Water Bodies Rejuvenation works at JNPA

The port is located at Sheva foot hill. This area comprises of waterbodies, forests, Temple areas, JNPA guest house, Air Force station old and new and Connective roads. The overall Catchment area for the waterbodies come up to 690 acres. The port has water bodies, one is located at Sheva temple, Sheva foothill and near CPP plaza. The water bodies are filled with rain water and remain wetted for entire season. In order to preserve these water bodies, the present proposal is considered in view of green port initiative. In order to encouraging green projects in port area, it is decided to take up the work of rejuvenation of existing water bodies which are located at Sheva temple, Sheva foothill and near CPP plaza. The Ministry of Port, shipping and waterways also included this project part of National Action Plan for climate change. And included in MIV 2030.

The project addresses the need to rejuvenate stagnant water bodies not only because water is a precious resource but also because of the enhanced ecological value it gives the surrounding environment. Rejuvenation of the water bodies benefits several components of the rich biodiversity of this area of JNPA like the birds, butterflies, flora and fauna that depend on this water resource, besides attraction tourists.

This project will resolves associated with stagnant water like mosquito menace, eutrophication problems due to excessive algal growth, and dominance of invasive species leading to the deterioration of a precious resource.

Due to this project the area becomes a better place with healthy growth of flora and fauna thereby contributing to the biodiversity and becomes a good environmental retreat for the residents as well as visitors to this place.

1. Rejuvenate stagnant water bodies:
   The project highlights the need to rejuvenate stagnant water bodies as its not only a precious resource but also to enhance the ecological value it gives to the surrounding environment. Rejuvenation of water bodies will benefit several components of the rich biodiversity of JNPA.

2. Resolving issues related to stagnant water:
   The project resolves the problems associated with stagnant water like mosquito menace, eutrophication problems due to access algae growth, and dominance of invasive species leading to deterioration of a precious resource.

3. Envisage flora and fauna:
   The natural stone edge and gabions allow the ecosystem to thrive naturally providing a breeding and roosting space for microorganisms thus enhancing the flora and fauna of the surrounding.
   The surrounding catchment is revived by removing the invasive species and replanting indigenous trees, shrubs and ground covers.
   Cluster plantation techniques that involve a five tier species selection considering the indigenous plant associations.

4. Using Bioengineering techniques:
   The project involves Bioengineering techniques for the rejuvenation of the water bodies. By this principle of allowing an ecosystem to function as naturally as possible. Ecological base maps are generated to analyses the environmental characteristics of the catchment area of each water body.

Sources of pollution unto the water are addressed, and have been tired to eliminate using Green eco measure such as Gabion walls, retention bunds, green bridges, coir matts coir rolls, GCL liners.
Avoiding concrete and RCC completely.

5. Understanding topography and water flow:
   The inflow and outflow/ overflow of water is revived through the surface flow analysis of the landform topography and vegetation cover around the water body.
   The water body edges are restored by understanding the subsurface flows of the surrounding water allowing a natural undisturbed breathing edge to the waterbody.

6. Impact:
   This project would make the area become a better place with healthy growth of flora and fauna that depends on this water resource, also will form to be a good environmental retreat for the residents as well as visitors of JNPA.
   Beautification of the surrounding is based on the natural characteristics of the area giving way for free movement together with an aesthetically designed space for the visitors, locals as well as the residents of the place.

Rejuvenation of the water bodies benefits several components of the rich biodiversity of this area of JNPA like the birds, butterflies, flora and fauna that depend on this water resource.

