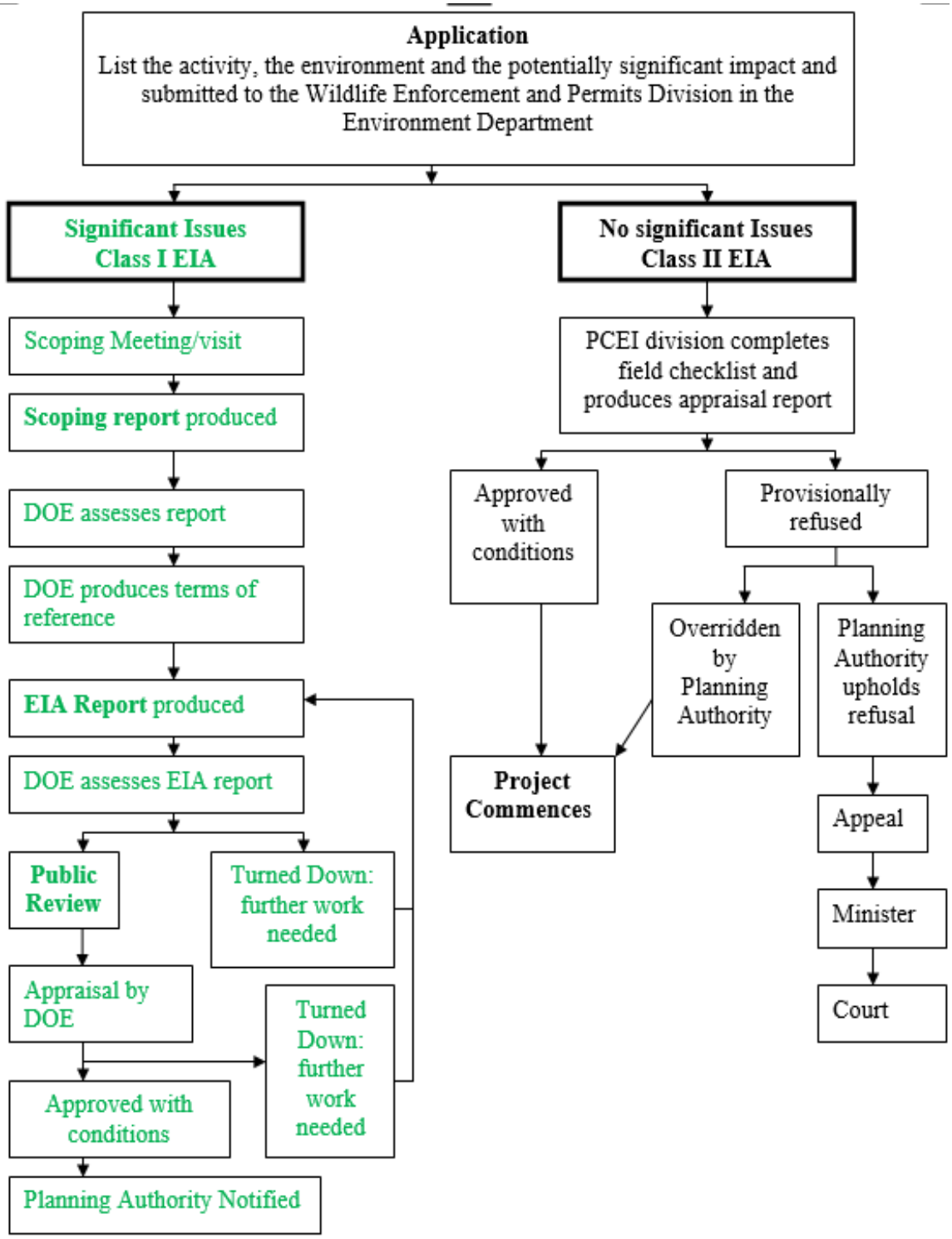


Fig 4.0: ESIA process in Seychelles

1.4 PROJECT TEAM

The ultimate beneficiary is Orient International Limited a Seychelles registered company. The shareholding structure designates Mr. Ahmed Umar Maniku and Mr. Ahemed Mahir as the beneficial owners, holding 99% and 1% of the shares respectively, both identified as Seychellois.

The architectural partner is Peter Harper with local Architects being Ah-time Architects. The appointed environmental consultants are local firm ECO-SOL Consulting.

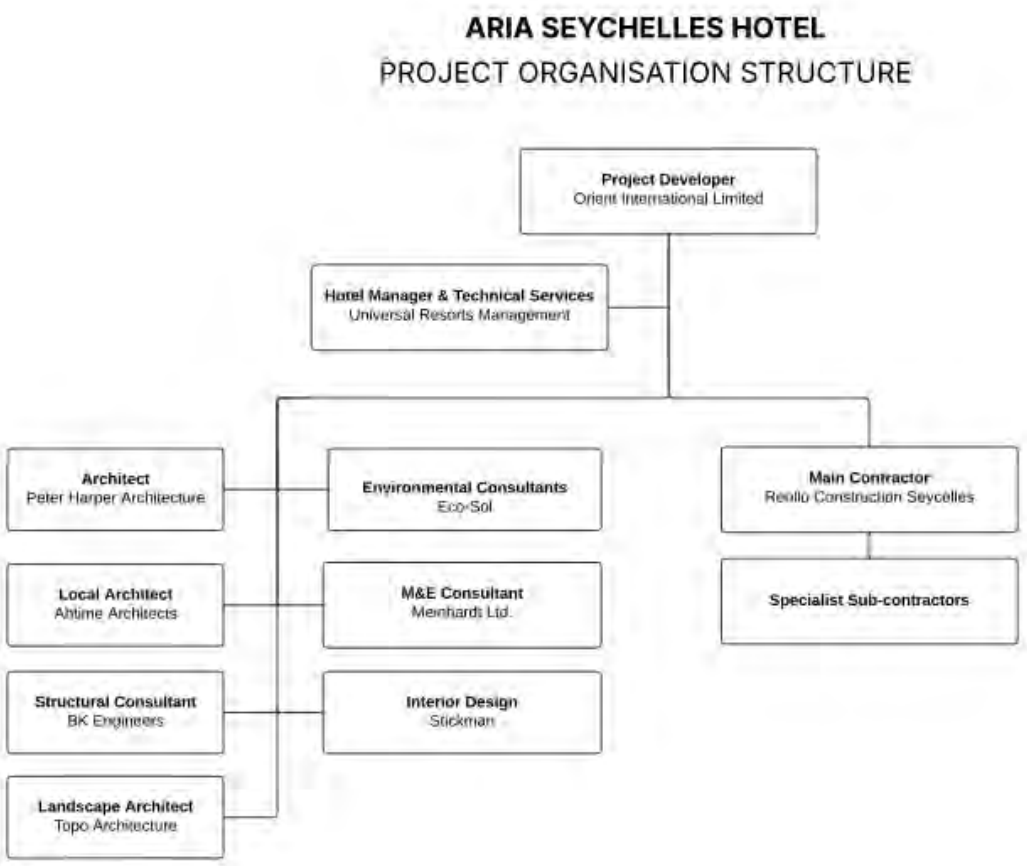


Fig 5.0: Project Team Organigram

2. LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

2.1. INTRODUCTION

The property owners remain determined to adhere to the legislative and policy driven frame works of the countries' national standards. This section examines the relevant legislation both locally and internationally, that pose relevant attributes to the setting of this Project. It provides a brief overview of the policy, legislative, and regulatory framework to which the proposed project should comply, key being the Environmental Protection Act (2016) and its associated regulations.

In Seychelles, key legislations governing the conduct of EIA is the Environmental Protection Act (2016). The Act charges the Ministry of Agriculture, Climate Change and Environment (MACCE) with responsibility to ensure compliance with the EIA process in planning and execution of projects.

2.2. PLAN AND POLICY FRAMEWORK

The Environmental Management Plan of Seychelles (EMPS)

The EMPS documents extensive issues raised on thematic zones of the country being Environment, Economic, Social and Political Sector's. This multi-disciplinary output has selected sustainable growth programs that are cross cutting in several sectors of growth in the Seychelles today. By designing and fitting the project components to its site, by having surveyed an understood the baseline environment related impacts and by having provided practical mitigation measure, the project seeks to align itself to a sustainable model showcasing the ability to integrate into its environment and position the core components of circulation/roads around the natural eco system it is located within.

Seychelles Sustainable Development Strategy (2024-2028)

The overall objective of the EMPS 1990-2000 and EMPS 2000-2010, was to promote, coordinate and integrate sustainable development in Seychelles. The need to transform the EMPS into a strategy for national sustainable development is of importance and merit. This is particularly crucial as many of the issues tackled in the previous two EMPS's are closely linked to development and social issues. There is also the need to cater for the increasing complexity of ongoing and emerging environmental concerns and threats. The institutional dimension of the EMPS also needed to shift from being seen as exclusively an environmental matter to become a national matter of prime importance for the future prosperity and security of the people. The rationale for shifting from an environment plan to a Sustainable Development Strategy is derived from extensive multi-stakeholder consultations associated with the review of the EMPS 2000-2010, and consultations in preparation for this new plan. Sustainable development principles form a core part of the new strategic plan, which should be reflected in the vision and overall objective of the new strategy and plan. In 2024, the revised strategy was launched, built upon a foundation of sustainable development-where stakeholders note is one not only environmentally responsible but also economically viable and socially equitable.

2.3. LEGAL FRAMEWORK AND REGULATORY STANDARDS

Seychelles Constitution of the Third Republic (1993), Cap 42

Article 30 of Constitution of the Third Republic (1993), Chapter 42

The State recognizes the right of every person to live in and enjoy a clean, healthy and ecologically balanced environment and with a view to ensuring the effective realization of this right, the State undertakes:

- To take measures to promote the protection, preservation and improvement of the environment;
- To ensure a sustainable socio-economic development of Seychelles by a judicious use and management of the resources of Seychelles;
- To promote public awareness of the need to protect, preserve and improve the environment.

This policy is relevant to the project in that it requires the promoters to comply with the regulations set therein.

Environmental Protection Act (2016)

The Promoters, contractors and associated entities of the implementation of project need to adhere strictly to the provisions of the Environment Protection Act No 9 of 1994, revised in 2016. The below further elaborated are legal obligations of the proponent in meeting the national norms for such a venture. It is further well noted that the implementation of the Project can only begin once the necessary administrate clearances from Ministry of Agriculture, Environment and Climate Change and Ministry of Land Use and Habitat.

Environmental Impacts Assessment Regulations (2016)

The Environmental Impact Assessment Regulations 2016 (within the EIA Regulations 1996) governs the procedures for Environmental Impact Assessment in Seychelles prior to the commencement of any project or activity as prescribed in the Schedules of the Environmental Impact Assessment Regulations 1996. This law is administered by the Environmental Assessment and Permits Section of the Environment Department. The EAPS is responsible for the collection and assess data on the state of the environment and physical nature resources. It also supervises and provide assessment for projects or development that are likely to have an impact. It also undertakes appraisal of ad-hoc Environmental Impact Assessments and recommendations for the Town and Country Planning Authority, the Project Appraisal Committee and other government organizations. For any development, the Environment Department has developed a set of thirteen (13) guidelines that sets out preliminary environment assessment to be undertaken as assistance in project implementation that respects minimum environmental guidelines to ensure its environmental sustainability.

Effluent Discharge Quality Standards

Seychelles standards of effluent discharge are prescribed under the EPA 1994 (revised 2016), Environmental Protection (Standards) regulation and are relevant to the project that its effluent monitoring program is well established and capable of meeting all national standard set. Moreover, emergency and mitigation activities must be pre-scribed in the case of effluent or discharges not meeting the standard during operational testing. Standard Operating Procedure's (SOP) are to be integrated into the Construction Environmental Management Plan (C.E.M.P)

as and when contractors for site are Hired and Official Commissioning begins. The Ministry is mandated to also prevent, control or abate water pollution from natural causes or from abandoned works or projects or activities.

Noise and Air Quality Standards

Under the EPA the Noise Emission Standard and regulation 1999 cover the limits of sound pressure in Db (A) that needs to be met at varying levels and hours of construction. Extensive and prolonged noise with certain frequency can have detrimental effect on wild life and human settlements. The project's location naturally acts as an absorption zone given that dense vegetation is a good damping agent of sound waves. However, the surrounding population need consideration and mitigation measure have been described to this effect. Moreover, the Environmental Monitoring Program to be run parallel to the construction phase, ensures decibel recordings during construction phase allowing for maintaining acceptable levels of Noise Emission from site.

Suspended solids in air columns and gaseous emission are key contributor to reduction in localized air quality. Such issues are relevant to the project's construction of roads etc. Therein mitigation measure akin to site hoarding, watering and dust suppression techniques will be used.

Environment Protection (Seychelles National Parks Authority) Order

These Regulations constitute the National Parks Authority as a body corporate. They also provide for internal matters of the Authority and define its functions. The agency, newly autonomous, regulates the felling and sale of commercial timber from State Land. It is to be noted that the SNPA (now SPGA) is now an autonomous body once again in Seychelles.

Seychelles Public Utilities Corporation

The Public Utilities Corporation (PUC) was formed on 1st January 1986 under the PUC Act 1986 and subsequent amendments. It is a parastatal institution wholly owned by the Government of Seychelles. It falls under the portfolio responsibility of the Ministry of Environment, Energy and Climate Change through its Board of Directors. PUC is a vertically integrated utility company which is responsible for:

- The generation, transmission, distribution and supply of electrical energy on the main islands of Seychelles, including Mahé, Praslin and La Digue;
- The production, transmission, distribution and supply of potable water to the main islands of Seychelles, including Mahé, Praslin and La Digue; and
- The treatment and sanitary disposal of waste water to the environment on Mahé Island.

Other relevant activities of PUC include: customer metering, billing, procuring equipment and materials, inventory control, inspectorate services, customer services, public relations, system planning, project management, etc.

The PUC Act & PUC supply regulations

This act provides for unlawful contamination of treated water by breakage or external entry. This is relevant in so much that PUC water is also being proposed for the development and thus onus is placed on project contractors

in ensuring that MEP connectivity are strengthened against possible break in and contamination. Two regulations are outlined below in brief:

PUC Sewerage regulations

The 1987 Regulation makes provision for controls and regulation permitting to sewerage connections outside the sewer network areas of greater Victoria and Beau Vallon. If private sewerage disposal units are owned project promoters are responsible in meeting all the requirements of the Public Utilities Corporation (PUC) for its implementation. Moreover, administrate clearances are needed by the Seychelles Bureau of Standards (SBS) and standard testing for its operational continuance at agreed frequency of sampling.

Health Act, Cap 194

Under the Public Health Ordinance Chapter 194, strict regulatory frameworks are placed for the cleanliness, disease prevention and sanitation controls. It is geared to maintain and improve the public health of work force, surrounding human populations and immigrant work force while on the job. This is important for the Project given that it is understood that attention must be given to the role and responsibilities of health officers on site, the obligation of the promoter to ensure adequate measures are taken to prevent mosquito and vermin related diseases from entering or spreading outside the site confines, and to provide basic sanitary and ventilation needs for temporary work force.

Physical Planning Act

Enacted in 2021, this law guides Physical Development and land use management in the country. Its basis is derived from the former Town & Country Planning Act, but the new Act seeks to modernize the operations and functions of the Planning Authority to make provisions to deal with Seychelles' construction industry. It remains the primary instrument for land, infrastructure and the physical development needs of Seychelles. It is also responsible for controlling and issuing planning and building permits.

State Land and Rivers Act

The hydrology and flow regime on receiving environment is protected by the 1903 State land and rivers reserves whereby strict adherence to provision for protection of surface and sub-surface flows and rivers are prescribed. Development must maintain the required set back as well as provide mitigation measures for any possible sediment loading and contamination of these water sources during construction.

Plant Protection Act

Though the project site is not located in any agriculture zonation, this act makes provision for preventing the importation, spread and movement of diseases, insects and pests and seeks the protection of the Agriculture and forestry resources of the Seychelles Environment.

Wild Animals and Bird Protection Act (1961) - Chapter 247

This act prohibits the following:

(a) Prohibit the shooting, killing or taking of any wild animal or bird;

(b) Prohibit the purchase, sale or exhibition for sale of any wild animal or bird, or of any wild birds' eggs;

(c) Prohibit the taking or destroying of, or tempering with, any wild birds' eggs or nest;

(d) Prohibit the exportation of any wild bird or of the plumage or skin thereof;

(e) Provide the contravention of or failure to comply with any regulations shall be an offence.

The Road Transport Act

This act along with priori amendment being in 2000, specifies the dimensions and weight of transports that can use public roads. The act also restricts the use of specified roads for particular time of the days giving specifications on speed, installations of traffic lights, traffic crossing and other legalities for road users. It also covers special vehicle categories more important for this project such as heavy transportation and associated axle loading and use of trailer, canes, excavators on public road and the need for authorization.

Occupational Safety and Health Decree, Cap 151

Implemented since 1978, this decree states the precautions required form the employer upon the employee in line with the employee's protection vis-a-vis exposure to working conditions, their working environment, and possible gaseous emission and hazard material handling. The associated monitoring program has forms and incident registration of any events. Such SOP are required under the overall project management of this project.

Seychelles Employment Act Chapter 69

[Amended by Employment (Amendment) Act, 2021 (Act 38 of 2021) on 16 September 2021]

The Employment Act of Seychelles is a piece of legislation that governs various aspects of employment relationships within the country. It covers matters such as the minimum terms and conditions of employment, including wages, working hours, overtime, leave entitlements, termination procedures, and the rights and obligations of both employers and employees. The Act also addresses issues related to discrimination, occupational safety and health, and provides mechanisms for resolving disputes between employers and employees. Overall, the Employment Act of Seychelles aims to ensure fair and equitable treatment of workers and promote a harmonious work environment within the country.

United Nations Sustainable Development Goals

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges faced, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The SDGs are part of Resolution 70/1 of the United Nations General Assembly: "Transforming our World: the 2030 Agenda for Sustainable Development."

2.5 INSTITUTIONAL ARRANGEMENTS

The project will fall under the purview of certain institutions once approval is received:

Ministry of Agriculture, Climate Change and Environment (MACCE)

The Environment Protection Act provides the Ministry of Agriculture, Climate Change and Environment as the principal agency responsible for coordination, monitoring and supervision of environmental conservation activities. Specifically, the Environmental Impact Section within the Ministry is mandated to oversee the conduct of EIA through issuance of the EIA guidelines, regulations and registration of practitioners. It reviews and approves environmental impact assessments through the issuance of a Notice of Approval (NOA).

The section also includes an enforcement branch that is responsible for ensuring that promoters comply with the various environmental regulations and standards. The Ministry is linked to sectoral lead agencies that are charged with implementation of environmental programs and integration of environmental concerns in sectoral policies, laws, regulations and programs. Relevant agencies are considered stakeholders in the Project and will provide input during the process. For the purpose of this project, the EIA Section of the Ministry will review and approve the EIA prepared through a Notice of Approval.

Ministries responsible for Habitat, Land Transport and Infrastructure

The mission is to facilitate the national socio-economic development through sustainable and efficient use of land resources for habitat, economic, social and infrastructure needs through effective policy framework, regulations and provision of ancillary technical services to the clientele. The MHILT envisions having the necessary tools and framework to be a dynamic agent for promoting sustainable and responsible development of Seychelles.

The core functions of the Ministry of Land Use and Housing are;

- Management of all state land including Acquisitions, Sales and Leases;
- Implementation of Land Bank Project as per Capital Budget allocations;
- Administration of Immovable Property (Transfer Restriction) Act and the responsible for the processing of all applications for purchase or lease of an Interest in Immovable property including corporate shares dealings;
- Responsible for land policy and land related legislation and timely review thereof;
- All survey related Infrastructure including cadastral surveys and registration to tiles;
- Developing the Geographic Information System (GIS) Centre of the Ministry and ensuring the efficient use of acquired digital data throughout Government with the set objective of improving performance and decision - Preparation of land Use Plans and Urban development guidelines;
- Responsible for housing and provision of decent and affordable shelter as per requirements of the Seychelles Constitution and Government housing policy;
- Management of the land and Housing Application Database.

Local Government Administration Structures

The Seychelles operates a partial de-centralized governance and devolution of certain central government functions. Given the location of the project, key stakeholders such as the Das and MNAs in the nearby districts will therefore also play a role in the monitoring associated with the project. Such administrators are to be considered as stakeholders in the Project and will have input in to the EIA process as well as subsequent monitoring.

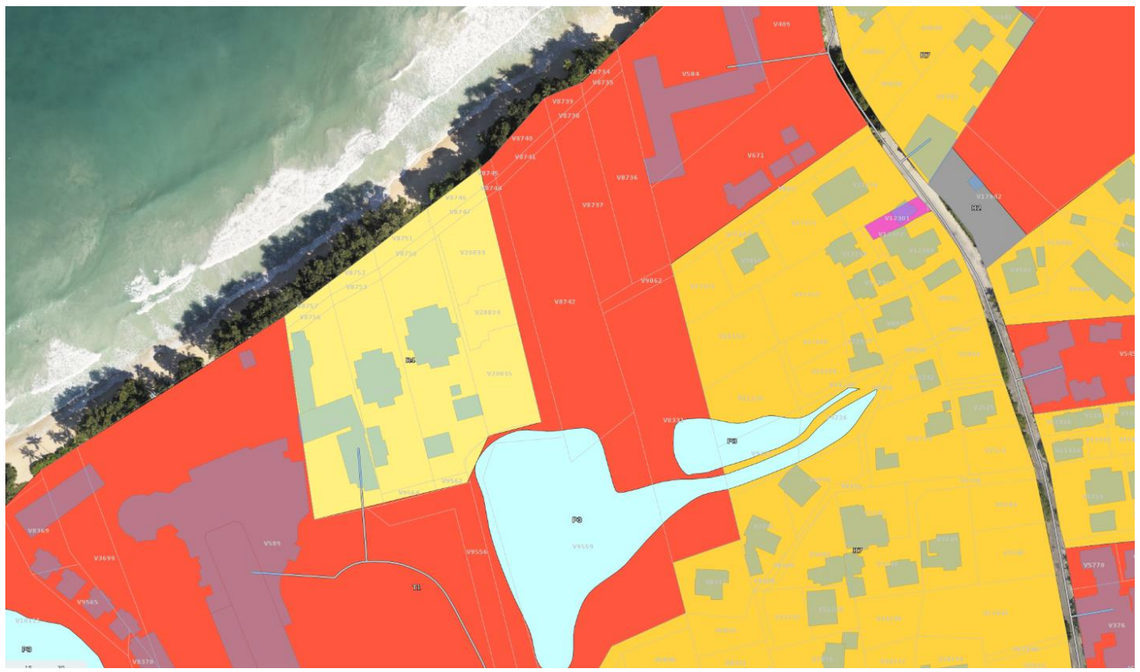
3. PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The project is located at Beau Vallon, Mahe, Seychelles and is based adjacent to Coral Strand Hotel.

Fig 6.0: Project Site Location on Mahe

Fig 7.0: LUP is aligned to proposed Tourism Development and Consists of a Fragmented Wetland.



3.2 PROJECT COMPONENTS

3.2.1 Road Construction

Plot V15897 has been designated by the Government of Seychelles as a right-of-way for the development of a public access road intended to serve the surrounding properties within the area. As part of the proposed project, the developers will undertake the construction and development of this plot, thereby establishing a new access road from the District Administration to the hotel.

This new access route will replace the existing, older, and significantly narrower road located at the rear of the Coral Strand Hotel, which is inadequate to service the entire hotel needs. This old access road will be retained exclusively as a service road for the hotel, while Plot V15897 will function as the primary public access road, improving accessibility, and traffic flow.

Fig 8.0: New Access Road on V15897

3.2.2 Public Access

Based on new circulation, the existing access to the beach will no longer be used. This access will now solely be dedicated as an emergency access for ambulance and lifeguards. However, to ensure continued public access to the beach, the existing Right of way V15897 leading to coastal culvert located at the end of the Plot V8745 will be redesigned to function as a non-motorable pedestrian pathway. Pedestrians will access it directly from the drop-off area. The culvert will be covered with paving materials with adequate lighting to allow safe and comfortable passage for pedestrians, while still maintaining its original function for stormwater management. Responsibility for the ongoing maintenance and upkeep of the culvert and paved access will be undertaken by the hotel.

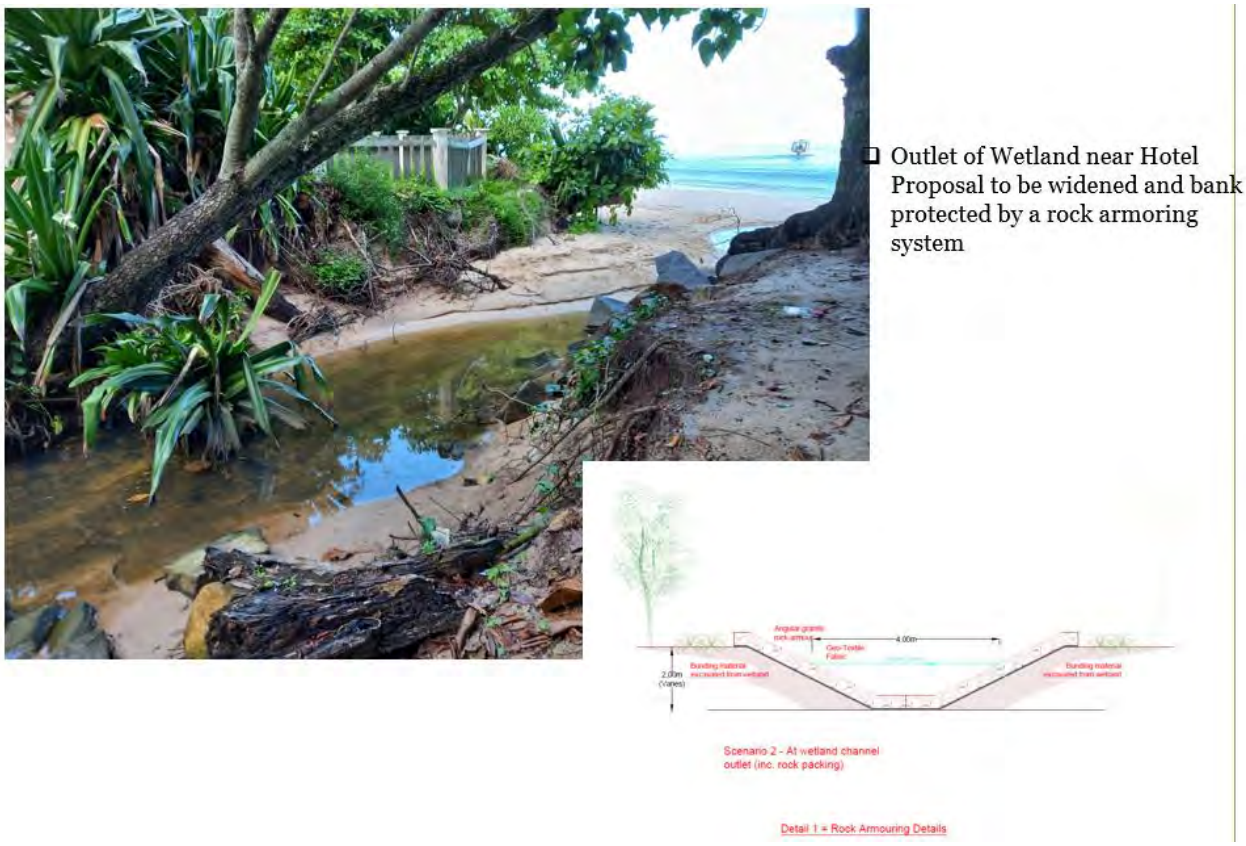


Fig 9.0: New Alignment for Public Access atop New Drainage Channel

3.2.3 Hotel Component

The project is located on the following parcel numbers:

Parcel Number	Size Sqm
V8331	4102
V9062	199
V8736	1732
V8735	103
V8374	115
V8739	169
V8738	88
V8737	1404
V8742	4180
V8741	155
V8740	348
Total Land Area	**12595**

Client and land owner: Orient International Limited

The proposed hotel will consist of 75 elegantly designed guest rooms, with the following configuration:

- 20 Deluxe Rooms (40 sqm)
- 35 Superior Rooms (50 sqm)
- 12 Family Rooms (70 sqm)
- 5 One-Bedroom Suites (80 sqm)
- 2 Two-Bedroom Suites (100 sqm)
- 1 Presidential Suite (150 sqm)

The architectural concept of the hotel draws inspiration from the iconic Banyan tree located on the site. Rather than removing this landmark feature, the building has been designed to curve around the tree, preserving its presence and integrating it into the overall landscape. This design approach reinforces the vision of creating a "hotel within a park and garden," where nature and hospitality coexist harmoniously.

The hotel will feature a variety of food and beverage outlets, including restaurants and bars, offering guests a rich culinary experience. In support of Seychelles' vibrant cultural heritage, the hotel will incorporate local music and art, celebrating and promoting the island's creative talent.

To protect the existing lush coastal vegetation, particularly the prominent Takamaka trees along the beachfront, the roof top of the hotel will house an infinity pool that offers panoramic views above the

treetops. Guests will be treated to stunning views of Beau Vallon Bay, with Silhouette and North Island visible in the distance. The rooftop area will also host live entertainment events, creating a lively and dynamic atmosphere for both guests and visitors.

Along the beachfront area, a food cart, operated by the hotel, will be accessible to the general public—particularly catering to those who prefer a more casual dining experience outside the hotel premises. A dedicated lifeguard station will be also integrated within the beachfront area. This facility will not only serve hotel guests but also benefit the wider public frequenting Beau Vallon Beach.

Additional guest amenities will include a dedicated kids' club, a spa and gym with garden views, and a serene coffee shop nestled near the landscaped garden area. Given the hotel's beachfront location, these facilities will also be accessible to locals, encouraging community interaction and inclusivity.

The hotel will also feature a fully equipped conference room designed to host corporate meetings, private events, and weddings, making it a versatile venue for both business and leisure functions.

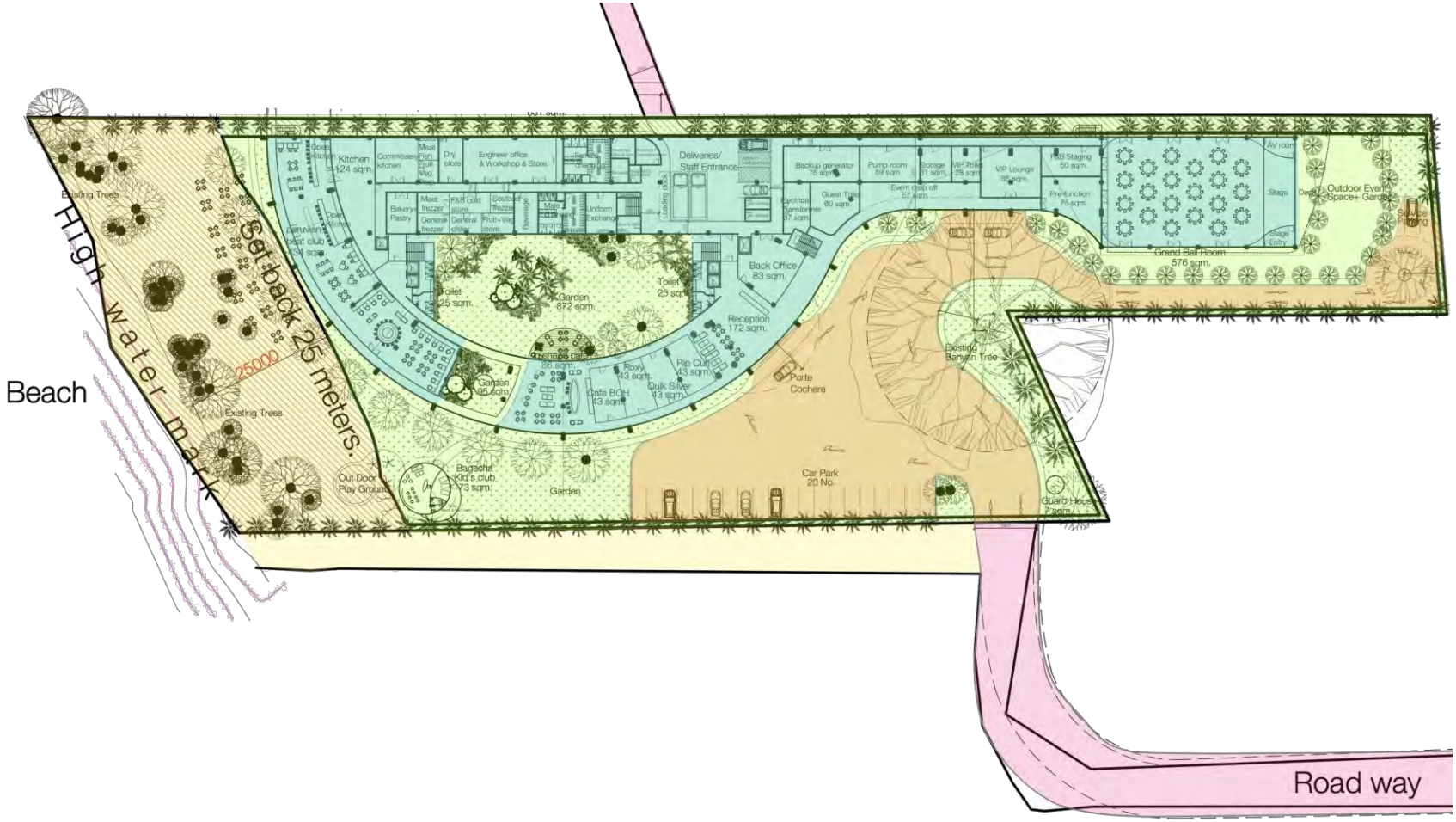
The proposed hotel development has received formal approval from the Department of Tourism and has successfully undergone the relevant Seychelles Investment Board (SIB) procedures.

3.3 PROJECT OPERATIONS

The existing site plan and updated masterplan is depicted in the next few pages:

Fig 10 thru to 15 depcting Existing Site Coverage

Site Plan



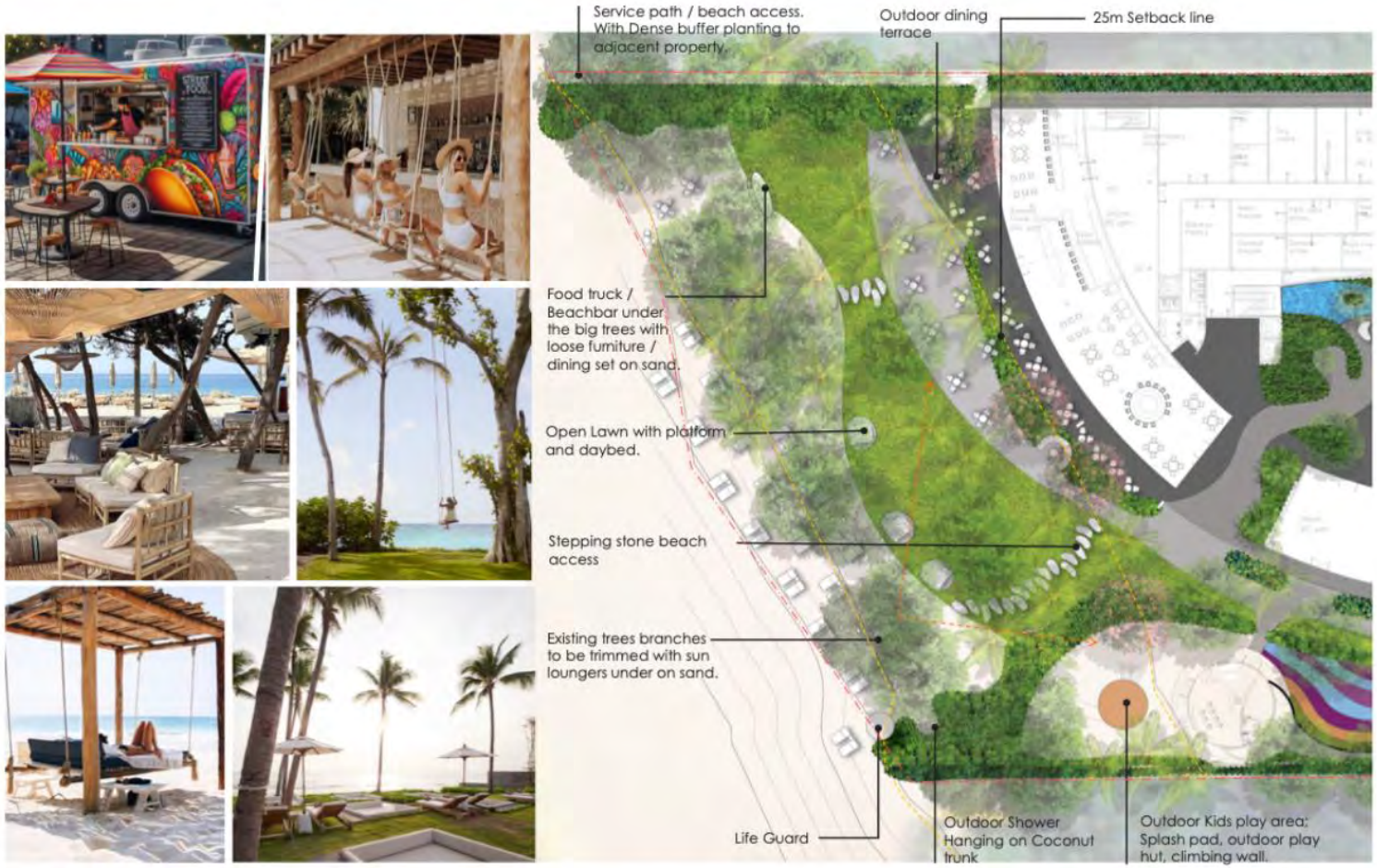
3.4 ARTISTIC RENDERINGS OF FINAL PRODUCT

The following pages depict the renderings of materials, lighting, and end finish of some of the project components ensuring subtle balance between existing environments, nature and artistic modern contemporary architecture.

Aerial view of the hotel, illustrating the landscaped garden areas, parking facilities, the ground-plus-four-storey building, as well as the rooftop swimming pool and photovoltaic installations.

Entrance of building within garden space

Rooftop swimming pool, designed to overlook the lush Takamaka vegetation and offer a picturesque view of Beau Vallon Bay.



Outdoor space

4. ENVIRONMENTAL BASELINE CONDITIONS

4.1 BIODIVERSITY AND VEGETATION ASSESSMENT

An Environmental and Social Impact Assessment (ESIA) was commissioned prior to the redevelopment of the Fishermen's Cove hotel and the extension of The H resort at Bel-ombre, Mahe, Seychelles. As part of the ESIA, a biodiversity (impact) assessment was commissioned. Biodiversity assessment provides the information needed to assess the biological conditions on site, any potential impacts of the development and ways to mitigate these impacts. An impact assessment is requested for such types of development (Government of Seychelles 1996, 2012b, 2014), where buildings should be done in accordance to the Town and Country Planning Act which controls and regulates any matter relating to buildings (Government of Seychelles, 2012b). The current report provides biodiversity data to facilitate informed decision-making, and for the planning of any future development.

The objectives of the assessments are outlined below:

- Carry out a detailed baseline survey in order to identify all endemic plants present on site.
- Produce a vegetation map with particular attention to species populations of significance.
- State the extent of vegetation communities to be removed or disturbed as a result of the development.
- Provide information on any rare or endangered species, their habitat requirements and their sensitivity to changes.
- State the proportion of natural vegetation that will not be removed.
- Carry out a survey on fauna and determine the fauna occurring on the site, with the survey providing data on species diversity and abundance.
- Provide information on the potential impacts as a result of such project on the terrestrial aspect of the area.
- Carry out a detailed baseline survey in order to identify terrapin species present on site.
- Produce survey maps to highlight trapping areas around the small wetland body with particular attention to the wetland areas that will form part of the road construction access.
- State the number of the critically endangered Seychelles terrapins captured in the fish-traps.
- Provide information on the potential impacts as a result of such projects on the aquatic aspect of the wetland areas.

Scope of work

The scope of the work to be carried out was as follows:

- Conduct inventories of the animals and plants residing inside the proposed project areas.
- Provide a listing of animals and plants in the zones to be developed.
- Identify and list rare species.
- Identify and map vegetation types.
- Identify sensitive or critical areas.
- Make recommendations on mitigation measures.
- Conduct inventories on the critically endangered Seychelles terrapins inside the small wetland body for Phase 1 of the monitoring surveys.
- Identify and list other aquatic species residing inside the small wetland body.

- Identify and map the trapping areas for the Phase 1 monitoring survey areas.
- Make recommendations on mitigation measures.

Methods

The groups covered in this survey are mostly the vascular plants. Within these groups, all species listed as Key Biodiversity Area (KBA/rare species) in Seychelles and all endemic species were recorded. Exotic and invasive species were also listed. Data for characterizing and mapping different vegetation-types were also collected.

Field visits were undertaken on the 10th January and 13th February 2025.

The Rapid Inventory method (Senterre et al., 2013) was used for the inventory in each different type of habitat. Each habitat-type was geo-referenced by taking a GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795).

Plant species and their abundance were estimated by collecting semi-quantitative data through the 5-levels system 'ROFCA' (i.e. R=Rare, O=Occasional, F=Frequent, C=Common, A=Abundant).

For the vegetation data collection and mapping exercise, explorations were done to identify and map the different vegetation-types within the proposed development zones, a GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795) was used to record waypoints for each vegetation-type. Vegetation-type classes were distinguished based on the universally accepted classification system of The Nature Conservancy– UNESCO (Grossman et al., 1998).

Data collected and analysis

The following data were collected:

i. Species inventory: Plant species presence and abundance (rare, frequent, occasional, common, abundant). Species status (endemic, indigenous, exotic).

ii. Dominant and rarest species.

iii. Vegetation-types (mixed forest, mostly native woodland, grassland etc.)

