INTEGRAL ECOTOURISM DEVELOPMENT AREA
CÔTES DE FER MASTER PLAN

may 2014

PLAN MAESTRO
CôTES DE FER, ZONA SUR HAITÍ

INDEX

I HAITI ACCESIBILITY

	Cotes de Fer	Baleine	Bainet	Aquin	Jacmel	Jeremie	Les Cayes	Miragoane	Petit Goave	Port au Prince
Cotes de Fer										
Baleine	33									
Bainet	33	46								
Aquin	27	40	85							
Jacmel	59	97	142	156						
Jeremie	195	183	228	155	311					
Les Cayes	105	93	138	56	241	99				
Miragoane	83	71	116	44	112	199	100			
Petit Goave	109	97	142	70	86	225	126	26		
Port au Prince	190	178	223	138	121	293	194	94	68	

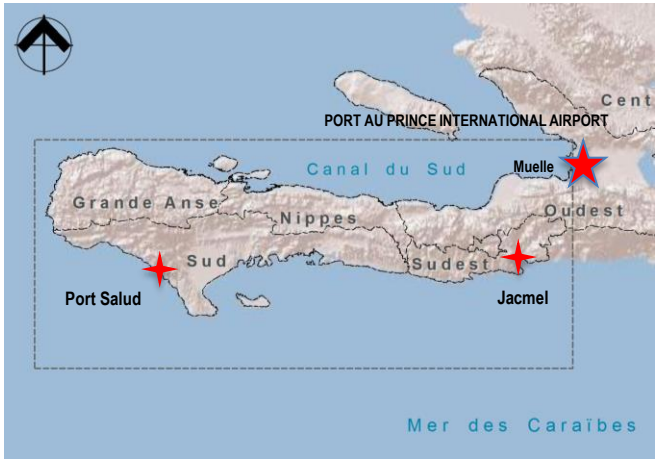
Distance Table to Major Cities (Km)

AIR ACCESS

Air Transportation Actually Haiti has its air transportation through the Port au Prince international Airport and two other national airports located at Les Cayes and Jacmel, the last one is under renovation by now.

SEA TRANSPORTATION

Puerto Principe's port has highest activity in the country. The port's facilities include cranes, large docks, warehouses, among others.



ROAD TRANSPORTATION TO THE SOUTHERN REGION

The National Route RN2, a two-lane paved highway, brings connectivity to the southern region.

The regional road RD23, a four-lane unpaved highway provide a regional connectivity tu the area.

II PROJECT AREA
TRANSPORTATION - LOCATION

	Sitio	Cotes de Fer	Baleine	Bainet	Aquin	Jacmel	Les Cayes	Port Salut	Port au Prince
Sitio	PM								
Cotes de Fer	22								
Baleine	10	30							
Bainet	24	33	14						
Aquin	27	27	37	51					
Jacmel	55	33	65	79	156				
Les Cayes	80	102	90	104	56	241			
Port Salut	107	129	117	131	44	112	100		
Port au Prince	165	187	175	189	138	121	194	94	

Distance Table to the Master Plan (KM))

AIR TRANSPORTATION TO THE PROJECT

According to the International Civil Aviation Organization (ICAO) standard, they have been analyzed different location proposal surfaces for the international airport project (Côtes de Fer).

The analysis result brought out three main options for the airport location; once the project has the topography information, it would be possible to determine its viability.

LOCATION

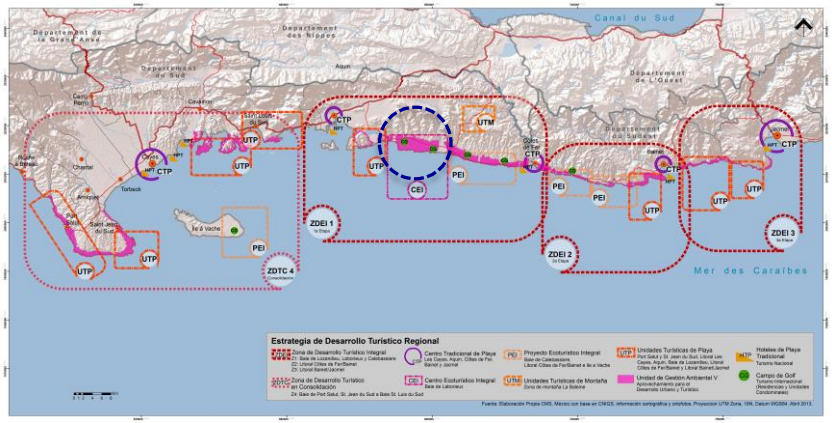
The project is located at the middle way of the the Port Salut-Jacmel tourist corridor.

The RD23 highway improvement has been taken in account, the suggestion is to undertake a two-way four-lane highway with one-sideway each lane and a median