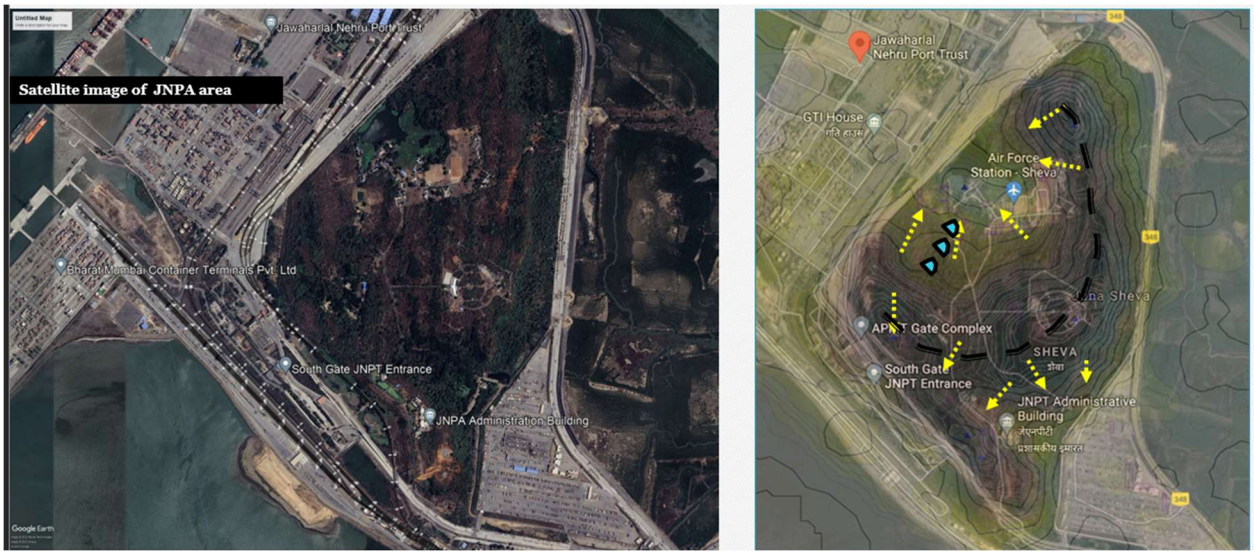

Figure 1 – Satellite Image of JNPA

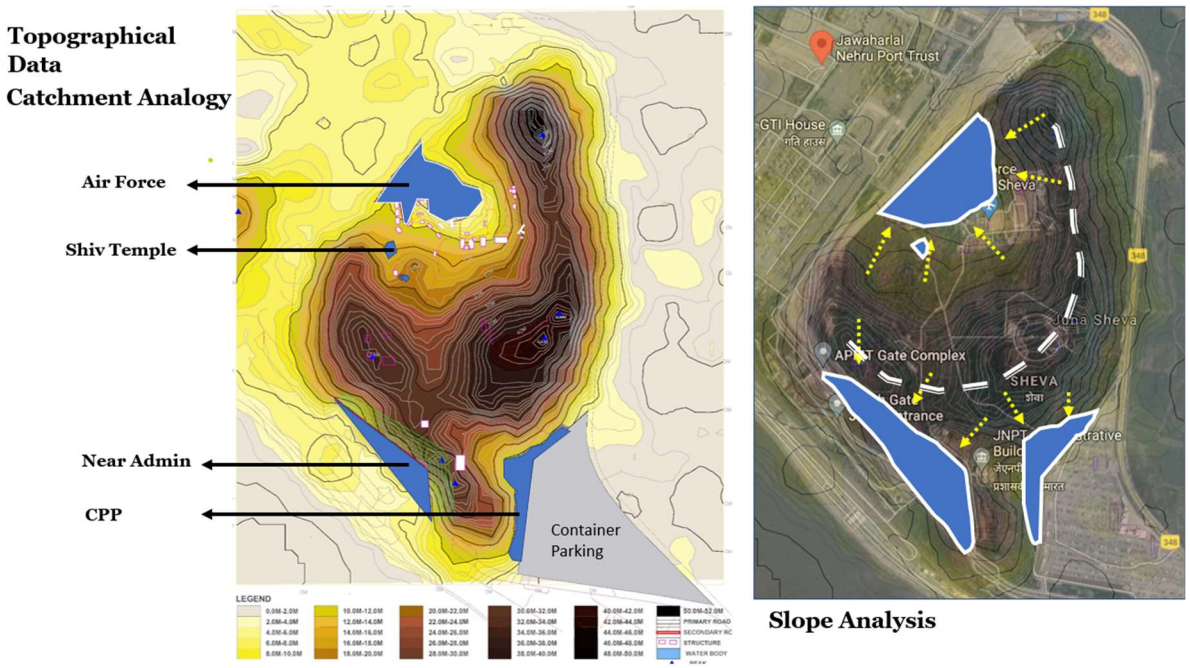

Figure 2 - Topographical Image of JNPA

Regarding this project concept plans, before & after photos are attached for reference -