The data were analyzed using Microsoft Excel. All mapping was done

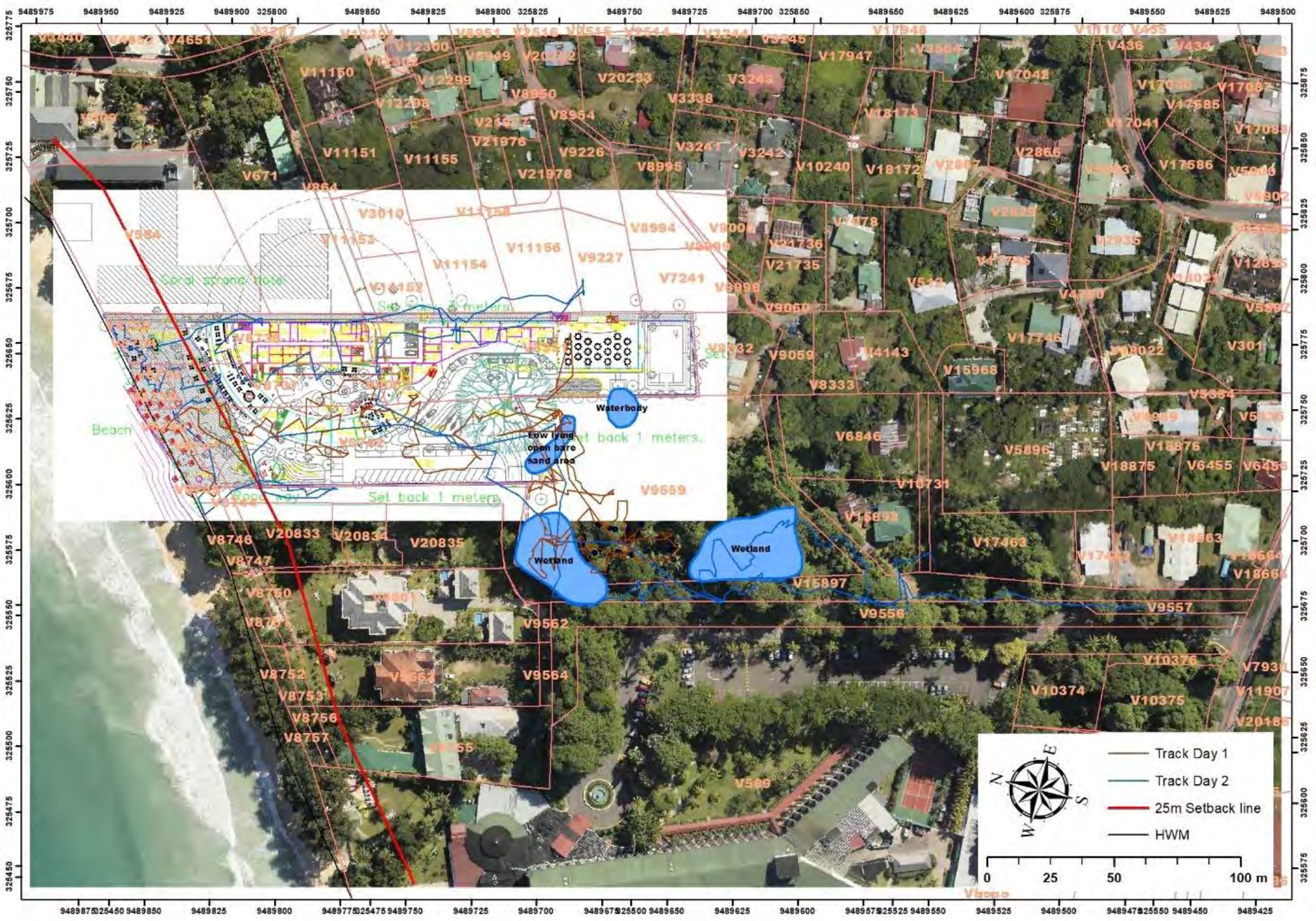


Fig 1: Map showing tracks and areas surveyed by environmental consultant in January & February 2025 at Beau Vallon

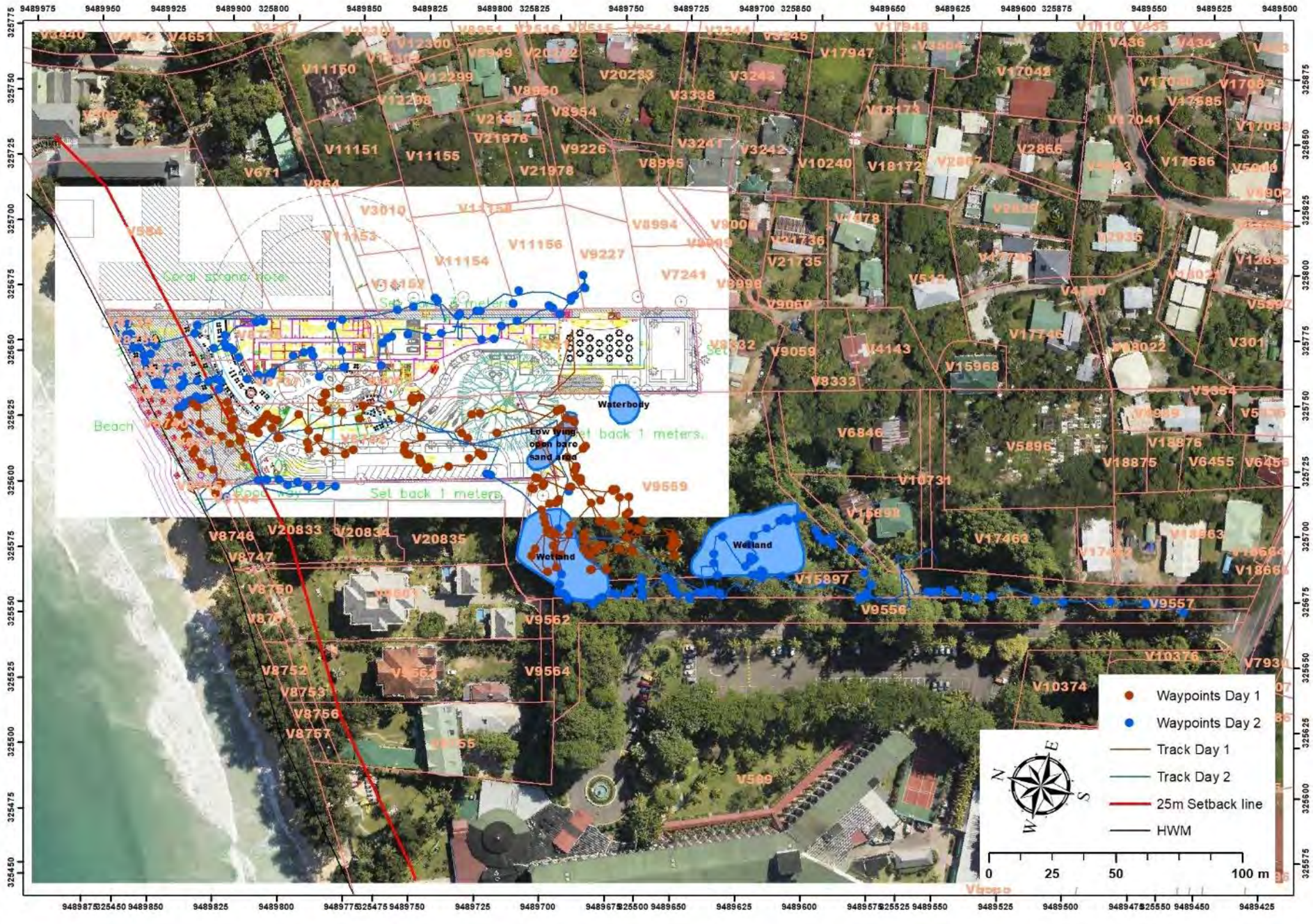


Fig 2: Map showing waypoints recorded by environmental consultant in January & February 2025 at Beau Vallon

2.1. Inventory method

The Rapid Inventory method (Senterre et al., 2013) was used for the inventory in each different type of habitat. Each habitat-type was geo-referenced by taking a GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795).

Plant species and their abundance were estimated by collecting semi-quantitative data through the 5-levels system 'ROFCA' (i.e. R=Rare, O=Occasional, F=Frequent, C=Common, A=Abundant).

2.2. Vegetation data collection – mapping exercise

Explorations were done to identify and map the different vegetation-types within the eight proposed functional development zones. A GPS (model Garmin Montana 750i) point (e.g. ECOSOL_1795) was used to track and record waypoints along the boundary of each vegetation-type. Vegetation-type classes were distinguished based on the universally accepted classification system of The Nature Conservancy – UNESCO (Grossman et al., 1998). 9.

2.3. Vegetation Data collected and analysis

The following data were collected:

i. Species inventory: Plant species presence and abundance (rare, frequent, occasional, common, abundant). Species status (endemic, indigenous, exotic).

ii. Dominant and rarest species.

iii. Vegetation-types (mixed forest, mostly native woodland, grassland etc.).

The data were analyzed using Microsoft Excel. All mapping was done using Quantum GIS 2.14.

Biological/ecological characteristics:

i. Species inventory: terrestrial plant species presence and abundance (rare, frequent, occasional, common, and abundant). Species status (native or exotic).

ii. Dominant and rarest species.

Field visits were undertaken on the 10th January and 13th February 2025.

2. RESULTS

3.1. Biodiversity inventory

3.1.1. Terrestrial and plant diversity

A total of 21 species: 21 plant species were inventoried during the surveys in January and February 2025. This includes 5 native and 16 exotic plant species (5 natives and 16 exotics in total). In terms of fauna species, 2 animal species consisting of two reptile species were recorded. The fauna species recorded consisted of the endemic

Seychelles terrapin species consisting of Black Mud terrapin P. castainoides and Yellow-Bellied Mud terrapin P. subniger.

3.2.2. Vegetation-types / Habitat types

Thirteen vegetation types were recorded inside the proposed construction areas earmarked for the proposed Aria Hotel project site at Beau Vallon. Vegetation types inside the sensitive native coastal belt vegetation area which falls within the 25m setback line where no major construction activities will be allowed, is dominated by mainly native woodland trees consisting of Badamier and Coconut, and mixed woodland trees dominated by Badamier, a native tree species and Calice Du Pape, an exotic tree species. Vegetation types and habitats inside the main proposed hotel and associated infrastructures construction areas, are dominated by mainly exotic woodland tree species consisting of Kasi, Miltipliyan, Albizia, Mango, Zanblon. Agati, Calice Du Pape, Gliricidia and Tanmaren. Native woodland trees are also present inside the main proposed construction areas consisting of juvenile and mature Badamier trees. Coconut and juvenile Takamaka trees. The vegetation structure and composition inside the project zones is described according to different vegetation types and dominant plant species where they dominate inside the project construction areas.

Dominated by Bare sand

This vegetation class is dominated by bare areas devoid of vegetation. The soil structure is sandy and dry.

Figure 3: Bare ground dominated by dry sandy soil inside the proposed Aria Hotel construction areas

Mainly exotic woodland trees dominated by Agati & Mango

This vegetation class is dominated by a mixture of exotic trees consisting of Agati Adenanthera pavanina and Mango Mangifera indica inside the Aria Hotel proposed construction areas.

Figure 4: Mainly exotic woodland trees dominated by Agati & Mango

Mainly exotic woodland trees dominated by Albizia, Mango & Zanblon

This vegetation class is dominated by a mixture of mature exotic woodland tree species consisting of Albizia Falcataria moluccana, Mango Mangifera indica and Zanblon Syzgium cumini inside the Aria Hotel proposed construction areas.

Figure 5: Mainly exotic woodland trees dominated by Albizia, Mango & Zanblon

Mainly exotic woodland dominated by Kasi

This vegetation class is dominated by Kasi Leucaena leucocephala, an exotic plant species inside the Aria Hotel proposed construction areas.

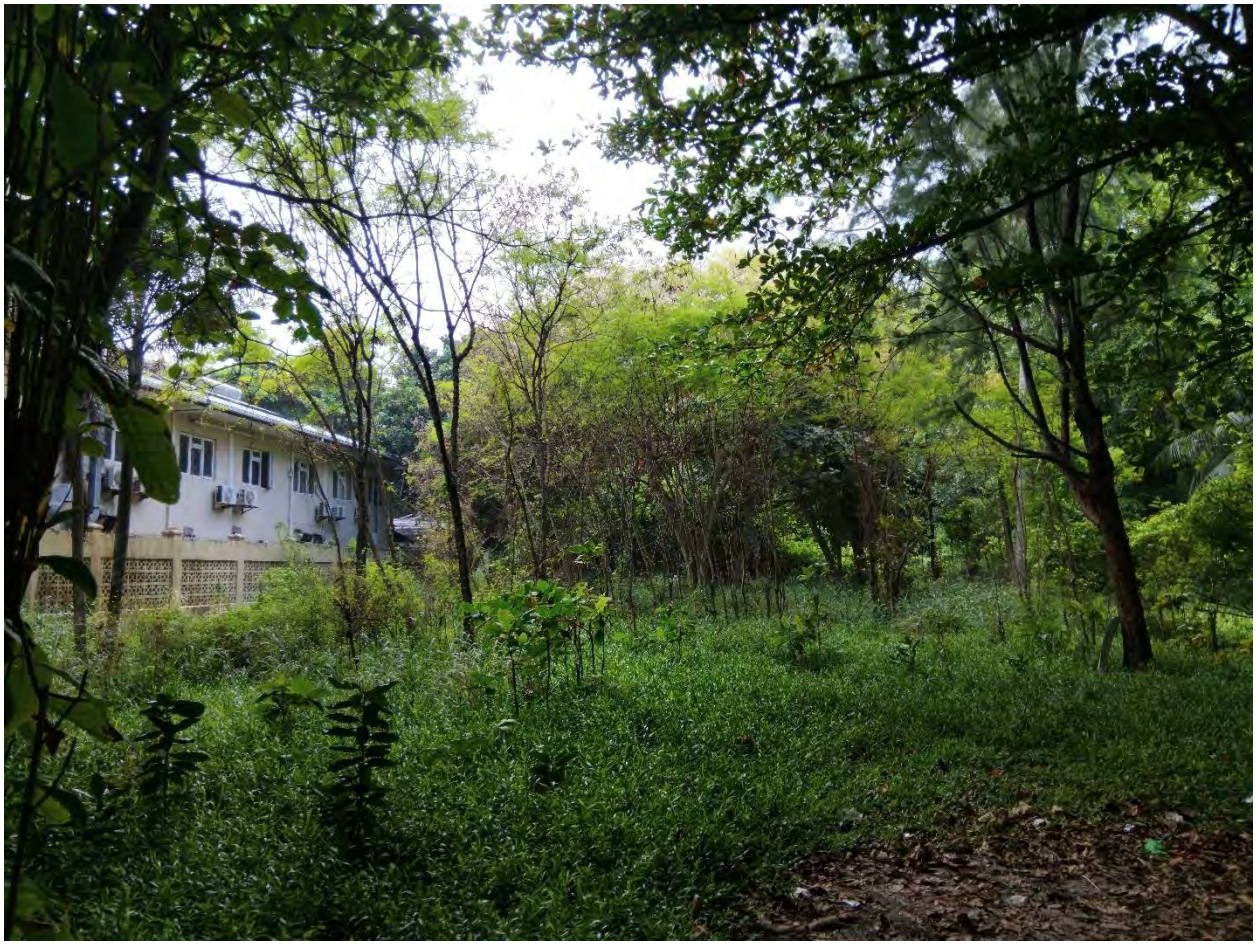


Figure 6: Mainly exotic woodland dominated by Kasi

Mainly exotic woodland dominated by Miltipliyan

This vegetation class is entirely dominated by Miltipliyan, a mature exotic tree species inside the Aria Hotel proposed construction areas. The trees have root systems that have spread outside of the proposed construction areas and into the nearby waterbody.

Figure 7: Mainly exotic woodland dominated by Miltipliyan

Mainly native woodland trees dominated by Badamier trees

This vegetation class is dominated by native mature and juvenile Badamier Terminalia catappa trees inside the Aria Hotel proposed construction areas and associated facilities.

Figure 8: Mainly native woodland trees dominated by Badamier trees

Mainly native woodland trees dominated by Badamier & Coconut

This vegetation class is dominated entirely by mainly native woodland tree species consisting of Badamier Terminalia catappa and Coconut Cocos nucifera trees in a portion of the Aria Hotel proposed construction areas and also inside the 25m setback area emanating from the HWM where heavy construction areas will not be allowed to preserve the sensitive coastal belt area, where the native coastal belt species act as a protection against coastal erosion.

Figure 9: Mainly native woodland trees dominated by Badamier & Coconut

Mainly native woodland trees dominated by Badamier & Takamaka

This vegetation class is dominated by a mixture of mainly native woodland tree species consisting of mature Badamier Terminalia catappa and Takamaka Calophyllum inophyllum trees inside plots V8735, V8734, V8738, V8739, V8740 and B8741 which falls inside the 25 m setback line that starts from the HWM and where major construction works or structures will not be allowed to protect the integrity of the sensitive native vegetation coastal belt area.

Figure 10: Mainly native woodland trees dominated by Badamier & Takamaka

Mainly native woodland trees dominated by juvenile Badamier and juvenile Takamaka trees

This vegetation class is dominated by a mixture of mainly native woodland tree species consisting of juvenile Badamier Terminalia catappa and juvenile Takamaka Calophyllum inophyllum trees inside the Aria Hotel proposed construction areas,

Figure 11: Mainly native woodland trees dominated by juvenile Badamier and juvenile Takamaka trees

Mixed woodland trees dominated by Badamier & Calice Du Pape

This vegetation class is dominated by a mixture of native and exotic tree species consisting of Badamier Terminalia catappa and Calice Du Pape Tabebuia pallida inside the Aria Hotel proposed construction areas.

Figure 12: Mixed woodland trees dominated by Badamier & Calice Du Pape

Mixed woodland dominated by Badamier & Tanmaren

This vegetation class is dominated by a mixture of native and exotic woodland tree species consisting of Badamier Terminalia catappa and Tanmaren Tamarindus indica inside the Aria Hotel proposed construction areas.

Figure 13: Mixed woodland dominated by Badamier & Tanmaren

Mixed woodland trees dominated by Calice Du Pape & Coconut

This vegetation class is dominated by a mixture of native and exotic woodland tree species consisting of Calice Du Pape Tabebuia pallida and Coconut Cocos nucifera inside the Aria Hotel proposed construction areas.

Figure 14: Mixed woodland trees dominated by Calice Du Pape & Coconut

Mixed woodland trees dominated by Gliricidia and Takamaka

This vegetation class is dominated by a mixture of exotic and native plant species consisting of Takamaka Terminalia catappa and Gliricidia inside the Aria Hotel proposed construction areas.

Figure 15: Mixed woodland trees dominated by Gliricidia and Takamaka

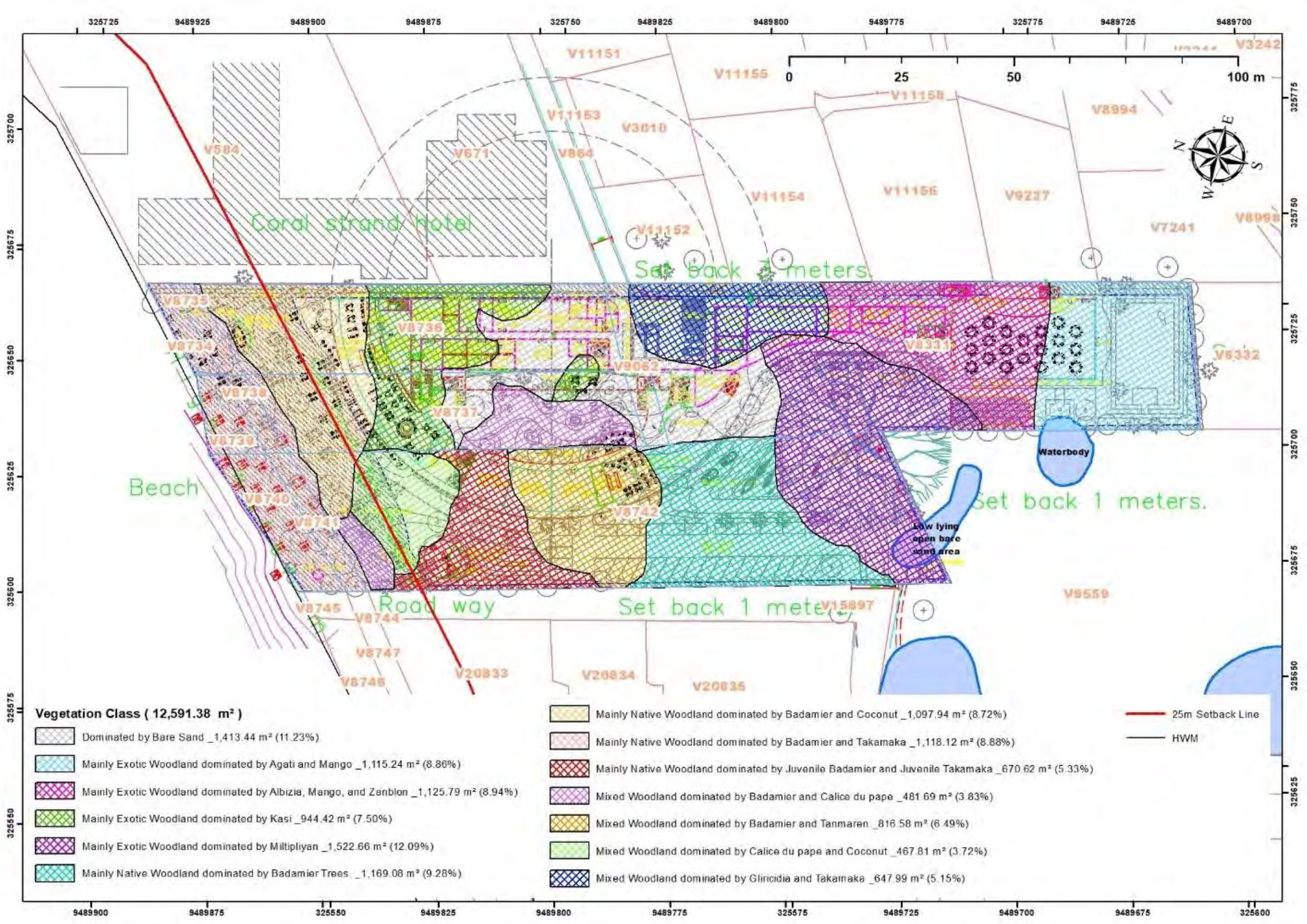


Fig 16: Map of vegetation types on site with percentages for all 13 habitat types

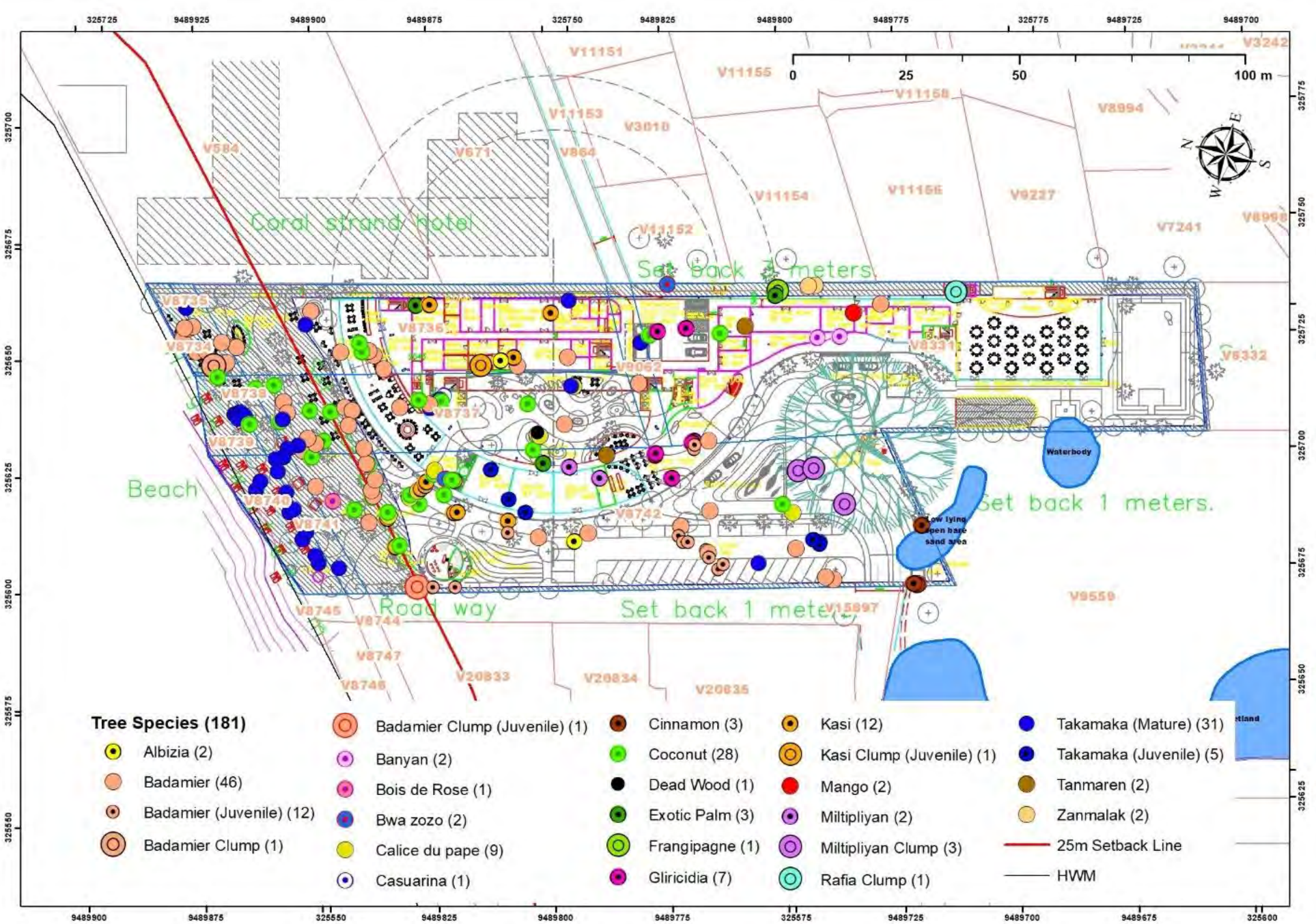


Fig 17: Map showing tree species inside the main hotel development area

The vegetation map above clearly shows that the vegetation structure inside the main hotel complex and associated infrastructures proposed construction areas, are dominated by a mixture of native and exotic plant species consisting of Agati, Mango, Albizia, Zanblon, Militipliyan, Kasi, Calice Du Pape, Gliricidia and Takamaka. The sensitive native coastal belt vegetation that is located within the 25m setback line and which acts a native coastal buffer zone, will not be touched or altered due to their sensitivity with regards to coastal zone protection from erosion and other ecological services that they offer. This native coastal belt is dominated by mature Takamaka and Badamier trees on the beach front, with Coconut and smaller Badamier trees located more inland.

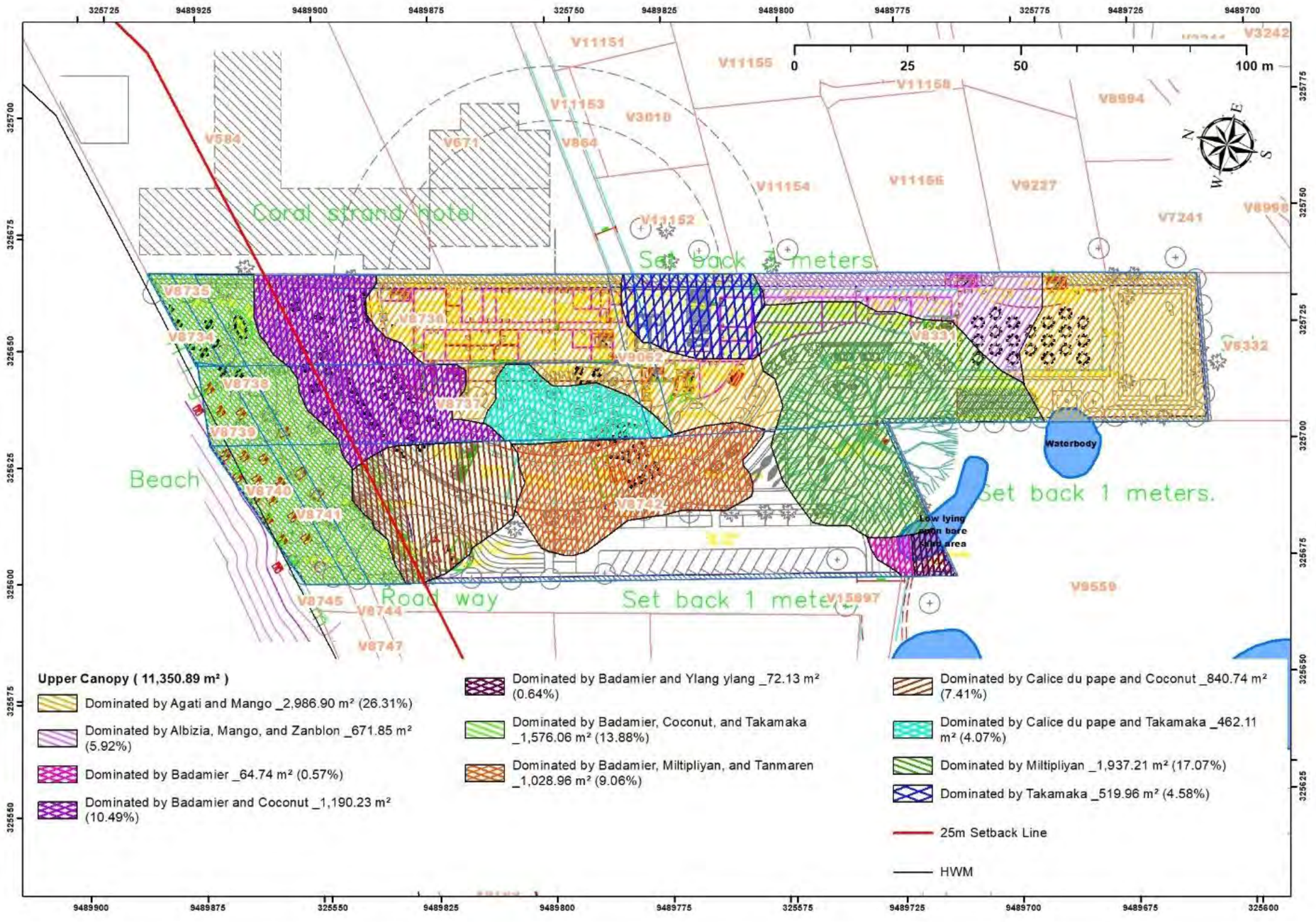


Fig 18: Map displaying the upper canopy vegetation inside the Aria Hotel proposed construction area

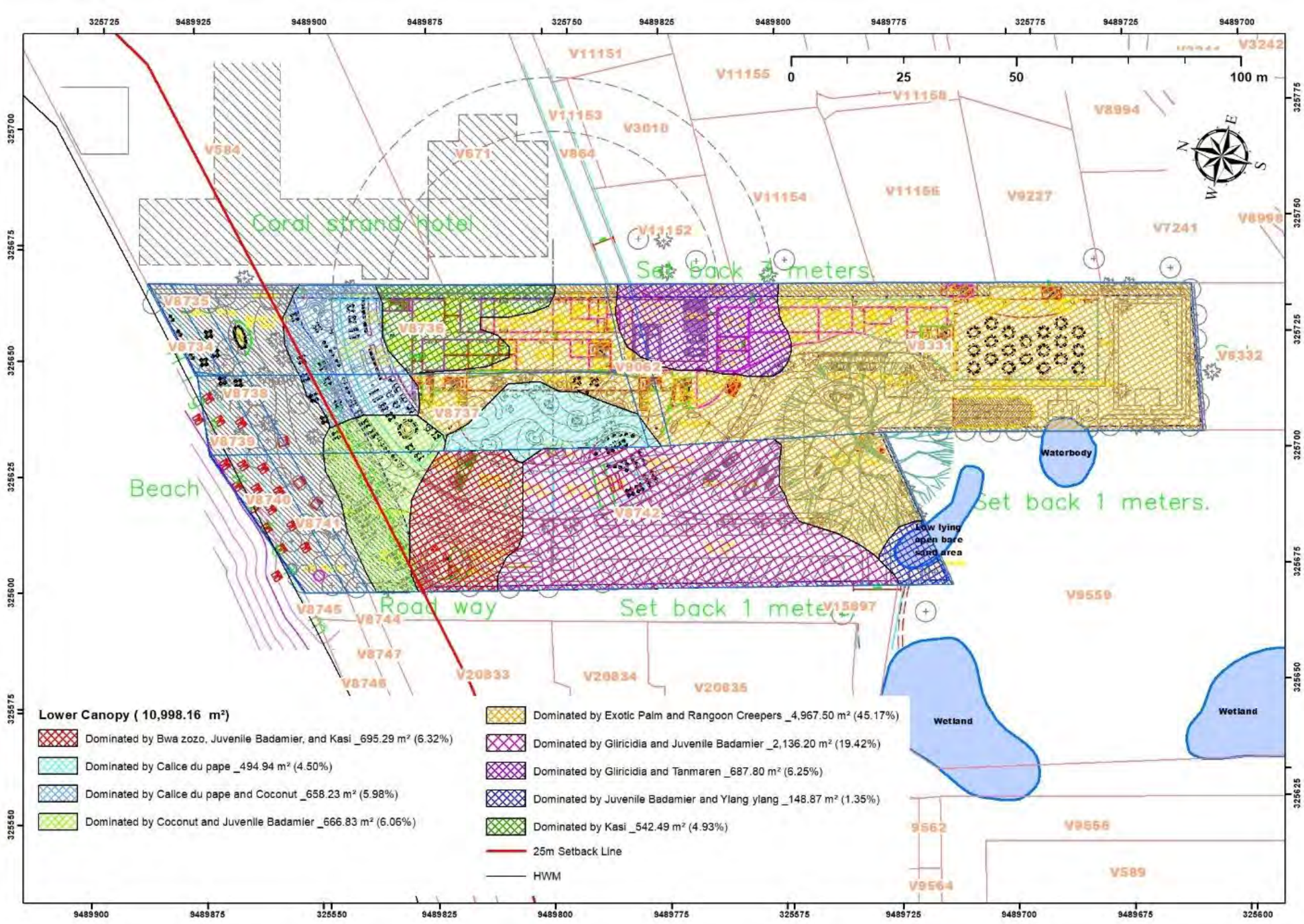


Fig 19: Map displaying the lower canopy vegetation inside the Aria Hotel proposed construction areas

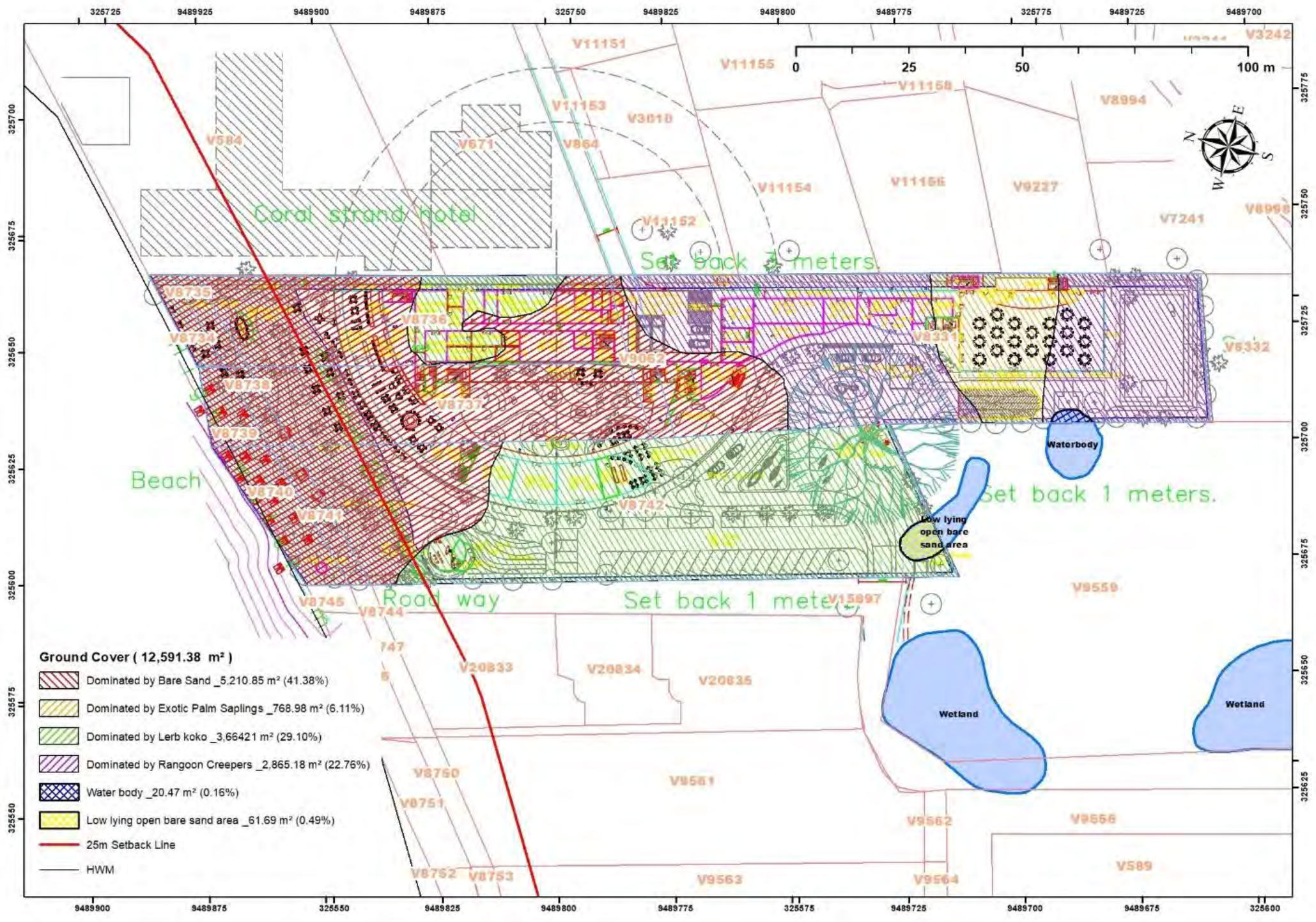


Fig 20: Map displaying the ground cover vegetation inside the Aria Hotel proposed construction areas

The vegetation hierarchy maps above clearly shows that the upper and lower canopies vegetation cover inside the proposed project plots are dominated by exotic plants consisting of Zanblon, Agati, Mango and Gliricidia. Lerb Koko, a native grass species, dominates the ground layer where the hotel building footprints will be located. The lower and ground cover vegetation located closer to the 25m high water mark is dominated by Kasi, an exotic plant species and Lerb Koko, a native plant species. The mainly native coastal vegetation belt and coastal buffer area are dominated by mature Takamaka and Badamier trees in the upper canopy hierarchy, with Badamier and Coconut dominating the lower canopy vegetation structure. The ground cover is dominated by bare sand.

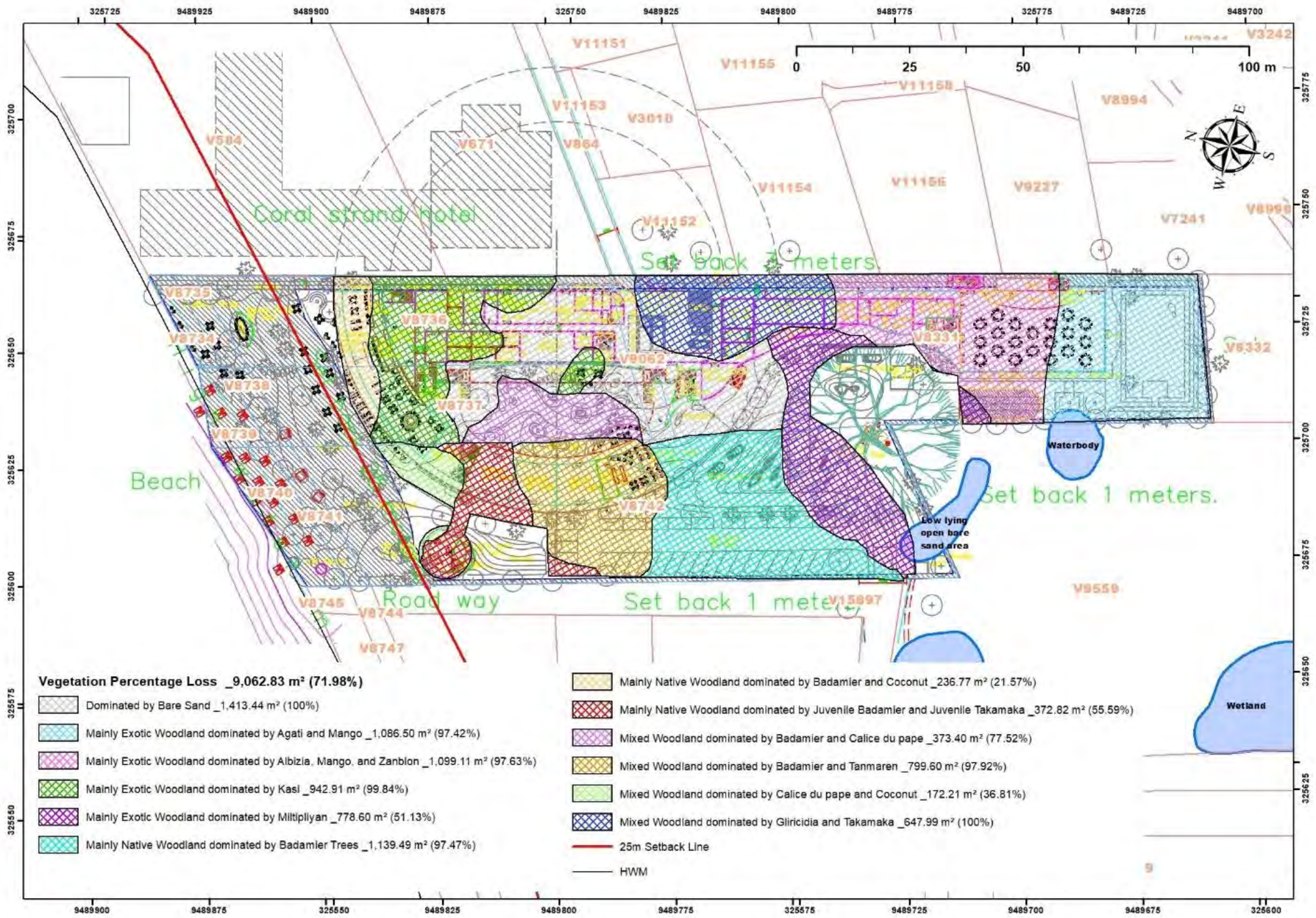


Fig 21: Map showing species of trees to be lost as a result of the proposed Aria Hotel construction at Beau Vallon

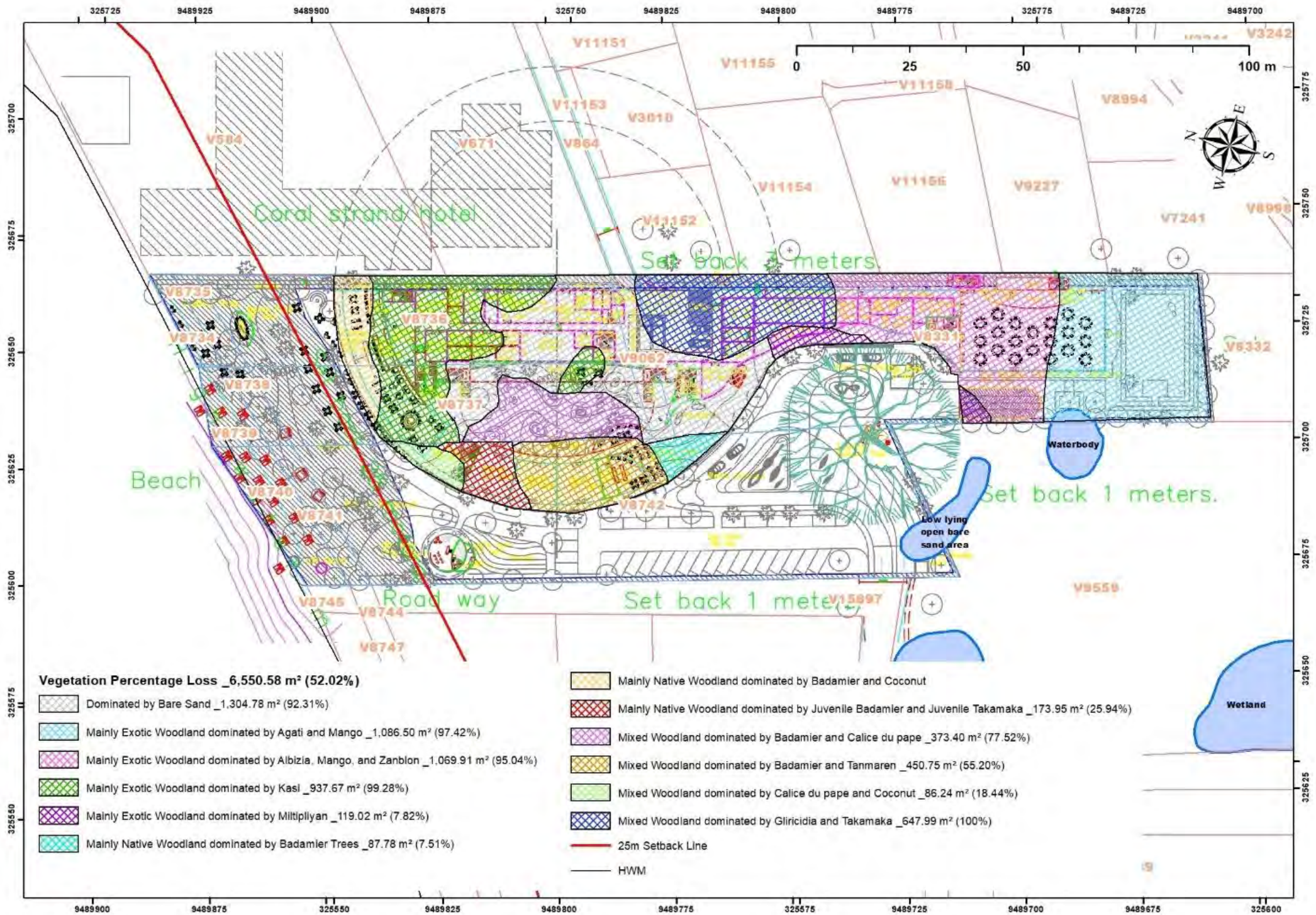


Fig 22: Map showing vegetation loss inside the Beau Vallon Aria Hotel building development areas

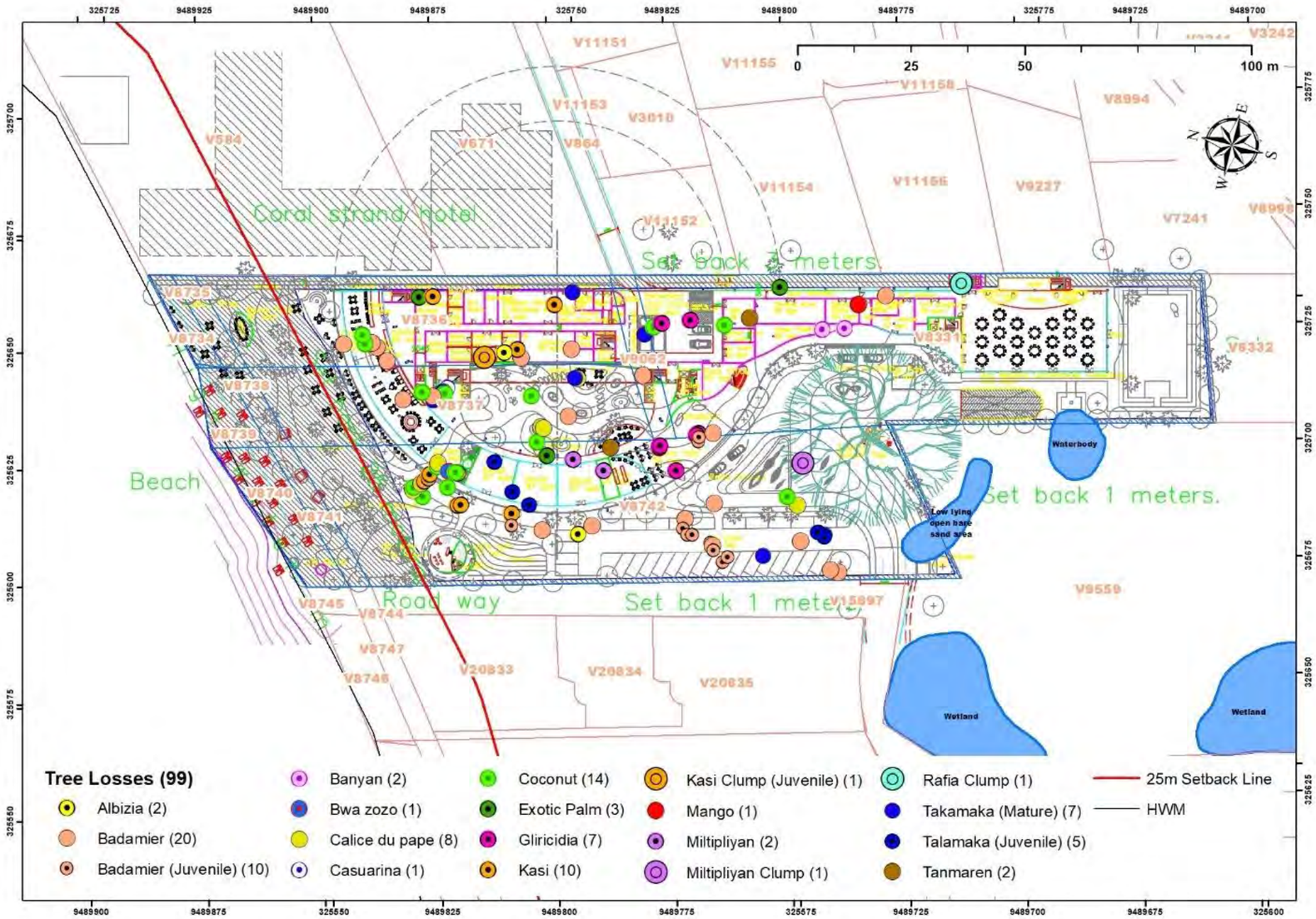


Fig 23: Map showing species and no. of trees to be lost inside the Beau Vallon Aria Hotel main development areas

The overall vegetation maps above clearly show that the majority of trees to be lost inside the proposed Aria Hotel construction sites will be mainly exotic woodland tree species dominated by Zanblon, Agati, Mango and Gliricidia. Native trees dominated by mature and juvenile Badamier, Takamaka and Coconut trees will also be lost as a result of the proposed constrcution actvities inside the Aria Hotel project plots. No trees will be lost inside the 25m setback line, as the area is a sensitive native coastal belt area.