Route Table Proposal Section RD23

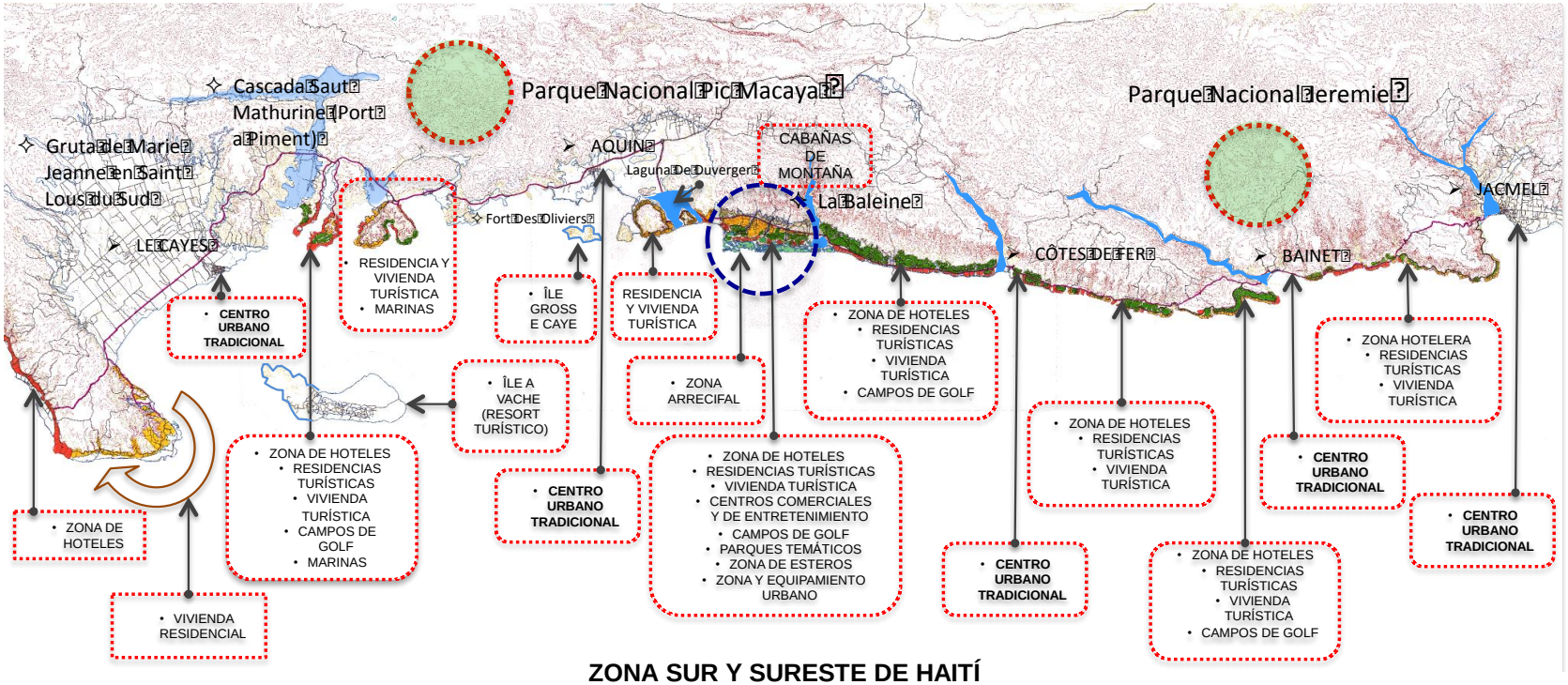
III TARGET

- ✓ Under the diversity of natural attractions and its potential for tourist development, the south and southeast is promoted as a **multi destination,** therefore the range of the target is much more wider according to ages, preferences, economic status, among others.



Programa Genetral de Desarrollo Turístico e Imagen Obgetivo de la zona sur de Haití

- ✓ Main activities: sports, adventure, nature, ecotourism, agritourism, aquatic, mountain, ethnotourism and nautical.
- ✓ Target: East coast USA, Canada, (Second phase), Germany, United Kingdom, France, Italy and Spain, (Third phase)), China and Japan.



ZONA SUR Y SURESTE DE HAITÍ

IV MASTER PLAN

- The project is distributed in 5 680.95 acres (2,299 ha) the 55% may be developed. The potential capacity is about 8 500 rooms, 12 200 tourist residences, 750 panoramic tourist residences and 3 100 housing lots. Density: 19 tourist residences per hectare and 40 houses per hectare.

RESIDENTAL AREA OVERVIEW
CONDOMINIUM AREA
EQUESTRIAN CLUB
CONDOMINIUM AREA
RESIDENTAL AREA OVERVIEW
RESTORATION OF RUNOFF
CONDOMINIUM AREA
CONDOMINIUM AREA
URBAN LIVING
RESIDENTIAL AREA HOMES AND CONDOS
RESTORATION OF RUNOFF
HOTEL ZONE
BEACH CLUB
WETLAND 3
GOLF AND DEVELOPMENT OF REAL ESTATE
RESIDENTIAL AREA HOMES AND CONDOS
CONDOMINIUM AREA
GOLF AND DEVELOPMENT OF REAL ESTATE
SERVICIOS TURISTICOS
WETLAND 2
GOLF AND DEVELOPMENT OF REAL ESTATE
WETLAND 1
Boutique Hotel
HOTEL ZONE
COMMERCIAL AREA JOINT
HOTEL ZONE
COMMERCIAL AREA JOINT
BEACH CLUB
COMMERCIAL AREA JOINT
BEACH CLUB
HOTEL ZONE

IVi MASTER PLAN FIRST PHASE

- Capacities:
  - 1,800 rooms (60 rooms / ha)
  - 1,150 tourist residences (21 residences / ha)
  - 3,100 urban dwellings (40 dwellings / ha)
  - Total area, 525.59 acres (5.25 km2)

PARAMETRICS COSTS

EXPENSES	Equivalent investment for First Phase	Equivalent Investment for urban living	TOTAL INVESTMENT FIRST PHASE
MANAGEMENT	**661,173.58**	**436,624.06**	**1,097,797.64**
Permits, Licenses and Concessions	661,173.58	436,624.06	1,097,797.64
STUDIES AND PROJECTS	**1,408,230.60**	**929,963.60**	**2,338,194.20**
Stuides Water Prospecting	281,646.12	185,992.72	467,638.84
Environmental Impact Studies	281,646.12	185,992.72	467,638.84
Banking Study Materials	155,136.97	102,448.94	257,585.91
Soil Mechanics and Pavement Design	281,646.12	185,992.72	467,638.84
Programs and Plans	408,155.27	269,536.50	677,691.77
EXECUTIVE PROJECTS	**1,132,583.42**	**747,932.45**	**1,880,515.87**
Executive Projects Integral Urban Design	393,841.36	260,083.92	653,925.28
Executive Projects Drinking Water	235,704.92	155,654.19	391,359.12
Sewerage Project Executive	204,077.64	134,768.25	338,845.89
Executive Projects Electric Power and Telecommunication	298,959.50	197,426.08	496,385.58
HEAD WORKS	**8,025,877.55**	**5,930,883.71**	**13,956,761.26**
Power generation, Electrical Substation and Tranmission Lines	3,609,782.10	2,383,818.37	5,993,600.47
Drinking Water	2,558,810.86	1,689,780.76	4,248,591.61
Wastewater Treatment Biodigesteres water treatment systems or other.	1,857,284.59	1,857,284.59	3,714,569.18
Integral Development	**15,840,266.67**	**11,606,546.34**	**27,446,813.00**
Secondary and tertiary roads	1,374,983.74	1,854,237.85	3,229,221.59
Acces Boulevard	2,162,132.82	4,530,247.69	6,692,380.51
Electric Power Networks and Telephony	3,422,616.11	2,260,218.19	5,682,834.30
Red water, Sewerage and SUDS	2,558,810.86	1,689,780.76	4,248,591.61
Walkers, Squares and Gardens	1,926,265.10	1,272,061.86	3,198,326.95
Environmental Protection Works	4,395,458.03	0.00	4,395,458.03
WORK SUPERVISION WITHOUT GOLF	**2,393,187.39**	**1,580,406.76**	**3,973,594.15**
GOLF COURSE 18 HOLES	**14,400,000.00**	**0.00**	**14,400,000.00**
Golf Course 18 holes	14,400,000.00	0.00	14,400,000.00
Grand Total	**43,861,319.20**	**21,232,356.93**	**65,093,676.13**