Sheva Lake -

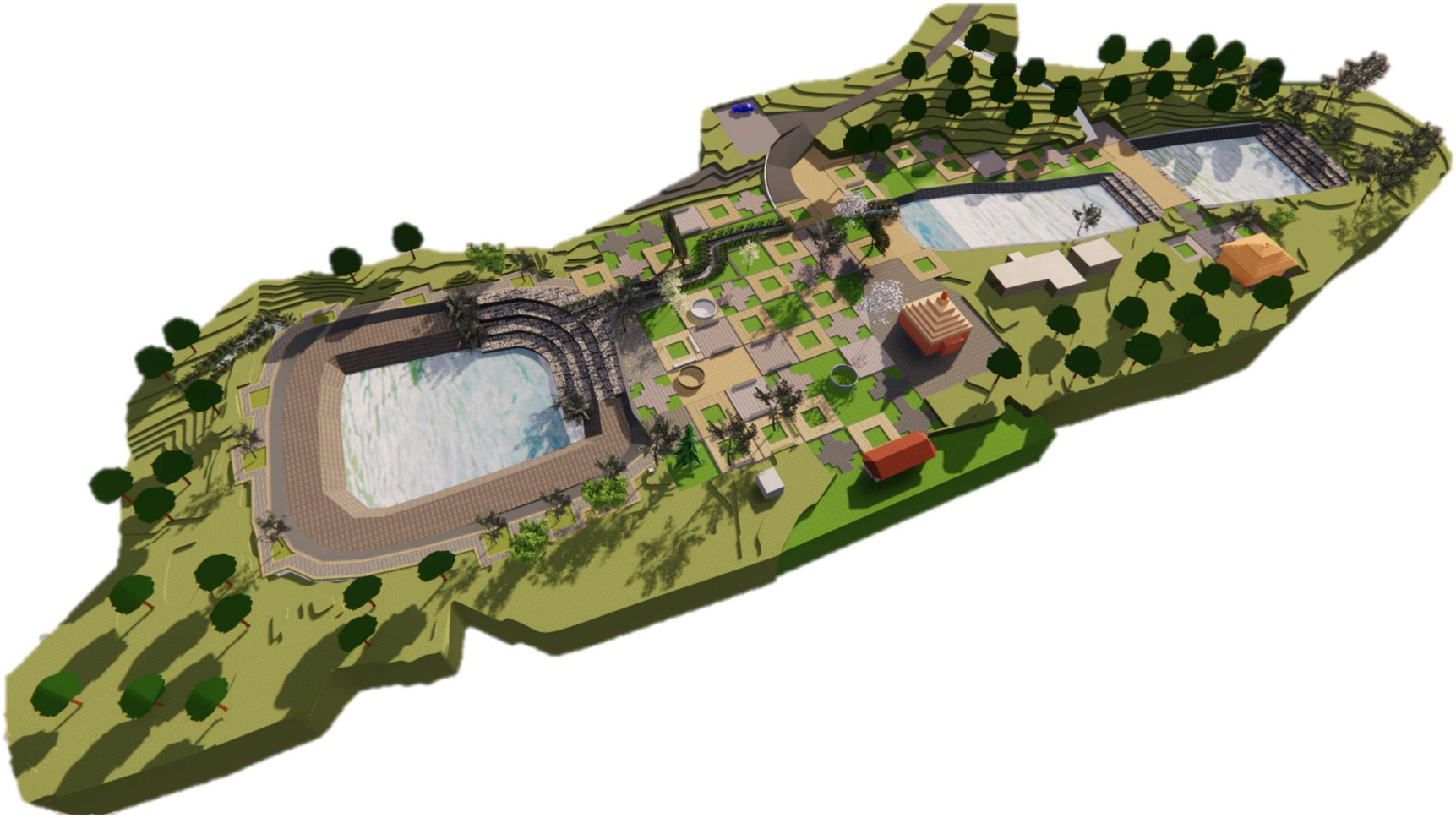

Figure 3 - Topography of Sheva lakes

The Site consists of 3 lakes geologically interconnected. Its our attempt to connect their water flow seamlessly and enhance the ecological biodiversity.
To ensure seamless flow of clean water through the lakes, Eco technological insert of gabion walls have been used at its inlet point.
Rip Rap Stone pitching to curb soil erosion.
Revival of Devi temple and its precinct with the help of Suitable landscape.