4.1.1 Fauna survey inside wetland areas located inside the V9559 land-parcel

4.1.2 Fauna Species recorded inside the proposed road construction areas

The study site for the terrapin trapping was categorized as lowland habitat and categorized as open with no vegetation cover or invaded (covered by Bred Lanmar or other wetland plants such as water lettuce or water hyacinth). The wetland surface where the two traps were laid was clean, with broken tree branches emanating from the tall mature Badamier trees, that had to be removed before placing the traps inside the wetland body. Other areas of the wetland especially near the Beau Vallon Bay Resort Hotel was dirty with litters and wastes covering the wetland surface. Evidence of illegal dumping of inorganic wastes are present, indicating that this wetland has not been managed or cleaned by the hotel management for years. The study was undertaken from March to April 2025, which falls outside the main wet season period. The numbers of trap days are given in Table 1. The four weeks of trappings were intensive, with traps re-baited every day with new baits.

The eleven terrapins caught during the entire project time-frame were caught during the four weeks of intensive trapping inside the wetland areas earmarked for the proposed alignment for the road network that will act as link to the Aria Hotel project that is located on plots V8331, V8742, V9062, V8737 and V8736. A total of eleven terrapins were caught, consisting of 5 Black Mud terrapin Pelusios subniger species (3 adult males & 2 adult females), and 6 Yellow-Bellied Mud terrapin Pelusios castainoides species (4 adult females & 2 adult males). All the terrapins caught were trapped in open water areas with no vegetation cover. All the terrapins were caught on the wetland side that is located closer to the Berjaya Beau Vallon Bay Resort Hotel, as it was the only area with sufficient water depth for the two fish traps to be submerged enough for the trap entrance to be covered, so that the terrapins could enter and not escape. The wetland areas located closer to V15898 was not surveyed due to insufficient water depth for immersion of the two fish traps. No other fauna species was caught during the survey period.

Figure 24: Adult P. subniger female terrapin caught inside open water inside the wetland areas located close to the Berjaya Beau Vallon Bay hotel area

Figure 25: Adult P. castainoides female terrapin caught inside wetland open water inside the wetland areas located close to the Berjaya Beau Vallon Bay hotel area

Table 1: Fauna data gathered during the Seychelles terrapin survey inside the proposed wetland areas that will be traversed by the proposed road network that will act as a link to the proposed Aria Hotel project

Trap Night	Trap ID	Location	Weather	Wetland condition (Open with no vegetation cover or covered with wetland plants like Bred Lanmar)	Trapping Method	Terrapin species	Sex (Male, Female or juvenile)	Age	Carapace Length	Carapace width	Distinctive marks or injuries	Remarks
12th/13th March 2025	1	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	
12th/13th March 2025	2	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	
13th/14th March 2025	3	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait gone. Nothing.
13th/14th March 2025	4	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait gone. Nothing.
14th/15th March 2025	5	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait gone. Nothing.
14th/15th March 2025	6	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait gone. Nothing.
15th/16th March 2025	7	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Trap empty. Bait gone. Trap damaged by falling branch. Will have to be replaced by new one.
15th/16th March 2025	8	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait gone. Nothing.
16th/17th March 2025	9	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.

17th/18th March 2025	10	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
18th/19th March 2025	11	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
18th/19th March 2025	12	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
19th/20th March 2025	13	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
19th/20th March 2025	14	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
20th/21st March 2025	13	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
20th/21st March 2025	14	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
21st /22nd March 2025	15	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. castainoides	F	A	215 mm	195 mm	None	Trap 1
21st /22nd March 2025	16	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. castainoides	F	A	208 mm	168 mm	None	Trap 1
21st /22nd March 2025	17	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. castainoides	M	A	200 mm	155 mm	None	Trap 1
21st /22nd March 2025	18	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. subniger	M	A	162 mm	155 mm	None	Trap 2
22nd /23rd March 2025	19	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. castainoides	M	A	230 mm	200 mm	None	Trap 1
22nd /23rd March 2025	20	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	P. castainoides	F	A	201 mm	163 mm	None	Trap 2
22nd /23rd March 2025	21	Aria Hotel wetland	Sunny	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	N/A	Bait still intact.
23rd /24th	22	Aria Hotel	Sunny	Open with no vegetati	Fish trap	P. subniger	F	J	140 mm	133 mm	None	Trap 1

March 2025		wetland		on cover								
24th /25th March 2025	23	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	P. subniger	M	A	183 mm	150 mm	None	Trap 2
24th /25th March 2025	24	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	P. subniger	M	A	145 mm	125 mm	None	Trap 2
24th /25th March 2025	25	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	P. subniger	F	A	145 mm	123 mm	None	Trap 2
24th /25th March 2025	26	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Bait still intact.
25th /26th March 2025	27	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	P. castainoides	F	A	195 mm	165 mm	None	Trap 1
25th /26th March 2025	28	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
26th /27th March 2025	29	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
26th /27th March 2025	30	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
27th /28th March 2025	31	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
27th /28th March 2025	32	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
28th /29th March 2025	33	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
28th /29th March 2025	34	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
29th /30th March 2025	35	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
29th /30th March 2025	36	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.

30th /31st March 2025	37	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
30th /31st March 2025	38	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
31st March /1st April 2025	39	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
31st March /1st April 2025	40	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
1st April /2nd April 2025	41	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
1st April /2nd April 2025	42	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
2nd April /3rdApril 2025	43	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
2nd April /3rdApril 2025	44	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
3rd April /4th April 2025	45	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
3rd April /4th April 2025	46	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
4th April /5th April 2025	47	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
4th April /5th April 2025	48	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
3rd April /4th April 2025	49	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
3rd April /4th April 2025	50	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
4th April /5th	51	Aria Hotel	Cloudy	Open with no vegetati	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.

April 2025		wetland		on cover								
4th April /5th April 2025	52	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
5th April /6th April 2025	53	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
5th April /6th April 2025	54	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
6th April /7th April 2025	55	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
6th April /7th April 2025	56	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
7th April /8th April 2025	53	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
7th April /8th April 2025	54	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.
8th April /9th April 2025	55	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 1. Bait still intact.
8th April /9th April 2025	56	Aria Hotel wetland	Cloudy	Open with no vegetation cover	Fish trap	N	N/A	N/A	N/A	N/A	None	Trap 2. Bait still intact.

5. DISCUSSIONS

5.1 Impacts onto the biodiversity

5.1.1 Impact on habitat and species

Impact on native coastal belt vegetation zones

There are presently no existing hard structures or buildings on the native coastal belt vegetation zone that falls within the 25m setback that starts from the HWM. No major hotel construction activities will be allowed inside this sensitive coastal zone to protect the native coastal zone which is also a buffer zone offering the beach ecosystem protection from coastal erosion and other coastal hazards. This native coastal belt vegetation area is dominated by mature Takamaka and Badamier trees which are acting as important protection against coastal erosion events and tidal surges. No negative impacts are expected on the native coastal belt area from the proposed construction activities that will be concentrating mainly inside plots V8331, V8742, V9062, V8737 and V8736.

Impact on native plants and ferns

Minimal impact onto the biodiversity is expected from the proposed developments as the majority of the trees to be lost as a result of the proposed hotel development will be exotic plants and a small proportion of juvenile and mature native plants. No endemic trees or palms were recorded inside the project plot.

Impacts of the proposed road that will be traversing inside parts of the V9559 wetland

1) **Social impacts on local communities during implementation of the road construction**

Impacts expected during the implementation stages of the road network that will start near V15898 which is a private property and the private businesses using this existing road network that leads all the way to V15898 and other private properties behind, will entail the use of heavy trucks for ferrying off of loose loamy soil material from the wetland to be deposited off-site and carrying of rocks for rock packing works and upgrade to the existing soil structure will involve noise impacts from the dumper trucks and dust pollution that will be an issue. Mitigation measures have to be put in place for minimizing impacts to the private properties and businesses. Truck movement hours have to be monitored to minimize noise and dust pollution during the weekend.

2) **Impacts on the wetland ecosystem during excavation and road construction works**

Before any excavation works can commence on the wetland are where the road alignment will be constructed, the removal of all the terrapin individuals inside the wetland has to be initiated to prevent any accidental crushing of

the critically endangered terrapin species, which are present inside the wetland area. Trapping works has to be started 4-6 weeks before any commencement of the excavation works so that the terrapins can be trapped and relocated in an enclosure for safekeeping and returned back to the wetland area once the road has been completed. The excavation of the loose and loamy wetland soils is necessary and replacement with bedrock for rock packing works to upgrade the soil stratum and give long-term stability to the constructed road. However, during the excavation works, the loamy soil during rainfall events will flow into the drainage network that flows out onto Beau Vallon beach. A sedimentation pond has to be constructed before the exit of drain that leads out onto the beach to prevent pollution of the beach and sea by the loamy wetland soil and sludges. It is important to have a de-watering mechanism system that minimize water ponding on the project site, so that minimal water remains on the wetland surface that can overfill the sedimentation pond with suspended sediments, which can then pollute the beach and marine environment. It is important that the excavation works are done during the dry season to minimize impacts to the beach and marine environment.

3) Impacts of tree felling on the wetland area

Tree felling activities will be conducted for construction of the proposed road link that will provide access to the Aria Hotel project site. Only trees that falls within the road alignment will be felled. Mature Badamier trees that provides vital habitats to the existing critically endangered Seychelles terrapins populations, will be protected and any trees that will be felled by the tree felling contractors, has to make sure that the trees do not damage the important native woodland trees communities nearby.

4) Impacts of the road construction works on nearby hotel businesses

The proximity of the proposed road construction works to the Berjaya Beau Vallon Bay hotel boundary fence will entail protection to prevent damage to the fence. Hoarding walls will have to be erected to prevent noise and dust pollution from affecting the nearby land-tortoise inside the tortoise pen. The construction of the new road link that will pass close to the boundary corner of plot V9561 will be beneficial to the hotel business as it can provide a direct access to the property and thus minimizing the need to go inside the Berjaya Beau Vallon Resort area.

5) Impacts of construction workers on the wetland area

The increase in human presence on the site during the construction stages will put pressure on the wetland with regards to hygiene. Proper toilet facilities have to be constructed away from the wetland to prevent pollution of the wetland surface by unsanitary hygiene practices. Measures has to be put in place to prevent pollution of the wetland surface by oil and fuel leaking from the machineries on site.

6) Impacts of soil staining of the small road that leads into the take-off point of the proposed road network that will link the proposed Aria Hotel project

It is also important to address the issue of soil staining of the small road that starts from the V15898 private property and leads out onto the main road. The removal of loamy wetland soil with dumper trucks will lead to staining of the small road due to the water inside the soil. Road cleaning and maintenance should be addressed as this is a touristic area.

5. RECOMMENDATIONS

5.1 Reducing impact to the native belt coastal zone areas

No major structures or buildings will be allowed inside the native coastal belt vegetation zone that falls within the 25m setback that starts from the HWM. However, the proximity of the construction works nearby that will involve dust and noise pollutions, will entail the construction of hoarding walls to prevent dust pollution on the existing native trees on the coastline as well as the Coral Strand buildings nearby, as well as the tourism businesses that are located inside plot V9561.

5.2 Reducing impacts on local communities during implementation of the road construction

Proper monitoring and issuing of working hours for the movement of the dumper trucks working inside the proposed road construction area will have to be implemented to minimize noise and dust pollution especially during the weekends when the tourism businesses are busy. Road control has to be implemented to control traffic inside this area to prevent accidents especially after 16:00 hrs. when the residents are returning home from work.

5.3 Reducing impacts on the wetland ecosystem during excavation and road construction works

a) All road construction activities should ensure that the wetland surface and bed are not polluted by construction materials such as cement sludges, discarded cement bags, dust and chemical spills during the construction of the proposed road network that will traverse parts of the wetland areas. Mitigation measures have to be put in place such as proper hoarding walls to prevent such accidents. A sedimentation pond will be built before the exit point of the drainage network that leads out to the Beau Vallon beach to trap all loamy soil sludges and sediments during heavy rainfall events and during the excavation works to prevent pollution of the beach and the marine environment.

b) A capture programme must be initiated 4-6 weeks before the commencement of the proposed road construction works to capture all the terrapins present inside the wetland areas and relocate them in an enclosure where they can keep safely, whilst they are being fed and looked after. This is important for their survival due to the dangers of the machineries to be involved in the road construction works. Once the road construction works has been finalized and proper protection measures put in place such as smooth rock armoring networks to prevent them from wandering on the road surface, they can be put back into the wetland. They can use the wetland areas on the other side for their breeding and foraging needs.

c) Proper sanitary facilities such as toilets and urinals that are placed well away from the wetland edges to prevent leakage of urine into the wetland. H&S officer needs to be appointed to ensure that this is strictly adhered to.

d) Tree cutting works inside the alignment of the proposed road network to ensure that minimal damage is inflicted on the trees that are not earmarked for felling.

6. CONCLUSION

The proposed hotel development inside plots V8331, V8742, V9062, V8737 and V8736 that forms part of the proposed Aria Hotel development at Beau Vallon, falls within areas that are dominated by mixture of exotic and native plant species consisting of Mango, Gliricidia, Zanblon, Albizia, Kasi, Calice Du Pape and Takamaka. The sensitive native coastal belt vegetation that is located within the 25m setback line and which acts a native coastal buffer zone, will not be touched or altered due to their sensitivity with regards to coastal zone protection from erosion and other ecological services that they offer. This native coastal belt is dominated by mature Takamaka and Badamier trees on the beach front, with Coconut and smaller Badamier trees located more inland.

Mitigation measures with regards to the protection of the wetland areas due to the proposed road construction activities, minimizing noise and dust via mitigation measures due to the increase in construction vehicles moving in and out of the active construction zone located inside the wetland areas found inside plot V9559 to ensure minimal noise and dust pollution will be put in place with regards to the proposed new road that will act as a link to the main hotel project plots consisting of V8331, V8742, V9062, V8737 and V8736. The results from our fauna survey in March and April 2025 has shown the presence of a small terrapin species consisting of both the Black Mud terrapin *Pelusios subniger* and Yellow-Bellied Mud terrapin *Pelusios castainoides* that will be protected from the proposed road construction activities. A capture programme with fish-traps will be put in place 4-6 weeks before the commencement of the road construction works to capture all the terrapins and relocate them in a temporary enclosure for protection. After the road construction is finalized, the terrapins will be released back into the wetland. Mitigation measures consisting of the construction of a sedimentation pond before the outlet point of the drainage network that leads out to sea during heavy rainfall events will be vital to protect the beach front from sedimentation sludges and sediments during the proposed excavation works that will ben vital for the road construction works. It is also important to address the issue of soil staining of the small road that starts from the V15898 private property and leads out onto the main road. The removal of loamy wetland soil with dumper trucks will lead to staining of the small road due to the water inside the soil. Road cleaning and maintenance should be addressed as this is a touristic area. In terms of suitable areas identified for the purposes of development, all the development zones mentioned are of low sensitivity in terms of rare and endemic plant and animal species, with the forest structure comprising of the upper, lower and ground cover all dominated by mostly exotic plant species.

In conclusion, the proposed Aria Hotel development project on plots V8331, V8742, V9062, V8737 and V8736will not damage the natural assets of the proposed development zones, which are mostly dominated by exotic trees consisting of Gliricidia, Zanblon, Albizia, Kasi and Calice Du Pape. Measures will be put in place to ensure that the

environment is not polluted and that all terrestrial ecosystems will not be interfered with. The removal of all terrapin species present inside the small wetland bodies and relocation in a temporary enclosure for their protection will be undertaken 4-6 weeks before the commencement of the road construction works to ensure their safety. Appropriate mitigation measures will be put in place to ensure that the wetland, beach areas and the neighboring tourism establishments are protected from the proposed road construction works.

4.2 SITE TOPOGRAPHY

The topography of the Seychelles granitic islands is such that they have a very low coastal zone (2-3m above mean sea level) with a sudden, sharp rise in level, moving further inland, resulting in a mountainous topography with a maximum peak of 908m on the main island of Mahe. With an average central width of only 5km, this gives an average slope gradient of about 20%. The islands are also composed of steep-sided valleys acting as natural water catchments, with the lower areas acting as wetlands, flood plains and minor river deltas.

Mahé has the highest relief of the three main islands, which are typically rugged and hilly as shown in the figure below. It has a coastal strip rising fairly sharply from the coast to heights of up to 300 m in the south, reaching 914 m in the northern portion of the island. Praslin and La Digue have less severe relief, reaching heights of just over 300m.

Figure 5.2.1

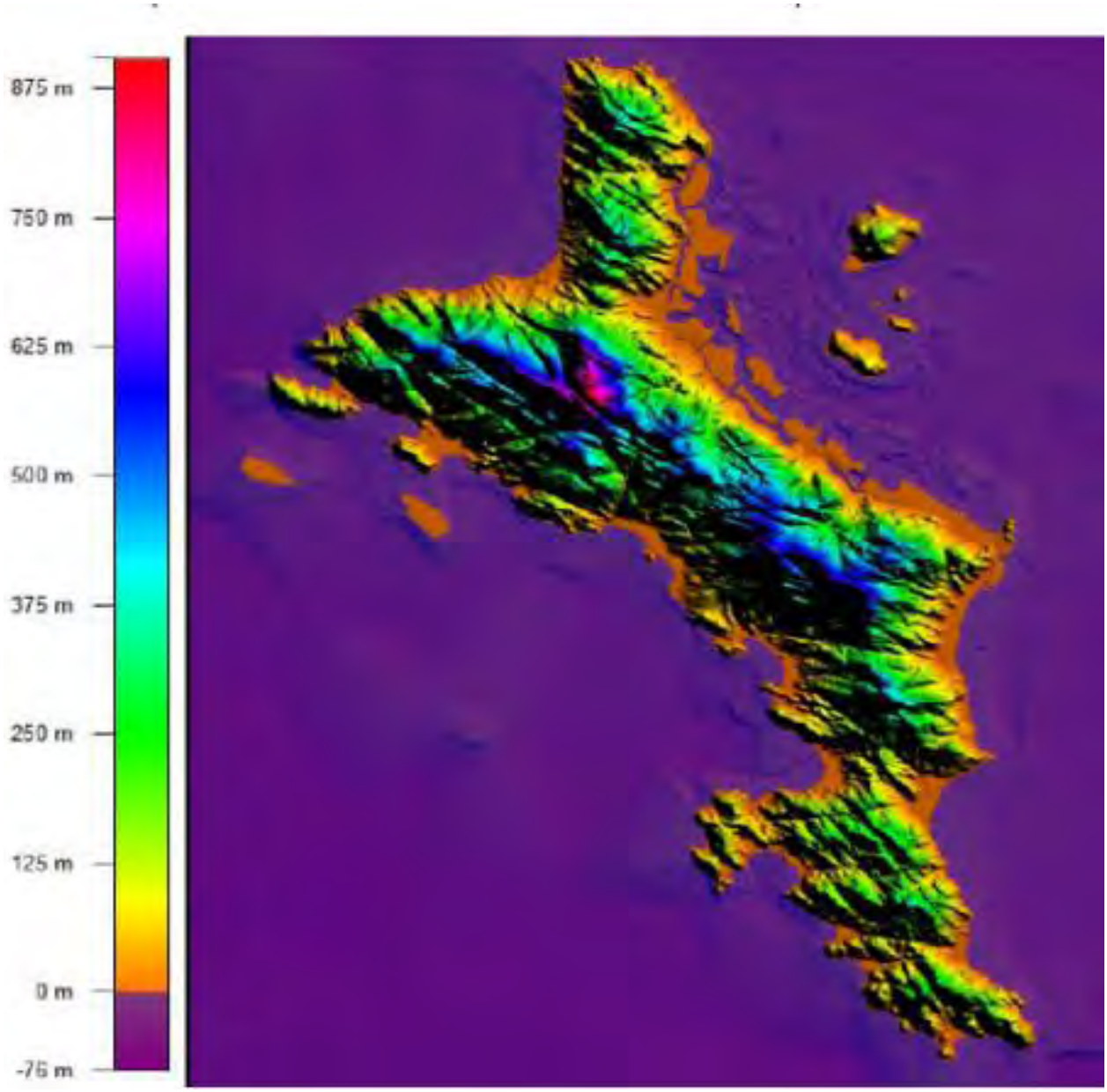
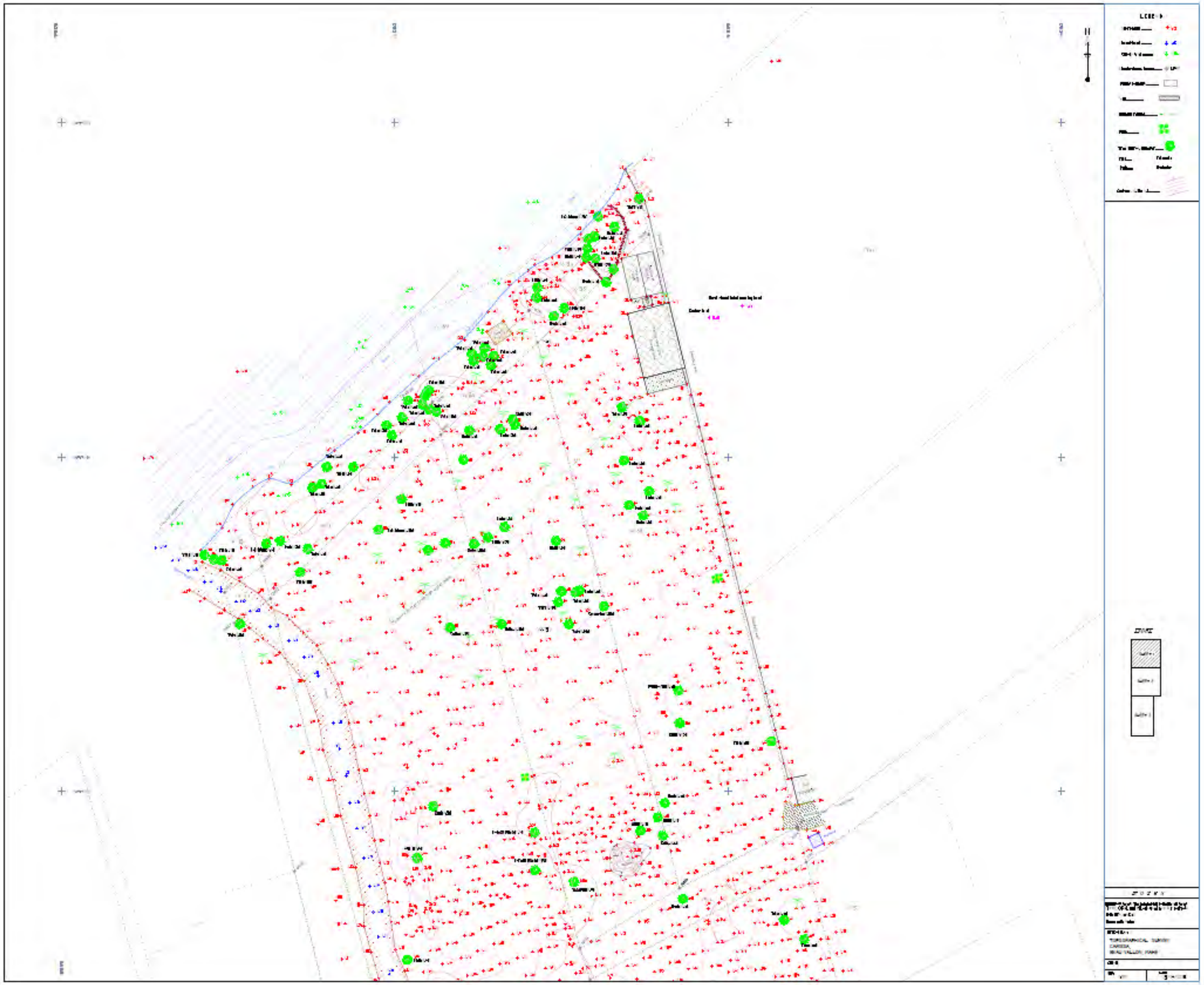
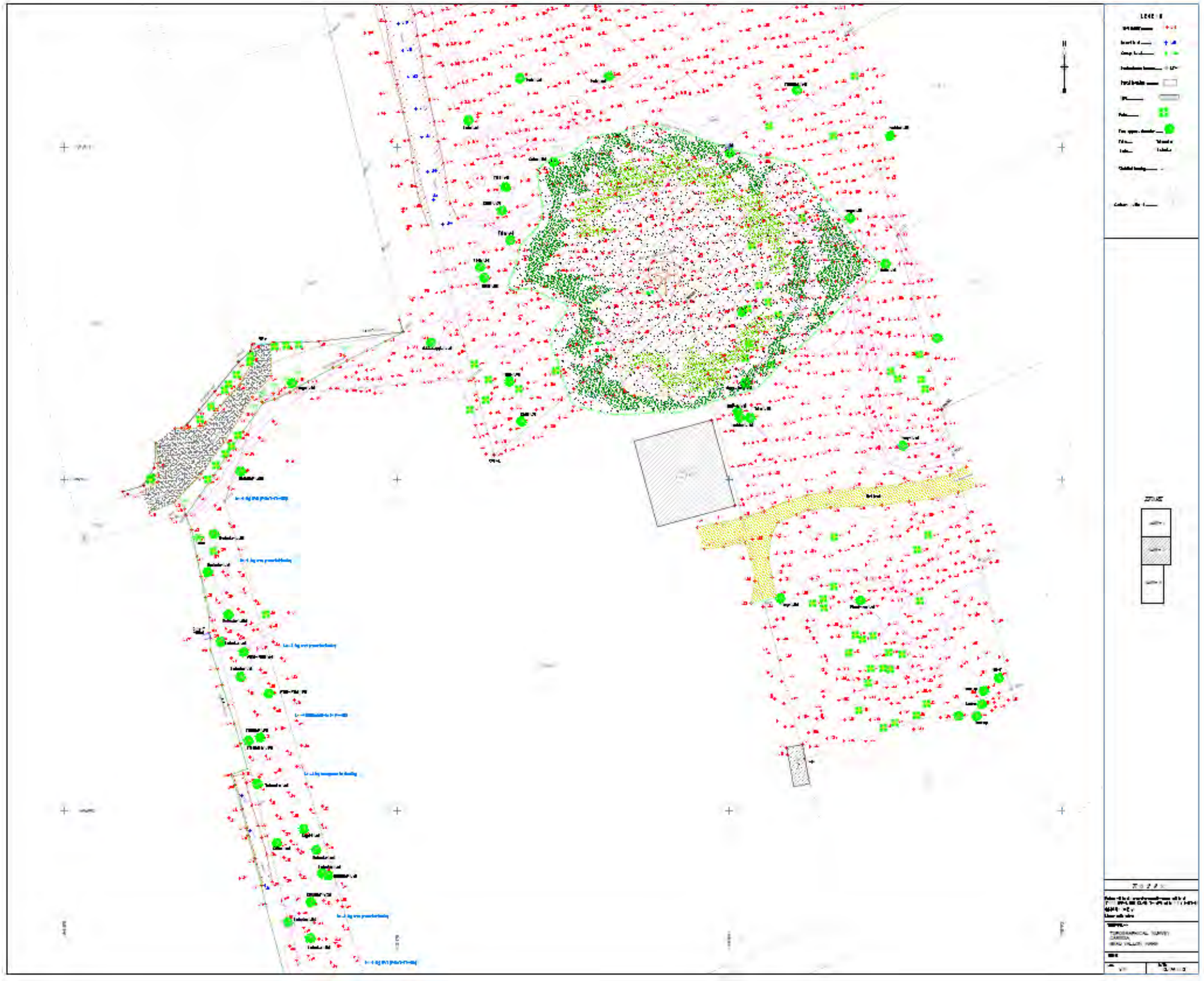
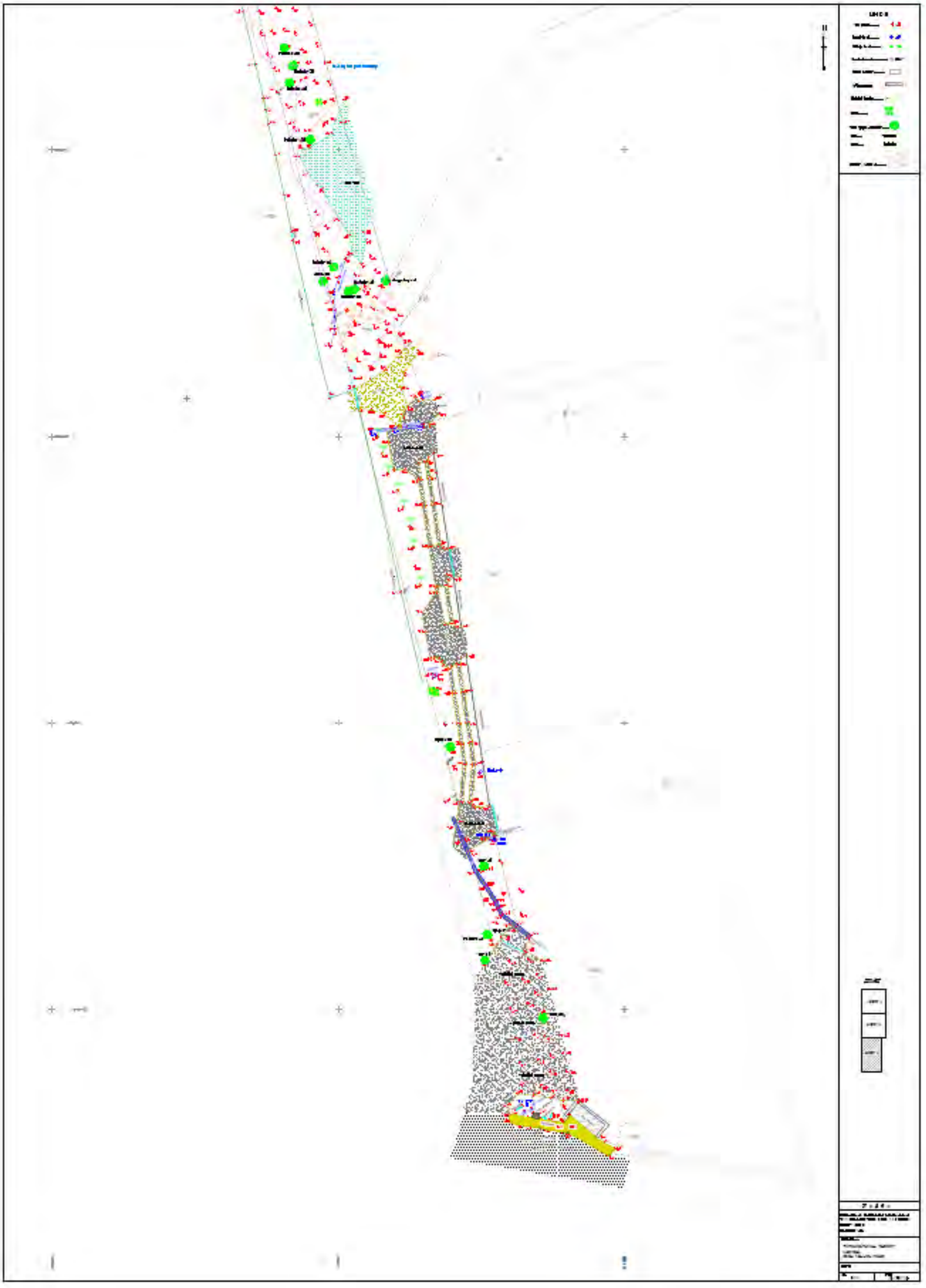


Fig 5.2_2: Mahe Island's Topographical Map

The topography assessments of the site are shown below:







4.3 HYDROLOGY ASSESSMENT

The objective of this section is to outline the hydrology, storm water & regime flow management baseline survey requirement to the development. The general idea of a hydrology baseline survey towards the ESIA study of the project looks to present a detailed report on flood mitigation to the proposal, which entails generally the storm water and flow regime analysis. The report shall aim at presenting a detailed hydrology, hydrological and topographical analysis in the mindset of mitigating adverse effect of excessive overland storm water flow generated by the introduction of the new infrastructures development to the existing infrastructures, marsh system and associated flow regimes/paths. The mitigation measures shall consider the actual site of development, all adjacent/neighboring plots and hydrological influence of overlying watersheds on the proposed development.

The report aims to present detailed analyses and recommendations towards an effective storm-water management viz. the proper channeling, evacuation and safe discharge of flow such that 1) the proposed development is not affected adversely by unprecedented flow of water either from foreign flow or incident rainfall and 2) the proposed development does not pose as a new environmental threat to adjacent plots and existing water bodies (wetland) in terms of storm water runoff either from covered surfaces or river/stream diversion. The baseline study report shall also touch upon alternatives to management of local storm water runoff in the form of water harvesting and recycling.

As a first assessment of the area, detailed reconnaissance site visits were undertaken to establish a physical overview of the existing features of the site and its adjacent plots, the natural drainage profile of the proposed area of development as well as the overlying watershed areas. The site visits covered the entire grid area stretching from the Beau Vallon Main road from the Police Station Junction, to the beachfront area of the proposed Aria Hotel site. The site visits were aimed at assessing the degree of influence of physical features on the flow regime, volume and path within and around the proposed area of development, such as slope, spot heights, vegetation cover, soil type etc.

Following the detailed site visits, a series of desktop studies were undertaken in the form of analysis of the upper areas beyond the Beau Vallon and Beau Belle Main Road towards the establishment of upper watershed boundaries, areas as well as establishing the flow paths, regimes and volume that each of these watershed discharges. The aim of this upper terrain analysis is to determine of any of these upper main watershed contributes flow to the project site and the volume thereof. The determination of the watershed areas and boundaries were done through careful analysis of digital terrain mapping tools

available such as WebGIS and Quantum GIS with layers of pre-determined watershed boundaries, rivers, wetlands and drainage channels super-imposed thereon.

In addition to the terrain mapping exercise, flow analysis and computation from these watersheds was also done in line with research from past and live reference documents vis-à-vis historical flooding events, rainfall patterns and areas of persistent flooding relating to the area of development as well as to North Mahe in general. Among the reference documents are the 1999 Paul Abbey Drainage Design Guidelines, 2006 National Drainage Task Force report, the 2013 Damage and Loss Assessment (DALA) report, the 2014 JICA report, past ESIA flooding and drainage management studies within the area and current topographical survey maps produced from other baseline study of the ESIA for this project. Resulting from the site visits and desktop studies the below preliminary points outline proposed detailed work plan for the addressing of the flooding issues within the immediate areas over and adjacent to the proposed project site. As a systematic summary to the scope of works covered in this study, the following points entail: -

- *To compute inflow into Aria Hotel development and adjacent wetlands by means of hydrological analysis of upper catchment areas and confirm the extent of influence of these upper watersheds on the area of development;*
- *To analyse flow pattern into and within the Aria Hotel premises and in-coming covered surfaces such as road accesses and roofs;*
- *To analyze flow path of the wetland, wetland area/extent, outlet status in a bid to propose methods for optimization of flow;*
- *To compute marsh flow retention capacity and proposed excavation works to enhance capacity of wetland*

Site Characteristics

4.4.1 Land Profile

Site topographical survey exercise reveals a very flat terrain throughout the area of development, with an average height of 2.4m above mean sea level (*Fig 2*). The area itself falls outside of any distinct main watershed, as seen in Chapter 4. The area is generally void of any large boulders or protruding rock outcrops.

The lack of a distinct slope within the area makes it unfavourable to propose lengthy open drainage systems. However, due to the close proximity of the site from the sea outfront, the evacuation of surface flows from the built areas can easily make use of this. The presence of the wetland is an added advantage in the proposal of surface flow evacuation system. As the aim of the development looks to enhance the existing water features on site, it is proposed that most of the surface flows within the area be fed into the wetland.

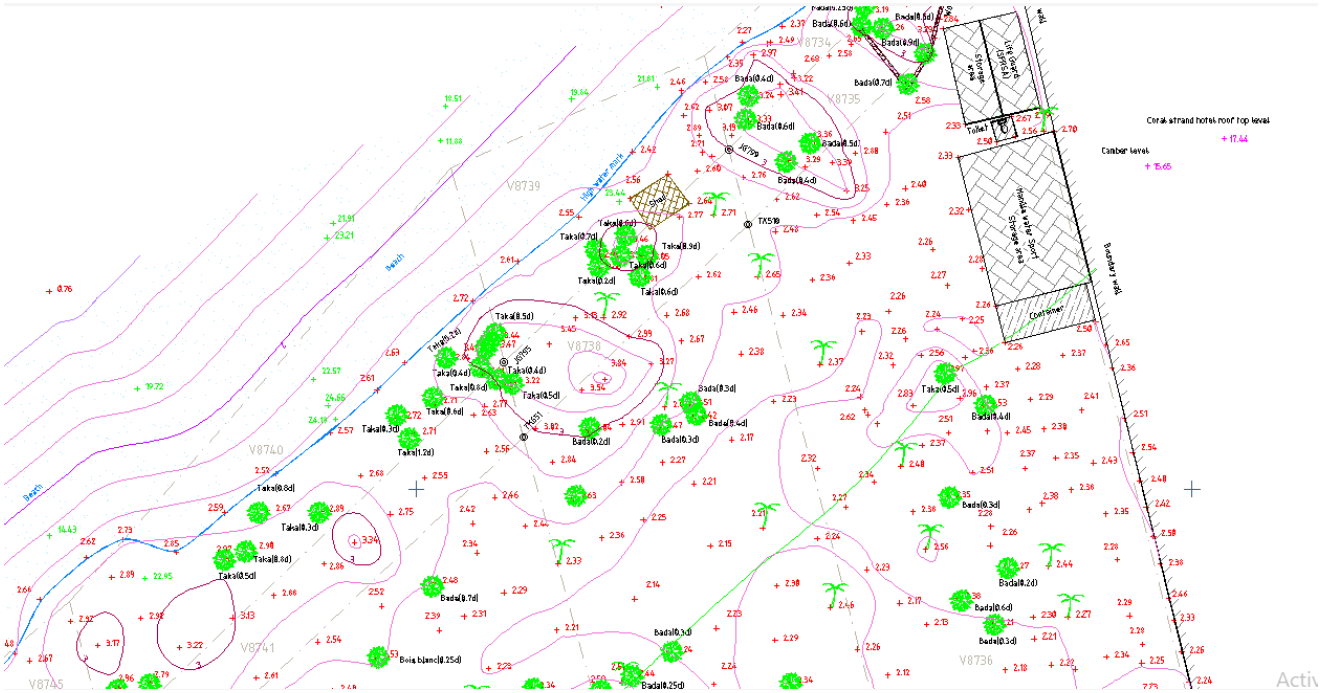


Fig 2 – Site Topographical Survey Layout (Extract)

4.4.2 Terrain Soil Type

The soil characterisis of the area of development is determined by 3 main factors.