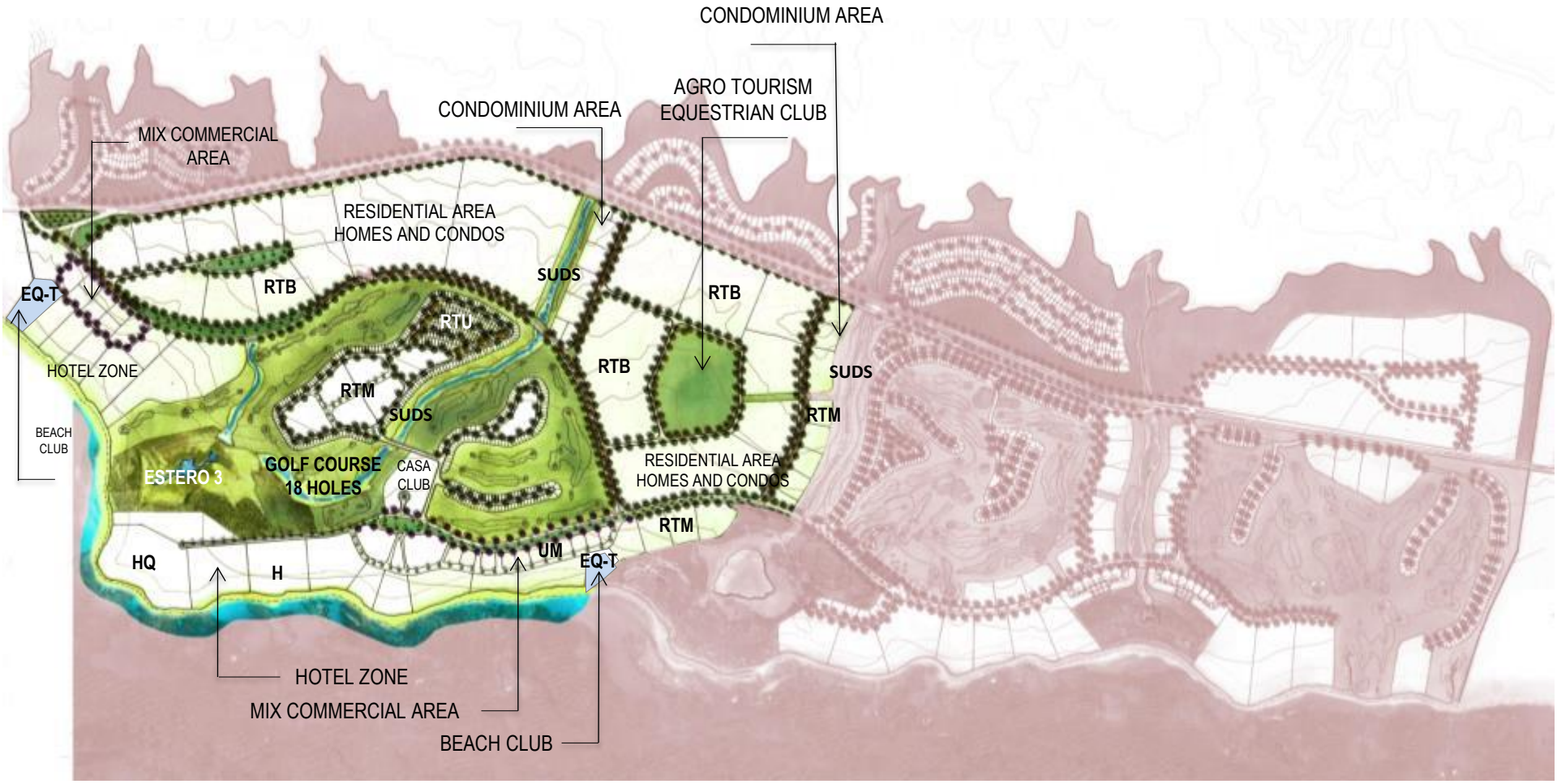
NOTE: THESE FIGURES NOT CONSIDER ACQUISITION OF LAND, PREOPERATING EXPENSES OR CAPITAL EXPENDITURE.

IVii MASTER PLAN SECOND PHASE

- Capacity: 2,006 rooms and 1,434 tourist residences

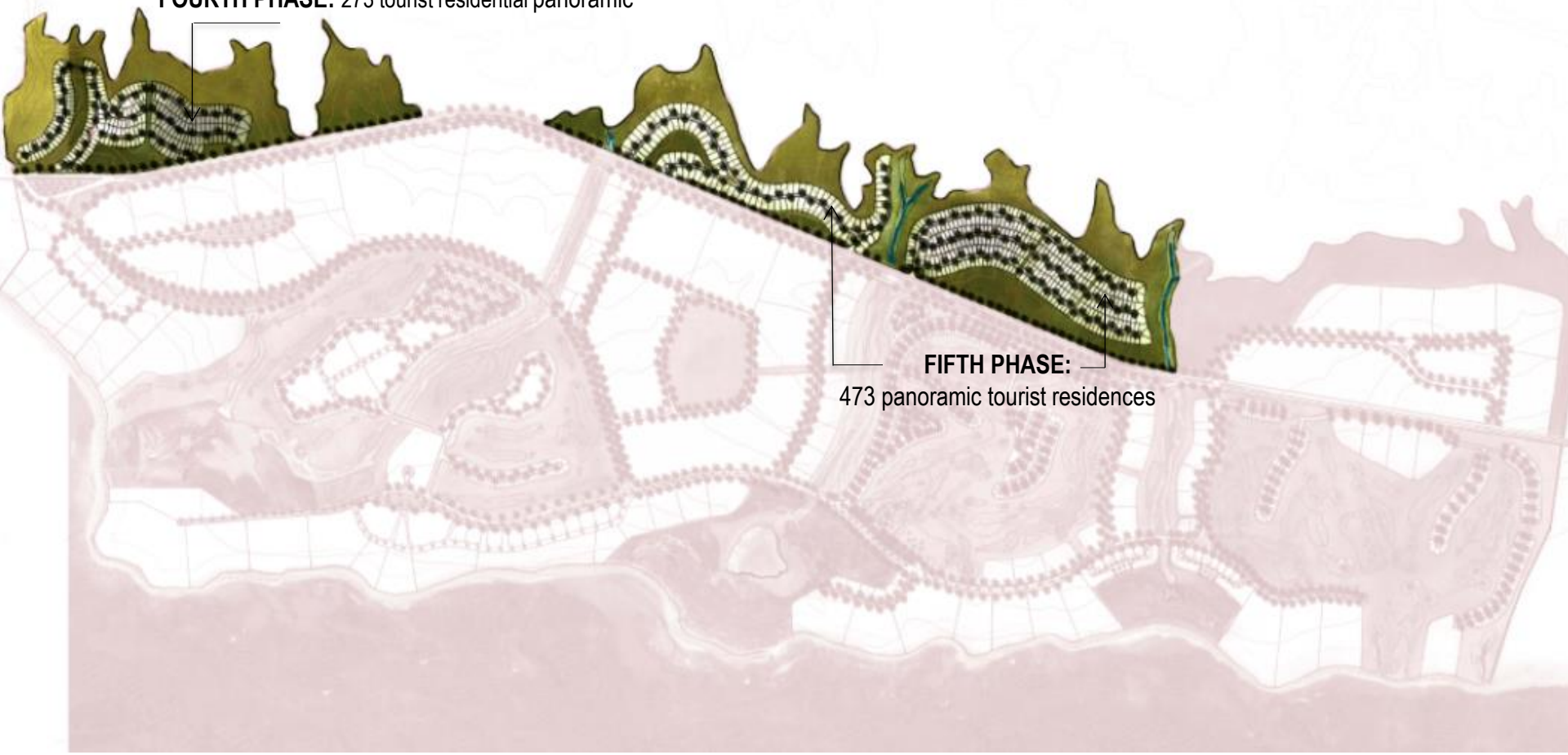
IViii MASTER PLAN THIRD PHASE

- Capacity: 4,397 rooms and 9,624 tourist residences.