Figure 4 - Before picture of sheva lake area

Figure 5 - After picture of sheva lake area

Adam Foot Hill Lake –

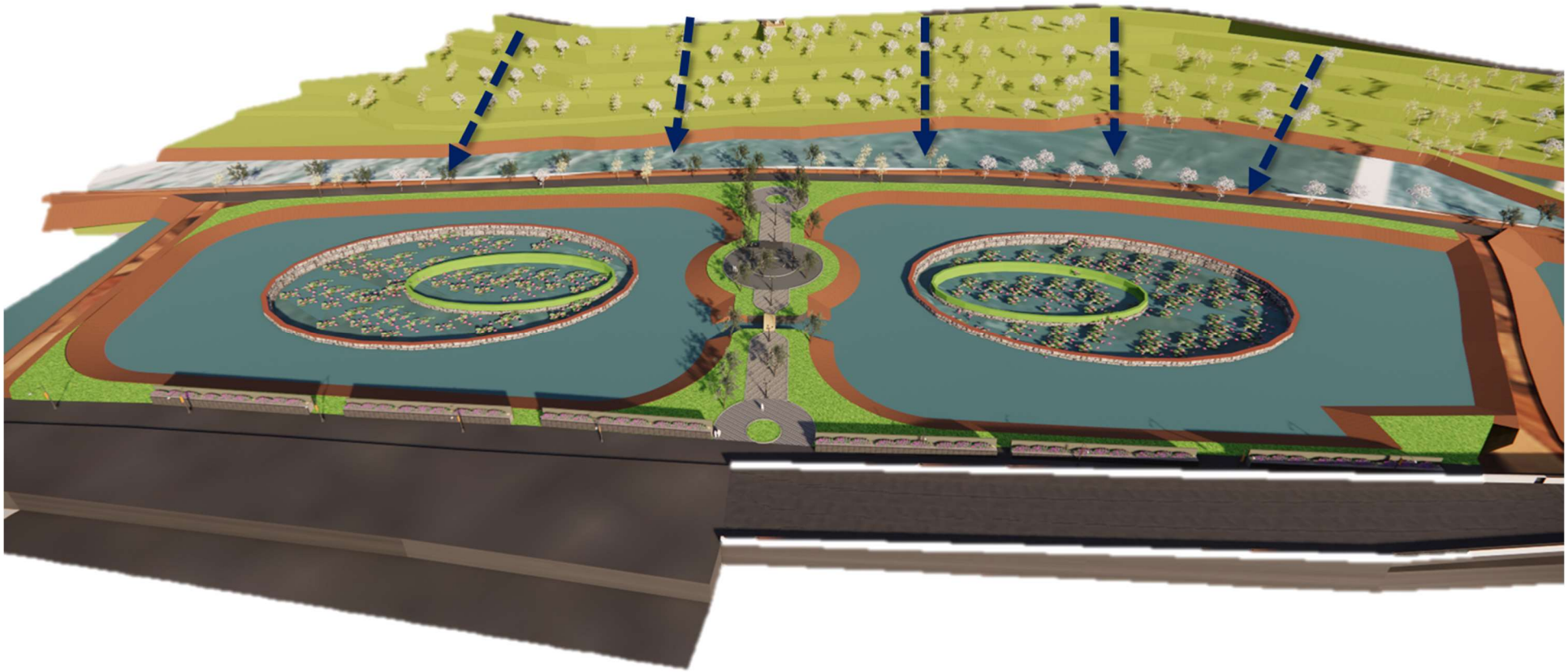

Figure 6 - Adam Foot Hill Lake

It lies at the base of Adam foot hill and adjacent to the JNPA highway.
Due to its peculiar location it collects the surface runoff water from its surroundings.
The lake Thus formed is quite shallow and it evaporates in the summers. Understanding its Characteristic behavior and seasonal changes.
The aim is to retain water throughout the year in the lake to boost the vegetation and Aqua Flora and fauna in the lake. Hence, 2 concentric gabion wall edges at the shallow base of the lake is devised to contain the water retaining the beauty and sanctity of the space all-round the year.
The gabion wall provides for breathing edge for the restored water and indigenous flora fauna.