1. The close proximity of the area from the beachfront means that beach sand deposition is prevalent. As a result, the pre-dominant soil type of the area is sandy soil, which displays good water absorption characteristics (*Plate 1*).

2. The presence of the wetland and wetland outlet adjacent and within the site means that eroded soil deposition is also prevalent. The deposited soil type are usually coarse grains that are less easily carried by water flow. As a result, the second most prevalent soil type of the site is coarse, gravelly soil. This tyoe of soil, similar to sandy soil allow for fast water percolation and ground absorption (*Plate 2*).

3. The low lying nature of the site that forms the wetland, which means that vegetation matter and silt are also present, however, to a much lesser extent. The silt and decomposte vegetation matter forms a layer of loam soil, which discurgaes absorption of surface water. However, this soil type is mainly found within the wetland bed and close proximity to the wetland outlet channel.

Plate 1 – Soil composition nearer to beach front mainly sandy Plate 2 - Sand-gravel mixture further inland

4.4.3 Vegetation Cover

Two types of vegetation cover can be found on the site. The predominant vegetation types are mainly in the form of ground covers and ferns. The ground cover layer is dense and hampers the absorption of surface flow into the ground. However, this can easily be revoved during project implementation to make way for construction. The ground cover is also found mainly within the bank of the wetland and channe outlet (*Plate 3*).

To a lesser extent, the site consists of sparse trees which poses no signifcant influence on the hydrology of the area. The notable vegetation of course, is the existing banyan tree, which is situated on the edge of the wetland (*Plate 4*). The location of the banyan tree acts as a natural wetland edge protection in some areas as well as forms a well-established eco-system within the wetland itself. The developer would be advised not to tamper with this banyan tree and to in fact make use of its presence for wetland protection and aesthetic purposes.

Plate 3 – Ground cover-type vegetation within site

Plate 4 – Bayan tree within marsh edge

4.4.4 Rainfall Patterns/Intensities

The site of proposed development experiences a similar pattern and intensity of rainfall as the entire lower Beau Vallon area, due to similar relief. The Beau Vallon area has had a fair share of historical recorded flood events

In 2012, the JICA Study Team examined archived newspapers for the last 25 years and has found that major floods occurred in 1989, 1990, 1993, 1997, 2004, 2005 and 2006. However, there are no detailed records and specific information on flooding conditions. The summary of flood disasters in the last 25 years, as per JICA's findings is shown in Table 1.

Date	Area	Location	Description
31st July 1989	Mahe	Anse Aux Pins, Pointe Larue	flooding
28th January 1990	Mahe	Belonie, La Louise, Beau Vallon	flooding / landslide
18th-19th February 1990	Mahe	Victoria Town, Anse Etoile, Pointe Larue, Mont Fleuri and Bel Eau	flooding / overflow / damage to houses
18th-22nd May 1990	Mahe	Mont Buxton, Port Glaud, Les Mamelles, Anse aux Pins	flooding / landslide/ damage to houses
16th February 1993	Mahe	Victoria, Albert Street	flooding
18th February 1993	La Digue	La Passe, Anse Reunion	flooding/mud/damage to drainage and road
10th-13th Jan. 1997	Mahe	Mont Fleuri, Roche Caiman, Foret Noire, Bel Air	flooding/landslide
9th-12th Feb 1997	Mahe	Foret noire, Plaisance. Mont Fleuri	flooding/landslide
13th-17th August 1997	Mahe La Digue	Victoria Town, Beau Vallon, Pointe Conan, Takamaka	flooding / overflow / collapsed roads
5th Nov. 1997	Praslin	Grand Anse, Baie Ste Anne	flooding
29th-30th December 2004	Mahe	Northern regions of Mahe, Victoria Town, Beau Vallon	flooding / inundated houses / damage to public infrastructure
8th-12th June 2005	Mahe	Grand Anse, Anse Boileau, Port Glaud, Anse Royale, Le Niole	flooding / landslide / falling of trees
4th-5th January 2006	Mahe	North Mahe, Pointe Conan, Beau Vallon and Mont Buxton.	flooding / landslide / collapsed roads

Table 1 – Summary of Past Flood Disasters for the last 25 years
(Source: JICA 2012)

As can be seen, the Beau Vallon region experiences frequent torrential rains and floods due to its flat terrain, which sits within the watershed interface of the Bel Ombre/Le Niole upper areas. The unique, sharp rise in relief of these areas causes sudden condensation of water vapour, which results in more-than-average rainfall, ending up within the Beau Vallon lower regions.

On the night of the 28th to 29th December 2004 torrential rains battered the northern parts of the Island of Mahé for 3 consecutive days. Flood-Induced damages were reported to the road infrastructure as well as damages to many houses and private businesses. Over 400mm of rain were reported over the northern areas for the 3-day period between the 28th and 30th whilst the southern areas received less than 200mm over the same period. The heavy rain was the result of a series of rainstorms within a particularly active portion of the Inter Tropical Convergence Zone (ITCZ) in the vicinity of Mahé and Inner islands.

4.4.5 Flow regimes and sources

As stated before, due to the very good surface water absorbent nature of the soil, very little surface flow is generated from the site. All flows from the incident rainfall is expected therefore to naturally percolate into the ground. It is also perceived that with the introduction of the hotel buildings and paved areas, there will be a significant increase in the volume of surface water within the site. This can however easily be countered by having small surface drainage or self-percolating drainage that further encourages surface water absorption.

The outlet of the wetland consist of a sandy beach area, with periodic sand accumulation within the channel itself *(Plates 5-6).* Although significant, the sand accumulation is always countered by the medium to heavy flows from the wetland during rainy periods, which acts as a self-cleansing mechanism for removal of excess sand from the outlet. This sand accumulation-cleansing patterns is established within the outlet in a delicate but natural equilibrium. As such, the introduction of any sand barrier system within the outlet is not recommended for this reason. Having a hard structure on this portion of the beach will also definietly deface the pristine beach front.

Site observsation has however shown that there is a constant threat of wetland bank erosion and degradation (*Plate 7*). This is primarily due to the soil nature of the wetland bank. As seen before, the soil characteruistics of the area is mainly sandy and gravelly soil, which provides good water absorption. The downside is that this soil type does not form very stable embankment. As a result, and with constant water flow, the wetland bank will experience perodic degradation. The solution for this is by the intriduction of a more sturdy bank protection system. The two main system used commony in Seychelles is timber piling and rock armouring. The former is however not durable and is suspectble to weathering/decomposition, especially in dymanic areas such as the outlet. As such, the preferred recommendation for the bank protection is a rock armouring system, by means of angular granite rocks from quarry.

Plate 5 – Sandy Outlet to wetland

Plate 6 – Periodic Sand Accumulation within Channel Outlet of Wetland

Plate 7 – Channel Bank Erosion and Degradation

4.4.6 Hydrology and Watershed Parameters

For relatively small areas such as the property in question and its associated overlying, influential watershed areas, the most used method for estimating the maximum annual discharge starting from the rainfall intensity is the "Rational Method". According to this formula the rainfall intensity is considered for a duration that is at least equal to the time of concentration (T_c) of the basin. This means that for punctual rainstorms a relationship between the intensity - duration - frequency (IDF curves) has to be established. The Rational Method is used for drainage areas of 20 km^2 or less and is the simplest method to determine peak discharge from drainage basin runoff. Considering its simplicity and applicability, the Rational Formula is deemed most appropriate and is therefore adopted in the calculation of discharge.

The Rational Formula is expressed as:

$$\mathbf{Q = 0.278\ C_y I_y A}$$

Where,

Q = design discharge, m^3/sec

Cy = runoff coefficient

Iy = rainfall intensity, mm/hr (for duration is which is assumed to equal to catchment time of concentration)

A = catchment area, km^2

Examination of this formula reveals that the product of rainfall intensity and catchment area has unit equivalent to that of peak discharge. Therefore, it can be seen that the rate of "inflow" to the catchment is given by Iy *A (and is a steady rate over rainfall duration).

The upper watershed areas overlooking the hotel premises of proposed Aria Hotel site consists of several watersheds that discharges within the Beau Vallon and Bel Ombre lower area via established perennial rivers and channels. By means of GIS and spatial data (e.g. relief and contours), the boundaries of these individual watersheds were determined. In addition, analysis of the relief of the area allows to make sound approximations as to the flow regime that proceeds from these watersheds. Due to their relatively large sizes, the flow regime is portrayed as consisting of all 3 main flow regimes being sheet flows, semi-concentrated flows and channel flows.

Following this exercise, the usage of hydrology parameters such as Runoff Coefficients, Time of Concentration and Rainfall Intensities, a relatively precise volume of flow was computed for each watershed at the watershed/wetland interface. Due to the terrain type of the upper watershed being very rocky, it was safely assumed that a runoff coefficient of value 0.57 be adopted for usage in these computations. The value corresponds to the low soil absorption characteristics of the area due to the

presence of large boulders, coupled with the vegetation canopy which further minimizes soil absorption. The corresponding runoff coefficient value for the various terrain types is referenced from Table 2.

The rainfall intensities used for each watershed correspond to the design storm duration, a common assumption for calculating flows from small watersheds (for Seychelles). In this case, a storm Average Recurrence Interval of 10 years has been adopted and the rainfall intensity is computed for each flow regime for each watershed. The design rainfall intensity varies from 119mm/hr to 176mm/hr, with the corresponding time of concentration calculated accordingly.

Based on the spatial data and by the adoption of the aforementioned parameters, the watershed boundary was delineated and flow computations from each computed. The results are portrayed in Annexes 1 and 2 of this report.

Type of ground surface	Coefficient of surface runoff,
Road:	
Pavement	0.70–0.90
Permeable pavement	0.30–0.40
Gravel road	0.30–0.70
Shoulder or top of slope:	
Fine soil	0.40–0.65
Coarse soil	0.10–0.30
Hard rock	0.70–0.85
Soft rock	0.50–0.75
Grass plot of sand:	
Slope 0–2%	0.05–0.10
Slope 2–7%	0.10–0.15
Slope 7%	0.15–0.20
Grass plot of clay:	
Slope 0–2%	0.13–0.17
Slope 2–7%	0.18–0.22
Slope 7%	0.25–0.35
Roof	1.00
Unused bare land	0.20–0.40
Athletic field	0.40–0.80
Park with vegetation	0.10–0.25
Mountain with a gentle slope	0.30
Mountain with a steep slope	0.50
A paddy field or water	0.70–0.80
Farmland	0.10–0.30

Table 2 – Runoff Coefficient Values

4.4.7. Hydraulics Computation

Open Channel Flow is defined as fluid flow with a free surface open to the atmosphere. Examples include streams, rivers and culverts not flowing full. Open channel flow assumes that the pressure at the surface is constant and the hydraulic grade line is at the surface of the fluid.

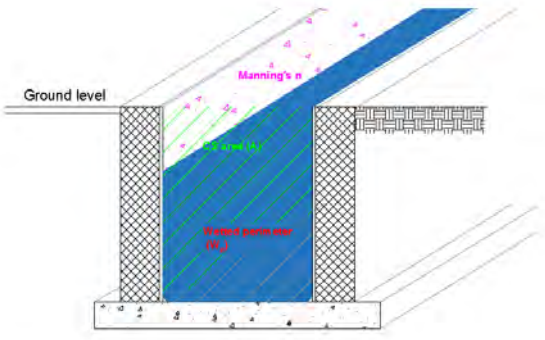
Steady and unsteady flow depends on whether flow depth and velocity change with time at a point. In general, if the quantity of water entering and leaving the reach does not change, then the flow is considered steady.

Steady flow in a channel can be either Uniform or Non-uniform (varied). When the average velocities in successive cross sections of a channel are the same, the flow is uniform. This occurs only when the cross section is constant. Non-uniform flow results from gradual or sudden changes in the cross sectional area and thus hydraulic radius.

Uniform flow and varied flow describe the changes in depth and velocity with respect to distance. If the water surface is parallel to the channel bottom flow is uniform and the water surface is at normal depth. Varied flow or non-uniform flow occurs when depth or velocity change over a distance, like in a constriction or over a riffle. Gradually varied flow occurs when the change is small, and rapidly varied flow occurs when the change is large, for example a wave, waterfall, or the rapid transition from a stream channel into the inlet of a culvert.

Uniform flow almost never occurs in natural rivers, but since it is much easier to calculate uniform flow than non-uniform flow, we generally assume (for calculation purposes) that the flow is uniform. With uniform flow the most commonly used formula for open channel flow capacity computation is the Manning formula.

$$Q = A\,((R^{2/3}S^{1/2})/n)$$



Where:
Q is the channel flow capacity
R is the "hydraulic radius"
S is the slope and n is the channel roughness (often called Manning's n).

As can be see, the flow capacity of open channel is affected by three main factors. These are channel slope, the roughness of the channel's bed and banks and the cross-section channel shape.

The hydraulic radius is the term used to describe the shape of a channel. It is the ratio between the length of the wetted perimeter and the cross-section area.

$$R = A/P_w$$

The Manning's n is a coefficient which represents the roughness or friction applied to the flow by the channel. Manning's n-values are often selected from tables, but can be back calculated from field measurements. In many flow conditions the selection of a Manning's roughness coefficient can greatly affect computational results. Annex 1 provides an establish set of Manning's n values for various channel surfaces.

4.4.8. Existing Flow Characteristics

4.4.8.1 Influence of Upper Watersheds

The results of the watershed analysis as portrayed in Annexes 1 and 2 indicate that most of the upper watersheds are discharged into a sea outfall by well-defined river channels. The main river channels that evacuates these watersheds are Mare Anglaise River, Sullivan River, Grand St. Louis River, Manmzel Anna River and Athanase River, all of which flows directly to the sea. The area of proposed development falls outside of the boundary of these watersheds and therefore the latter pose as no direct hydrological influence on the Aria Hotel development site. As a result, the proposal of flood mitigation measures for the proposed site shall not take into account the management of flows from these watersheds.

Plate 8 - Sullivan River being channeled on mountain side of Beau Belle Main Road, well away from Aria Hotel site. The river discharges into the sea adjacent to H Hotel area.

4.4.8.2 Entrance Road (Guest Road) to Hotel

The proposed main entrance (guest) road to the Aria Hotel shall be connected to the main road at Beau Vallon and shall run parallel to the Berjaya Hotel main entrance road. The existing situation is such that water flows from the main road onto the access road of Berjaya hotel. This is due largely to 1) the main road camber towards that entrance and 2) the lack of a proper water capture system such a grille within that junction (Plate 9). As a result, there is water flow from the main road ending up into the Berjaya premises (Plate 10). It is foreseen that a similar scenario will occur with the new access guest road of Aria Hotel can result unless adequate mitigation measures for road surface runoff from the main road be introduced in that junction.

Plate 9 – Junction between main road and guest entrance to Berjaya/Aria Hotel lacks proper drainage system. As a result, flooding of and water ponding of water onto road access of Berjaya is observed (Plate 10).

P6 – Water ponding on access road to Berjaya due to lack of drainage as stated in Plate 9

4.4.8.3 Existing Wetland

The main component of the flood mitigation measure for the Aria Hotel development comprises of the proper management of the existing wetland. The Existing wetland serves as the main water body within and adjacent to the Aria Hotel premises, stretching adjacent to the Berjaya Hotel and follows the natural profile of the land into the Aria Hotel site.

Detailed site investigations show that there are no significant overland flows feeding into the wetland. However, as with most coastal freshwater wetlands, the absence of a surface flow usually indicates underground flow feeding into the wetland. Due to the permanent nature of the wetland, it is assumed that the underground feeding flow is perennial and is very likely to be a branch of the overlying Sullivan River. There are no surface flow connections between the Sullivan River and this wetland.
The wetland also serves as a sink for excess water from incident rainfall as well as from nearby covered surfaces such as the Berjaya hotel parking area, being the closest covered surface to the wetland. A system of lined concrete drains (although currently in poor structural state) connects the Berjaya car park to the wetland.

The current state of the wetland is such that it is heavily vegetated and silted up, which is a significant factor in reducing the water retention capacity thereof (*Plates 11 and 12*). Any flood mitigation proposal in areas where wetlands a present, makes recommendations to maximize the water retention capacity of the wetland without affecting the current ecosystem balance therein.

Plate 11 – Wetland pocket adjacent to Berjaya heavily vegetated and silted up

Plate 12 - Inland part of wetland channel outlet in need of widening, bank reinforcement and de-vegetation/cleaning.

As a result of the silt accumulation and other debris within the wetland, the other significant factor affecting the water retention capacity of the wetland is its loss of a defined edge/boundary. This is the case especially closer to the project site, where human activity, sediment deposition and over-vegetation has breached into the flood buffer zone of the wetland. The usual approach towards the re-defining of the boundary of the wetland is through the excavation for de-silting of the wetland, using de-silted material to form an earth bund around the bank thereof and re-enforcement of the bund through hard or soft engineering approaches, depending on the soil type.

Finally, the wetland outlet channel consists of an open-to-sea earth channel, discharging excess water from the wetland to the sea via a sandy beach front. As is the case with virtually all open channel to the sea in Seychelles, the issue of sand accumulation is prevalent within the channel (Plates 13 and 14). In cases where flow from these channels are not permanent, irregular or of small volume, the sand accumulation tends to overwhelm the flow of the channel, such that manual sand removal is required for the removal of the sand. In this case however, a delicate balance has been established between the rate of sand accumulation and the rate/volume of flow within the wetland. This is due to many factors such as the location of the outlet being in a bay area with relatively low sand movement, the flow frequency and volume from the marsh and the angle of the mouth of the outlet in relation to the beach front. As such, any proposals towards the mitigation of sand movement within the channel should be minimal at most, in order not to disturb this delicate balance.

Plate 13- Sandy Outlet to sea

Plate 14 – Inland sand intrusion and accumulation within the wetland outlet channel

The Annex provides a summary of the existing flow characteristics within and around the project area.

4.4.9. Recommendations

4.4.9.1 Wetland Management

Recommendation 1 – Wetland pocket adjacent to Berjaya heavily vegetated and silted up. For optimal flow and water retention capacity, it is recommended that periodic de-silting and de-vegetation be carried out. The de-vegetation does not include the removal of large trees – rather low, bushy shrubs that hamper flow. All excavated material shall be utilized to form bunding of wetland bank for better delineating of wetland perimeter. There is a proposal for the developer to also adopt this wetland through a memorandum of understanding with the Seychelles Ministry of Environment. The proponent shall ensure periodic de-silting and de-vegetation of the same.

Recommendation 2- Existing outlet of wetland within area of development. It is proposed that a rock armouring system be constructed at the bank of the outlet to mitigate the onset of sand degradation and for optimal flow. No sand barrier system or engineered outlet system required as outlet is self-cleansing (See Detail of Annex 5).

Recommendation 3 - Large Banyan Tree within wetland pocket adjacent to proposed Aria Hotel to remain for added stability to wetland and for aesthetic purposes. The recommendation is to dredge and de-silt the wetland within this area and around the banyan tree and use excavated material as bunding. The rock armouring system proposed at recommendation 2 shall stretch all the way inland to the area around the banyan tree.

Recommendation 4 – Inland part of wetland channel outlet in need of widening, bank reinforcement and de-vegetation/cleaning. It is proposed that a 2m depth x 4m top width be adopted to match the width of the outlet.

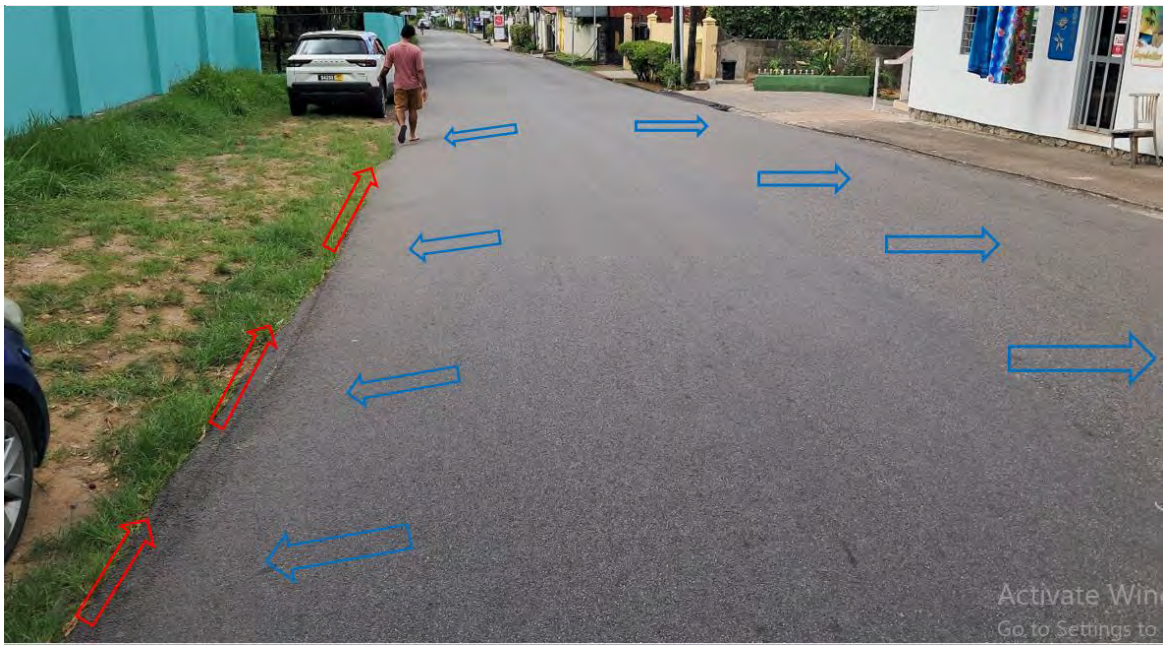
4.4.9.2 Road and Covered Surface Runoff Mitigation Proposals

Recommendation 5 – Junction between main road and guest entrance to Berjaya/Aria Hotel lacks proper drainage system. As a result, flooding of and water ponding of water onto road access of Berjaya is observed. It is proposed that the guest entrance road entails a road side or central drainage system to take up 1) flow from surface and 2) part of flow from main road, to safely convey same into the wetland pocket adjacent to Berjaya.

Recommendation 7 - Existing road access serving as back of house entrance to proposed Aria Hotel. The access is in adequate structural condition. However, it is proposed that a self-absorbent swale system be constructed adjacent to this road access to ensure proper evacuation of road surface runoff (See Detail of Annex 5)

Recommendation 8 - Concrete road access to Chez Nella Guesthouse consists of a proper roadside drainage. As such, no flow from this road surface is entering the wetland pocket at Aria Hotel. However, for optimal flow evacuation, it is proposed that a grille system be installed across the junction of this road to the Coco D'Or road. The proposal shall ensure that no surface flows from this road enters the Aria hotel premises as well as to maximize the efficiency of this drain. The proposal is a Government undertaking. See detail of Annex 5 for grille system.

Area for proposed grille for better evacuation of water from road to Chez Nella Guesthouse. This project is within Government's jurisdiction. The grille shall be connected to a proposed roadside drainage along the Coco D'Or road



Recommendation 9 - Road to Coco D'Or lacking in roadside drainage on left side of road, even though the road cambers 2 ways. The lack of roadside drainage causes local ponding of water in the area, which can be an inconvenience for users of the back of house road of Aria hotel. In addition, the roadside drain shall allow effective evacuation of the surface runoff of the road access to Chez Nella Guesthouse so that same does not influence the wetland at Aria Hotel. The proposal is within Government's jurisdiction.

4.4. MEP

A comprehensive Schematic Design report has been annexed to this ESIA. It is intended to provide the reader with a general overview about the MEP systems elaborated for this stage of design for Aria Hotel.

It will also provide technical descriptions and parameters, to which, will form the 'basis of design' throughout the later stages of the design for the MEP, ELV and infrastructure services.

The international standards that will set the minimum requirements in the design are:

o The HVAC system will be based on American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), Air-conditioning and Refrigeration Institute (ARI), Air Movement and Control Association (AMCA), Sheet Metal and Air-Conditioning Contractors National Association (SMACNA), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM), American National Standard Institute (ANSI), National Fire Protection Association (NFPA), and Underwriter's Laboratories Inc. (UL) standards and methods.
o Energy performance shall be limited to the systems provisions and equipment for electrical power, lighting, ventilating, air-conditioning, and energy management. The design will be carried out based on local codes and regulations or optional: ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings (TBC)
o Ventilation rate is based on latest ASHRAE Standard 62.1-2022; Ventilation and Acceptable Indoor Air Quality.
o ASHRAE Standard 55-2017 "Thermal Environmental Conditions for Human Occupancy" has been specified for thermal comfort specifications.
o Duct design and construction meet SMACNA Standards.

The water distribution design shall generally comply with international codes and applicable regulations and standard practices.
o National Standard Plumbing Code
o American Society of Plumbing Engineers
o Plumbing and Drainage Institute (PDI)
o National Sanitation Foundation (NSF)
o American Society of Plumbing Engineers (ASPE)
o American Society of Mechanical Engineers (ASME)
o American Society for Testing and Materials (ASTM)
o American National Standard Institute (ANSI)
o Occupational Safety & Health Agency (OSHA)
o Underwriter's Laboratories Inc. (UL)
o International Plumbing Code (IPC)

o International Building Code (IBC)

Cold water

The hotel needs are 146 m3/day. Considering 150 m3 capacity, the tanks will have a storage capacity of 1 day(s) which we consider sufficient.

Hot water requirements for each unit will be sized considering approximately 225 L/day per person: This estimation considers a total hotel occupancy of 112 guests from 75 rooms, and includes usage from the following areas:

- Guestroom consumption
- Public areas
- Hotel kitchen
- Back-of-house (BOH) staff consumption

Currently the hotel drainage system is collected by gravity, through an infrastructure network comprised of main gravity sewage collection system connected to lifting stations. Then, drainage is pumped to the sewage treatment plant (STP) at the hotel's boundary.

Firefighting Systems

Fire protection system shall be designed on international codes and hotel standards.

o National Fire Protection Association (NFPA)

o American Society for Testing and Materials (ASTM)

o American National Standard Institute (ANSI)

o Occupational Safety & Health Agency (OSHA)

o Underwriter's Laboratories Inc. (UL)

A diesel fire pump shall be provided with fire water tank 285 m3, reserve for 1 hour.

Sprinkler, hose reels and fire extinguishers system shall be provided.

The firefighting system shall be integrated with the Fire Alarm System and monitored via the Fire Control Panel, which will be connected to the Building Management System (BMS) where required.

Electrical Design

- Electrical Installations shall be designed according with PUC (Public Utilities Corporation), NEC (National Electrical Code), and IEC Standards (International Electrotechnical Commission)
- Life Safety Systems including fire alarm and emergency lighting shall be designed in accordance with Seychelles Fire and Rescue Services Agency (SFRSA), NFPA (National Fire Protection Association) and UL (Underwriters' Laboratories, Inc.)

Lighting system performance for service areas shall be designed according to CIBSE (Chartered Institution of Building Services Engineers) and IES (Illumination Engineering Society) for Lighting.

- The Earthing system shall comply with PUC (Public Utilities Corporation) and IEC Standards (International Electrotechnical Commission).
- Lightning protection system shall be designed according to PUC (Public Utilities Corporation), and IEC Standards (International Electrotechnical Commission).
- Surge protection system shall be designed according to IEC Standards (International Electrotechnical Commission).
- Panel Boards construction shall be designed according to IEC Standards (International Electrotechnical Commission).
- Voice (telephone) and data installations shall be designed to comply with Local Authority requirements, ISO/IEC 11801, EN 50173 and EIA/TIA 568 and 569.

Nominal characteristics of power supply and distribution are as follows:

- Medium Voltage: 11kV, 33kV (to be confirmed by PUC)
- Low Voltage: 400/230V
- Frequency: 50Hz.

Climatic conditions

All electrical equipment and materials shall be designed, specified and de-rated for a continuous and trouble-free operation with satisfactory performance in the climatic conditions of Seychelles (35 deg C). Voltage drop will be limited to a total of 5% from the MDB (Main Distribution Board) to farthest end on any branch circuit. Voltage drops during starting shall be limited to 5%.

The electrical installation shall provide reliable and coordinated systems that could handle safely and efficiently the Hotel operational processes. The systems shall be specified with durability and operationally costs, as key elements. The electrical installation shall provide reasonable spare capacity and physical space for future loads.

The Uninterruptable power supply shall be provided to feed the critical loads such as Fire Alarm System, All Server / Network / IT equipment, Security System (CCTV and Access Control) and BMS (Building Management System). The electrical systems in common areas will be controlled / monitored through a building management system (BMS) that has a simple human interface and that is able to efficiently and economically manage the hotel services; moreover, the BMS system will assist in preventive maintenance and repairs processes.

Load Estimation

Based on the above-mentioned estimation basis, the total expected loads will be as follows:

・Demand Load: 1,054 kVA (including utilization factors for lighting, small power, kitchen equipment, pool and mechanical equipment loads within each guestroom).
・Final Demand Load: 1,054 kVA (including overall simultaneity factor).

・Utility transformers: 1x1,200 kVA Dry Type Transformer with a utility subscription of 1,200 kVA (to be confirmed by PUC)
・Generators: 1,200 kVA *(100% Back up)*

5. CONSULTATIONS AND PARTICIPATION

5.1 INTRODUCTION

This section provides an overview of the consultations and scoping conducted at government, public and community level for this ESIA. The aim of these in-depth consultations was to understand and evaluate the potential social effects of proposed project as much as possible. In doing so, the process underscores the importance of engagement with stakeholders and addressing social concerns to achieve positive outcomes for both project proponents and the community at large.

5.2 OVERVIEW OF THE PROJECT LOCALITY

Beau Vallon is a picturesque district located on the northwest coast of Mahé, the largest island in the Seychelles. It is renowned for its stunning crescent-shaped beach—Beau Vallon Beach—one of the most popular beaches in the country. The area is a hub for tourism, offering a mix of hotels, guesthouses, restaurants, and water sports activities like snorkeling, diving, and jet skiing.

Despite its popularity, Beau Vallon retains a relaxed, local charm, with a small vibrant population showcasing the Seychellois culture, food, and crafts. Its proximity to the capital, Victoria, makes it both a convenient and scenic destination for visitors.

As in many other districts across Seychelles, income levels and types of employment in Beau Vallon vary—some residents work in well-paying positions within the tourism industry, while others are employed in lower-income roles. The relatively high cost of living in Seychelles may reflect and, to some extent, reinforce the socio-economic conditions of residents in Beau Vallon.

Seychelles offers a well-established education system, with free education provided up to the secondary level. Beau Vallon is served by both a primary and a secondary school, ensuring local access to education. Healthcare services are also available, primarily through public health facilities, including a public clinic in the district. However, should residents wish, they have the option to access private healthcare facilities available elsewhere on the island.

The district features a variety of residential properties, including houses, apartments, and villas. Housing affordability and ownership differ across households, which can influence the socio-economic landscape. Beau Vallon is equipped with essential infrastructure such as roads, electricity, and water, along with community amenities like public transportation, recreational spaces, and social services.

Beau Vallon's proximity to major tourist attractions significantly boosts its local economy. This is evident in the numerous retail outlets, hotels, and restaurants throughout the district, all contributing to economic opportunities for the community

The page overleaf provides a brief snapshot of the district.

Gallery of Beau Vallon district, encompassing the Coral Strand Hotel, Berjaya Beau Vallon Bay Hotel, Beau Vallon Bay beach

(Source: Seychelles Nation, Facebook) images within the periphery

5.3 CONSULTATIONS

Given the class I nature of the EIA, consultations were first carried out with key stakeholders in government, then the general public and the community closest to the areas of identified impact. These outcomes are summarized below.

5.4 SUMMARY OF CONSULTATIONS

5.4.1 GOVERNMENT SCOPING OUTCOMES

In accordance with the Standard Procedures and the requirements of the Environment Protection Act, and following clearance from the Seychelles Investment Board (SIB), Eco Sol Consulting—the appointed Environmental Consultant for the Environmental Impact Assessment (EIA) of the project—convened an inception meeting exclusively with the relevant entities from the Ministry of Environment, Climate Change and Energy.

In attendance were Mr. Myron Meme, Mrs. Marie Alise Rosette, Ms. Bianca Marzocchi, conservation officers, Mr. Vincent Ahtime (the local architect), the appointed Consultant, and—via Zoom—the client's team along with the client's architect.

During the meeting, a presentation was delivered outlining the architectural design, development protocols, anticipated timelines, as well as all MEP and utility components. It was noted that the EIA would proceed as a Class 1 assessment. With this determination, the meeting concluded, and the project was granted clearance to proceed with the EIA.

A hybrid scoping meeting was held on March 5, 2025, starting at 9:00 a.m., with over 20 participants in attendance, including the appointed environmental consultants, Eco Sol. The Client's project managers, Universal Enterprises, delivered a detailed presentation outlining the project concept and its components. Environmental consultant Mr. Nimhan Senaratne also provided an overview of the project's environmental and social considerations, including planned environmental surveys and stakeholder consultations. The session concluded with a Q&A segment, followed by a scheduled site visit at 10:30 a.m.

Scoping Meeting Outcomes

During stakeholder consultations, several key issues and recommendations were raised by participating authorities and entities. The Public Utilities Corporation (PUC) informed the project team that a major sewer line runs through the proposed development site, necessitating the identification of alternative solutions. Additionally, PUC highlighted that the project may obstruct access to the existing pump station and

recommended that a new access route be incorporated into the site plan. Concerns were also expressed regarding water supply during drought conditions, with a proposal for the developer to install a backup water system to ensure continuity of service.

The Ministry of Agriculture, Climate Change and Environment (MACCE) stressed the importance of detailed assessments to address drainage and flood mitigation, given the site's position between two hotels and surrounding waterlogged areas. As part of the environmental management plan, a three-week terrapin survey was proposed to assess the presence of terrapins and other ecologically sensitive species. It was also recommended that care be taken to avoid disturbing mature Badamiers located in wetland areas, particularly during minor backfilling activities required for road works.

The District Administrator suggested that the road connecting the District Administration office to the hotel be widened to improve access, as its current narrow width may not adequately support increased traffic flow. Additionally, the issue of lifeguards operating within the property boundary was discussed. It was proposed that lifeguard services be integrated into the development and that their facilities be improved accordingly. The developer expressed willingness to support this integration. Concerns regarding encroachment by a watersports centre were also raised by the environmental consultant, with further discussions required between the involved parties to determine a suitable arrangement for the centre's operational base.

Mitigation measures for the construction phase were also addressed. These included the implementation of noise and dust control protocols, the development of an appropriate drainage system to prevent flooding during heavy rainfall, and the assurance that public access to the beach would be maintained both during and after the construction period. With regard to traffic management, it was recommended that the development include adequate parking facilities and designated taxi bays. Parking for retail and restaurant areas should comply with standard dimensions to ensure accessibility and convenience.

From a social impact perspective, the Ministry responsible for family affairs advised that a social assessment be conducted, particularly in consideration of the site's proximity to schools, healthcare services, and nearby tourism accommodation establishments. The Public Health Authority (PHA) raised inquiries about the developer's plans for on-site labour camps and staff accommodation. It was confirmed that accommodation for a maximum of 80 workers would be provided on the property itself, while the remainder of the labour force would be transported to and from the site daily. All utilities for the on-site labour camp would be supplied by PUC, with no reliance on soakaways, septic tanks, or a sewage treatment plant (STP). PHA further recommended that a hoarding be erected around the site to minimise contact between construction activities and the public, including beachgoers at Beau Vallon Bay. In response, the client also committed to offering various forms of welfare support for the resident labour force, including weekend recreational activities and entertainment.

Additionally, the client was advised to provide detailed plans and mapping to clearly present the waste management strategy for the project. This should include systems for managing solid waste, construction debris, effluent from the labour force, as well as waste from kitchen and hospitality operations.

Site Visit Outcomes

Following the stakeholder consultation meeting, a site visit was carried out with the participation of approximately 20 representatives from relevant government agencies and stakeholders. The visit involved a walk-through of the area where the proposed hotel development is to be situated, allowing participants to gain a clearer understanding of the site context and surrounding environment.

A key focus of the visit was the issue of encroachment involving the existing lifeguard station. Mr. Sanjay Maniku, along with representatives from SFRSA, led discussions on the challenges currently faced by the lifeguard team. These include the absence of adequate facilities such as designated changing rooms, secure locker areas, and a properly equipped lifeguard tower. In recognition of the importance of public safety and beach management, it was mutually agreed that new, purpose-built lifeguard facilities will be incorporated into the hotel development. These facilities will be designed to serve both hotel guests and the wider public using Beau Vallon Beach.

During the site walk, additional encroachment was noted from a watersports operator currently operating within the vicinity of the project boundary. It was agreed that further discussions would be held between the concerned parties to explore practical solutions and reach a mutually beneficial resolution.

Side Meeting Outcomes

During a side meeting with the Board of the Seychelles Planning Authority held after the main scoping meeting, it was clarified that the road allocation had been established some time ago, although the road itself was never constructed. The Planning Authority has since recommended that this road be prioritized and constructed before further development proceeds. Additionally, it was emphasized that the hotel design has been carefully crafted to harmonize with the existing natural environment. The 25-metre setback from the high-water mark must be strictly maintained to preserve coastal integrity. Furthermore, it was recommended that the existing lifeguard facilities, currently situated on the encroached property, be formally integrated and adopted into the project plans.

Stakeholder Feedback

STAKEHOLDER	FEEDBACK
MACCE	Coastal and marine environmental concerns:

	The beach bar's location must be clarified. If it is within the 25-metre setback, mitigation measures must be implemented to prevent any disturbances to the ecosystem. Kitchen wastewater and sludge disposal from the beach bar require clarification. A wastewater management plan must be developed to prevent contamination. Dredging activities must be assessed to determine potential sedimentation impacts on marine biodiversity. The 25-metre setback from the coastal vegetation line must be strictly maintained for all building footprints. The developer must provide measures for coastal vegetation to ensure no disturbance occurs during or after construction. Wastewater dewatering issues The site is waterlogged, and the developer has not provided a clear plan for dewatering during foundation works. The EIA must: Specify where extracted water will be discharged. Assess potential impacts on groundwater levels and surrounding wetlands. Ensure that dewatering does not lead to erosion or contamination. The proposed retention tank for sewage must be critically evaluated, as its proximity to the coast may pose contamination risks. Alternative waste treatment options should be considered. A hydrology analysis must be conducted to assess flooding risks, especially considering high tidal surges and heavy rainfall events. A full drainage master plan should be provided to manage surface runoff from adjacent plots. Soil sedimentation issues

	A geotechnical survey as conducted by the EIA consultant will be conducted soon. However, the survey must confirm whether pilling or other foundation techniques will be required. The developer has mentioned dredge channels, but further details are needed on how these will be designed to minimize sedimentation and hydrological disruption. Soil conditions and erosion risks must be analyzed, especially given waterlogged nature of the site. The site has an uneven terrain, requiring controlled backfilling and grading to ensure a stable and level foundation. Construction phase environmental disturbances Dust and noise hazards must be minimized. The developer should: Implement screening and hoarding to contain dust Provide a noise monitoring plan with clear mitigation measures Clarify how claims of "minimal noise emissions" will be monitored and enforced. Traffic impact mitigation must be addressed, especially given the narrow access road and planned road expansion. A construction plan should be provided detailing: Public access provisions Beachfront buffer zones Dewatering mechanisms Stockpiling locations for construction materials Potential staff quarters during project implementation Crane and heavy machinery operations must consider public safety and accessibility constraints. Wetland and terrestrial conservation

	The current wetland layer is inaccurate and must be refined before further planning. The site is an area of fruit bat roosting. The EIA must: Assess whether construction activities will disturb roosting behaviour. Outline mitigation measures to minimize disruption. A biodiversity assessment should be conducted to check for the presence of terrapins and other sensitive species. The iconic banyan tree is to be preserved, and specific measures should ensure its protection. The developer states that no key biodiversity areas (KBA) plant species will be cut, but an independent verification assessment must be conducted. A list of fauna identified on site must be submitted before any construction begins The percentage of wetland affected area by backfilling for development construction must be stated. Waste management and utilities Retention tanks for sewage require a detailed assessment to ensure they comply with coastal regulations. The Public Utilities corporation will handle sewage treatment, but alternative on site solutions should be considered to reduce dependency. Storm water drainage and flood management must be detailed, given the site's waterlogged nature. Post-treatment of harvested water must meet public health standards. Public health authorities must be involved in reviewing mechanical, electrical, and plumbing (MEP) Plan.

	The developer must provide proof of agreement for connecting the sanitary facilities to the Ex-Gondwana Housing Estate Sewage Treatment Plant, including details on the plant's annual capacity. Construction materials should be inspected before arriving on-site to prevent the introduction of exotic plant and animal species. Monitoring and mitigation commitments The developer's claim of "not much noise emission" must be backed by: A noise impact assessment Clear monitoring measures during construction and operation The door-to-door engagement plan with neighboring property owners is positive but must include commitments to addressing stakeholder concerns. Detailed environmental monitoring programs must be in place for: Air quality, noise, and vibration levels during construction Long term impact assessments on wetland hydrology and biodiversity. Standard operating procedures must be established for construction staff to prevent unauthorized impacts on biodiversity No construction activities will be permitted within the Takamaka Tree cluster on the beachfront. The area must be preserved in its natural state. A landscaping plan must be presented, prioritizing the planting of endemic species to replace any exotic trees removed. While the Aria Seychelles project incorporates sustainable design elements such as solar panels, green walls, and hydroponic local produce, several environmental and regulatory gaps remain. The main concerns requiring further assessment include dewatering impacts, coastal water.

Seychelles Investment Board	Sustainable Practices Eco-friendly Accommodations promoting eco-friendly lodging options can attract environmentally conscious travelers. This includes using renewable energy sources, minimizing waste, an preserving local flora and fauna. Community engagement: Involving local communities in the management and operation of these accommodation ensures that economic benefits are distributed fairly. This could include hiring local staff and sourcing food from local farmers. Diversified Offerings Unique experiences: Offering packages that include cultural experiences such as guided tours of local markets or traditional cooking classes can provide tourists with memorable interactions beyond tropical beach activities. Quality Services: High-Quality services such as personalized concierge assistance or wellness programs (eg. Yoga retreats) can differentiate these accommodations from others in congested areas. Capacity Management Staggered Bookings: Implementing staggered booking systems can help manage visitor flow during peak times, reducing overcrowding on beaches and attractions. Promotional campaigns: Targeting off-peak seasons through promotional campaigns can encourage tourists to visit less during busy times, helping to balance visitor numbers throughout the year. Job creation Employment opportunities: New hotels or lodges will create jobs not only within the hospitality sector but also related industries such as transportation, food supply chains, and tour guides. Skills development: Training programs for locals in hospitality management or customer service will enhance skills and employability. In conclusion, promoting tourism accommodation by Universal Enterprise Seychelles in Beau Vallon has the potential to significantly benefit this tourism-congested area by implementing sustainable practices that enhance visitor experiences while supporting the local economy. Through eco-friendly initiatives, community engagement, diversified offerings, capacity management strategies, job creation and increased revenue streams for local businesses, this approach not only addresses current challenges but also paves the way for a more sustainable future for both tourists and residents alike.