IViv

MASTER PLAN
FOURTH, FIFTH AND PHASE



V ENVIRONMENTAL FEASIBILITY

- ✓ To design the master plan as a sustainable ecotourism center, is required an analysis of the elements and both, physical and biotic environmental characteristics, resulted in the use of natural conditions present in the area, reducing possible environmental effects that arise.

- ✓ Greater care items that were considered as guiding principles for the design of the distribution of the project are:

a. Biodiversity:
   - Reduce the area of rudeness and retrieve local floristic diversity.
   - Systems restore wetland vegetation (mangrove).
   - Reactovate biological corridors through the creation of roosting sites, nesting, shelter and food.

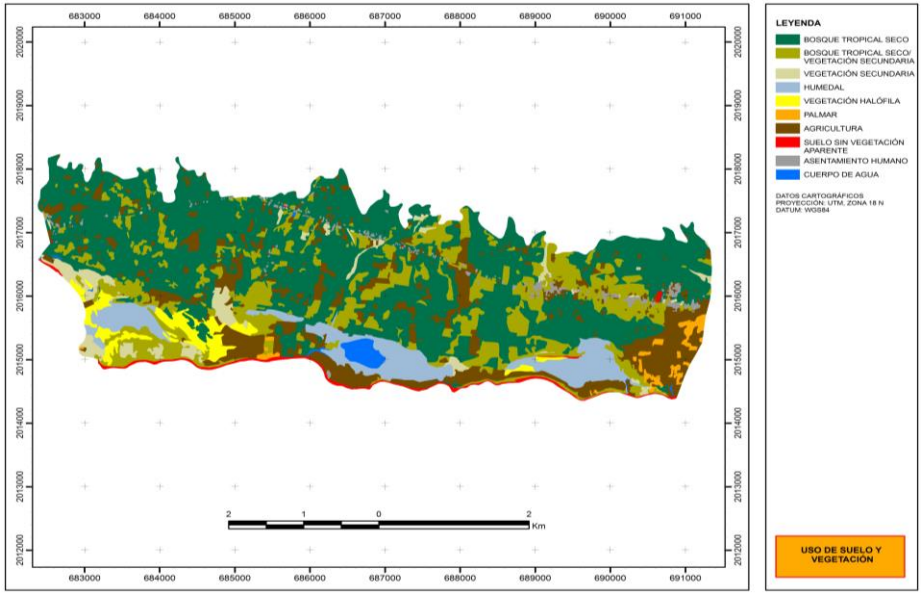
b. Soil:
   - Reduce the risk of erosion and flooding.
   - Densities and low occupancy of rooms per hectare.

c. Water:
   - Restore natural runoff and recover the bodies of surface water.
   - Encourage recharge of groundwater.
   - Reduce the use of water systems.

d. Energy:
   - Mixed use of energy (clean/generated) to reduce greenhouse gas emissions and consumption of resources not renobables.

V ENVIRONMENTAL FEASIBILITY

- ✓ Through soil applications and the current vegetation in the project area (2013), analyzed and assessed the possible environmental effects.
- ✓ The property has biological characteristics of low importance, they are highly degraded systems with a high number of exotic species and a constant human pressure for fuelwood extraction.

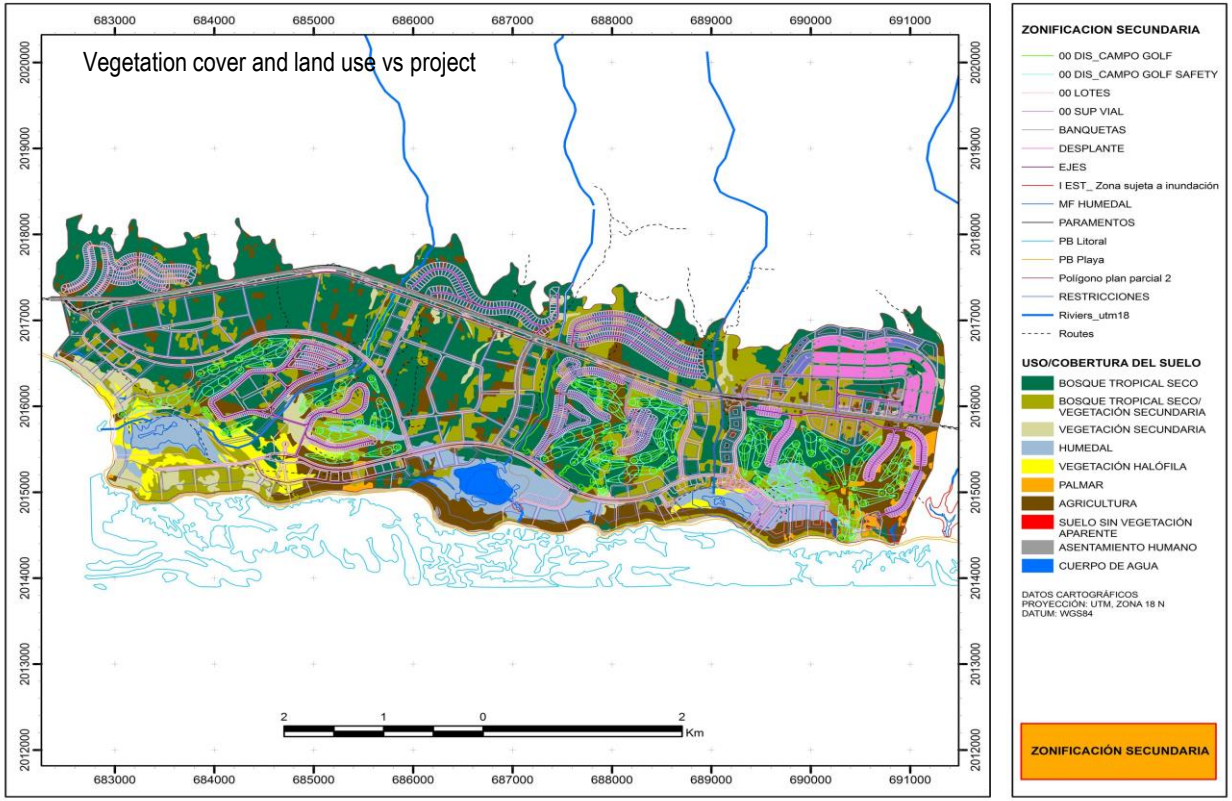


Land use and vegetation

Cobertura /uso de suelo	Superficie (ha)	Superficie (%)
Bosque tropical seco	1,157.31	50.33
Bosque tropical seco con vegetación secundaria (en degradación)	414.51	18.03
Vegetación secundaria	73.57	3.20
Humedal	170.82	7.43
Vegetación halófila	59.77	2.60
Palmar	21.84	0.95
Agricultura	333.13	14.49
Suelo sin vegetación aparente	20.92	0.91
Asentamientos humanos	25.75	1.12
Cuerpo de agua	21.38	0.93
Total	**2,299.00**	**100.00**

V ENVIRONMENTAL FEASIBILITY

- ✓ However, through the zoning project aims to direct the distribution of the sites in order to reduce other kinds of affectations such as disruption of water flows, degradation of mangroves, and mantain the extent possible grouncovers currently present, among other actions.