Figure 7 - Before picture of Adam Foot Hill Lake area

Figure 8 - After picture of Adam Foot Hill Lake area

Lake near CPP area –

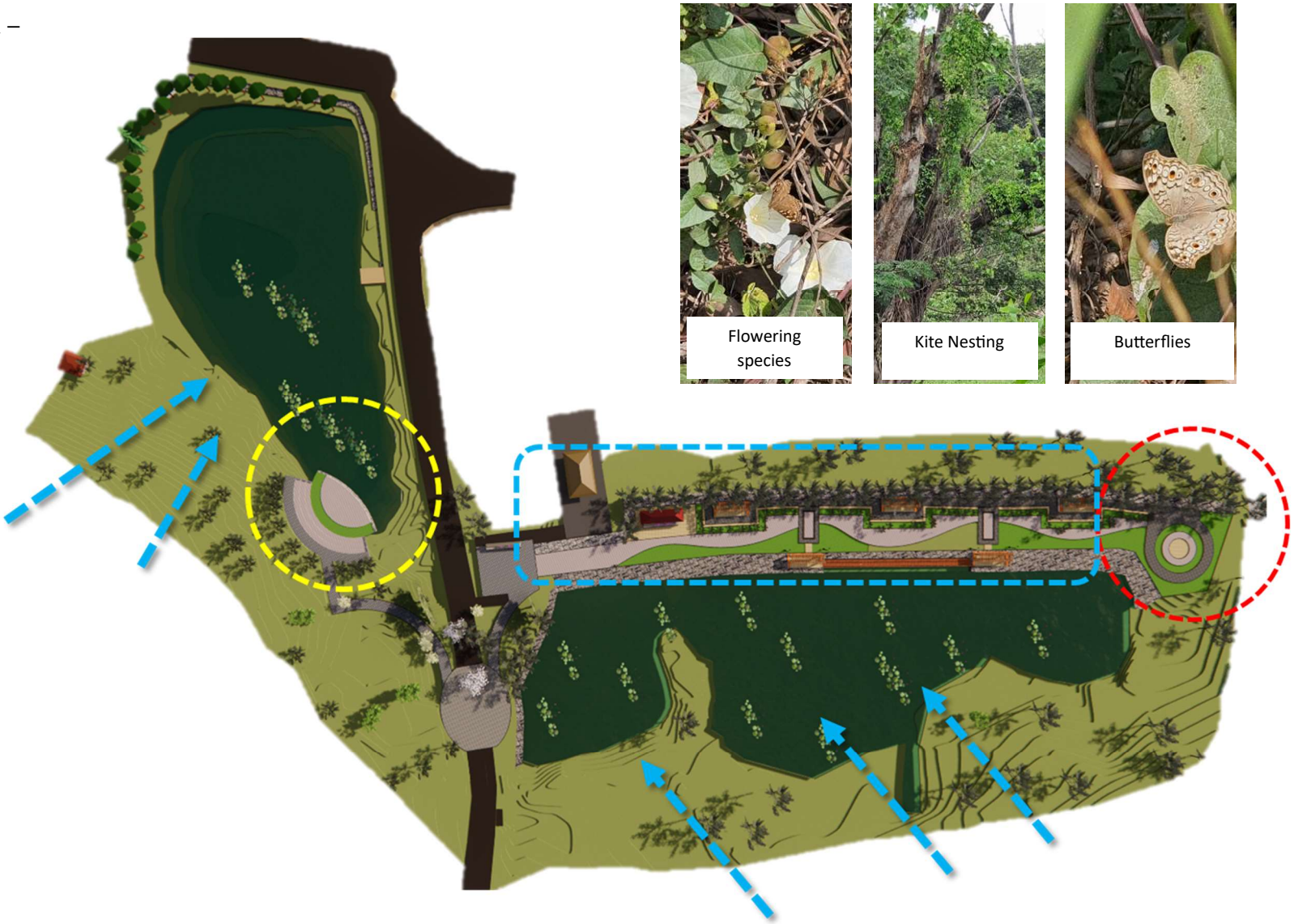

Figure 9 – Lake near CPP Area.

These lakes are most untouched and have the most Natural abundance.
Aim is to harness the Water resources and sustain them yearlong to enhance the biodiversity. Increasing the Human connect with Flora and Fauna.

Figure 10 – Before Lake near CPP area

Figure 11 – After Lake near CPP area