District Administrator	Road from district administration office has been proposed for the hotel access road and need attention as it is very narrow. Level of noise and dust pollution needs to be kept at a standard level during construction. Need to have access footpath for beach goers to access beach. Proper drainage needs to be done to capture rainwater and need to be in plan. No trees on the high-water mark should be felled unnecessarily.
SFRSA	SFRSA have no objection to the scoping of EI for the proposed project in principle. However, taking in account the size of the project the developer should include a fire safety design plan in the detail planning application, such fire safety design should be presented to SFRSA through the life safety section first for review prior to submission to Planning Authority. Fire Safety design should include the following in principle: Means of escape (Fire Escape Staircase, Fire Doors, Exit Signs, provision for person with disabilities ect) Means of giving early warning (Fire alarming and detecting system) Emergency lighting system Means of primary firefighting (Portable fire extinguishers, fire hose reel, automatic suppression system). Means of firefighting (fire hydrants/rising main) Adequate vehicular access for fire tender including alternate access on premises for major fire fighting Back-up water Storage for the purpose of fire fighting Passive fire protection system (designed to help prevent the spread of fire or smoke) Should there be any installation of fuel tanks such as LPG or Diesel, a pre-visit and consultation should be made with relevant referral prior to approval particularly SFRSA, DRMD and SEYPEC. Fire safety measures should also be put in place for the construction phase of the

	development. In regard to the location of the Life Guard post, discussion has been made with the developer and they have expressed flexibility regarding location of the lifeguard post as well to the intention to integrate it into their plans and to rebuild the post. Official agreement need to be made between SFRSA and the developer and we anticipate that the developers honor their commitments.
Department of Transport	Parking requirements Hotels 1 bay per every 2 rooms (3 of which to be disabled bays) 1 bay per every 20 sqm of public accessible space (restaurant, bar, casino, etc...) 1 bay per every 4 staff with 1 bay per every head of departments. 1 bay per every 20 sqm or 1 bay per every 5 persons for meeting rooms/conference halls 5 Taxi bays 2 bays for courtesy cars/hotel vehicles Shops (Retails, Spare parts, clothing), Bakery, butcher bay per 25 sqm (minimum 3 bays) plus 1 loading and unloading bay Restaurants/amenities/casinos/cafes/cafeterias/ fast food outlet bay per 20 sqm 1 bay for manager 1 bay per every 4 staff 1 loading and unloading Standard Parking Dimensions Angular and perpendicular parking 2.5m x5.0m Parallel parking 2.5m x 6.0m Loading/Unloading bay 3.0 x 8.0m Necessary legal procedure shall be sort out to be able to accommodate 6m wide dimension for the entire main entrance Dimension of the proposed parking bays at the deliveries/staff entrance must be provided The proposed parking bays between the kid's club and the proposed angular bays

	must have reversing space of 4.5m Comprehensive drainage layout for all surface water from the development will need to be resubmitted during the planning stage It is imperative that the road access is constructed prior to any commencement of the main hotel. The access must have a minimum width of 6m.
PUC (Water Division)	PUC has a 100mm DI pipe running from the main road to Coral Strand Hotel and a trunk main of 250mm feeding the Northern Region. The developer has to make provision for the pipeline extension from Coral Strand Hotel to the proposed site for development. As Aria Seychelles is requesting an additional water supply of 50KL, the Public Utilities Corporation indicates that the existing water supply system is near its full capacity. Therefore, during the drought periods, there may be a shortfall in supply. Hence, the developer should consider installing a water back up system to cater for the shortfall in supply during the difficult period of the year. The developer should also make provision for one-day storage drinking water needs on site for such development. Firefighting requirements will be in addition to this storage facility and need not be potable water. The developer should promote water conservation practices by incorporating water saving devices, such as fine spray showers, dual flush WC's and aerated taps in plumbing installation. The developer should take advantage of the rainwater harvesting potential on the island for non-potable water used to minimize treated water requirements.
Family Department	Based on the presented documents and according to the SIA principles, we have no objection for this project. Nevertheless, the developer must consider the following: It is important to conduct the SIA to determine the possible impacts in view of mitigations Based on the presentation and site visit, the developer must do the necessary to mitigate any form of population. So far, some fruit vendors as well as lifeguards using the place to earn their living. Even though this may not be regulated, the developer should find ways and means to accommodate tall parties involved and come up with possible alternatives. It is imperative that the developer observe the existing laws and other policies, inter

	alia the laws that protect the right of migrant workers, the human trafficking, gender-based violence, sexual abuse and so on. It is also advisable to establish grievances mechanisms that will cover all phases of this project. Otherwise, the public view through the established door-to-door consultations/questionnaires and the public meeting(s) should be included in the final report for further consideration.
Public Health Authority	Ensure water supplied to this establishment must be potable and conform to Public Health standards, Water Examination Regulations 1994. Ensure that if any intention of using any other sources of water supply and if it involves harvesting from catchments, this should be clearly identified and specified and would also require approval prior to being used. Ensure proper management of solid waste disposal, collection, storage and final disposal as relevant agency requirements. The Public Health services requires that a complete detailed floor layout plan with specifications and positioning of equipment of kitchen (s) for client and for staff should be provided to our office for thorough assessment prior to submission to Planning Authority. Ensure provision of all facilities, fittings are provided for the disabled. Given the proximity and scale of works to be carries out next to existing operational tourism establishments, we foresee certain issues ranging from dust, noise, and vibration nuisance. All practical means and works scheduled and carried out in line with the maximum tolerable levels as per the relevant Laws and regulations. Any construction workers brought on site should be provided with adequate and convenient staff facilities which should include kitchen/eating facilities, sanitary facilities (toilets, shower, laundry), sleeping facilities. These facilities should be built in conformity with the Environmental Health Section within the Ministry of Health requirements. All sanitary facilities on site should be connected to the existing PUC lifting station on the neighboring plot

	Careful consideration on the location of the back of house whereby generators, refuse storage, ect whereby any nuisance (noise, vibrations ect) to any neighboring property may be identified and mitigated. Management plan of the back of house should include collection and disposal of waste oil, spillages ect.
Seychelles Planning Authority	Page 10 – Drainage channel to be upgraded and integrated The developer to provide details on how this will be achieved Page 12 – Encroached lifeguard HQ Provide details of what will be done to accommodate the lifeguards and their necessary storage unit Page 15 – Page 20 The details provided are not for the proposed site and project, although they are in each other's vicinity. It is important for each site to undertake its own individual analysis. The colour scheme of the building needs to blend in with ntural environment, same should be reflected in the proposal. The develoepr to ensure that the minimum distance from the high water mark is maintained and that same level is also reflected in the proposal Developer to ensure that beach access is maintained during and post construction.
Tourism Department	If the promoter is planning on offering other activities such as water sports, he will need to consult with SMSA. He needs to also be aware that ownership and investment in a water sports business is reserved for Seychellois and should be undertaken in specifically demarcated areas as stipulated under the Vertical Integration (Amendment) Regulations. Moreover, in instances where an accommodation establishment cannot contract out to a Seychellois operator, they may offer non-motorized water sports activities on

	complimentary basis to clients. They are also able to offer motorized water sports. However, the needs to be contracted out and as mentioned above, SMSA will need to be consulted. In view of the proximity of the proposed project to the beach and sea, it is important that the promoter considers mainstreaming climate adaptation measures in its development and operation plan. The promoter also needs to have an emergency response and evacuation plan in line with all the facilities and services that they intend to provide.
PUC (Wastewater division)	Proposed development will block the existing access to the PUC pump-station; developer should provide alternate access to the pump station. A portion of the existing gravity-sewer line crosses the proposed development at a location where the developer is proposing an underground parking facility; alternatives will need to be identified via either Sewer-line diversion on the adjacent parcel (private land and therefore will require permission) or Connect the existing sewer-line to the proposed lifting station (for the hotel) and cancel the portion that crosses the property Fencing of the existing pump-station needs to be re-done to blend in the new environment as envisioned by the project Developer should consider investing in an odor-control unit for installation at the pump station to mitigate the impact of prevalent gases in the vicinity.
DRMD	Traffic Impact Assessment: The Construction site located in the Beau Vallon area can be accessed via two primary roads.; St Louis and Glacis. Both roads experience heavy traffic particularly in the morning 07.30 -9.30 and afternoon 16.30 -18.30, due to commuters travelling to and from Victoria for work. The transportation of raw materials, personnel, and construction vehicles is likely to exacerbate the existing traffic congestion. This necessitates a comprehensive traffic management plan to mitigate adverse effects on daily commuters and ensure smooth operations during the construction phase. Prioritization of Road Access Construction: In conjunction with the Traffic Impact Assessment, it is crucial to establish proper road access to the site. The current side road by Coral Strand Hotel is inadequate for accommodating construction vehicles and heavy machinery. Developing a more

	suitable and robust road is essential to facilitate the transportation of materials and personnel, minimizing disruptions and ensuring safety. Wetlands, Drainage and Flooding The construction site is situated on a wetland, making it susceptible to flooding. This underscores the importance of incorporating appropriate drainage systems to manage water flow and prevent flooding. Underground Parking Area The planned construction of an underground parking area for approximately 50 cars necessitates an intensive geotechnical survey to assess soil conditions and quality. This is particularly important due to the site's propensity for seasonal flooding. Ensuring the stability and safety of the parking structure under such conditions is paramount. Sewage Management (PUC Substation): The site has a history of swage seepage into the ocean during rainy season and flooding events. The addition of sewage from the new hotel may further exacerbate this issue, potentially increasing swage pollution. Furthermore, the underground parking area is located along the path of existing sewage pipes, necessitating careful planning and mitigation measures to avoid disruptions and environmental contamination. Beach/marine pollution The construction activities, couples with wetland drainage and potential seepage pose significant risks to the beach and marine environment. Effective management and mitigation strategies are essential to minimize pollution and protect the coastal ecosystem. This measure should encompass: Implementing rigorous erosion practices Establishing robust drainage systems to manage stormwater and prevent runoff Regular monitoring of water quality to detect and address any pollution promptly. Collaborating with relevant authorities to ensure compliance with environmental regulations and standards. As further developments unfold and specialized organization submit their remarks and concerns, DRMD will comment accordingly.

5.5 PUBLIC MEETING OUTCOMES

A public meeting for the project was held on March 27, 2025, commencing at 2:30 p.m. with over 20 attendees, including the appointed environmental consultant Eco Sol, the project's architect on record, and representatives from Universal Enterprises. The Client's architectural team delivered a detailed presentation outlining the project concept and its key components. The meeting, which took place at the Beau Vallon District Administration office and ran until 4:30 p.m., also featured an extended presentation by the environmental consultants, who provided further insights into the site's environmental context and shared outcomes from the community scoping process.

Public Meeting Outcomes

A resident inquired about the proximity of the PUC pump station to the project site. Mr. Senaratne responded that a dedicated access route with a turning circle for PUC vehicles is proposed. A sewer line currently runs under the client's property to the pump station, and discussions are ongoing to reroute it. He added that during heavy rainfall, the pump station and nearby households suffer from flooding, raising the risk of raw sewage entering the marine environment. To address this, a flood mitigation design is being developed, interconnecting fragmented wetlands while ensuring PUC infrastructure is not compromised, allowing water to flow directly to the sea.

The MNA for Beau Vallon requested more information on parking and Beau Vallon's carrying capacity. He cited a 2017 study highlighting infrastructure limitations and emphasized the need to protect existing wetland wildlife. Mr. Ah-time responded that the hotel will include 50 underground and 20 overground parking spaces, in line with the Department of Transport's requirements.

Mr. Darius Oliaji questioned the feasibility of underground parking in a flood-prone area. Mr. Ah-time explained that pumps, sumps, and elevated construction will prevent water ingress, with discharge directed to culverts. Mr. Harper added that the car park will be slightly raised. Mr. Senaratne elaborated on flood control measures, including sedimentation ponds to reduce water velocity, a potential weir system to trap debris, and deepening the wetland to enhance flood retention. Baffle walls and stone-packed channels will also reduce outflow speed. Mr. Didi noted that similar setups exist locally, such as at Allamanda Hotel.

A resident raised concerns over the hotel's compliance with the 25-meter setback from the high-water mark, referencing beach beds in the renderings. The same resident expressed skepticism about public access and fears of being excluded from the beach when having their family barbecues during such times that as weddings are being held on the beach. Mr. Sanjay Maniku assured that the hotel is designed to be community-inclusive, offering public spaces and aiming to work closely with locals.

Another resident supported the development, conditional on wetland rehabilitation. She recalled the rich biodiversity the wetland once had, now degraded due to nearby developments and that the wetland currently in a dire state with a foul smell during heavy rainfall. Mr. Senaratne acknowledged this during his presentation and emphasized the goal of ecological restoration.

A separate resident questioned the impact of nearby hotel developments, such as Story Hotel, on the wetland. He asked if the new development would address water drainage issues at the rear of the site.

Concerns were also raised about the repatriation of funds. Mr. Maniku confirmed that as the development's financing comes from abroad, and some revenue will be repatriated to service loans. However, 60% of the revenue is expected to remain in Seychelles for wages, taxes, and operating costs. He added that around 75% of the over 200 staff will be Seychellois.

Residents asked whether beach weddings would restrict access. Mr. Sanjay stated that the hotel is designed to be a hub for the Beau Vallon community and will not restrict public access. Mr. Maniku reiterated Universal's longstanding commitment to Seychelles, referencing community partnerships such as training programs for STA students.

Ms. Joanna Poupounneau expressed concerns about tourism not benefiting locals and emphasized the importance of community integration. Mr. Sanjay confirmed that their goal is to train and empower Seychellois staff rather than rely on expatriates.

The CEO of SIB asked why a Creole architectural style was not adopted. Mr. Harper responded that the design draws inspiration from local elements like the granite mountains and the Banyan tree, using soft, curved lines to reflect Seychelles' natural beauty.

A resident asked about parking for beachgoers. The Consultant explained that public beach access is legally ensured, but not public parking as it is not a requirement by law, which may also harm dune ecosystems. Visitors can use nearby parking such as La Perle Noir.

In response to construction timelines, Mr. Maniku optimistically projected a start within four months and completion in 18–24 months. However, the Consultant cautioned that this depends on permit processes and may take longer.

The MNA asked if land at the back of the site would be reclaimed due to its low elevation. The Consultant confirmed that site levelling is likely, necessitating drainage infrastructure to prevent flooding into neighboring properties.

When asked about sewage capacity, the Consultant confirmed that PUC had received all necessary flow data and is planning upgrades to accommodate the development—enhancements that would also benefit the wider community.

A resident commented that there should be a commitment by the operator of the hotel to engage with cultural groups such as musicians to showcase the Seychellois culture. He stated that the existing collaboration between the developer and STA for training of locals should be maintained. He further expressed concerns of Beau Vallon community in rehabilitating the wetland. The Consultant explained that this will be dependent on the Department of Environment in providing them with the relevant permission. The gentleman stressed on the cooperation with all parties to ensure that the wetland problems are resolved.

Finally, in response to a question on Corporate Social Responsibility (CSR), the Consultant outlined key initiatives: constructing a public-access road with drainage and lighting, adopting the lifeguard station, training programs for Seychellois, and contributing to PUC infrastructure upgrades

Mr. Senaratne thanked the participants for attending. With no further matters, stakeholders were reminded they had two weeks to submit any scoping forms to MACCE with their concerns around the project. The meeting adjourned at 4.30 pm.

Scoping Form Feedback from Public Meeting

No scoping feedback was received within the period of 14 days.

Bianca Marzocchi <bianca.marzocchi@env.gov.sc> Tue, Apr 22, 11:18 AM

to Marie-Alise, nimhan158@gmail.com, Nanette, Myron, Sanjay, me

Dear Mr. Nimhan,

Thank you for your email. Please note that we have not received any comments from the public to date.

Kind regards,

Ms. Bianca Marzocchi
Environment Impact Assessment Officer
Environment Assessment and Permits Section (EAPS)
Tel: +248 2813630
Email: bianca.marzocchi@env.gov.sc

5.6 COMMUNITY SCOPING OUTCOMES

Key Thematic Areas	Comments
Coral Strand Hotel	Concerns were raised regarding vibration and noise disturbances, particularly affecting approximately 70 guest rooms situated closest to the boundary wall. These rooms are expected to be impacted between 8:00 a.m. and 9:00 a.m. It was requested that heavy construction works near these rooms be scheduled to begin after 10:00 a.m., in order to minimize disruption to guests. Dust was also a key concern, especially in relation to the Coral Asia restaurant, which is located adjacent to the boundary wall.
Augerine Hotel	Mr. Sadapin, the hotel owner, acknowledged the issue of minor flooding during heavy rainfall. He welcomed the development of the new road near the Berjaya and expressed interest in exploring how his existing right of way might be connected to this road. He also showed interest in temporarily housing the terrapins during the road construction phase.
Suzanna Residence	Overall, the owner expressed support for the development, acknowledging it as a natural part of national progress. However, he sought clarification on whether the food cart would be leased to a Seychellois.
Chez Nella/Chez Remie	The operators of the entities raised the following concerns: • The impact of the pipeline diversion near the boundary, particularly regarding the potential effect on the building foundations. • The construction timeline, as well as the potential for flooding on the property. • The management of low-scale agricultural activities in close proximity to the development site, which may pose environmental or operational challenges. It was also questioned what protocols would be followed in the event of property damage during piling or other heavy construction activities. It was emphasized that existing water and wastewater treatment systems installed by Biwater must be factored into any development plans, especially regarding the relocation of the PUC pipeline.
Water Lily Guesthouse	No adverse comments were recorded, apart from a request to minimize or restrict construction activities over weekends.
Berjaya Beau Vallon Bay Hotel	The General Manager presented a file of past flooding complaints submitted to MACEE. He explained that due to the lack of a dedicated drainage channel to the marsh, and with existing outlets becoming blocked by nearby developments, the hotel had found it necessary to take measures to improve marsh circulation and manage the outlets effectively. The GM also expressed concern regarding the future management of the wetland outlet, which has previously been handled by the hotel team. He emphasized the need for a clear operational framework for the opening of the wetland outlet to the beach, particularly under the management of New ARIA. Finally, caution was expressed concerning high tides in Beau Vallon Bay during the northwest monsoon, which could exacerbate flooding risks.
Georcelin Doude (Regional Commander Beau	The Police informed that the area of proposed development is a current hotspot for illegal activities. At current, they do have any adverse comments.

Vallon Police Station)	
Sheena Mangroo (Coconut vendor)	It was expressed that the rise in hotel developments continues to marginalize small Seychellois, limiting their ability to participate in and benefit from the economy. She stated that a positive aspect of the new development is the restriction of public vehicles from accessing the beach, as their presence contributes to environmental degradation and heavy littering by beachgoers. Concerns were also raised regarding the potential impact of an underground parking facility, particularly with respect to its effects on the nearby wetland.
Errol Renaud	New NGO has set up a conversation regarding willingness to do the Terrapins relocation from our wetlands into the wetlands at Domaine de Val de pres.

Negative Outcomes

Several concerns were raised during consultations regarding the potential negative impacts of the proposed development. Among these were noise and vibration disturbances anticipated during construction, particularly in the early morning hours, which could disrupt nearby accommodation facilities. Dust pollution was also identified as a significant issue, especially for establishments located adjacent to the project boundary. Flooding during heavy rainfall was a recurring concern, with some stakeholders pointing to historical drainage challenges in the area, exacerbated by inadequate or blocked outlets and a lack of dedicated drainage infrastructure.

Concerns were also raised about the impact of pipeline diversions on the structural integrity of nearby buildings, as well as the need for clear timelines and protocols in case of property damage resulting from piling or other heavy construction activities.

Some stakeholders expressed uncertainty about the management of wetland outflows and the risks posed by high tides during the northwest monsoon, particularly in terms of exacerbating flooding risks.

To minimize community dissatisfaction, it is recommended to involve local residents – especially the nearby tourist establishments - in decision-making processes related to the development at the earliest phase. This can be formalized through the implementation of a Grievance Redress Mechanism (GRM).

Grievance Redress Mechanism

The grievance mechanism will allow the affected stakeholders to express concerns about the project. The grievance mechanism should include a mechanism for assessing the credibility of any allegations, investigation of credible allegations of unlawful or abusive acts, corrective actions and documentation and (where appropriate) reporting of such incidents.

Per the Grievance Redress Mechanism, people adversely affected or about to be affected by project activities will raise their grievances and dissatisfactions about actual or perceived impacts in order to find a satisfactory solution. Grievances are concerns or complaints raised by an individual, a group within affected communities or any other stakeholder resulted from either real or perceived impact caused by project's activities or operations. These grievances can surface at different stages of the project cycle. Some grievances may arise during the project design and planning stage, while others may come up during project implementation.

GRMs are defined as organizational systems and resources established by national government agencies to receive and address concerns about the impact of their policies, programs and operations on stakeholders/communities. Stakeholders/communities input handled through these systems and procedures may be called "grievances," "complaints," "feedback," or another functionally equivalent term. GRMs are intended to be accessible, collaborative, efficient, and effective in resolving concerns through dialogue, joint fact-finding, negotiation and problem solving.

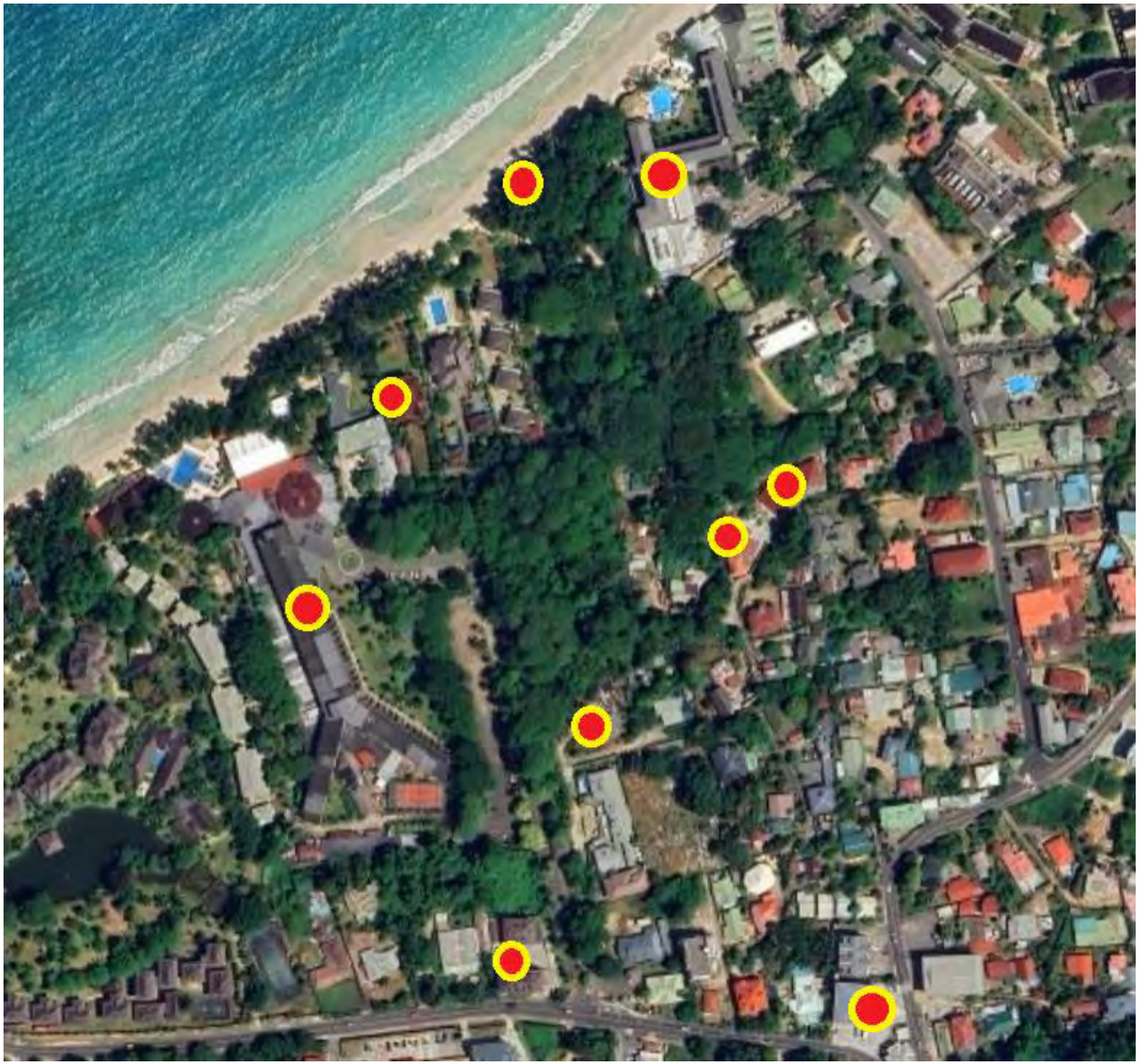
The specific objectives of the GRM include:

- Establishing a system for responding to grievances in an understanding, transparent and suitable manner
- Developing an easy access, no cost and efficient grievance procedure for PAPs and other stakeholders
- Ensuring effective dialogue and open lines of communication with the public, helping to prevent unrealistic expectations and/or negative perceptions from the local population towards the project
- Establishing a system of investigation, response and quick grievance resolution
- Ensuring that non-compliances with project environmental and social commitments are adequately corrected in a timely fashion and are subsequently monitored

To address the concerns and foster a collaborative relationship with stakeholders, the following grievance mechanisms are recommended:

1. Construction Impact Mitigation
    - Develop a Construction Timing Schedule restricting heavy work near sensitive zones (e.g., Coral Strand) to post-10:00 a.m.
    - Implement dust suppression measures (e.g., water spraying, protective screens) near dining areas and open spaces.
    - Share a detailed Construction Management Plan with neighboring businesses and update it regularly.

2. Environmental Protection and Biodiversity Management
    - Formalize an agreement with relevant stakeholders (e.g., NGOs) for terrapin relocation and monitoring, including habitat quality assurance.
3. Drainage and Flooding Solutions
    - Establish a joint task force (including Aria, Berjaya, and MACEE) to plan and implement a comprehensive drainage upgrade and wetland management framework.
    - Include climate resilience measures for high-tide periods and maintain marsh circulation with public-private coordination.
4. Clear Communication and Community Involvement
    - Appoint a Community Liaison Officer (CLO) to provide a direct communication channel between the developer and affected stakeholders.
    - Maintain a Grievance Register at the site office and through digital means (email, hotline) to log, acknowledge, and resolve concerns within defined timeframes.
    - Provide regular updates through newsletters or community briefings.



Feedback from the Final Scoping Report

Following the government, community scoping and public meeting, the EIA consultants submitted the final scoping report for review to MACCE and circulation to stakeholders for comments. The only feedback received came from the Social Affairs Department that emphasized the need for a SIA within the ESIA. The contents are outlined below and the full feedback can be found in the annex:

1. The SIA should address how the project will mitigate any negative affect to people's way of life. The report should thus address social impacts in the way of health, quality of living etc.
2. The report should indicate changes to potential employment/unemployment as a result of the project. The community might be a risk to the project itself.

It must be noted that the project will not displace any residential communities or properties. Public access to the beach will remain and will be enhanced as a result of the redevelopment.

6. E&S RISK, HAZARDS AND ENVIRONMENTAL SAFETY ASSESSMENT

6.1 INTRODUCTION

In accordance with the Environmental Protection Act of Seychelles, any developer who intends to pursue a significant development which may present risks or impacts its immediate environment require a survey/study which is aimed at identifying all potential environmental impacts including mitigation measures to address these identified impacts before the projects are being approved and subsequently implemented. Environmental impacts are conditions that can cause harm to the immediate environment where the project is to be implemented and this includes effects onto the neighboring environment.

The Public Health Act of the Seychelles stipulates certain criteria of how public health and safety should be safeguarded and that no development whatsoever shall cause a nuisance to the public, health and safety. Furthermore, the Town and Country Planning Act makes provisions for minimum standard of construction and building requirement. In order to remain lawful and compliant to legal obligation and to prevent any unwanted environmental and public health and safety issues an Environmental Impact and operational risks assessment was initiated to determine the potential impact to environment and public health and safety in view of the proposed project.

This chapter provides analysis on the environmental impacts of the project in relation to pre-construction, construction operation and social impacts such as employment, income to suppliers of construction materials and equipment.

6.2 METHODOLOGY

The methodology adopted involved a comprehensive and systematic approach to evaluating the potential effects of the proposed development. This exercise included the identification of significant environmental components within the project zone and the assessment of their baseline conditions. This initial analysis provided a clear understanding of the environmental context prior to any project-related activities.

A detailed prediction and assessment of potential impacts from various project activities were undertaken. This included examining the implications of demolition works, construction processes, operational systems, water consumption, solid waste generation, and sewage output. These activities were analysed through the use of an environmental impact matrix to determine which aspects of the project might lead to notable environmental consequences.

The assessment also involved the evaluation of the most significant anticipated impacts, with the objective of developing an effective Environmental Management Plan (EMP). The EMP was designed to mitigate adverse effects on the surrounding environment, ensuring that the project aligns with sustainability principles and regulatory

requirements. In addition, specific attention was given to the environmental, human, and socio-economic effects associated with the construction and operation of a luxury resort. This included assessing the project's potential to influence local communities, ecosystems, and infrastructure.

The methodology also incorporated measures for the ongoing monitoring and evaluation of environmental indicators, allowing for adaptive management and ensuring that mitigation strategies remain effective during development.

6.3 IMPACT SIGNIFICANCE

The following risk rating scheme were used to assess the impacts. It based on the process of combining the severity of the impact with the likelihood of the impacts.

a) Impact severity: how severe is the impact? What's the consequences if the impact is to occur. The severity of an impact is a function of a range of considerations including:

- Impact magnitude
- Impact extent
- Impact duration
- Receptor sensitivity

b) Likelihood of occurrence: how likely or what is possibility for the impact to occur

c) Rating of the impact significance, which is the product of a combination of the above two variables.

Mitigation of Environmental Impact

Hierarchy of control

a) Elimination

b) Substitution

c) Engineering control

d) Administrative Control

e) Personal Protective Equipment

Ratings for the assessment of Consequence Levels

Severity Level	Environment	Community
1	Negligible Almost no impact(s) to land, Biodiversity, ecosystem, water resources and air.	Low-level social impacts. Low-level infringement and minimal disturbance to of

		cultural heritage / structures. Minimal impact on human rights.
2	Low minor repairable impact to land, Biodiversity, ecosystem, water resources and air.	Minor medium-term social impacts on small number of people. Repairable damage to property and structures. Minor infringement of cultural heritage. Minor temporary human rights impacts.
3	Medium Moderate Impact to land, Biodiversity, Ecosystem, Water resources and air.	Moderate medium-term social impacts or frequent social issues. Moderate damage to structures of local cultural heritage significance. Moderate temporary human rights impacts.
4	High Catastrophic impact to land, Biodiversity, Ecosystem, water resources and air.	A complete breakdown of social order. Widespread damage to items of significant cultural importance. Severe long-term impacts on human rights.

Ratings for the assessment of Likelihood

Likelihood	Environment
High	Very Likely to occur on multiple occasions
Medium	May occur at least once during project phase
Low	May occur at least once during project phase
None	Unlikely - Will not occur

POTENTIAL IMPACTS AND MITIGATION MEASURES

IMPACTS ON LAND ENVIRONMENT

Land-take

During pre-construction, the site will have to be cleared at various specific areas for temporary land use of some important temporary project site components and areas to build the final Hotel project: These will cause disturbance to the land environment, habitat and existing ecosystem. As a result, some potential reverse effect is expected. Temporary land take will happen for the provision of the below components;

- Site office
- Construction employee's temporary accommodation (housing 80 workers max)
- Site work-area and temporary workshop,
- Construction materials stock pile areas,
- Construction vehicles, plants and equipment station areas

Temporary land use will after construction, be rehabilitated as much as possible to mitigate long-term impact to land.

Project Phase when impact will occur	Pre-Construction	Construction	Operation
	√	√	

The Likelihood of this impact will be **MEDIUM**, since land will have to be cleared in specific areas of site for the implementation of the projects and the land use for this area has already been earmarked as Tourism Development Zone.

The severity of this Impact will be **MEDIUM** as most of the areas to be used for temporary structures will have to be rehabilitated after construction.

Impact significance, **Minor-MODERATE.**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	**Negligible-Minor**	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

Direct Impact to the Land Environment

- Erosion of land
- Destabilization of land
- Pollution of land
- Contamination of land

Erosion of land and beach

Erosion is certain when vegetation will be cleared for temporary and additional permanent structures to be built on the project site. Reserve areas for stock piling will also expose the land area susceptible to erosion. Erosion will be caused mainly due to storm / surface water run-off onto loose land causing degradation. Unnecessary vegetation removal is also a contributing factor to land and beach erosion. Sandy soil in close proximity of beach will also increase the risk of erosion and its severity.

Project Phase when impact will occur	Pre-Construction	Construction	Operation
	√	√	√

The likelihood of this impact is **HIGH**

Impact severity is considered **MEDIUM** since potential areas to be use as temporary land may have very little ecological value.

Impact significance; **Moderate**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	**Moderate**
	High	Minor	Moderate	Major	Major

Destabilization of land and beach

Destabilization of land leading to degradation of land and beach might be a point of concern. This is most likely to be caused by heavy construction vehicles manoeuvring and operating on the project site especially in close proximity to the beach. Construction of new access road will also contribute to land destabilization. Land environment in the project area and its vicinity is sandy soil dominant, which is considered to be a soft soil type, thus prone to destabilization.

Project Phase when impact will occur	Pre-Construction	Construction	Operation
	√	√	

The likelihood of this impact is **HIGH**.

Impact severity will be **MEDIUM**

Risk significance; **MODERATE.**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	**Minor**
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

Pollution of land and beach

Pollution of land and beach may arise from the use of numerous materials on site during site preparation and construction, which if not adequately managed, will turn into waste and end up in the land environment causing pollution. Most solid wastes are expected to come from construction materials used on site. Site

employees dumping their domestic wastes on site not in wastes receptacles is also a possibility to land pollution. Uncontrolled access by general public can also increase the severity of land pollution.

It is an obligation for the building contractor and project client implementing significant project to ensure that a waste management plan including wastes receptacles and waste removal and management contract is established before approval for commencement of the project.

Local Environmental, Public health authorities and project environmental management representative will have to constantly be monitoring waste management performance of the site and ensure it is properly being managed, with no or minimal pollution to the land and beach environment.

Project Phase when impact will occur	Pre-Construction	Construction	Operation
	√	√	

The likelihood of impact is **MEDIUM**

The severity is **MEDIUM**

Impact Significance, **Minor-Moderate**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	**Minor**
	Medium	Negligible	Minor	**Minor-Moderate**	Moderate
	High	Minor	Moderate	Major	Major

Contamination of land by hazardous substances including petroleum products.

Construction work will require substances that may be hazardous to the environment including fauna and human. These will include but not limited to paints, varnishes, solvents and fuel for plants and construction machineries.

Project Phase when impact will occur	Pre-Construction	Construction	Operation
	√	√	

The likelihood of this impact is **MEDIUM** and the severity of impact is also **MEDIUM** as the Environmental management plan will ensure that minimum amount of hazardous substances are kept on project site and mitigation measures will be applied effectively. Most of the heavy vehicles will be refuelled from construction company yard or depot.

Impact Significance, **Minor-moderate.**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor

	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

MITIGATION MEASURES (Pre-construction, Construction and Operation)

1. Ensure all necessary permits and approvals are gained prior to the commencement of demolition and construction works.
2. Prevent unnecessary ground excavation. All ground excavation must be, properly planned and done according to Town and Country planning guides and agreement.
3. Induct all project employees on the environmental sensitivity of the project site and its surrounding land environment.
4. Minimize vegetation clearing and habitat disturbance by clearly identifying clearing boundaries on site.
5. Integrate existing high biodiversity value plants(Banyan, Takamaka, Coconut and Almond tress) into the project's landscaping and beautification plan.
6. Conduct Environmental/Health and safety induction and awareness of construction workers in environmental protection.
7. Develop an Erosion and Sediment Control Plan prior to commencement of construction.
8. Limit earth cutting and excavation to the minimum.
9. Limit removal of vegetation at the beachfront/coastal area.
10. Install sediment control trap, around the perimeter of cleared land to protect the surrounding land environment from potential soil runoff.
11. Regular auditing of the Project' environmental performance.
12. Daily inspection of land environment of project site to identify possible threat leading to land pollution.
13. Conduct land clearing and minor earth digging/cutting only if absolutely required and strictly during dry season (May - October).
14. Maintain sediment control screening, especially in the wet season when surrounding habitats are most likely at risk of land beach disturbance.
15. Install permanent sediment control structures and measures.
16. Avoid the use of hazardous chemicals/substances on site which can harm the land environment, select and use environmentally friendly substances during the phases of the project.
17. Ensure all potentially hazardous substances are properly stacked and securely stored with no risk of spillage on land, beach and eventually the marine environment.
18. Ensure availability of spillage cleaning kits and equipment and employees well trained in emergency actions relating to hazardous substance spillage on land.
19. Construction employees must be well trained and informed on environmental protection strategies to prevent land pollution.
20. Ensure adequate management of construction wastes and that wastes production are limited. All wastes should be stacked at designated wastes receptacles/collection areas and removed from site as often as possible. (Preferably daily removal)

21. All machineries and construction vehicles should be maintained to an accepted level and that no oil or fuel leaks on land while they are in operation.
22. Securing and hoarding of site to prevent intruders from accessing the project site and potentially cause an environmental incident to occur.
23. Develop, maintain and implement ongoing land and beach environmental monitoring program.
24. Continuous monitoring of environmental performance of the project.
25. Implement a failure mode analysis program to identify potential failure of operation or critical equipment, which can lead to an environmental incident on site.

IMPACTS ON WATER ENVIRONMENT

The project is located in an area with close proximity to sensitive water bodies (wetland and marine environment). The marine environment is crucial for beach users, marine recreational and economic activities and marine aquatic life. The nearby wetland acts as a filter of debris from fresh water source to the marine environment. Throughout the phases of the project, the water environment must be monitored and protected at all times.

The impacts to water Environment identified are as follow;

a) Sea Water pollution and Quality Deterioration
b) Impacts on wetland and aquatic lives
c) Water Pollution Risk

Wetland Water Quality Impact

Soil compaction caused by site development and the stretch of water-resistant surfaces, such as roads, roof tops and parking areas produce storm water run-off containing sediment and other contaminants. (eg. Nutrients, vehicle fluid leaks and other equipment wastes). Increased storm water run-off can overload drainage corridors can negatively impact water quality in the environment especially the wetland and marine environment.

Decomposition of organic matter under anaerobic conditions at the wetland bed may result, in generation of hydrogen sulphite, emit noxious smell and as a result impact existing aquatic live which are crucial to wetland biodiversity.

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	√

Likelihood of Impact is **LOW** since the nearby river is a constant running river with significant flow throughout the year and Severity considered **MEDIUM**.

Impact Significance, **MINOR**.

Impact risk rating		Impact Likelihood			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

MARINE ENVIRONMENTAL POLLUTION

The marine environment may be polluted by deposition of residue from construction materials run-off during construction phase. These materials if not securely stacked on site and in reasonable amount as per project phase requirement may be washed into the sea and cause inconveniences to marine environment and marine activities.

80 construction workers will dwell on site with an additional 120 that will be staying outside project zone. Approximately 200 employees would be working on site at a given time and must be provided with welfare facilities like toilets and washing areas. This is a mandatory legal requirement. Therefore, generation of wastewater from sanitary and work-related activities has a potential of polluting the marine environment. In the event that the wastewater is not adequately contained and managed or site workers do their sanitary needs in the surrounding environment and these are washed down to the sea by rain, bacterial contamination of the sea and infection of sea users may occur.

Depending on construction methodology, different hazardous substances such as, construction chemical products (including construction additives and solvents) and petroleum products from site vehicles and fuel-operated equipment will have to be transported, stored and used on site. These substances if allowed, or accidentally to spill into the environment they have high potential to pollute the marine environment and cause chemical poisoning to humans and fauna in the area. '

Project Phase when impact will occur	Pre-construction	Construction	Operation
		√	√

Likelihood of impact is **MEDIUM** and severity considered **HIGH**, if measures are not put in place and implemented to prevent Impact occurrence.

Impact Significance, **MAJOR**

Impact risk rating		Impact Likelihood			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	**Major**	Major

MITIGATION MEASURES

Pre-Construction

1. Seek and obtain approval from the Department of Environment and Planning authority with details of construction work-plan, mitigating actions and emergency response plan. Follow and adhere at all set conditions and approved agreement by the relevant local authorities.
2. All construction materials stacked and stored on site before construction should be securely stored in a manner so as to prevent washing away by storm water run-off into the existing water bodies.
3. Sanitary and wastewater should be carefully pumped, collected from site sewerage containment tank and safely disposed off-site into PUC sewerage treatment plant through a cesspit emptier operation/pumping contract.
4. All temporary infrastructures required for the project should be located in areas away from beachfront as much as possible. Minimum distance proposed from high water-mark should be at least 50m and above.
5. The necessary planning, health and environmental approval should be sought and granted prior to any mobilization to site, and all safety and environmental guidelines to be strictly followed and adhered to.

Construction

1. All workers washing and sanitary areas should be designed to prevent foul and black water from discharging into the environment and eventually into water sources.
2. As a minimum, design of working areas will include: – Dedicated fuel and chemical storage areas and are appropriately labelled with Safety warning signs and emergency action guidelines. The storage areas will be sited in locations that pose No risk to surrounding water sources. All storage areas will have an emergency containment barrier so as to prevent spilled substances from discharging into the environment and contaminating the water environment around the project site.
3. Provision for providing an oily water interceptor and sump as necessary.
4. Provision of Spill kits at all fuel and chemical storage areas and will include response equipment specific to the intended purpose.
5. Personnel will be trained in Chemical incident response, the use of spill kits and in general emergency response actions.
6. Refueling of plant, equipment and vehicles will take place in designated areas only (and in accordance with best refueling procedure. All personnel will receive training on the correct refueling procedure. As much as

possible construction vehicles will be refueled off-site.

7. All fixed plant or equipment requiring fuel and oil will be equipped with drip trays. Drip trays will be checked daily/continuously. Any oil or fuel collected will be disposed of in such a way that prevents contamination of surface waters, preferably incineration off site or through a hazardous wastes disposal procedure set by LWMA.
8. Daily inspection of plant, vehicles and other equipment fuel and oil system and any defaults or signs of wear and tear shall be reported to the Site Manager for repair as part of an established preventative maintenance program.
9. Sewerage and grey water will be collected from temporary sanitary facilities containment tank, and disposed off appropriately in Waste Water treatment plant at PUC (Beau Belle STP which is closer to construction site or Providence in the unlikely event that the Beau Belle STP is out of service).
10. Excavated soil must be stockpiled in such a way as to minimize release of sediment. There will be no stockpiling in close proximity to watercourses.
11. Pre-construction drainage will be required to divert excess water away from possible excavations, earth cuttings and working areas to minimize and prevent pollution of water sources by sediment run-off.
12. Any water pumped or drained from excavations will be filtered through a suitable medium (geotextile membrane, or settling pond) prior to being disposed of, to vegetated land away from water sources.