V ENVIRONMENTAL FEASIBILITY

IMPLICATIONS

Assessment and weighting of environmental systems and services that may be modified by the concept of site preparation and construction and operation of the project was conducted. Among the adjustments to the project to reduce environmental effects and increase the benefits include:

- ✓ Retrieve the local floristic diversity through the use of wild species in the region that are currently absent.
- ✓ Systems restore wetland vegetation (mangrove). These systems are highly disturbed by the extraction of foresy individuals to coal generation and studs.
- ✓ Reduce the area of rudeness by optimizing the use of land and the generation of large expanses of green areas.

Generation of green areas

Wetland restoriation

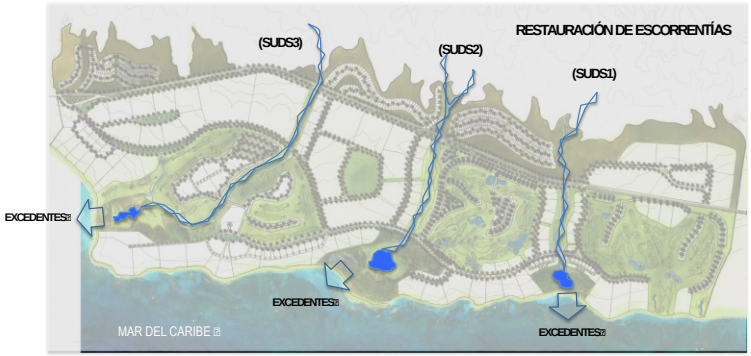
V ENVIRONMENTAL FEASIBILITY

IMPLICATIONS

- ✓ Reactivate biological corridors through the creation of roosting sites, nestling, shelter and food. Mainly it is considered that by restoring wetlands can favor population of birds, amphibian and fish. In the case of birds, is expected to increase in the biological richness of migratory water type.

- ✓ This revival in particular will be favored El Corredor del Caribe between Cuba, Haiti and Dominican Republic and the next Ramsar sites to the project area and are found in the Dominican Republic (Lago Enriquillo and Wildlife Refuge Silvestre Laguna Rincón).

- ✓ Restore wetlands and re-incorporate wild plants species to revive food chains. Food chains will benefit species of reptiles, small mammals and birds. This seeks to promote in the medium an long-term recovery of certain populations that currently accounts sparsely individuals.



V ENVIRONMENTAL FEASIBILITY

HABITATS NATURALES

MEDIO NATURAL

El sitio presenta un ecosistema transformado a pastizal por el intenso uso agropecuario, el cual en su origen fue selva baja y zona estuarina, con gran diversidad de flora y fauna, es por ello que se propone una campaña de reforestación con especies del sitio y cuidado a la fauna.

FAUNA

Priotelus roseigaster

Buteo ridgwayi

Amazona ventralis

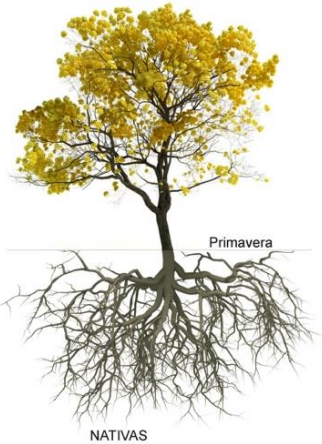
Coccyzus rufigularis

Aratinga chloroptera

Solenodón poeyomis

Cyclura ricordii

FLORA

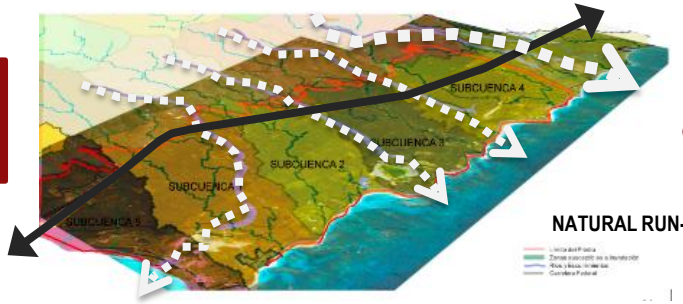


ESTRATO	EXÓTICAS	NATIVAS
PALMERAS	Washingtonia (Washingtonia filifera) Palma real (Roystonea regia) Palma de coco (Cocos nucifera) Yuca pie de elefante (Yucca elephantipes) Totuma (Licuala grandis) Banano del paraíso (Musa × paradisiaca) Papayo (Carica papaya)	Palma guanito (Cocothrinax argentea)
ALTO	Jacaranda (Jacaranda mimosifolia) Acacia (Acacia mangium) Margosa (Azadirachta indica) Primavera (Tabebuia chrysantha) Flamboyán (Delonix regia) Samán / Árbol de la lluvia (Samanea saman)	Gri Gri / Ucar (Bucida bucera) María / Dale-marie (Calophyllum calaba) Almácigo (Bursera simaruba) Uva de playa (Coccoloba uvifera) Higuero (Crescentia cujete) Guayacán (Guaiacum officinale)
MEDIO	Mimosa (Minosa pudica) Café (Coffea arabica) Tulipancillo (Malvaviscus arboreus) Franchipán (Plumeria rubra) Guaje (Leucaena leucocephala) Bugambilia (Bougainvillea spectabilis) Hibiscus (Hibiscus rosa sinensis) Rancho viejo (Epidendrum ibaguense) Ixora (Ixora coccinea)	Clavellina (Caesalpinia pulcherrima) Trompetilla (Tecoma stans) Adonis morado (Duranta erecta) Coronitas del sol (Lantana camara) Flor de marzapan (Plumeria obtusa) Adelfa amarilla (Thevetia peruviana)* Adolfina (Petrea volubilis)

Se cuenta con 32 aves endémicas en la isla y se han registrado unas 150 aves que migran desde el Neotrópico. Incluyen aves canoras, como las cigüitas, los zorzales y los vireos. Se incluyen también aves de costas y lagunas como los playeritos, patos y gaviotas. Otras aves migratorias son las rapaces como algunos falcones.

V ENVIRONMENTAL FEASIBILITY

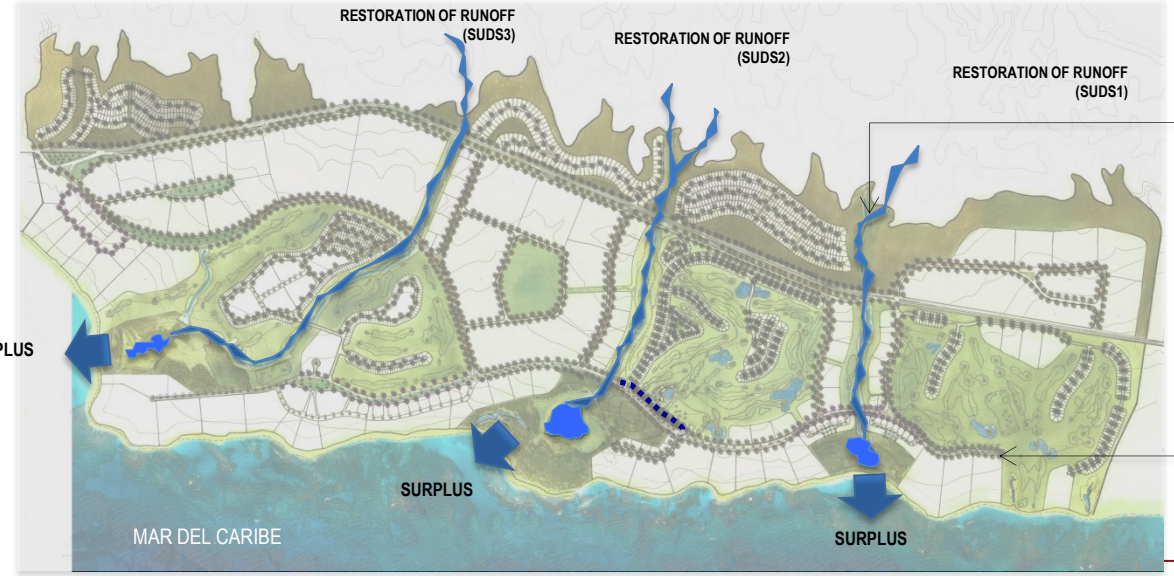
HYDROLOGIC ANALYSIS (RUNOFF MANAGEMENT)



NATURAL RUN-OFF

Objectives

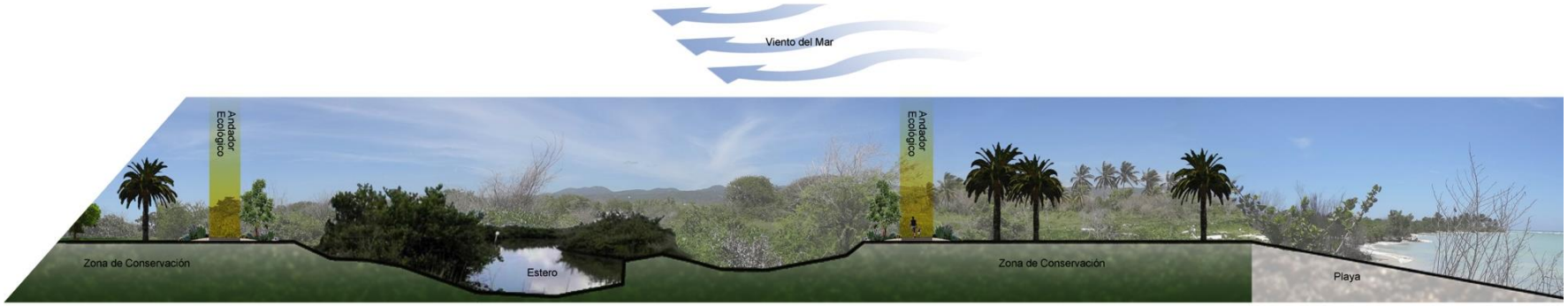
- ✓ The concept of sustainability in the water management is to replicate as closely as possible the characteristics of their natural life once the urbanization process has taken place.
- ✓ The project is to mitigate the problems of both quantity and quality of urban runoff minimizing environmental impact vs urban development and maximizing landscape integration and social and envoronmental values of the planned projects, avoiding possible flodding during reasonable periods of return.
- ✓ Addiotanally, through a system of regulating rainwater to irrigate golfcourses, parks, community garden will be recycled



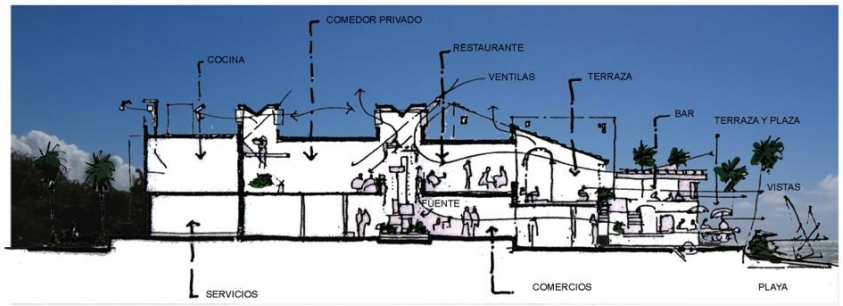
VI SUSTAINABILITY

CAMINO A LA SUSTENTABILIDAD
SECCIÓN TRANSVERAL PRINCIPAL

De a cuerdo al respeto al medio ambiente se generaron corredores biológicos y se utilizaran criterios bioclimáticos en todo el proyecto a nivel urbano y particular.



CRITERIOS DE EDIFICACIÓN SUSTENTABLE



UBICACIÓN

Es un Desarrollo turístico sustentable integral bajo los siguientes ejes rectores;
Desarrollo turístico integrado al urbano.
Manejo de Criterios Sustentables
Conservación, restauración, aprovechamiento y mejoramiento del medio ambiente.

Creación de un proyecto con gran rentabilidad.