Operation

a) Wastes should be properly managed on site to prevent pollution to water-courses. A waste management and collection contract will have to be established and implemented.
b) All hazardous substances should be adequately stored with all preventive measures for spillage management in place. (Spilling kits, waste receptacles, respond guide)
c) Access control to site to prevent unauthorized entry, which may cause pollution to water thus affecting the water environment quality-
d) The hotel will be connected to PUC wastewater (STP) treatment plant, which is adequately maintained and monitored at all times. A preventive maintenance program will have to be established to ensure adequate preventive maintenance of the wastewater treatment plant and eliminate the risk of breakdown and subsequently discharging sewerage into the environment.

IMPACT ON AIR QUALITY

Seychelles is amongst the countries with the best Air quality in the world.
There are strict environmental policies and rules in Seychelles and every year significant effort is invested to continue to improve the environmental performance of the country.

However, it is foreseen that there will be potential deterioration in local air quality due to dust from construction materials stock pile and carbon emissions from construction vehicles and machinery operations activities.

Traffic and Construction Machinery Generated Dust and Carbon Gas

There will be a fair amount of heavy vehicles/trucks on site, which will be involved in transporting construction materials, site employees and specialized vehicles like Excavators and dumpers on-site. These vehicles are expected to produce dusts from their activities especially during the dry season.

Deterioration of the road by the heavy vehicles will also contributes to dust emission.

These heavy vehicles and construction machinery are mostly fuel operated and therefore expected to release or emit exhaust gas containing Carbon monoxide, hydrocarbons, particulate matter and nitrogen oxide in the air.

Construction Material Dust

The air quality on and in the vicinity of the construction site, due to increased dust generation when transporting and unloading of construction rock dust, cements and aggregate is also expected.

Work involving cutting of metals and other constructions materials like timber will emit a low level of dust into the air and as much as possible these works will be done off-site in contractor's workshop.

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	

The likelihood of this impact occurring is rated as **HIGH.** Severity will be **MEDIUM** if all proposed air quality control measures are implemented.

Impact Significance, **MODERATE**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	**Moderate**
	High	Minor	Moderate	Major	Major

Mitigation Measures

1) Limit the conduct of clearing and other significant dust generating activities to periods of suitable weather condition, eg: not during period of high winds.
2) All plant and equipment will be regularly serviced and well maintained in order to reduce emissions of greenhouse gases.
3) Vehicular speeds will be limited to 15 km/h on areas of unconsolidated or unsealed soil associated with the immediate site works.
4) Water spraying will be utilized as required to dampen dust on demolition remains stockpile, working areas, access roads and construction stockpile.
5) Naked fire emitting smoke in the air will be strictly prohibited.

6) Sanitary conveniences used on site to be thoroughly cleaned and septic containers adequately secured and regularly cleaned and emptied to prevent the release of foul smell into the air.
7) Install dust screening nets around areas emitting dusts to trap the dust and prevent propagation.

IMPACT OF NOISE

During pre-construction and construction phase of the project, the heavy vehicles and other construction site machineries and equipment will adversely affect the noise level in the area.

These will be mainly during felling down of low biodiversity value trees, transportation of heavy materials, operating of specialized equipment like site temporary generators, excavation, unloading and loading of construction materials on site.

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	

The likelihood of above mentioned impact is **HIGH**, since heavy equipment emitting noise will be required for the construction of the project. Severity **MEDIUM** if all noise attenuation and mitigation measures are complied with.

Risk Significance, **MODERATE.**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	**Moderate**
	High	Minor	Moderate	Major	Major

MITIGATION MEASURES

a) Ensure compliance to Local Environment Noise emission standard as stipulated by the Environmental Protection Act by measuring and controlling noise level.
b) Noise emitting works to be done during weekdays only between 9am - 4pm.
c) Ensure that all equipment is properly maintained and silencers are operational and effective.
d) Ensure that all noise proofing and guards on noise emitting equipment are secured and operational.
e) All noise emitting plant and machineries will be turned off when not in use. Equipment found to be producing excessive noise will be taken out of use and repaired or removed from site.

IMPACT ON VISUAL SCENERY

The development of the Aria resort project will result into an additional concrete structure to be constructed on the Beau Vallon beachfront. This will cause added visual impact of man-made structure in the environment. The project will be noticeable on the coastal-front. The visual impact may also be noticeable from the sea of the north-west coast of Mahe.

Construction lifting towers may also present a visual impact during the course of construction.

Emission of dust from demolition may also be seen from the above-mentioned locations if the dusts emitting from the demolition works are not properly controlled.

However, it is to note that the existing structures already present some negative impact and redevelopment of the project will only be a precedence of the existing impact.

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	√

The likelihood of this impact occurring is **HIGH,** as the scenery of the site will definitely be affected by the project. Impact SEVERITY is considered **MEDIUM**, as the end product of the project will be a precedence of existing infrastructure on the site.

Impact Significance, **MODERATE**

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	**Moderate**
	High	Minor	Moderate	Major	Major

MITIGATION MEASURES

1. Reforestation of impacted areas should be done to minimize extent of visual impact.
2. The building cosmetic finish should blend with the existing environment and not be an eyesore in the environment.
3. Lights should be properly position mostly facing downwards to reduce illumination from the sea.
4. Temporary structures built for construction should be appropriately removed from site after completion of project.

5. Construction to strictly adhere to the 25m set back from high water mark as per environmental guideline.

IMPACT TO SOCIO-ECONOMIC ENVIRONMENT

The socio-economic impact relating to the project can be categorized into two main categories. Beneficial Impact and Negative Impact.

Beneficial Impact

While beneficial impact expected from the proposed project are mostly socio-economic by nature, there will be some environmental benefits in terms of improved environmental monitoring, opportunities for water resource management and studies and biodiversity rehabilitation projects.

The key benefits expected from the project are:

a) Creation of employment opportunities mainly in, engineering, construction, transportation, clearing agent, hospitality and tourism.
b) Increase the country's tourism market coverage and expansion of clientele.
c) Additional on the job learning platform for tourism studies and work placement opportunities for Seychelles Tourism Academy students.
d) Promoting community tourism.
e) Added opportunities' for local farmers and other local artisans to sell and promote local products.
f) Added opportunities for local musical artists to perform at the establishment and visual artist to sell and exhibit their paintings and other art products.
g) Removal of invasive plants and rehabilitate native and endemic plants to identified areas for beautification and landscaping.
h) Improvement of community road structures from main road at Beau Vallon community center to project site.

Negative Impact

Occupational, Public Health and Safety hazards

Heavy civil and construction works is expected on site putting site workers and public at risk of occupational hazards and risks of accidents resulting in injuries or ill-health. Some of the foreseen hazards if not adequately controlled especially work involving heavy machineries; hot work, tree felling and working at height may even result into fatalities.

Workers may also be affected by continuous exposure to construction hazards such as dust, vibration, heavy lifting and noise.

The use, storage and transportation of construction chemicals may also result into human intoxication if not properly managed.

Hot work including, welding, grinding and metal brazing may result in fire or explosion causing burn injuries, death and significant damage to the surrounding environment.

Members of the public may also suffer from hazards on the project site if they access the site without the proper supervision, guidance and authorization.

Impact Significance, **MAJOR**

Project Phase when impact will occur	Pre-construction	Construction	Operation
		√	√

The likelihood of these impacts is **MEDIUM,** considering the expertise of the contractor and employees undertaking the project and severity **HIGH**, as some occupational hazards if not adequately controlled could be fatal.

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	**Major**

Road Congestion

Most of the vehicles involved in the project transporting construction materials, employees and construction wastes from site to landfill will be heavy vehicles. Heavy vehicles will usually operate at an average speed of 40km/hr while driving uphill St Louis road to Beau Vallon and this will cause traffic congestions and delays for other vehicles using the main road.

The two (2) tributary roads from main Beau Vallon road to project site will also be impacted with an increase of heavy vehicles using these secondary roads and this may lead to congestion to both tributary roads upsetting the local residents and affecting the neighbouring tourism and other recreational activities in the proximity of the project site.

The increase of heavy vehicles on the road means an increase of risk potential of heavy vehicle accident. Heavy vehicle accident has the potential to obstruct and block the main road and affects vehicle circulation and may also result in human injuries and damage to property.

Impact significance: **Minor-moderate**

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	

The likelihood of these impacts is **MEDIUM,** considering the extent of the project and forecasted increased number of vehicles using the road and severity **MEDIUM**, since most of the trips will be done during off-peak hours.

Impact risk rating		Impact Likelihood			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

Conflicts between foreign construction site workers and local population

Most if not all employees that will be, working on the project will be foreign employees, mainly Indians. Indian culture and the local culture are different and when there is a sudden influx of foreign employees in a community, the risk of conflicts with local residents due to cultural and ethnic difference is expected.

Foreign employees may not necessarily understand the livelihood of the local community and this may lead to conflict in terms of local residents' privacy, heritage preservation, culture, religion, social behavior and language barrier.

Conflicts can also be caused by over exploitation of local resources, like fruits, water and supplies in local shops.

Interference with local economic and recreational activates may also bring about conflicts between the locals and foreign workers.

Restriction of access to beach can be another cause for conflict between the project developers and local community.

Relocation of the two encroached activities on site, Life-guard and water sport kiosk is another cause for conflict.

Impact significance : **Moderate**

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	√

Likelihood of this impact is **high** and severity **medium**. There will be strict established protocols for workers residing on the project site and interaction with the local community is expected to be minimal.

Impact risk rating		Impact Likelihood			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

Transmission of communicable diseases

When people are grouped together or are introduced to a new environment, the risk of transmitting communicable diseases is always a concern, especially if they come from different places and homes. Different people will behave differently and infection prevention methods may not be adhered to always.

Tolerance to disease transmission and immunity is also different in each individual. Communicable diseases that are air-borne have the potential to spread rapidly and affects a number of people. Anti-social behaviour, unprotected sexual activity may also presents the risk of disease transmission.

Impact significance: **Minor**

Project Phase when impact will occur	Pre-construction	Construction	Operation
	√	√	√

Likelihood is **LOW** and severity **MEDIUM** as foreign employees are tested for specific communicable diseases (e.g. HIV)

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate
	High	Minor	Moderate	Major	Major

Fire

Construction and operation of the project will involve hot works (metal cutting, grinding and welding), the use of naked flame including flammable materials and high voltage electrical system.

Uncontrolled smoking activities on site also presents the risk of fire.

The effects of fire are usually catastrophic and can have long-term effect on both human lives and the immediate environment.

Impact significance : **Major**

Project Phase when impact will occur	Pre-construction	Construction	Operation
		√	√

Likelihood of this impact is **MEDIUM**, as there will be minimum hot works on site during construction and the final building will be equipment with a fire prevention system. The severity will be **HIGH** as if a fire do occur it will cause significant damage to the immediate project site and neighbouring environment, including possible loss of human lives and air contamination affecting the entire neighbouring local community.

Impact risk rating		**Impact Likelihood**			
		None	**Low**	**Medium**	**High**
Impact severity	**Negligible**	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Negligible	Negligible-Minor	Minor
	Medium	Negligible	Minor	Minor-Moderate	Moderate

	High	Minor	Moderate	Major	Major

MITIGATION MEASURES

1) Not more than 80 construction workers will reside on project site and all excess above the 80 will reside on permanent contractor accommodation facilities.
2) Employees to be medically screened for communicable and occupational health diseases.
3) Employees must undergo environmental protection awareness and understand all mitigation measures to prevent environmental impacts and safety incident.
4) Train all employees in the safety of Handling Hazardous Substances that will be used on the project site as per their specific Safety Data Sheet instructions.
5) Limit the use of hazardous substances on the project site as much as possible and select substances for use in the construction and operations that are environmentally friendly certified.
6) A health and safety management system shall be established to identify all health and safety hazards, plan mitigation measures and monitor the system accordingly.
7) Required personal safety equipment shall be provided to all workers on site including visitors.
8) Emergency management plan shall be developed and periodically tested to ensure its effectiveness.
9) Safety warning signs shall be placed on site warning workers and outsiders of all potential site risks.
10) A site environment, health and safety officer shall be appointed to monitor and manage all health and safety hazards and associated environmental risks to the project.
11) Material safety data sheets for chemicals and petroleum products to be used on site shall be communicated to all concern (workers and the authorities)
12) All plants and equipment shall be maintained in a manner not to cause injuries or illnesses to anyone.
13) There shall be safe work procedures for all activities on site.
14) Road users must be informed of the heavy traffic movement on the Beau Vallon and St Louis main road.
15) Vehicle warning and safety signs must be installed at the Beau Vallon community centre/ Berjaya Beau Vallon Bay road junctions to warn of heavy traffic movement and required road safety precautions.
16) Heavy vehicles transporting construction materials and construction wastes must operate during off-peak hours. Preferably between 9am and 3pm.
17) Transportation of workers to and off site must be done before 7am and after 5pm.
18) Project workers must be provided with food on site by contractor so that they do not flood the community shop and cause inconvenience to the residents.
19) Sick employees must be isolated from work site and remain on sick leave and adhere to medical treatment recommended by Medical officer.
20) A comprehensive Traffic Control management system should be established and implemented during the course of the project development.
21) There should be restricted speed limit and speed control strategies for heavy project-vehicles around high frequented areas like schools, tourism establishments and residential village. This shall include speed bumps, road safety signs and traffic control personnel.

22) Conduct safety driving induction session for all project drivers.
23) Drivers must have a valid driving license and experienced in the job.
24) Provide watering system in dusty roads/ areas on site to suppress dust emission.
25) Vehicles should periodically be inspected and undergo preventive maintenance.
26) Vehicles with accident-prone defects should be removed immediately from service.
27) Establish an emergency procedure for vehicle related emergency.
28) Conduct consultative meetings to inform community of the project and the possible inclusion of foreign workers into their community.
29) Conduct awareness induction session to foreign workers on the culture, heritage and general behavior of the local community, tourism activities including environmental protection strategies.
30) Foreign site employees should be looked after in terms of their welfare facilities so that do not end up seeking refuse or interfering with local community or neighboring property.
31) Ensure site security protocols does not allow for foreign employees to move freely from work sites to neighboring community.
32) Ensure the establishment and provision of workers welfare facilities on site so that site workers do not see the need to exit site to seek for such facilities.
33) The site must be hoarded for access and security control while the developers must ensure that an access to the beach is maintained. Access to beach will be by constructing of a concrete walkway over the existing sea outfall trench.
34) The Life-guard hut will be merged into the project with possible face lift to ensure safety of guests while using the sea.
35) The encroached water sport kiosk will be relocated as per consultation and agreement with the operator and local authorities.

Analysis of alternatives

Alternative	Financial	Technical	Social	Environmental
Without Project	No major increase in economic return from the operation of the project	Technical complexity of monitoring the identified environmental impact and health and safety risk	No spill over benefit from an additional tourism project to the community. No additional job opportunities for locals	No disruption to the natural habitat and environment on Beau Vallon beachfront. No additional risk of beach and marine

				environment pollution
With Project	Positive economic return increase from the project operation	Opportunity for constant reliable technical monitoring of environment where the project is located.	Job opportunities for local residents plus improvement of quality of life of local workers	Rehabilitation of sensitive plant (banyan tree) and restoration of wetland and its eco-system

Environmental Management plan

This section describe all the environmental considerations and mitigation measures to be implemented by the developers in order to prevent and minimize the extent of environmental damages that is likely to occur due to the different project related-activities, from pre-construction to operation of the establishment.

In other word, it is also to be used as a guide to measure compliance by all parties to environmental requirements and obligations. The Environmental Management Plan will achieve this by providing a framework for comprehensive monitoring and control of construction and operations of the establishment.

The Environmental Management Plan shall consist of the following management element

Environmental Policy

a) The Developer shall define and authorize an environmental policy which shall:
b) Include a commitment to prevent environmental damages and pollution and continual improvement in environmental management and performance.
c) Include a commitment to comply with applicable legal requirements and with other requirements that relates to environmental protection and conservation.
d) Provide a framework for setting and reviewing of environmental objectives.
e) Be documented, implemented and maintained.
f) Be communicated to all persons working under the control of the developer with the intent that they are aware of their specific environmental/safety obligation and responsibilities.

g) Be reviewed periodically to ensure that it remains relevant and appropriate to the developers and improved as see fit.

Environmental Training

The developer shall ensure that all personnel involved with implementation and operation of the project receive environmental instructions and induction in relation to the Environmental Management guidelines.

Monitoring Responsibilities

The primary responsibility for monitoring the potential impacts of the construction and operation of the project shall be the project developer. However, the developer may contract out to a third party (e.g. a consultancy firm) to undertake any independent monitoring required.

The construction contractor will be responsible for implementing a Construction Environmental Management Plan.

Auditing

The Environmental Management Plan and its supporting procedures and operational controls shall be audited monthly within the course of construction and operational phase of the project.

The developers will have to appoint suitable qualified Environmental Management System auditor to perform such task.

From the audit exercise, suitable corrective actions or further preventive actions shall be determined and implemented as to improve on any environmental management requirement non-conformances and identified opportunities for improvement.

Reporting

Weekly reports (as appropriate) will be completed on-site and reviewed by the Project Director/Manager for the duration of construction activity.

In the event of an environmental or safety incident, the Construction Contractor shall be responsible for the preparation of an Environmental Incident Report and Corrective Action plan which is to be monitored to measure and ensure effectiveness of corrective action.

Management and Staff Responsibilities

Objective

To ensure that there is an identifiable chain of command and available procedures in place for communication and reporting of environmental issues and incidents.

Implementation

A written chain of command indicating authority and responsibilities shall be available for both the Project management team and the Construction Contractor. This is to be established with the Construction Contractor prior to the commencement of works.

The Project director/manager is to be responsible for ensuring that all relevant staff and the Construction Contractor are familiar with reporting procedures and compliance with the health, safety and Environmental protocols and permit to work conditions.

The Construction Contractor is to inform the Project Director of any environmental incident or near-misses, which has the potential to cause environmental harm within 24hrs.

On-site personnel (including the Project Directorate, the construction contractors' crew, visitors, sub-contractors and consultants) are responsible for reporting an incident or near-misses if he/she is the first to notice or has caused the incident.

Incident Report forms are to be available on-site at all times.

Report forms are to include, a complaint register, an environmental incident report, a corrective action plan plus a site inspection/progress report.

Incident investigation results and determined corrective action must be communicated to all interested parties, to raise awareness on established corrective actions.

Performance Requirements

The Project Directorate and the Construction Contractor are aware of the procedures for communication of information between all relevant parties.

The establishment and implementation of a practical framework for the reporting and amelioration of potential environmental incidents is in place.

Monitoring and Reporting

The Project Director/manager is responsible for ensuring that reporting and management procedures are being followed.

Corrective Action

Non-conformities to environmental protection guides and requirement must be identified and corrective measures applied. The applied corrective measures must be evaluated at set intervals and after each potential environmental incident. The corrective actions must be reviewed as required to ensure continual improvement of the project environmental performance.

Management Review

The project management shall review environmental performance at set interval to identify opportunities for improvement and implement improvement measures as required.

Result of management review shall be communicated to relevant interest parties or to local authorities when required to do so.

Risk matrix

Environmental Impact & Operational Risk Assessment Matrix - Aria Resort Beau Vallon						
Activities	**Environmental / Social Impact**	**Health and Safety Hazards / Risks**	**Impact Level**	**Mitigation / Preventive Measures**	**Impact level after Mitigation Measures**	**Monitoring**
Pre-work stage						
Environmental Management Plans and Contractor Briefing/Preparedness for Site occupancy	Environmental damage due to lack of project knowledege and environmental proecttion strategies	Safety incident causing injuries or other health related issues due to lack of project knowledge.	Moderate	Environmental and safety induction or tool box meeting with appoitned contactor and Contractor HES representative To follow local Environmetal impact assessment process including public meeatings	Minor	Contractor's compliance to Environmental Protection Act, Environmental Management Plans and safety protocols
Project workers sanitary activities	Land and water source pollution	Parasitic infection / Water-borne diseases	Major	Install temporary workers toilets, washing areas and rest areas. Provide temporary sewerage containment tank which will be pumped periodically and dispose sludge at PUC sewerage treatment plant at Providence for final treatment and disposal. Ensure employees are well educted on sanitary hygiene and pollution prevention.	Minor	Sewerage leakage, spillage, water and land pollution
Mobilizing of construction vehicles and plant on site	Increased of heavy plants in the area / traffic congestion and traffic noise	Vehicular incident / noxious fume inhalation	Moderate	Designate safe areas for heavy vehicle movement through a site vehicle management plan. Install heavy vehicle safety warning signs on site, traffic mirrors and signs at entrance to kennedy road. Road safety warning signs should also be installed at least 200m from Kennedy road junction on each side of the road to warn road users of the heavy traffice risks. Drivers to be instructed to drive defensively with speed limit not exceeding 25 km/hr. Put notice of caution to road users on media (TV, Newspaper and radio) and traffic police to ensure safe compliance with road safety protocols during the course of the project through road spot checks in the area and road safety patrols.	Minor	Vehicular incident / complaints of road congestions
Tree and minor vegetation cleaning / cutting	Loss of trees / distabilization of land environment and disruption to existing eco-system	Tree felling incidents casuing body injuries to workers and members of the public	Moderate	Map vegatation areas and clearly identify the trees or branchs to be cut. Obtain tree cutting permit as per local Environment guidelines. Conduct walk through with vegetaion clearance contractor. Discuss, agree and mark all trees to be cut. Ensure site clearing contractor are licensed and competent to do the job. Practice safe tree cutting procedures by use of climbers, support rope, serviced and operational tree cutting tools, ensure the correct use of tree cutting personal protective equipment and conduct safety watch during the cutting process. Protect trees that will not be cut by wrapping with rubber tires (This must be done before any demolition work is undertaken). Select competent and experienced landscaping contractor and agree on vegetable and trees that will be replanted in the area. Inititiate tree replanting activities and rehabilitation of trees/vegetation with high biodiversity value/ importance. This can be included as tha La Misere school environmental project.	Negligible-minor	Number and type of trees or other vegetation cleared / Progress of trees and other vegetation rehabilitation

Construction Stage						
Transportation of construction workers to site	Traffic congestion	Body injuries due to vehicular incident	Minor-Moderate	All construction workers to be provided with transportation to and from work site as to limit stress on existing public transport. Vehicles provided for transportation should be raod worthy and fit for purpose. The vehicles should be maintained in good running order at all times and any identified defects the vehicle shall be sent for repairs or replecement. Workers movement to be done before 7am and after 5 pm during weekdays and Saturdays. No workers movement on Sundays and public holidays.	Minor	Number of trips vs number of workers to be transported
Introduction of construction workers on site	Conflict with neighboring inhabitants and toursim activities in the area Stress on local public facilities	Spread of communicable diseases	Moderate	Not more than 80 construction employees will reside on project site. The rest of the approximate 100 employees to reside at contractors workers camp at Industrial zone. All workes must be breifed on the neighborig inhabitants culture and way of life and tourism and recreational activities in the area. Workers access to the neighboring community will be restricted and workers will be restricted to working/project site only during working days. Access to site will be strickly controlled with gated access and admission will strickly be for business or work purposes authorized by the project team only. Contractors will be responsible to drop-off and collect workers to and from the project site. Conduct envrionmetal and safety awareness to all workers required to work on site thsi will apply to short term employees or sub-contractors also. Install and display site environmental and safety warning signage and posters. Employees to be periodically screened for communicable diseaes. provide edequate welfare facilities, water and food for workers to prevent them for finding reasons to search for these in the neibouring community.	Negligible-minor	Daily monitoring of employees' safety performance and conduct / appraisal of Frequency of Pep talks and attendance / Appraisal of non compliance events / List of display non compliance and action taken to be recorded in log book / Health screening and surveillance report / number and rational of complaints from interested parties
Transporation of construction materials to site	Pollution of roads by spilling of materials (crusher dusts, aggregate) Road congestion	Vehicular accident causing body injuries	Moderate	Vehiclces used for materials transportation must be fit for purpose and in good working order / All materials being transported must be well secured in the vehicle use for the transportation / Vehicle must respect loading limit when transporting materials / Install road signs at specific areas of the Beau Vallon road especially at closer to the junction at Beau Vallon community centre to warn road users of heavy vehicles Transportaion to be done strictly during off-peak hours. Notify road users of the potential increase of heavy vehicles on the St Louis and Beau Vallon road.	Minor	Road incident log / Complaint by other road users
Storage of Construction materials on site	Pollution of water environment (marine & Wetland) due to washing away of construction materials into the water environment	Body irritation due to excess sediment in the water bodies that may be consumed by human	Minor-Moderate	Transport and stack bulk amount of construction materials on site in phases and properly cover and secure to prevent wind dispersal and theft / Cement backs must be transported and kept in slings on site/ Timber and reinforced bars to be transported and securely kept in bundles on site / Construction materials stock must be adequately managed and control through a stock inventory system / All hazardous or chemical based products to be used during construction to be securely stored in locked storage facilities / Comply with hazardous waste disposal protocols in the event that hazardous/ chemical based materilas are required to be disposed	Minor	Evidence of water body contamination / pollution
Management of surface water	High surface water flow causing floodings and erosion on site	Transmission of water-borne diseaes	Modeate	Perform a detailed hydrology and drainage survey and the results to be included in buidling contractor agreement. Survey and monitor water environment at the neighbouring environment and perform drainage improvement works to ensure effective flow of storm water on the project site and neighbouring environment.	Minor	Flooding incidents / Cases of water borne-diseases / Evidence of land erosion
Construction of Resort	Visual impact	Work-related accident causing injuries and illnesses	Moderate	Building construction works to be done strickly as per approved master plan by the local authorities. All guidelines set by planning authority must be respected and followed accordingly. Lightning system of the resort to provide minimum glare so as to to limit reflection impact. Rehabilitation of native vegetation at strategic points to provide comouflage of the building thus reduce visual impact. Colour of the resort to blend with the existing surrounding environment to enhance camouflage. Screening of buidling during construction with green netting.	Neglible-Minor	Complaints from the public and other visitors feedback
	Generation of construction wastes on site		Moderate	Establish and implement a waste management plan. Ensure to have a waste removal contract. Provide adequate site wastes receptacles and educate workers on the safe waste disposal plan. Ensure materials for use during constructions are adequately calculated and that left overs and wastage are minimal. Sell any excess materias to members of the public instead of disposing as wastes.	Monor	Complaints from members of the public and naighbouring establishment
	Noise and dust nuissance to hotel guests and employees	Respiratory infection / Injuries due to possible accident from consrtuction work / falling and sharp objects	Moderate	Hoarding of entire site during consrtuction and use of green netting to trap any possible falling objects and propagation of dusts / Install safety warning signs and secure construction zone	Minor	Complaints by guests
	Habitat desruption and water pollution / Disruption of aquatic lives / removal of vegetation	Water-borned diseases	Moderate	Screen and hoard construction areas Ensure construction workers are aware of ientified environment impacts and the controls to be implemented to adress risks. Establish and impelment a wastes-water collection and disposal service contract.	Minor	Water pollution incident / surrounding environment water quality resuts / signs and evidence of aquatic lives disruption
Hot Work (Welding, grinding & metal Cutting)	Hot particles being deposited into the environment / Fire causing environmental destruction	Fire and Hot surface related injuries	Major	Ensure construction workers are aware of environmental protection protocols and environmental prevention actions. Implement and maintain a hot work permit system. Ensure there are enough fire fighting equipment on site and that employees are trained in their usage	Moderate	Hot work permit verification/ fire watch / number of hot work related incidents / Fire or explosion incident
HV Electrical installation & commissioning	Electrical explosion / Fire / Habitat destruction	Electrical shock / Electrocution	Major	Installation to be done by competent contractor/ Implement HV electrical safety procedures / Provide adequate validated fire fighting equipment on site and training in their use / Provide electrical shock ressucitation training and instruction	Minor	Inspection of system prior to loading by PUC inspectors
Operating of cranes / lifting equipment during construction	Visual Impact / Habitat disturbance	Falling objects/ substances due to work at height and heavy lifting	Moderate	Lifting must be done according to lifting aid specifications / Clearing of lift zone by non essentials and demarkation of safety zone Regularly inspect and service heavy lifting equipment	Minor	Periodic inspection of lifting activities / fall from height incidents / recording all non-compliance / record action taken against non-compliance events / Modify SOP after each event /
Generation of waste oil and other chemical byproduct	Spillage, environment pollution / Habitat disruption	Chemical poisoning	Minor-Moderate	Implement the waste oil disposal procedures as per Land Waste Management Agency (preferably incineration) / Effective removal from site and safe disposal scheme to be implemented and mainained	Minor-moderate	Amount of waste oil generated and amount disposed / Spillage incidents
Usage of specialized power tools/ equipment/ mechanical aid during construction	Vibration may destabilise the environment (Soil/ fauna) / Habitat disturbance and pollution	High noise emission including vibration effect	Moderate	Selection of appropriate tools for the work / All power tools must be fully operational with adequate spares / Only competetnt employees must operate power tools and other specialized equipment on site	Minor	Noise measurement / evidence of vibration effect
Site Safety and Security	Intruders may disturb existing environmental impact control on site	Security threat to persons working on the island	Major	Access control to authorized persons only and construction site perimeter Control / Usage of physical site security control / usage of site security cameras for monitoring and security alarms as required. Install and display warning signs and safety and security instructions to the general public especially along the Kennedy road.	Minor	Access control log / intruding incidents / Direct contact with Local law officers of district /

Operation of Resort						
Housing clients and accommodating full time workers at the resort staff accomodation	Environmental pollution and environmental damage by employees and clients at the facility	Occupational incidents causing injuries and illnesses to occupiers / disaster may cause severe injuries and damage critical equipment	Major	Establish and implement an Environmental, Health and safety management program to identify and prevent all possible environmental impacts as well as health and safety issues / Establish a plan for emergency situations / Train employees on the preparedeness and prevention plan and practice periodically Display sufficient signs and posters to make people aware of potential environmental, health and safety risks Implementation of a medical response plan Ensure access control to the staff accomodation by authorized persons only. Allocate designated entrance for hotel clients and guests to prevent access and exit congestions.	Minor	Environmental, health and safety performance of the establishment / number and severity of environmental, health and safety incidents and complaints / Reports from authorities (Env. Dept and Public health authority
Generation of sewerage and wastewater from the resort	Sewerage and wastewater spillage and overflowing causing environmental pollution (land and water bodies including marine environment)	Bacterial contamination / Parasitic infection / Contamination of water source	Modearete	Ensure that sewerage network/system from the facility is well organised and calculated as per forecasted effluent generation from the facility. Conduct preventive maintenence on the plant and establish a sewerage breakdown and overflow emergency response plan with back ups spares and competent personal to manage and respond to sewerage related emergencies. Regularly test water quality in the surrounding environment by Public health authority and PUC. Connect sewerage output to existing PUC sewerage line in the are.	Minor	Effectiveness of effluent treatment and discharge system / Monitor effluent quality Evidence of land and water source pollution
Generation of solid waste on site	Environmental pollution / Visual impact affecting guest expectation	Land poluution and ideal condition for vector-borne disease infestation on site	Moderate	Implement an effective waste management program on site including waste sorting, composting and recycling. Establish and implement an environmental management system which aims at reducing waste generation by adopting workable environmental protocols and procedures Purchasing of goods, items to be used at the resort must be carefully done in respect to consumption pattern / environmental protection and environment friendly materials	Minor	Monitor and evaluate waste management system and detect signs of related pollution
High pressure water network operation	Burst water pipe, causing soil erosion and land degradation Stress on local water supply demand and water avialability	Slippery ground, unstable ground	Moderate	water piping work must be done according to set specifications and water pressure requirement Implement a water savinfg program/scheme and install water saving/ water reduction device on resort internal network	Negligible-Minor	Water pressure / number of identified leaks and burst Water supply demand and availability
Operation of High voltage Electricity supply system	Electrical explosion / Fire Stress on local power supply availability	Electrical shock / Electrocution	Moderate	Protect electricity supply system from adverse condition. Regularly inspect electrical system and perform preventive maintenance as required. Implement a permit to work system incase intervention on the electrical network is required. Consider and implement a renewable energy generation scheme.	Negligible-Minor	Preventive maintenance records and results
Operating of hot kitchen	Fire	Burn injuries / Fatalities	Major	Provide of an efficient fire fighting system at the resort including provision of suitable firefighting equipment (extinguishers, hydrants, fire blanket, water spink;er system, fire alarm, fire route, fire evacuation and response plan (tested at least annually via a mock drill) Training of employees and provide clients with awareness of fire safety protocols and response action	Minor	Number of fire incidents / Number of fire near miss

7. ANALYSIS OF THE ALTERNATIVES

7.1 INTRODUCTION

The purpose of this chapter is to present and compare the different alternatives that have been considered for the area.

7.2 DESCRIPTION OF THE CONSIDERED ALTERNATIVES

Given its current location bordering the beach, the site is primarily characterized by limited informal use. Aside from a few local residents who occasionally utilize the area for recreational purposes, its main occupants include lifeguards and a watersports operator who have informally encroached upon the space. In the absence of any formal development, the site is likely to remain in its present state, with no structured management or enhancement, continuing to serve a small number of users without fulfilling its broader potential for commercial or public benefit. No further alternatives were presented by the stakeholders during the consultation period either. Therefore, this chapter will only consider a 'No Project' alternative.

7.3 A 'NO-PROJECT' SCENARIO

In the absence of the proposed project, the identified negative environmental and social impacts would not materialize, thereby eliminating the need for any corresponding mitigation measures. The current environmental, physical, and commercial conditions of the site would remain unchanged, with no further development or disturbance.

However, the decision not to proceed with the project would also mean that the anticipated economic and socio-economic benefits would not be realized. These foregone benefits include the creation of employment opportunities during both the demolition and construction phases, as well as long-term job creation during the operational phase of the resort. Additionally, the project represents a significant opportunity for wealth generation, the inflow of Foreign Direct Investment (FDI), and increased government revenue through taxation. Thus, while the environmental status quo would be preserved, the broader developmental and economic potential of the site would remain untapped.

8. CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

8.1 INTRODUCTION

This section outlines the principal measures, actions, and timeframes required to ensure the project aligns with the requirements set out in the Construction Environmental Management Plan (CEMP).

The CEMP will be progressively developed as additional information about the project's environmental and social risks and impacts becomes available. Its development will be informed by the outcomes of the Environmental and Social Impact Assessment (ESIA), Environmental and Social Due Diligence (ESDD), and stakeholder engagement processes. Preparation of the CEMP will begin as early as the project scoping phase and will serve as a dynamic tool to identify, assess, and address potential environmental and social risks through appropriate mitigation measures.

The CEMP will provide a concise and accurate summary of the material actions and strategies to avoid, minimize, reduce, or otherwise manage the project's environmental and social impacts. It will serve as the foundation for monitoring and evaluating the project's environmental and social performance. All requirements within the CEMP will be clearly articulated to eliminate ambiguity regarding compliance, implementation timelines, and monitoring protocols.

The specific content of a CEMP may vary depending on the nature and complexity of the project. For certain projects, the CEMP will encompass all environmental and social obligations of the Client, negating the need for separate, standalone plans. In other cases, the CEMP will reference supporting documents—either existing or to be developed—such as the Environmental and Social Management Plan (ESMP), Resettlement Action Plan (RAP), or Hazardous Waste Management Plan. Where applicable, the CEMP will summarize the key components of these supplementary plans.

8.2 OBJECTIVES OF THE CEMP

This CEMP aims to:

- Detail the legislative and policy framework for environmental management;
- Identify potential environmental impacts with the construction of the Project;
- Detail environmental management and mitigation procedures for the Project; and
- Describe the monitoring, reporting and training processes during the construction phase of the project.

8.3 LEGISLATION AND POLICY

The overarching legislation applicable to the environmental assessment process within the Seychelles is the **Environment Protection Act 2016 (EPA Act).** The key aims of the EPA Act are to:

Provide for the protection, improvement, and preservation of the environment, to set objectives and guiding principles aimed at safeguarding the environment and human health, and to promote environmental principles that facilitate the implementation of international commitments, including the prevention, control, and abatement of environmental pollution in Seychelles.

Other legislation that is relevant to the CEMP includes:

- **Environmental Impact Assessment Regulations 1996.**
- **Environment Protection (Effluent Standards) Regulations, 2023**
- **Physical Planning (Land Use and Development Plans) Regulations, 2023**

8.4 CONSTRUCTION ACTIVITIES

Before construction activities commence, remediation phases of development are required to prepare the site for development. The types of activities undertaken during the site preparation phase include:

- Complete Topography Survey + Road Access, Vegetation/Biodiversity Mapping & Hydrology Assessment
- Removal and disposal of illegal dumping, tree felling
- Backfilling of excavations and General grading of the site.

Once site preparation has been completed, the construction phase will commence. Activities will primarily consist of the following:

- Installation of temporary facilities such as offices, ablutions, parking and laydown areas;
- Earthworks;
- Civil and architectural construction;
- Structural, mechanical and plate work erection;
- Piping installation and electrical instrument installation.

8.5 ENVIRONMENTAL IMPACTS

8.5.1 DUST EMISSIONS

Many activities during the construction phase of the development have the potential to generate dust emissions, including:

- Excavation;
- Unloading raw building materials;

- Mixing concrete;
- Sawing, hammering, drilling and grinding of concrete, timber or masonry structures; and
- Driving vehicles on unsealed roads.

Dust emissions have the potential to impact the health or amenity of site personnel or neighbouring residents or workers, and/or nearby vegetation. The mitigation and management measures to reduce the impact of dust emissions are listed in Table 5-1.

8.5.2 NOISE EMISSIONS

The construction phase of the Development will necessitate the use of a range of noise-generating equipment at the site, including:

- Earthmoving equipment (e.g. front-end loaders, graders, scrapers, etc.);
- Cranes;
- Concrete mixers and pumps;
- Compactors;
- Generators;
- Compressors;
- Pneumatic and hydraulic breakers;
- Pile drivers; • Angle grinders; and Drilling equipment.

The potential impacts and risks associated with noise exceedance include a general reduction in the amenity of the area for site personnel and/or neighbouring land users. The mitigation and management measures to reduce the impact of noise are listed in Table 5-1.

8.5.3 WASTE GENERATION

Construction phase waste streams for the Development include:

- construction waste;
- fabrication consumables;
- domestic waste (food scraps and office waste);
- rubble;
- hydrocarbons;
- shipment packaging; and
- wastewater.

All wastes will be managed following the legal requirements. Where possible, waste materials will be reused or recycled. Waste not suitable for recycling will be disposed of off-site by the appointed contractors for the construction. Further details of waste management strategies are provided in Table 5-1.

8.5.4 EROSION / SEDIMENTATION RISK

Sedimentation risks are expected to be highest during the construction phase of the Development. Clearing of topsoil, excavation, site levelling and temporary stockpiling activities have the potential to facilitate migration of sediments into the inland water environment as site runoff. This is predominantly anticipated during the wet season.

Given the relatively short time frame for construction, the seasonality of the risk, the generally flat topography of the site and the availability of proven management strategies, it is not considered that

sedimentation and erosion will present a long-term significant impact for the proposal. It is acknowledged, however, that without mitigating strategies, erosion and sediment could pose a risk to surrounding environmental values throughout the construction phase.

8.5.3 WATER QUALITY

The Development site is adjacent to the following hydrological features: a Wetland and the sea

Construction of the Development has the potential to impact the water quality of these above features due to litter entering the waterways, spills and leaks of contaminants and erosion and subsequent sedimentation. Mitigation measures for these impacts are provided in Table 5-1. No impact to groundwater is predicted, being that it is so close to tidal influences, no draw on groundwater is anticipated, and there are no beneficial users in proximity to the site.

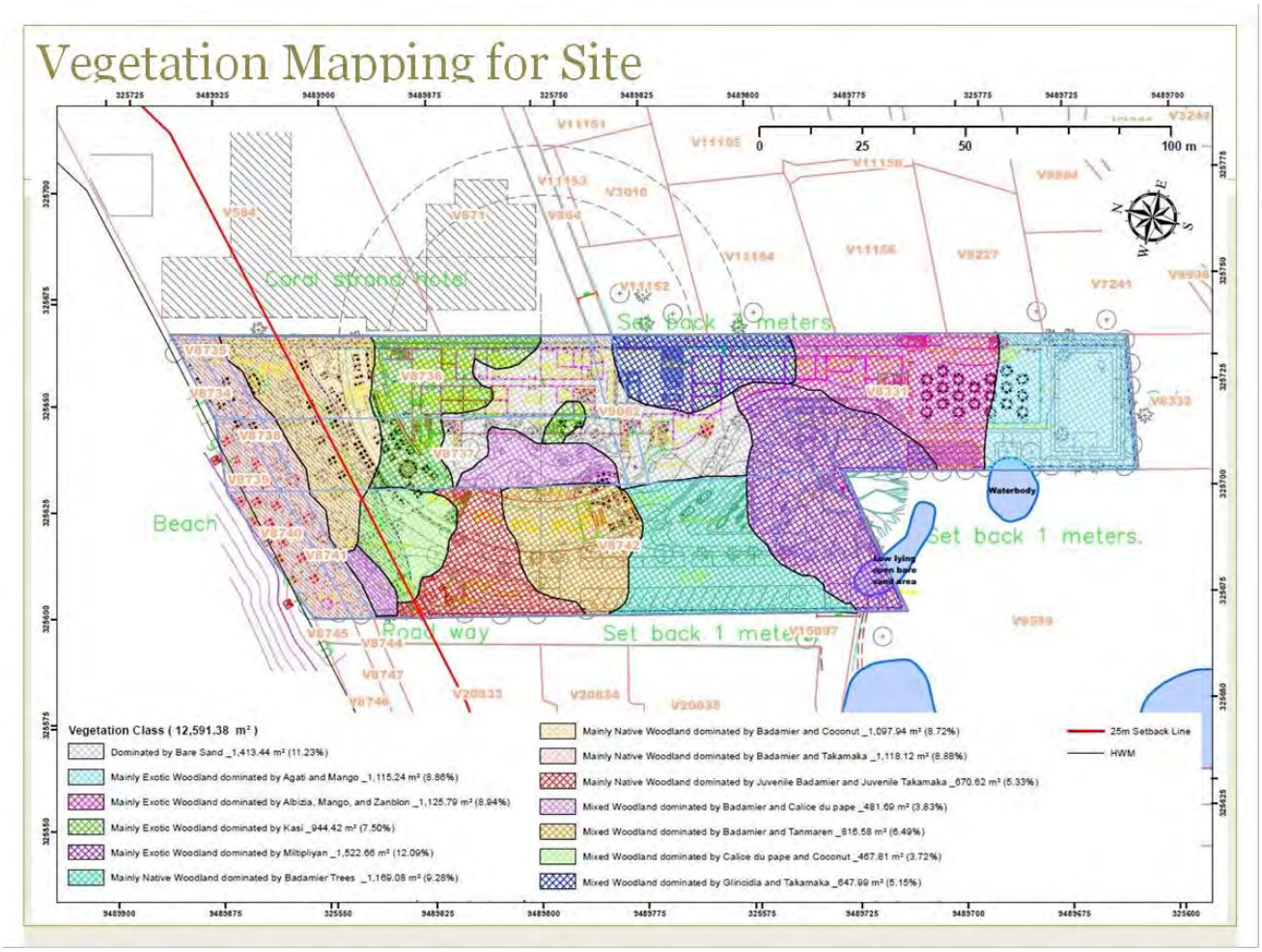
8.5.4 FAUNA ENTRAPMENT

The vegetation structure inside the main hotel complex and associated infrastructures are dominated by a mixture of native and exotic plant species consisting of Agati, Mango, Albizia, Zanblon, Militipliyan, Kasi, Calice Du Pape, Gliricidia and Takamaka.