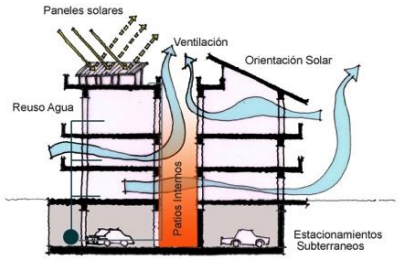
VII BIOCLIMATIC ARCHITECTURE

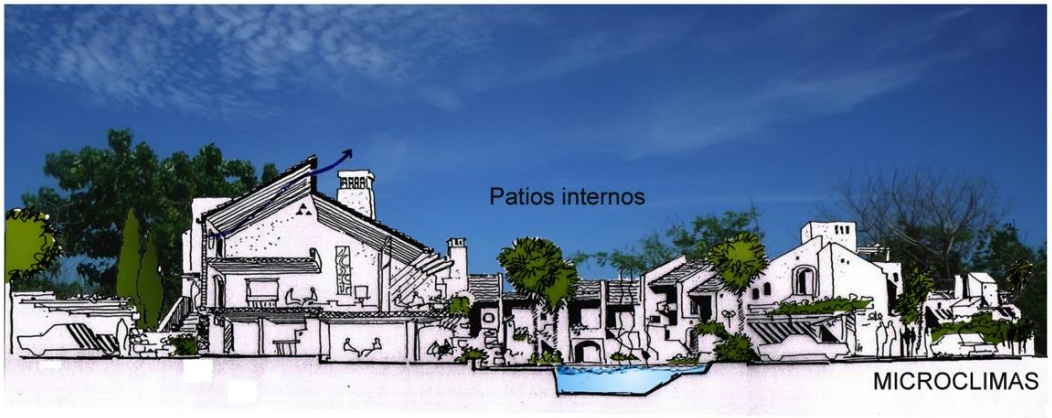
IMAGEN OBJETIVO

EJEMPLOS BIOCLIMÁTICOS

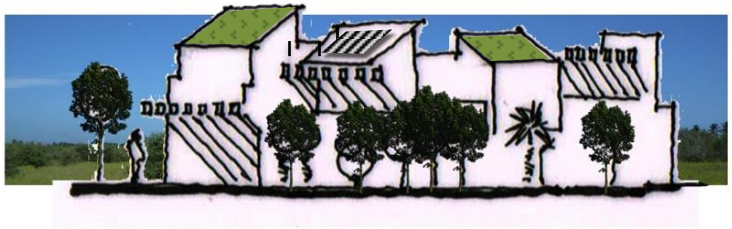
El objetivo es mitigar tanto los problemas de cantidad como de calidad de las escorrentías urbanas, minimizando los impactos del desarrollo urbanístico y maximizando la integración paisajística y los valores sociales y ambientales de las actuaciones programadas.

Techos verdes
Pisos permeables
Captación de lluvia
Drenes filtrantes
Vegetación endémica
Asoleamiento
Energía Fotovoltaica
Contaminación visual
Reforestación

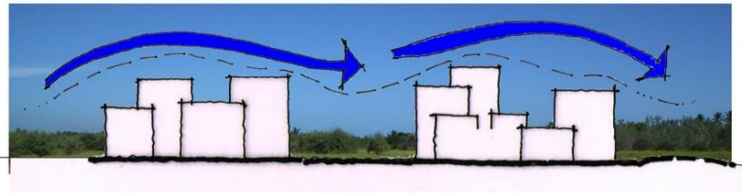


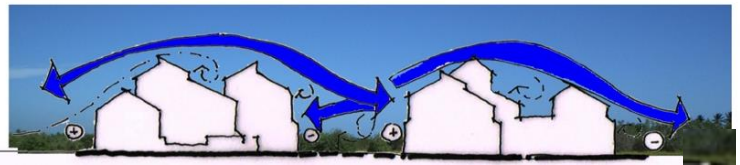


MICROCLIMAS



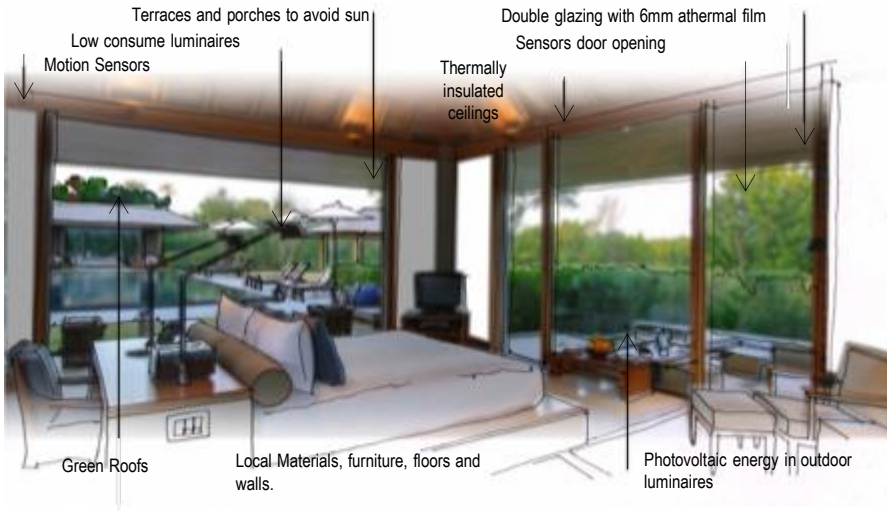
VENTILACIÓN





VII BIOCLIMATIC ARCHITECTURE

Shadows facades



Saving Systems (Example)

VIII URBAN AND ARCHITECTURAL IMAGE

IMAGEN OBJETIVO
PRIMERA ETAPA
FACHADAS EXTERIORES

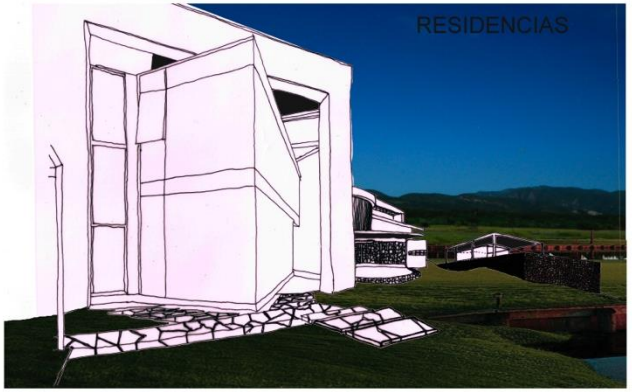
PROPUESTAS URBANAS

COMERCIO

CLUB DE PLAYA

CORREDOR URBANO

ESCUELA



RESIDENCIAS

RESIDENCIAS

IX BEACH PHOTOGRAPHIES

PHOTO SHOOTING ZONE

IX BEACH PHOTOGRAPHIES

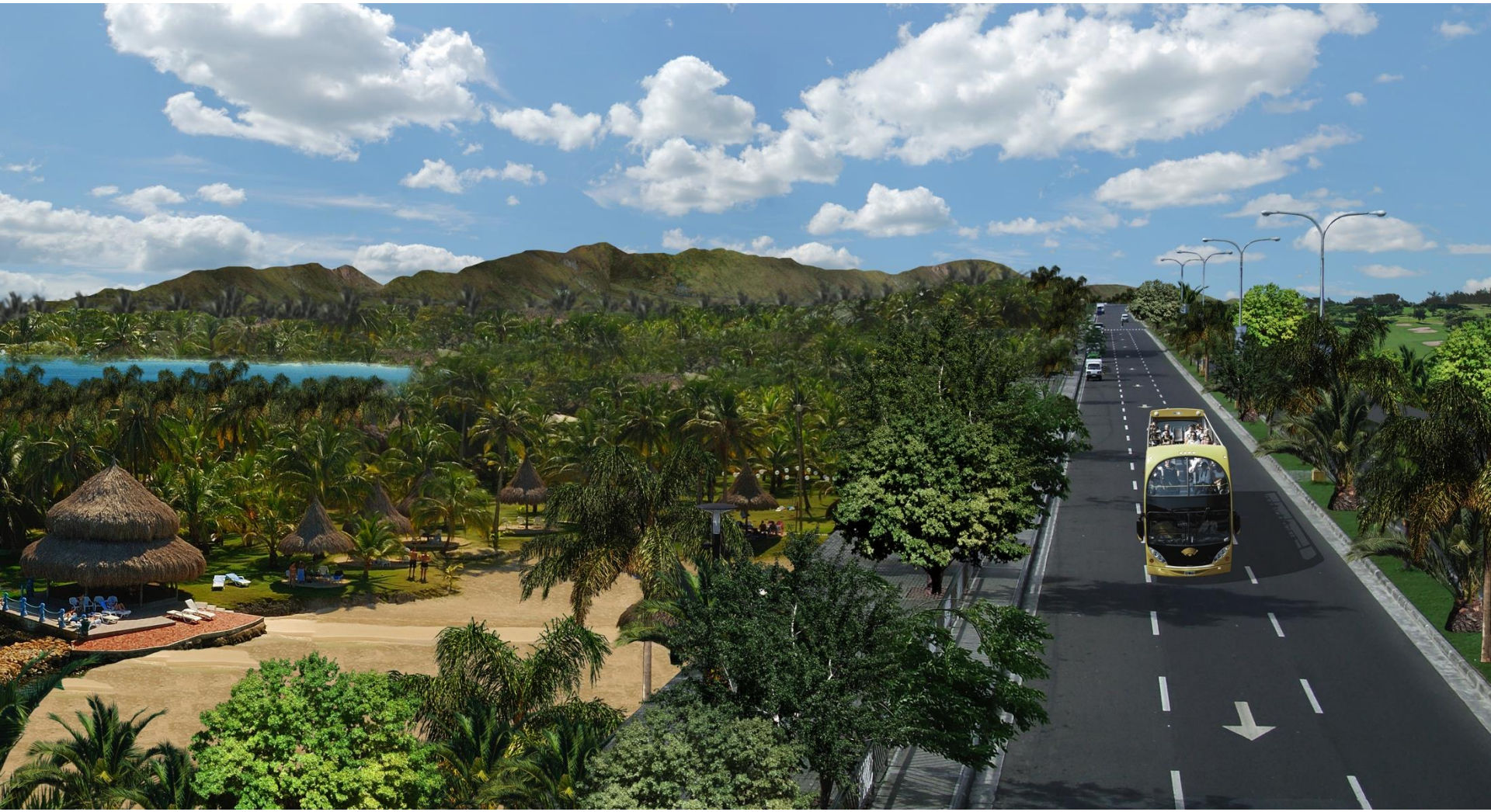
PHOTO SHOOTING ZONE

IX BEACH PHOTOGRAPHIES

PHOTO SHOOTING ZONE

X MASTER PLAN TARGET IMAGE

Tourist Boulevard



X

MASTER PLAN
TARGET IMAGE

Boutique Hotel

X MASTER PLAN TARGET IMAGE

Grand Tourism Hotel

X

MASTER PLAN
TARGET IMAGE

5 Stars Hotel

X MASTER PLAN TARGET IMAGE

5 Stars Hotel

X MASTER PLAN TARGET IMAGE

Holiday House

MASTER PLAN
TARGET IMAGE

Boutique Hotel

MASTER PLAN
TARGET IMAGE

Boutique Hotel

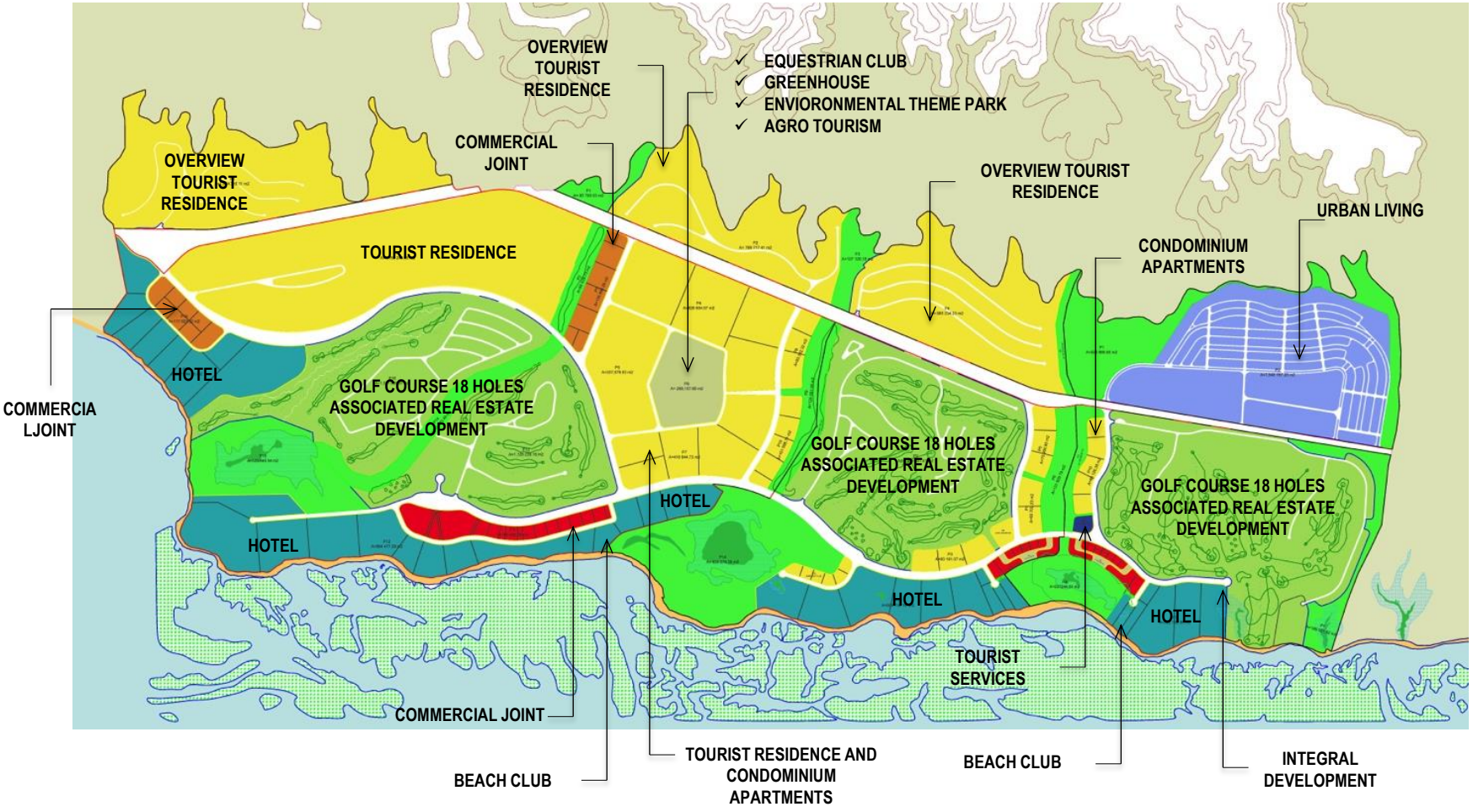
X MASTER PLAN TARGET IMAGE

A shopping center with condominium housing for the upper stories.

X MASTER PLAN TARGET IMAGE

18-hole Golf Course with real estate development

XI LINES OF BUSINESS



Prepared for the Ministry of Tourism of Haiti by
Consultoria Mexicana de Servicios S.A de C.V.