The native coastal buffer zone coastal belt is dominated by mature Takamaka and Badamier trees on the beach front, with Coconut and smaller Badamier trees located more inland. These located inside the 25m high water mark will not be touched or altered due to their sensitivity with regards to coastal zone protection.

Wetland bodies located inside plot V9559

The vegetation structure inside the two small wetland bodies is dominated by a mixture of native and exotic tree species, consisting of mature Bodamier and Cinnamon trees



8.6 ENVIRONMENT MANAGEMENT FRAMEWORK

The Construction Environmental Management Plan (CEMP) serves as the guiding framework for environmental management during the construction phase of the Aria Seychelles Hotel development. It establishes a structured approach to identifying and mitigating key environmental risks through comprehensive management plans and procedures.

Implemented by the building contractor, the CEMP ensures adherence to best practices and regulatory requirements, promoting sustainable construction processes. It also defines the mechanisms for fulfilling environmental commitments outlined in the Referral document, ensuring responsible and compliant project execution.

8.7 ROLES AND RESPONSIBILITIES

Key roles are responsibilities for environmental management are provided in Table 4-1.

Table 4-1: Roles and Responsibilities of the CEMP

Role	Responsibility
Universal Enterprises Pte Ltd,	Ensure all statutory approvals are in place before commencement of construction. Ensure the building contractor is aware of the conditions and requirements of statutory approvals. Ensures the building contractor is complying with CEMP, including implementing management or mitigation actions, monitoring and reporting. Conduct site auditing on a discretionary and strategic basis, where necessary. Respond to complaints from the public. Review and approve corrective actions and notification of regulatory authorities where necessary.
Site Manager/Construction Manager	Ensures implementation of the CEMP across the site including management and mitigation actions, monitoring and reporting. Ensure personnel and contractors conform with the CEMP and have completed induction prior to working on site.
Site Personnel	Comply with CEMP, site induction and/or additional procedures relevant to work tasks. Notify Site Manager of any non-compliance with CEMP.
Sub-contractors	Comply with CEMP, site induction and/or additional procedures relevant to work tasks. Obtain any additional permits from statutory authorities relevant to work tasks. Notify Site Manager of any non-compliance with CEMP.

8.8 MONITORING AND REPORTING

Monitoring will be undertaken by the appointed Environment officer to assess compliance with the CEMP and that the magnitude of the impacts is within the approved and set limits. There will be ongoing monitoring of the site throughout the construction phase by a representative of the building contractor who is aware of the prescriptions of the CEMP and the representatives from the Department of Environment and other authorities. Additional monitoring may be required on an as-needed basis following complaints from MDAS. Details of specific monitoring that will be implemented are provided in Table 5-1.

A bi-annual CEMP report will be prepared by the building contractor and submitted to the proponent throughout the construction phase of the Development. The report will include:

- List of actions that have been implemented from the CEMP;
- Details of any non-compliance or incidents;
- Results of any monitoring that occurred;
- Details of any complaints received from the community;
- Number of staff who have completed mandatory site induction and awareness training, and Corrective actions that were implemented.

8.9 COMPLAINTS AND INCIDENTS

The Development has the potential to impact the local community both negatively and positively. The mitigation measures developed in this CEMP are designed to mitigate and reduce impacts on the environment and community; however, an Incident and Complaints register will be established and maintained by the building contractor in the event of an incident or complaint. Any incidents of non-compliance with the CEMP will be recorded and the proponent will be notified (and any relevant environmental authority if necessary) as soon as possible.

Any complaints received will be recorded in the same register. The building contractor will notify the proponent of any complaints received as soon as possible, and the proponent will be responsible for responding. All complaints will be investigated to determine if corrective action is required.

The Incidents and Complaints register will include the following details:

- Date, Name, location and contact details of the complainant;
- Complaint or incident details;
- Follow-up actions and/or mitigation measures; and
- Close-out approval.

8.9.1 TRAINING AND AWARENESS

The proponent holds ultimate responsibility for ensuring that all contractors engaged in the construction of the Aria Seychelles undergo the necessary environmental training and awareness programs.

Before commencing work, all staff— including contractors and subcontractors— must complete a comprehensive site induction. This induction will identify sensitive environmental areas, cultural sites, and potential hazards to ensure responsible site management. The building contractor is expected to deliver this training, covering, at a minimum:

- Preservation of native vegetation designated for retention.
- Consideration for adjoining residents and land users, including the Coral Strand Hotel and beachfront areas, and their exposure to the Development.
- Environmental, social, and cultural impacts associated with erosion, weed spread, habitat disruption, human activity, dust, and noise.
- Mitigation and management strategies to address potential environmental risks effectively.

This structured approach ensures all personnel are equipped with the knowledge necessary to uphold environmental commitments and maintain compliance throughout the construction phase

8.9.2 CEMP REVIEW AND ADAPTIVE MANAGEMENT

To ensure continued effectiveness, the Construction Environmental Management Plan must be reviewed at least twice a year. In addition to scheduled reviews, an evaluation must be conducted following any significant environmental incidents, regulatory changes, or stakeholder concerns.

Where necessary, the CEMP should be updated to incorporate improvements based on past experiences, industry best practices, and evolving project requirements. This ensures that environmental management strategies remain relevant, responsive, and aligned with sustainability and regulatory expectations throughout the life of the project.

All reviews, modifications, and updates must be documented systematically using the Control and Revision History section on Page i of this document. Furthermore, a structured feedback mechanism should be established, allowing contractors, environmental specialists, and stakeholders to contribute valuable insights for continuous improvement.

Table 5-1: Construction Environmental Management Plan

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators
Dust emissions					
Soil disturbance and vehicle/machinery movement.	Minimise dust generation and the impact of dust emissions from construction activities.	✓ Dust suppression fencing will be erected around the perimeter of the site. ✓ Active road surfaces will be either sealed or sprayed with water using water carts. ✓ Other areas that can generate dust, such as stockpiles, laydown areas, carparks, and tipping areas, will be treated with a dust suppressant chemical or sprayed with water to dampen them. ✓ Vehicle speeds on-site the roads will be restricted. ✓ If weather conditions lead to extreme dust generation, halt activities until conditions alter. ✓ To install green nets/dust protection shields as building footprint densified to protect all the neighbouring parcels	✓ Daily visual checks of the level of dust being emitted or found throughout the site. ✓ Monthly photographic monitoring at established points within the vegetation. ✓ Monitor dust complaints from site personnel and adjacent residents/businesses. ✓ In the event of a complaint, campaign monitoring may be undertaken with other applied conditions from the authorities	**1) Site Supervisor** 2) Water Cart Operator 3) All Construction/ Site Personnel	No notable impact on vegetation health from dust deposition. No impacts on human health if properly manage
Noise and vibration					
Construction activities include the daily operation and movement of machinery.	Minimise noise and vibration generation from construction activities and ensure compliance with regulatory requirements.	Ensure construction activities adhere to recommendations outlined in the Notice of Acceptance and the Environment Authorisation: • Construction activities will occur during standard hours (8 am – 5pm) and will not occur during non-standard hours, where possible.	Monitor noise complaints from adjacent residents and businesses. In the event of a complaint, campaign monitoring may be undertaken.	**1) Site Supervisor** **2)** Maintenance Personnel	Noise-generating activities comply with the criteria for standard operating hours. No deterioration in the health of the site

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators

		• During standard hours, construction noise will not exceed the recommended assigned noise-affected level of Rating Background Level (**RBL**) + 10 decibels (**dB**); and • If out-of-hours construction is required, the operation of particularly noisy machinery will be avoided before 7 am and after 7 pm and will not exceed the recommended noise-affected level of RBL + 5 dB. Inductions will be provided to construction personnel (including sub-contractors) addressing responsibilities for noise management. Ensure truck drivers are informed of designated vehicle routes, parking locations, delivery hours and minimising engine braking and idling. Ensure vehicles, machinery and equipment are operated correctly and adequately maintained - including replacement of engine covers, tightening of rattling components, repair of leakages in airlines and shutting down equipment not in use. Consider the use of temporary solid screens for noise mitigation of noisy stationary equipment. Inform potentially affected receivers with adequate notice of the construction program and any planned activities that may exceed noise and vibration targets		3) All Construction/ Site Personnel	personnel or neighbouring residents or businesses Recurrent noise complaints are not received

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators
		Establish a Complaints and Grievance Protocol to address noise complaints.			
Odour emissions					
Temporary portable toilets on the construction site emit unpleasant odours for nearby residents, businesses and people utilising the area for recreational purposes.	Minimise the odour impacts where possible.	Ensure portable toilets are placed in a location that is as far away from sensitive receptors such as residences, businesses and recreational areas as practicable. Portable toilets will be inspected and cleaned daily and the waste will be pumped out frequently (at least every two weeks). Portable toilets will be regularly maintained.	Monitor odour complaints from adjacent residents and businesses. Daily inspections of portable toilets.	**1) Site Supervisor** **2)** Cleaner **3)** Portable toilet hire company	No deterioration in amenities for neighbouring residents and businesses.
Visual amenity					
Construction site reduces the aesthetic appeal of the area to neighbouring businesses, homes and/or people who utilise the general area. Litter from the construction site is visible or blown into neighbouring areas, reducing the visual amenity.	Minimise the visual impact of construction activities where possible.	Dust suppression fencing will be erected to act as a visual screen. Existing vegetation around the perimeter of the construction sites would be retained where feasible and reasonable to act as a visual screen. Where feasible and reasonable, the elements within construction sites would be located to minimise visual impact, for example, setting particular equipment/ structures back from the site boundaries to minimise their visual impact. Littering on site is prohibited, and work and office sites are to be kept clean and tidy. Rubbish containers are to be provided at all work areas. Housekeeping inspections of all work areas will be undertaken weekly.	Daily visual inspection of the site for litter and ensure visual screens are still effective.	**1) Site Supervisor** **2)** All Construction/ Site Personnel	No deterioration in amenities for neighbouring residents and businesses. No recurrent visual amenity complaints

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators
		Waste management will be addressed in the site induction.			
Waste generation					
Construction phase waste streams include rubble, shipment packaging, fabrication consumables, hydrocarbons, wastewater and domestic waste.	Reduce waste during the construction phase.	Implement the WMP, including: • Develop a "Reduce, Reuse, Recycle" awareness campaign; • Incorporate waste management into the Site Environmental Induction. • Establish a waste segregation and recycling program wherever possible, including scrap metal and waste oil; • Conduct regular inspections of waste disposal areas to ensure that waste is being disposed of correctly. If waste is disposed of incorrectly, raise awareness and review waste management awareness procedures.	Daily visual inspections of the site to ensure there is no litter. Weekly visual inspections of waste disposal areas to ensure recycling is occurring appropriately.	1) Site Supervisor 2) Environment Officer Representative 3) All Construction/ Site Personnel	No increase in pollution of waterways. No contamination of recycling.
Erosion and sedimentation					

Clearing of vegetation and earthworks during construction makes the Project site more susceptible to erosion and sedimentation.	Control, minimise and monitor erosion resulting from the construction phase.	Implement the Erosion and Sediment Control Strategies, including: • Installation of sediment barriers to all entrances to downstream stormwater infrastructure; • Maximise retention of existing vegetation to reduce soil disturbance; • Construction of temporary bunds at the top of earthworks batters • Construction of temporary diversion drains to divert water to sediment basins; and • Re-vegetation of all disturbed areas within two weeks of completion.	Ongoing site monitoring and audit by the building contractor. Monitoring is to be more frequent in the wet season.	**1) Site Supervisor** **2)** All Construction/ Site Personnel	No increase in sedimentation.

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators
Water contamination					
Contamination of surface water, groundwater, and marine waters	Minimise the risk of contaminants entering the natural environment.	Regular inspections of storage areas will be conducted to identify any leaks or issues with hydrocarbon storage areas. Hazardous materials will be located in storage areas and will be regularly maintained. Ensure spill response equipment is available and procedures are communicated effectively to staff involved with hydrocarbon use in their work areas.	Periodic (during the wet season) water quality monitoring of discharges, including suspended solids and hydrocarbons.	**1) Site Supervisor**	

Biting insects					
Contamination of surface water, groundwater, and marine waters	Avoid, minimise or control the effects of biting insects on personnel working at the Project site or nearby residents.	Implement the Biting Insects Management Plan (including: • Drain, fill and grade the current mosquito breeding sites, where possible; • Minimise ponding and poorly draining areas capable of holding water, including receptacles that could become breeding areas; • Provide personal protective clothing (long-sleeved shirts and trousers) to all personnel to protect against bites. • Insect repellent will be provided at all active work sites.	Weekly inspection of any stagnant water bodies and receptacles (i.e. ponds, drains, excavations filled with water, containers with water holding capacity, etc.) for the presence of mosquito larvae. Complaints from site personnel or nearby residents,	**1) Site Supervisor** **2)** All Construction/ Site Personnel	Compliance with Biting Insects Management Plan including: • No increased larvae or adult biting insect activity present on site

Source	Objective	Management and Mitigation	Monitoring	Responsible Personnel	Performance Indicators
		Ensure personnel are aware of this issue and the appropriate precautions to implement.			
Greenhouse gas emissions					
Carbon emissions from vehicles, machinery and equipment.	Minimise greenhouse gas emissions.	Vehicle emissions will be kept to a minimum by the avoidance of unnecessary engine running time. Machinery, plant and equipment (including air conditioners) will be well maintained in accordance with manufacturer's specifications and run in an efficient manner.	Maintain service records to ensure frequent servicing of equipment and machinery.	**1) Site Supervisor** 2) Maintenance Personnel 3) All Construction/ Site Personnel	N/A

8.9.3 CONCLUSION

The successful implementation of the strategies outlined in this Construction Environmental Management Plan (CEMP) will ensure that the Aria Seychelles Hotel is developed in full alignment with the environmental objectives set by the Environmental Protection Agency (EPA). By proactively managing environmental, social, and community impacts, the project will not only minimize its ecological footprint but also foster responsible and sustainable construction practices.

Through careful planning, ongoing monitoring, and adaptive management, the development will uphold its commitment to environmental stewardship while respecting the needs of the surrounding community. This approach guarantees that Aria Seychelles will serve as a model for responsible development, balancing progress with preservation, and paving the way for a future of sustainable tourism and hospitality.

9. CONSTRUCTION PHASES

The construction of the four-storey Aria Hotel in the Seychelles will be executed in seven sequential phases, ensuring rigorous adherence to safety, quality, and environmental standards at every step.

1. Pre-Construction Phase

Surveys

The project will commence with comprehensive site surveys and investigations. Licensed surveyors will establish precise property boundaries and topographical levels. Geotechnical engineers will perform soil borings and borehole logging to determine bearing capacities, groundwater tables, and soil stratification. Based on these findings foundation recommendations and temporary works designs will be developed.

Mobilization

Mobilization activities will follow immediately: securing the perimeter with high-impact fencing, erecting hoardings and signage, and establishing a site office complex complete with accommodations for key staff. Utilities (potable water, temporary power, and sewage connections) will be laid in parallel with construction of access roads. A logistics plan will coordinate material deliveries, on-site storage, and vehicle movements to minimize interference with local traffic and sensitive ecosystems.

2. Excavation and Basement Works

To prepare for the basement levels, a temporary shoring system shall be installed – typically interlocking sheet piles or soldier piles with lagging – designed per the geotechnical report. A dewatering network of wellpoints and sumped collection basins will control groundwater inflow; discharge lines will include sediment traps to protect the marine environment.

Bulk excavation will proceed in controlled lifts to the design depth, with material either stockpiled for reuse as engineered fill or exported off-site in compliance with environmental guidelines. Following cut levels, a lean concrete blinding layer will be poured to provide a clean working surface. Formwork will then be set, reinforcement cages installed, and watertight concrete placed for the raft foundation. After curing formwork and reinforcement for perimeter retaining walls shall be erected, manufacturer-approved waterproof membranes installed. Finally, footing trenches will be excavated, reinforced, and concreted; underground services—including drainage pipes, electrical trunking, and termite-resistant membranes—will be installed prior to pouring the ground-bearing slab.

3. Superstructure Works

Once the basement complete, construction will transition to the reinforced-concrete frame. At each level, formwork for columns and beams will be assembled, reinforcement tied according to structural drawings, and concrete poured using boom pumps. Floor slabs will be cast sequentially, employing a combination of falsework and soffit formwork

to maintain programme efficiency. Staircases and lift shafts will be constructed concurrently, with slip-form or conventional formwork to ensure alignment between floors. Vehicle ramps and basement access ramps will be formed in situ, with attention to drainage falls and anti-slip finishes.

4. MEP First-Fix Installation

First-fix mechanical, electrical, and plumbing (MEP) works will run in tandem with structural construction. All conduits, piping, and ductwork that penetrate slabs or walls will be embedded at the formwork stage, ensuring clash-free coordination. Vertical risers for electrical, HVAC, and plumbing systems will be installed up the cores, with horizontal distribution routes clearly marked for subsequent trades. Weekly coordination meetings between structural and MEP teams will mitigate the risk of rework and maintain critical-path progress.

5. Building Envelope and Internal Finishes

Upon completion of the structural frame, the building envelope works will begin. External walls will be erected (either cast-in-place or lightweight blockwork) plastered, and prepared for cladding or decorative finishes. High-performance low-e glazing systems, rainscreen cladding, and sealants will be installed to achieve the project's thermal and waterproofing requirements.

Internally, partition walls will be erected, levelled, and skim-plastered. Floor finishes (marble, porcelain tiles, timber, or carpet) will be laid as per the architect's finish schedule, and suspended ceiling grids installed for gypsum or fibre-cement panels. Doors and frames, both timber and aluminium, will be fitted with hardware to match design intent. Once surfaces are finished, the second-fix MEP installation of light fittings, switches, sanitary fixtures, and HVAC grilles will proceed, followed by comprehensive system testing.

6. External Works and Landscaping

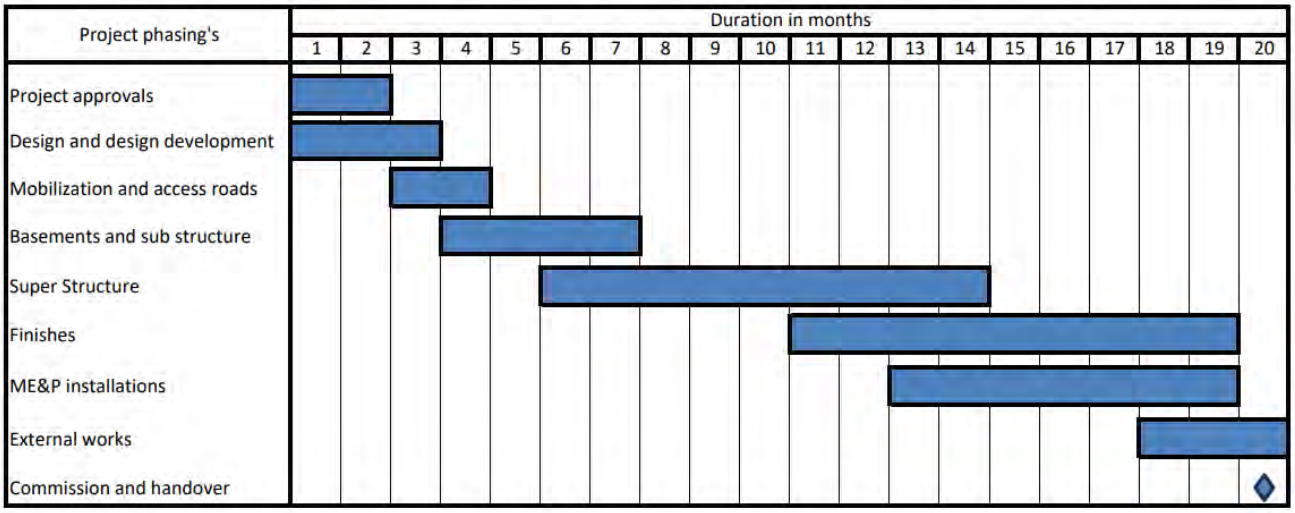
External hardscape works (including driveways, pedestrian pathways, and parking bays) will be constructed using asphalt or interlocking pavers, complete with kerbs and gullies to manage stormwater. Soft landscaping will be implemented according to the landscape architect's plan, featuring tropical planting, lighting, and any water features. Where specified, green-wall structures will be framed and planted. External MEP connections for irrigation, site lighting, and utility tie-ins will be completed and tested.

7. Testing, Commissioning & Handover

In the final phase, all building systems will undergo rigorous inspection and commissioning. HVAC systems will be balanced, electrical installations tested to IEC standards, and plumbing pressure-tested. Fire-safety equipment—sprinklers, alarms, and emergency lighting—will be verified with local authority inspectors. A comprehensive set of as-built drawings, O&M manuals, and warranties will be compiled.

Upon successful completion of snagging items and receipt of all statutory approvals, the project will be formally handed over to the hotel operations team, supported by a detailed walkthrough and training on building management systems.

Construction Phases by Schedule:



9 CONCLUSION

Based on the comprehensive Terms of Reference and through stakeholder consultation, as well as following a rigorous due diligence process, this Environmental Impact Assessment has thoroughly evaluated the baseline conditions of the receiving environment through all necessary field surveys and analyses. Foreseeable impacts have been proactively identified at an early stage, and a suite of practical, context-specific mitigation measures has been proposed to reduce both environmental risks and social disruptions to acceptable levels.

In view of the findings presented, and in close collaboration with the Project Promoters and Developers, we—the appointed Environmental Consultants—conclude that the **"Aria Hotel Development"** represents a feasible, environmentally manageable, and socially responsible project for implementation in the Seychelles.

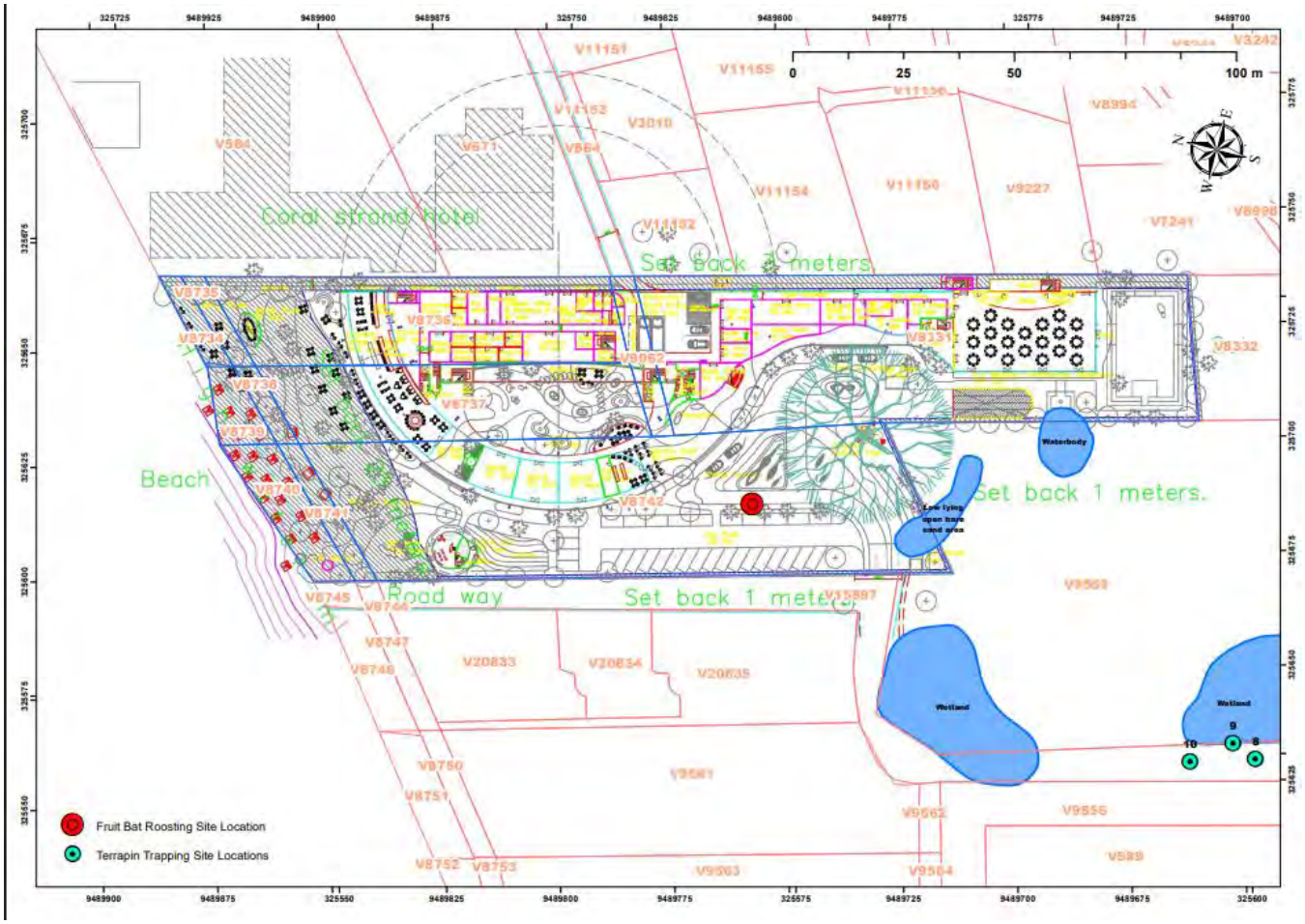
10 REFERENCES

1. Seychelles Sustainable Development Strategy, 2012-2020
2. Seychelles Public Private Partnership Policy
3. The Environmental Management Plan of Seychelles (EMPS)
4. Seychelles Fisheries Policy, 2005
5. Seychelles Occupational Safety and Health Decree
6. Seychelles Constitution of the Third Republic (1993), Cap 42
7. Seychelles Environmental Protection Act (2016)
8. National Environment Effluent Discharge Quality Standards, 2016
9. National Environment Noise and Ambient Air Quality Standards, 2016
10. National Environment Protection : Seychelles National Parks Authority Order, 2016, Cap 71
11. Seychelles Land Acquisition Act (1991) - Revised Edition - Cap 105
12. Seychelles Public Health Act
13. The PUC Act
14. The PUC Supply regulations
15. The PUC ACT Sewerage regulations
16. The Town and Country Planning Act
17. The National Parks and Nature Conservancy Act (1969)
18. Seychelles State Land and Rivers Act
19. The Road Transport Act
20. Seychelles Ports Act
21. Maritime Zones Act and related regulations
22. Merchant Shipping Act
23. The Nairobi Convention, 1996
24. Convention on Biological Diversity, 1993
25. United Nations Framework Convention on Climate Change, 1992
26. United Nations Sustainable Development Goals, 2015
27. National Gender Policy of the Government of Seychelles
28. Sadler, B and Verheems, R. (1996). Strategic Environmental Assessment: Status, Challenges and Future Directions. Ministry of Housing, Spatial Planning and the Environment, Pubication No.53, The Hague, The Netherlands, and the International Study of Effectiveness of Environmental Assessment
29. DEAT, (2004) Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7, Department of Environmental Affairs and Tourism (DEAT), Pretoria.
30. DEAT, (2004) Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs and Tourism (DEAT), Pretoria.
31. Antat, S., Bastienne, L and Vel. T. 2012. Mangrove rehabilitation through community involvement: Establishing mangrove conservation awareness and education
32. ARKive. 2011. Purple heron videos, photos and facts – Ardea purpurea. ARKive. Accessed on 8 October 2011.
33. AquaPlant. 2019. A Diagnostics Tool for Pond Plants and Algae. How to Control White Water Lily. https://aquaplant.tamu.edu/management-options/white-water-lily/
34. Birdlife International, 2009. Data Zone. http://www.birdlife.org/datazone/species/index.html?action=SpcHTMDetails.asp&sid=3742&m=0#FurtherInfo
35. BirdLife International 2016. Ixobrychus sinensis. The IUCN Red List of Threatened Species. http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22697303A93606843.en. Downloaded on04 December 2018.
36. Encyclopedia of Public Health. 2019. Biological Oxygen Demand. https://www.encyclopedia.com
37. Environmental Protection Agency 2001. PARAMETERS OF WATER QUALITY Interpretation and Standards. https://www.epa.ie
38. Fritz, U., W.R. Branch, P.-S. Gehring, J. Harvey, C. Kindler, L. Meyer, L. Du Preez, P. Široký, D.R. Vieites and M. Vences. 2013. Weak divergence among African, Malagasy and Seychellois hinged terrapins (Pelusios castanoides, P. subniger) and evidence for human-mediated oversea dispersal. Organisms Diversity & Evolution 13: 215-224.
39. Gerlach, J. 2002. Seychelles Terrapin Action Plan. Phelsuma 10 (Supplement B): 1-8.

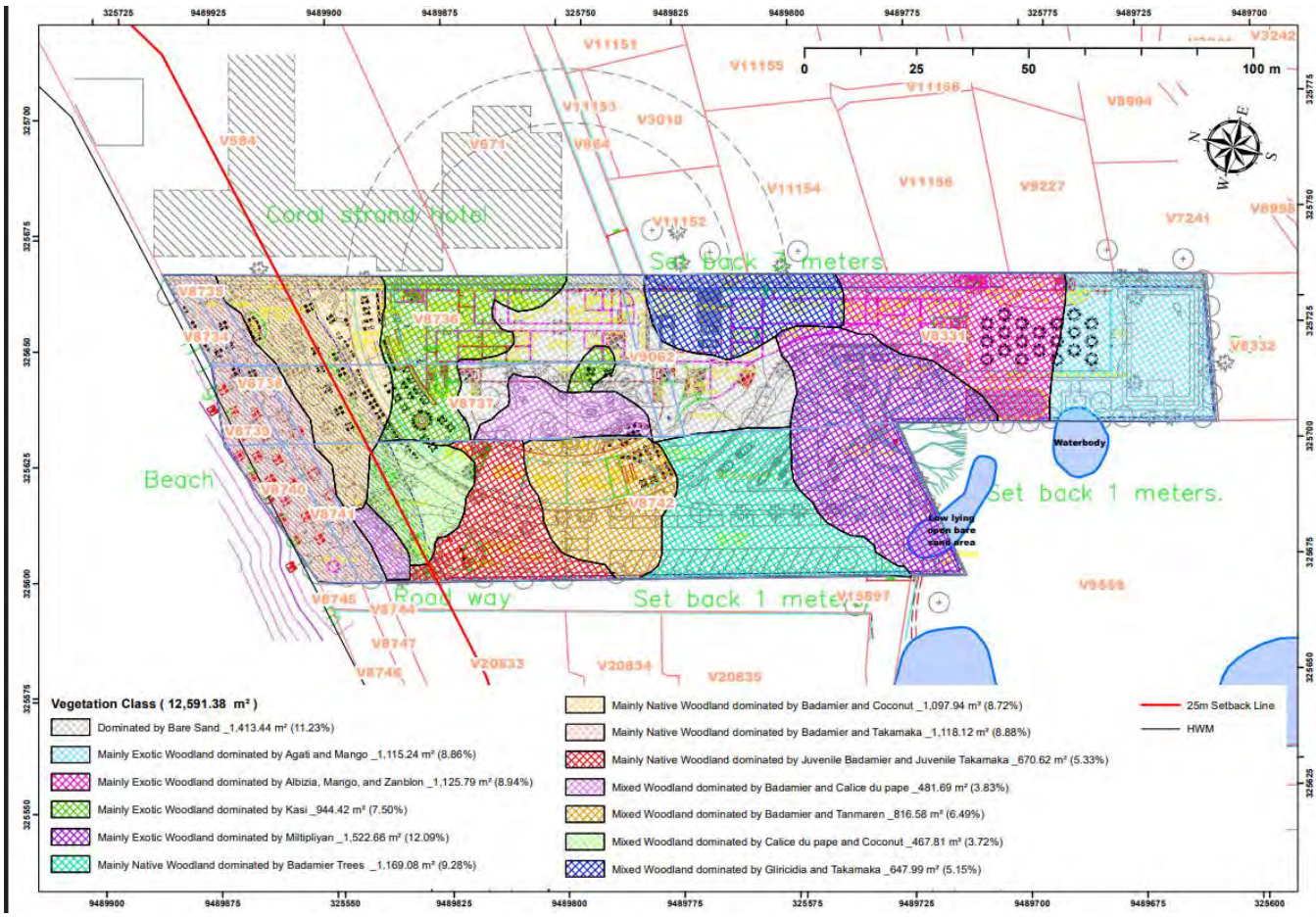
40. Gerlach, J. 2008b. Population and conservation status of the reptiles of the Seychelles islands. Phelsuma 15: 30-48.
41. Gerlach, J. 2008a. Fragmentation and demography as causes of population decline in Seychelles freshwater turtles (Genus Pelusios). Chelonian Conservation and Biology 7(1): 78-87.
42. Gerlach, J. and L. Canning. 2001. Range contractions in the Critically Endangered Seychelles terrapins (Pelusios spp.). Oryx 35(4): 313-321.
43. Government of Seychelles (1996). Environment Protection (Impact Assessment) Regulations.
44. Government of Seychelles (2012a). Seychelles Sustainable Development Strategy 2012 - 2020.
45. Government of Seychelles (2012b). Town and Country Planning Act. Chapter 237.
46. Government of Seychelles (2014a). Fifth National Report to the United Nations Convention on Biological Diversity. Ministry of Environment and Energy, P.O. Box 445, Botanical Gardens, Mont Fleuri, Victoria, Republic of Seychelles.
47. Government of Seychelles (2014b). Seychelles Biodiversity Strategy and Action Plan 2015-2020.
48. Government of Seychelles (2014c). State of Environment Outlook Report.
49. Government of Seychelles (2015a). National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020. 39
50. Government of Seychelles (2015b). Policy on Tourism Accommodation. Tourism Department.
51. Grossman DH, Faber-Langendoen D, Weakley AS, Anderson M, Bourgeron P, Crawford R, Goodin K, Landaal S, Metzler K, Patterson K, Pyne M, Reid M, Sneddon L. (1998). International classification of ecological communities: terrestrial vegetation of the United States. Volume I. The National Vegetation Classification System: development, status, and applications. The Nature Conservancy. Arlington, Virginia, USA.
52. Gupta, C. and D. Prakash. 2014. Duckweed: an effective tool for phyto-remediation. Toxicological & Environmental Chemistry.
53. Health Canada (2012). Guidelines for Canadian drinking water quality: guideline technical document – turbidity. Ottawa, Ontario: Water, Air and Climate Change Bureau, Healthy Environments and Consumer Safety Branch, Health Canada (www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/turbidity/index-eng.php, accessed 27 September 2016)
54. IPANE, 2019. Invasive Plant Atlas of New England. Hydrilla. https://www.eddmaps.org/ipane/ipanespecies/aquatics/hydrilla_verticillata.htm
55. IUCN, 2018. The IUCN Red List of Threatened Species, Version 2018-2. http://www.iucnredlist.org
56. Jacono, C.C., Richerson, M.M., Howard Morgan, V. and Pfingsten, I.A. 2019. Hydrilla verticillate (L.f.) Royle: U.S. Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, FL, https://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=6, Revision Date: 10/27/2015, Peer Review Date: 3/18/2016, Access Date: 1/20/2019
57. Lake Restoration Incorporated. 2019. Water Lily Control. https://www.lakerestoration.com/t-waterlily-control.aspx
58. Landesman, L., C. Fedler and R. Duan. 2015. Plant nutrient phytoremediation using duckweed; p. 341-354 In A.A. Ansari, S. Singh Gill, G.R. Lanza and W. Rast (eds.). Eutrophication: Causes, Consequences and Control. The Netherlands: Springer Science..
59. Marine Conservation Society of Seychelles, 2016. Initial Outline Assessment of the Wetland at H-Resort, Beau Vallon
60. Purdue Extension, 2019. Aquatic Plant Management. Control of Duckweed and Watermeal. https://www.extension.purdue.edu/extmedia/APM/APM-2-W.pdf
61. Robertson, B. 2004. pH requirement of freshwater aquatic life.
62. Rocamora, G. and Henriette, E. 2015. Invasive Alien Species in Seychelles. Why and how to eliminate them. Identification and management of priority species. Biotope Editions, Mèze, Museum national d'histoire naturelle, Paris & University of Seychelles
63. Senterre, B., Henriette, E., Chong Seng, L., Gerlach, J., Mougal, J. and Rocamora, G. (2013). Seychelles Key Biodiversity Areas - Output 6: Patterns of conservation value in the inner islands. Consultancy Report, Ministry of Environment-UNDP-GEF project, Victoria, Seychelles.
64. Seychelles Bird Records Committee. http://www.seychellesbirdrecordscommittee.com/ 40

65. Silva, A., S. Rocha, J. Gerlach, G. Rocamora, A. Dufrenne and D.J. Harris. 2010. Assessment of mtDNA genetic diversity within the terrapins Pelusios subniger and Pelusios castanoides across the Seychelles islands. *Amphibia-Reptilia* 31(4): 583-588.
66. Skerrett A., Bullock, I, and Disley, T. 2001. Birds of Seychelles. Christopher Helm (Publishers) Ltd, London. 320 pages.
67. The PondGuy. 2018. Duckweed. https://www.thepondguy.com/category/duckweed
68. Zedler, J.B. and S. Kercher. 2005. Wetland resources: Status, Trends, Ecosystem Services, and Restorability. *Annu. Rev. Environ. Resour.* 30: 39-74.

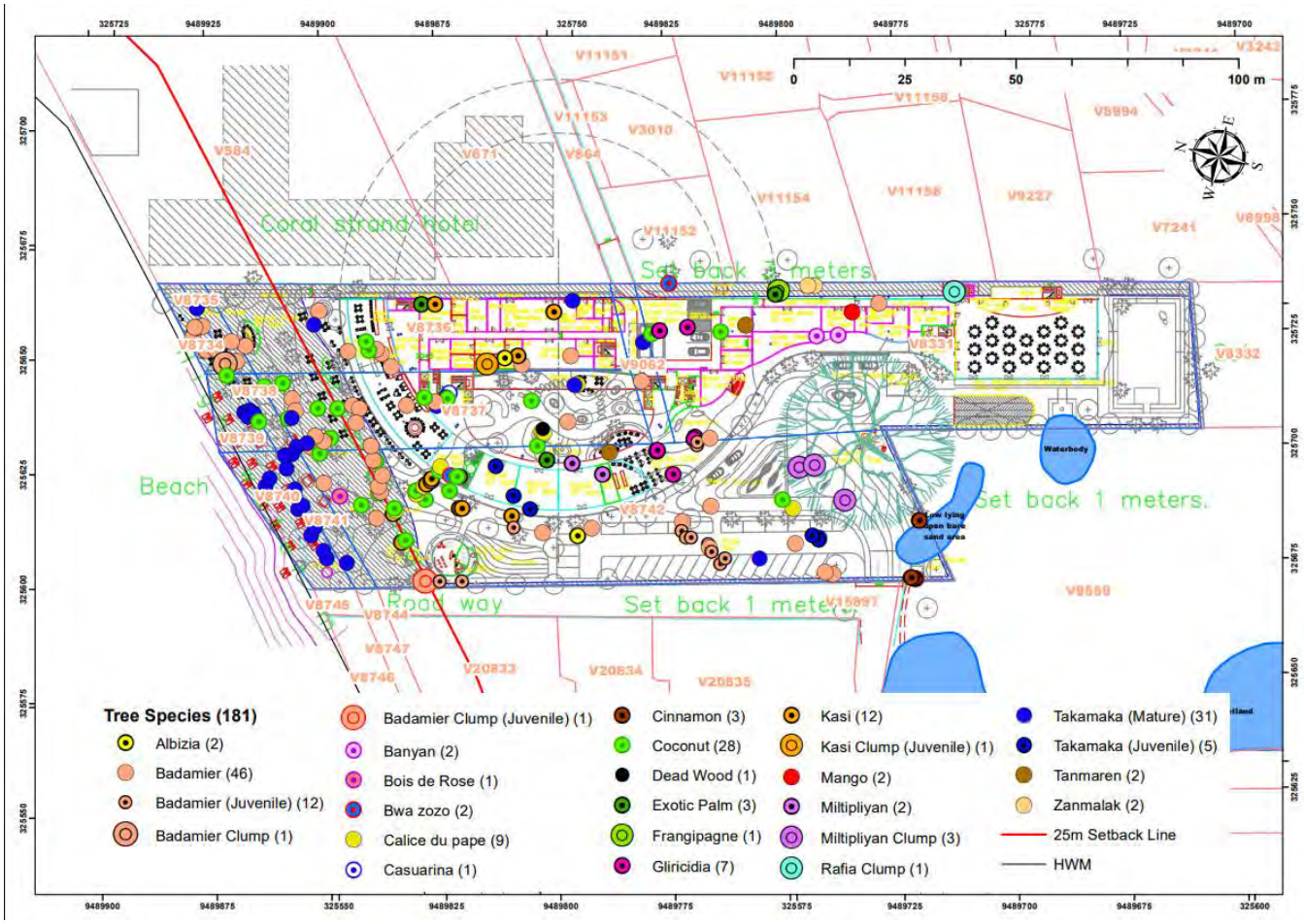
12. ANNEX



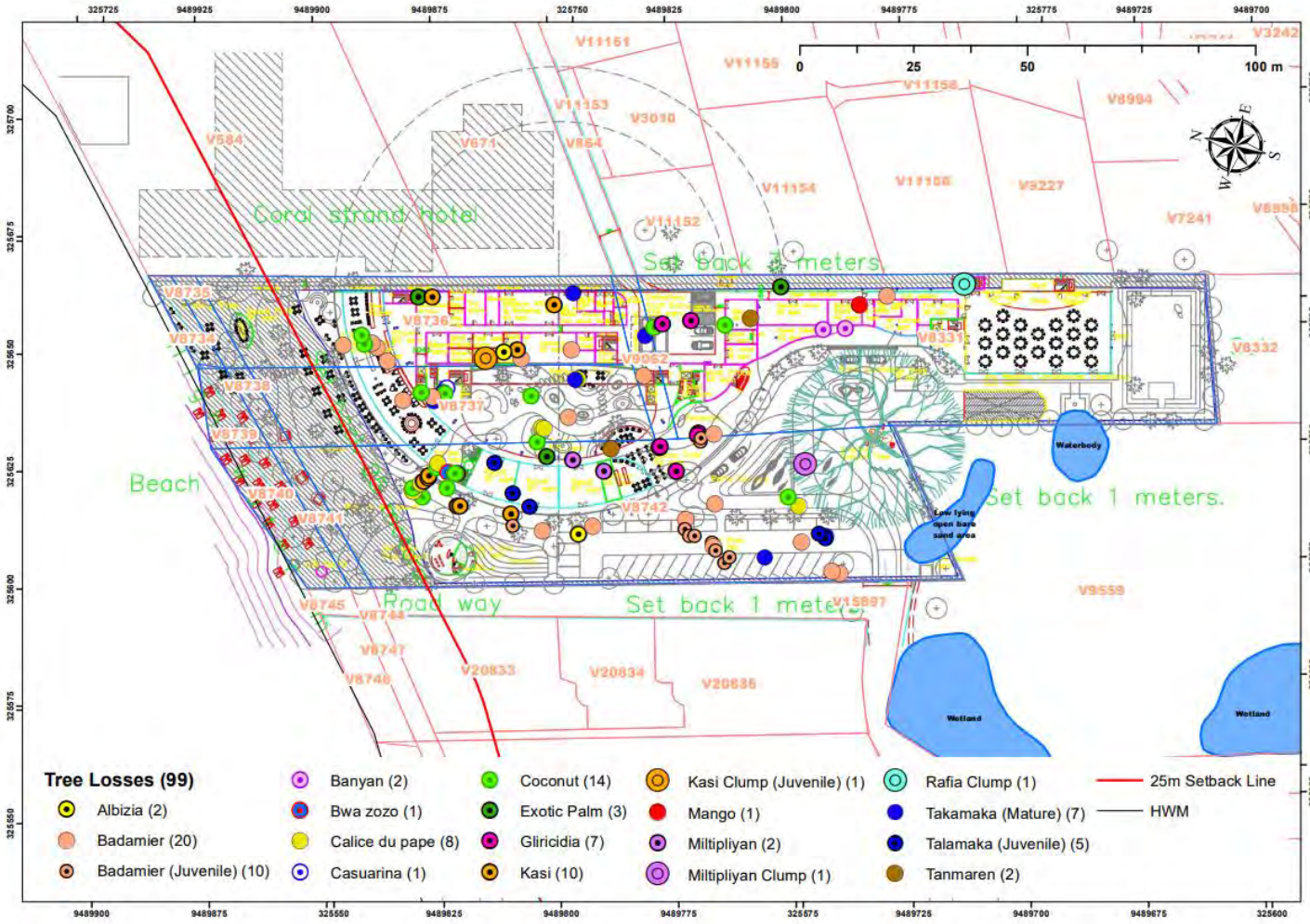
Annex 1: Fruit Bat Roosting and Terrapin site Locations



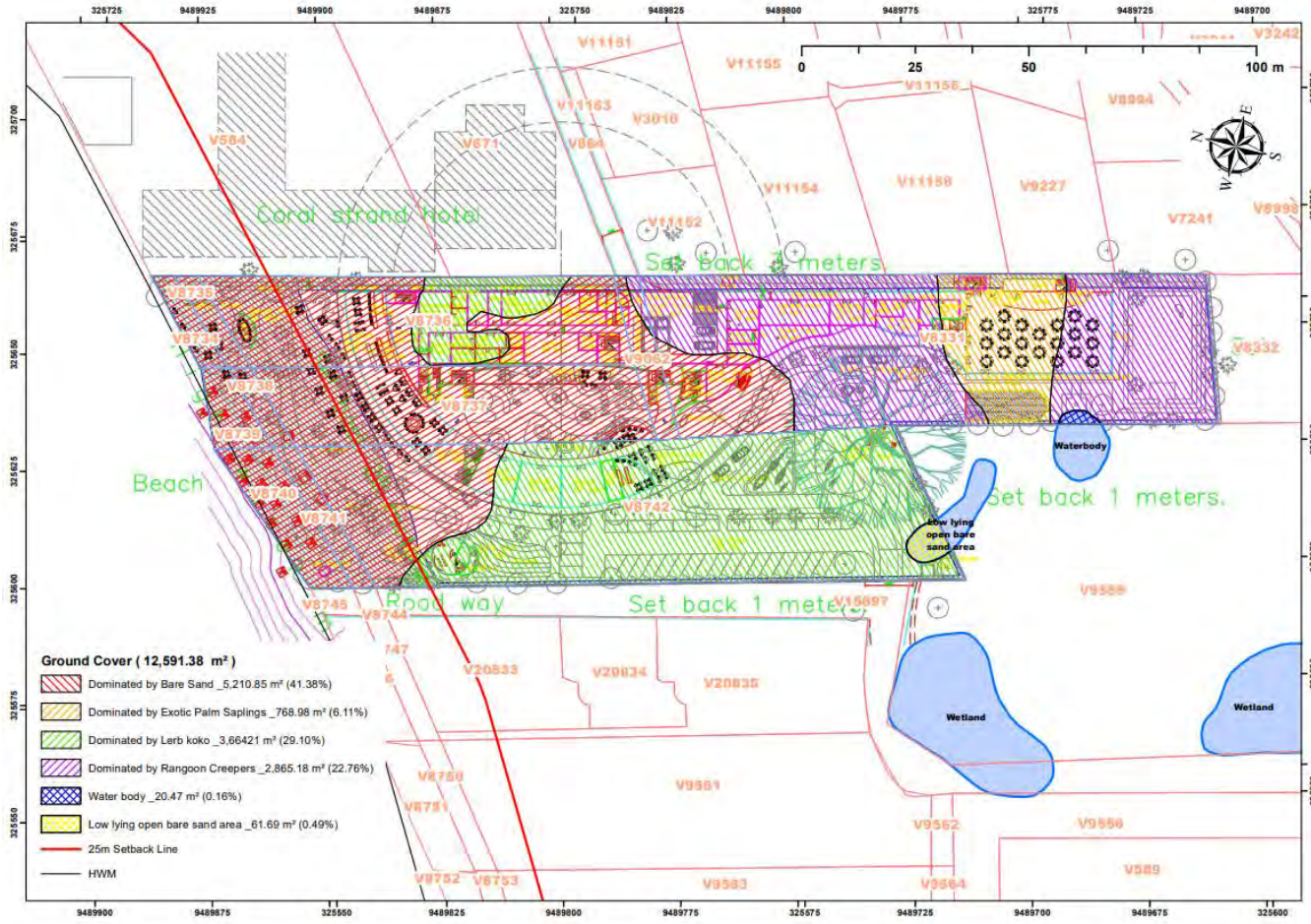
Annex 2: Overall Vegetation Class



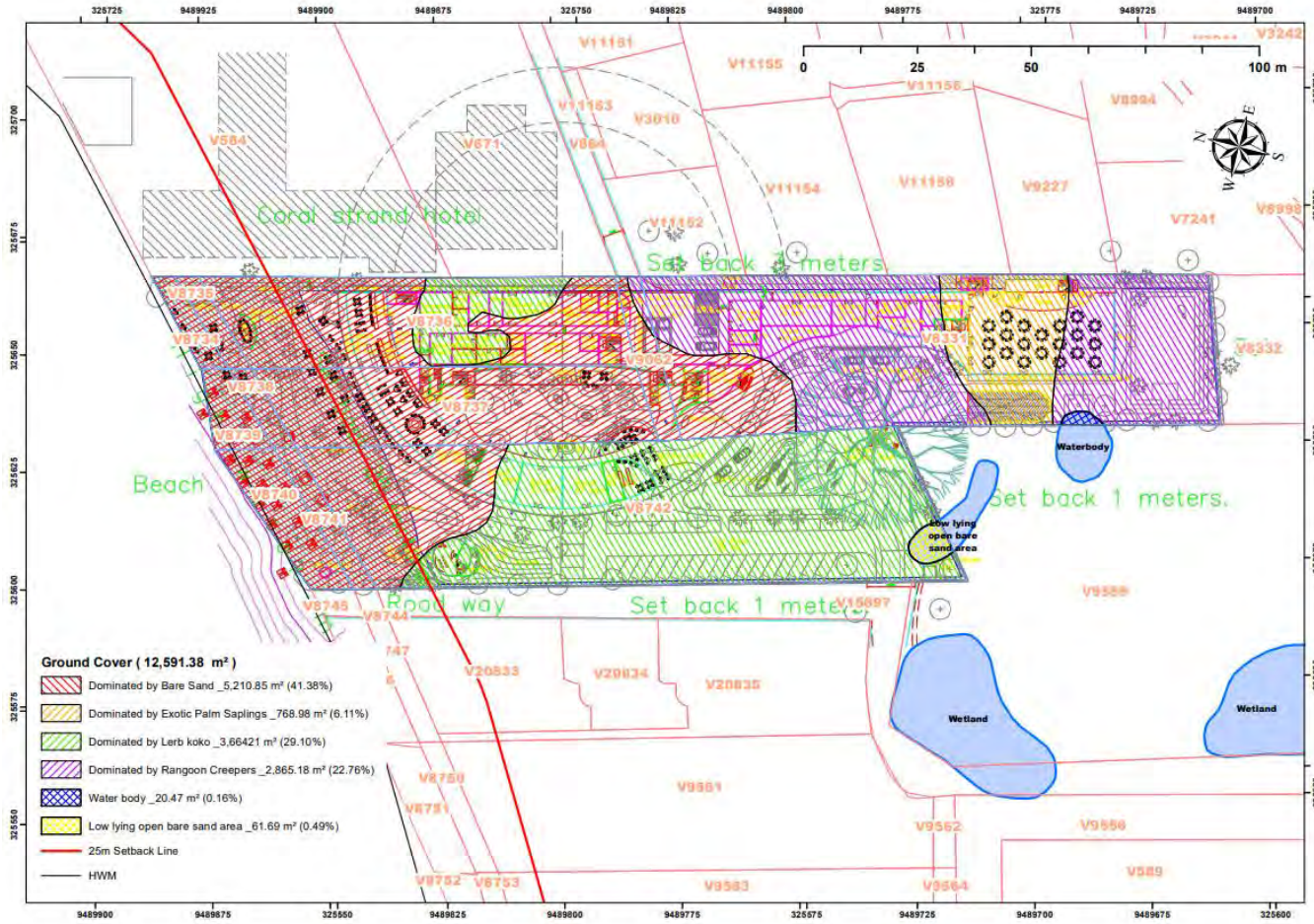
Annex 3: Tree Species



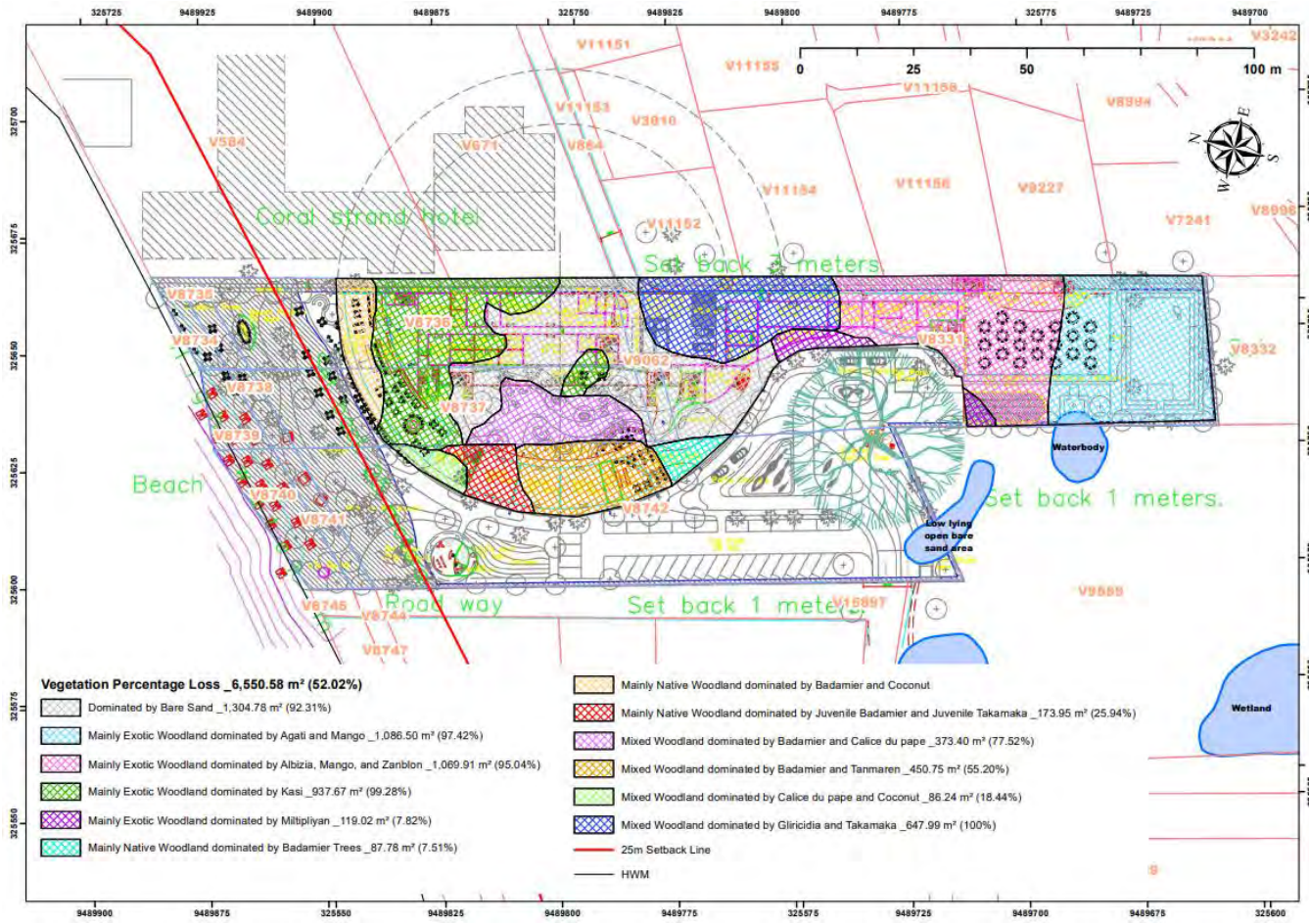
Annex 4: Tree Losses



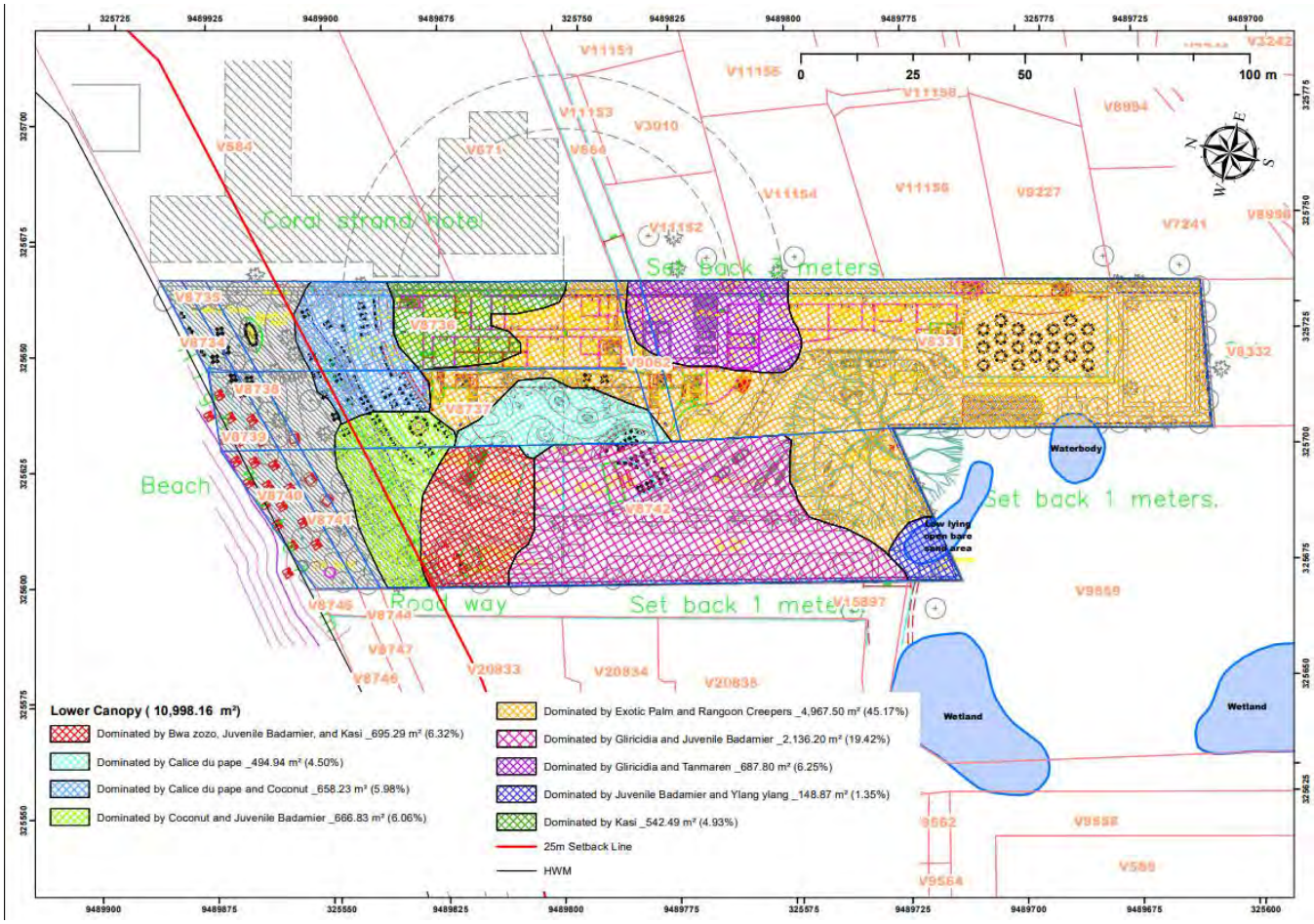
Annex 5: Vegetation Ground Cover



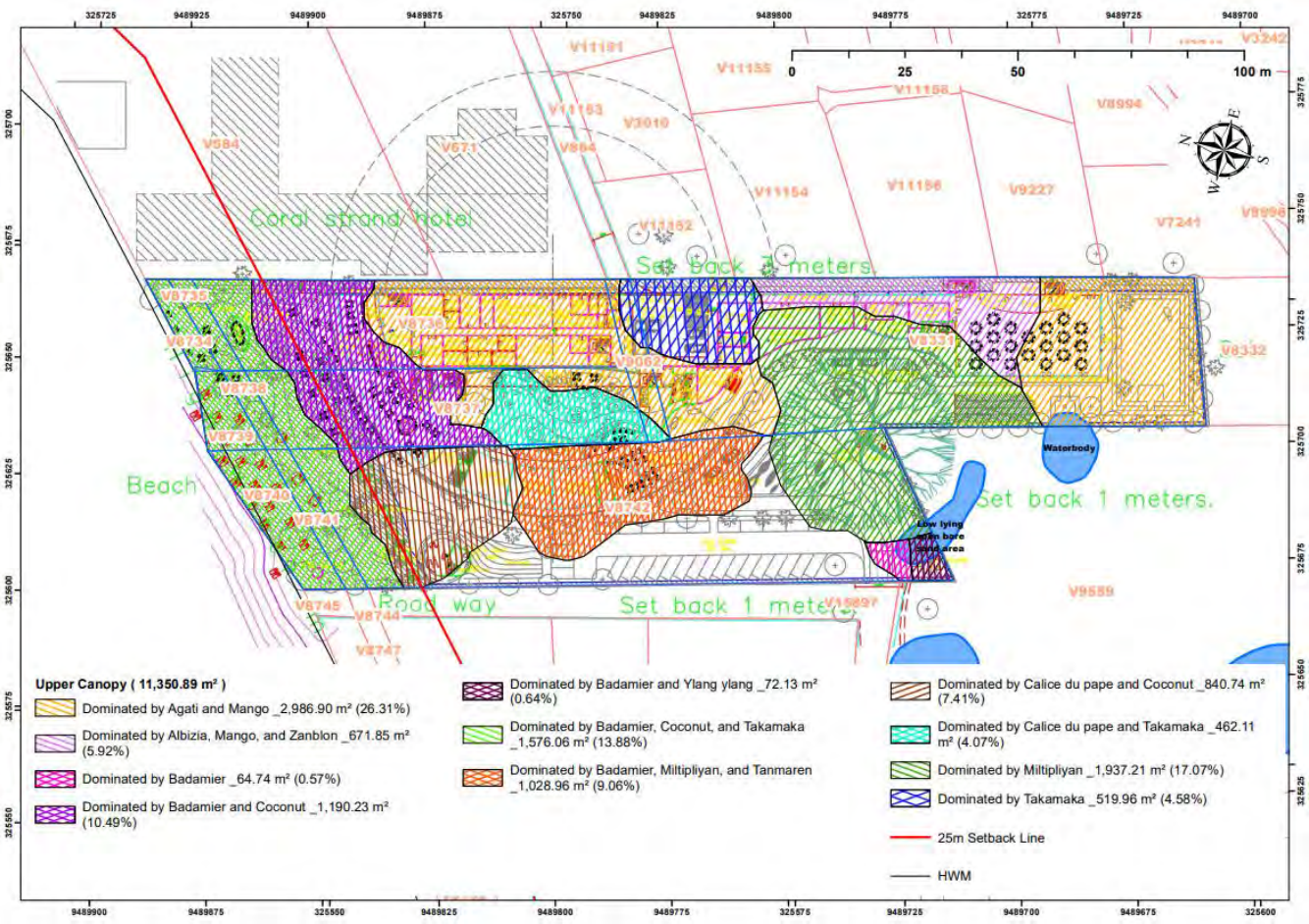
Annex 6: Vegetation Loss



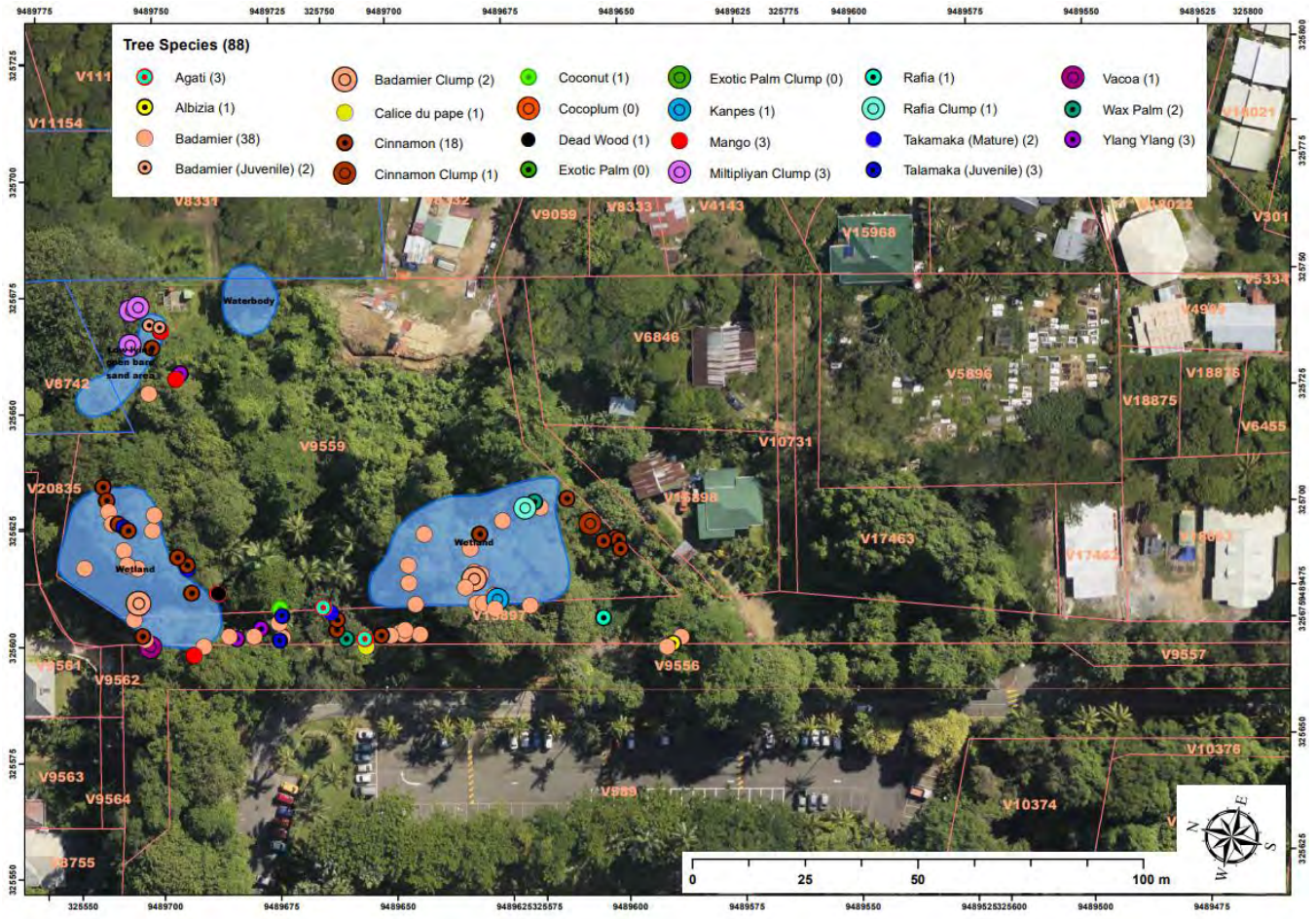
Annex 7: Vegetation Loss – Building Only



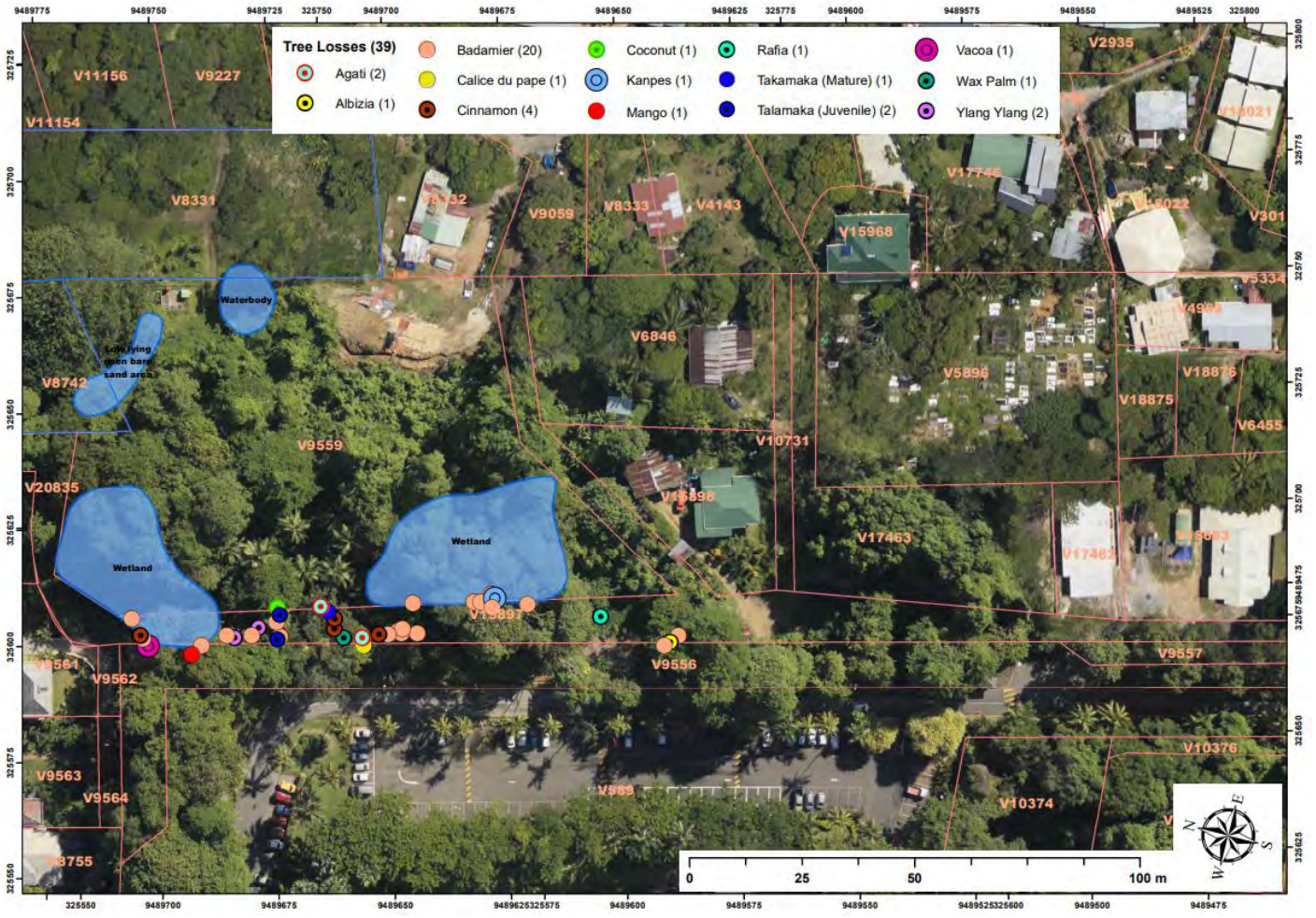
Annex 8: Vegetation Lower Canopy



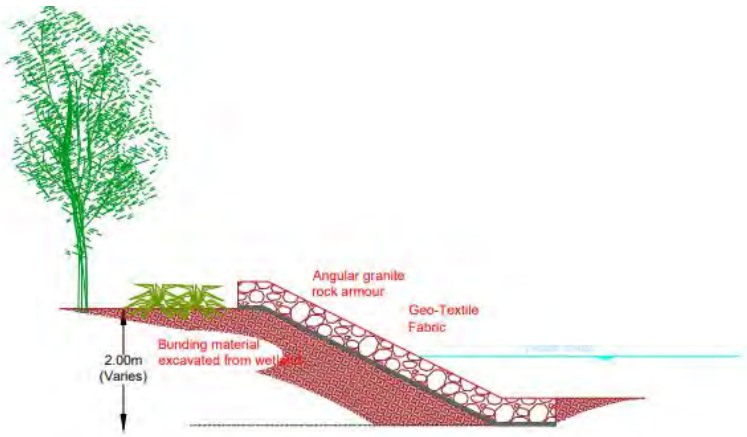
Annex 9: Vegetation Upper Canopy



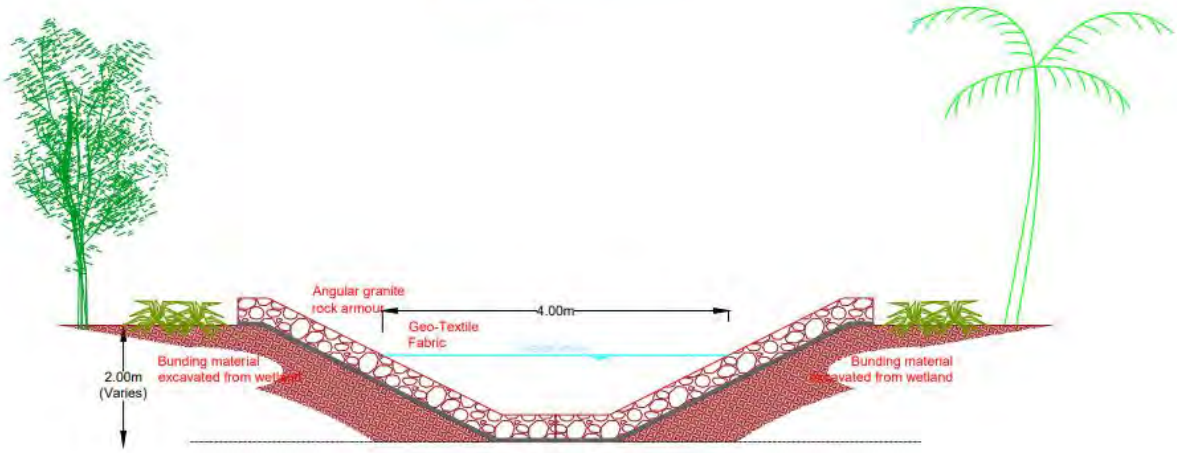
Annex 10: Wetland Area and Road Tree Species



Annex 11: Wetland Area and Road Tree Loss

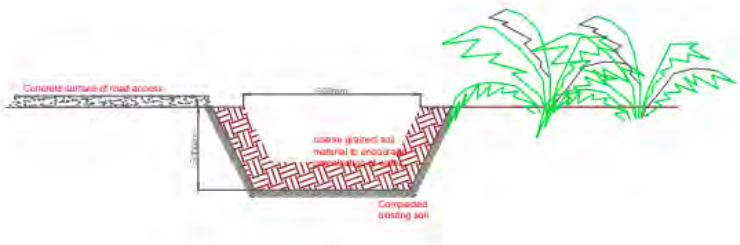


Scenario 1 - At edge of main wetland body



Scenario 2 - At wetland channel outlet (inc. rock packing)

Annex 12: Rock Armoring Detailed Design 1

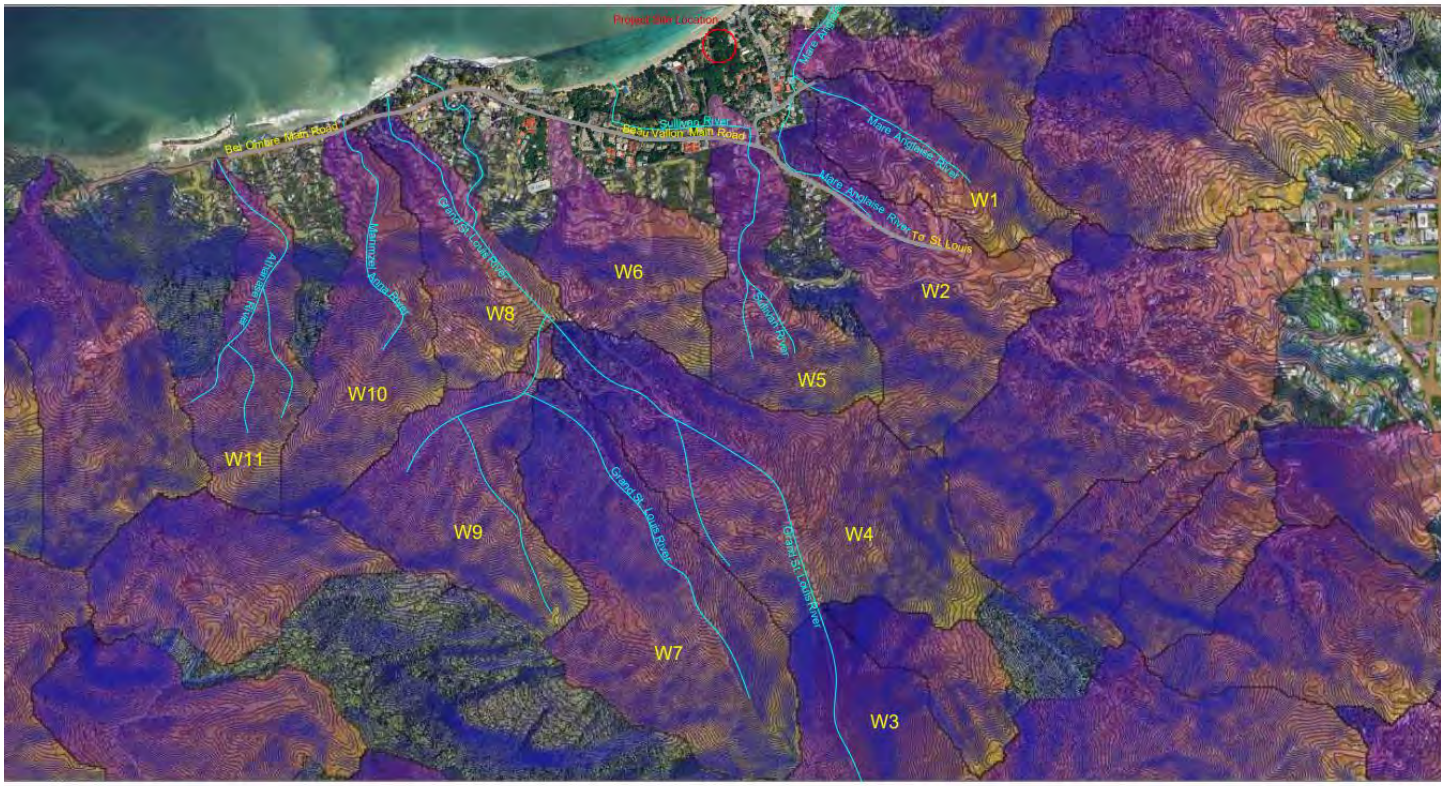


Detail 1 = Swale Design for back-of-house road access

Detail 2 = Grille Design

Annex 13: Rock Armoring Detailed Design 2

Annex 14: Existing Flow Characteristics of the area



Annex 15: Watershed Delineation

Reference	Description	Area (km^2)	Runoff Coefficient (C)	Design Rainfall Intensity (mm/hr) (25 years ARI)	Computed Discharge (Q) (m^3/s) (25 years ARI)
Watershed 1	Is discharged by the Mare Anglaise River Tributary 1	0.406	0.57	125	8.00
Watershed 2	Is discharged by the Mare Anglaise River Tributary 1	0.692	0.57	134	14.77
Watershed 3	Is discharged by the Grand St. Louis River main stream	0.560	0.57	135	11.98
Watershed 4	Is discharged by the Grand St. Louis River main stream	1.132	0.57	170	30.43
Watershed 5	Is discharged by the Sullivan River	0.477	0.57	119	9.02
Watershed 6	Is not discharged by any major channeled flow - however, by a number of minor chanelled flows	0.435	0.57	125	8.65
Watershed 7	Is discharged by the Grand St. Louis River tributary 1	1.005	0.57	174	27.65
Watershed 8	Is discharged by the Grand St. Louis River main stream	0.398	0.57	125	7.88
Watershed 9	Is discharged by the Grand St. Louis River tributary 1	0.605	0.57	130	12.46
Watershed 10	Is discharged by the Manmzel Anna River	0.590	0.57	125	11.60
Watershed 11	Is discharged by the Athanase River	0.687	0.57	135	14.70

Annex 16: Watershed discharge

Annex 17: Gallery from Government Scoping Meeting and Site Visit


KIA MOTORS


SEYCHELLES
FIRE & RESCUE
SERVICES AGENCY
SEYCHELLES
FIRE & RESCUE
SERVICES AGENCY

Annex 18: Meeting with Seychelles Planning Authority Board

Annex 19: Gallery from Public Meeting

Annex 20: Gallery Door to Door Scoping

Annex 21: Door to Door Scoping Forms

MINISTRY OF AGRICULTURE CLIMATE CHANGE AND ENVIRONMENT
ENVIRONMENTAL ASSESSMENT AND PERMITS SECTION (E.A.P.S)
SCOPING VERIFICATION FORM

PROJECT TITLE: ARIA SEYCHELLES

PROPONENT/CONSULTANT: Eco-Sol (Mr. Nimhan Senaratne) Tel: (248) 2723222
Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

After discussions, I see no problem with the creation of the new Establishment tourism Beau Vallon, Next to Coral Strand.

PERSON/ORGANISATION SCOPED

NAME: Terry Sandapin **Post Title:** Manager

ORGANISATION: Engineer.

Phone Number: _____ **Mobile Number:** 2513996

Email Address: _____

SIGN: _____ **DATE:** 6 May 2025

The completed form can be posted on the following e-mail address class1@env.gov.sc or contact the ENVIRONMENT ASSESSMENT AND PERMITS SECTION- MACCE-Tel; 4670532 to organise for collection.

DEADLINE FOR COMMENTS: 14th March 2025

MINISTRY OF AGRICULTURE CLIMATE CHANGE AND ENVIRONMENT
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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

1. Noises. (Perturbations tourist guest House)
2. Risk. Inondation. (Flooding)

PERSON/ORGANISATION SCOPED

NAME: TIROOMOODY Nella **Post Title:** CHEZ NELLA.

ORGANISATION:

Phone Number: 280 4088 → **Mobile Number:**

Email Address:

SIGN: Nella **DATE:** 6/5/2025

The completed form can be posted on the following e-mail address class1@env.gov.sc or contact the ENVIRONMENT ASSESSMENT AND PERMITS SECTION- MACCE-Tel; 4670532 to organise for collection.

DEADLINE FOR COMMENTS: 14th March 2025

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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon Parcel = V7241

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

- PUC pipes
- water diversion (flooding)
- working hours and working days
- noise pollution
- generator noise
- dilapidation survey of our house & closet property
- attention to biwater sewage

PERSON/ORGANISATION SCOPED

NAME: Marlene Thyroomoody **Post Title:** Retired

ORGANISATION: Chez Remy (self-catering)

Phone Number: 2723127 **Mobile Number:** 2516859

Email Address:

SIGN: MThyroomoody **DATE:** 06/05/2025

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LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

- Small Seychellois will not benefit from these large hotel developments coming up in the country.
- It is a positive that they will not be able to park on the beach as beach users create a lot of littering and degradation.
- Must take wetland into consideration when building especially underground parking.

PERSON/ORGANISATION SCOPED

NAME: Sheena Mangroo **Post Title:** _____

ORGANISATION: _____

Phone Number: _____ **Mobile Number:** 2639474

Email Address: _____

SIGN: S.M **DATE:** _____

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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

For the time being No objection.

PERSON/ORGANISATION SCOPED

NAME: Georgelin Doudé **Post Title:** ASP G. Doudé

ORGANISATION: Police officer

Phone Number: _____ **Mobile Number:** 2722563

Email Address: g.doude@police.gov.sc

SIGN: _____ **DATE:** 08/05/2025

The completed form can be posted on the following e-mail address class1@env.gov.sc or contact the ENVIRONMENT ASSESSMENT AND PERMITS SECTION- MACCE-Tel; 4670532 to organise for collection.

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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

- NO major objections
- ok for development
-

PERSON/ORGANISATION SCOPED

NAME: Susanne Antat **Post Title:** _____

ORGANISATION: _____

Phone Number: 2514044 **Mobile Number:** _____

Email Address: _____

SIGN: _____ **DATE:** _____

The completed form can be posted on the following e-mail address class1@env.gov.sc or contact the ENVIRONMENT ASSESSMENT AND PERMITS SECTION- MACCE-Tel; 4670532 to organise for collection.

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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED
(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

I have no objection towards the project development, but with short on Saturdays less heavy works.

PERSON/ORGANISATION SCOPED

NAME: LI LY **Post Title:** OWNER

ORGANISATION: WATERLILY GUEST HOUSE

Phone Number: _____ **Mobile Number:** 2522717/2510176

Email Address: _____

SIGN: _____ **DATE:** 06/05/2025

The completed form can be posted on the following e-mail address class1@env.gov.sc or contact the ENVIRONMENT ASSESSMENT AND PERMITS SECTION- MACCE-Tel; 4670532 to organise for collection.

DEADLINE FOR COMMENTS: 14th March 2025

	MINISTRY OF AGRICULTURE CLIMATE CHANGE AND ENVIRONMENT **ENVIRONMENTAL ASSESSMENT AND PERMITS SECTION (E.A.P.S)** **SCOPING VERIFICATION FORM**

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Email: nimhan158@gmail.com/malshisen@gmail.com

LOCATION: Beau Vallon

ISSUES DISCUSSED

(Please use additional sheets if required- a separate sheet is to be used for each organization/person undergoing scoping)

Sujith Surendran 5:34 AM (1 hour ago)

to Khlebnikov, Evgenia, me, Nimhan

Dear Bernice ,

Greetings . Please find below our comments regarding the project :

- There will be potentially high amount of dust being generated during the project . Though it is envitable , we would still request that utmost efforts are taken to ensure that these dusts don't affect our guests. We have approximately 40 odd rooms directly opposite to your contruction area and if not managed properly , we might end up having dusts in our corridors and more importamtly ,inside our guest rooms .
- Noise is another factor which cannot be avoided , however owing to the fact that we are a leisure destinaton and guests tend to wake up late & proceed for breakfast , we request that the noisy works are started not prior to 0930 amd and preferably , the initial works starts away from our hotel and during the course of the day , the noisy works can come closer . We do note that this not always possible , still would request your utmost attention in managing the noise levels . Also, we request that the works are stopped by 1800 hours on daily basis .
- Though we are not sure at this point , we tend to consider that there might be some amount of vibrations during the initial phase of the project , especially while mounting the foundation on stilts etc . It needs to be seen how much it might affect us , if ever there is scenario of such kind .
- As mentioned by you during the our meeting , the project team would be buidling the temporary wall (the sceen to hide) upto one floor above the floor where the work is happening . Our guests rooms are Ground level + 4 levels and yours is Ground level + 3 levels . Hence , while the work is happening at ground level and as it goes higher up , our guests in 03rd and 04th floor , will probably be able to view the contruction site for a longer period of the contruction phase . We request that the barriers are raised higher up from the initial phase itself so that our guests do not see the contrcution site as well as take any pictures for further complaints or compensations . A covered barrier is less unpleasant than a dierct view of construction site .
- Another major concern is the upkeep within the site as you had mentioned , around 80 contruction team members would be staying on-site . It is imperative that high standards of hygiene as well as waste management is implemented as otherwise we would be in danger of pest infestation .
