

Applying the three principles through:
A Neighborhood Resilient Framework Plan

Villa del Sol: Resilient Planning Framework



Guiding Principle:
Build Smarter



Planning Scale:
Neighborhood Scale

Villas del Sol is an immigrant community, originally from the Dominican Republic, that settled on private land. The land owner, with help from the Municipality, asked the community to leave, and the Authority of Land ultimately assigned them to their current location. There is press documentation of the community suffering excessive force by local police, including allegations of violation of human rights that led to intervention of international human rights NGOs. The community became organized as a cooperative, and a regulatory lot plan was developed as an initial framework to resettle in an organized way. The previous Municipal administration promised infrastructure that was never implemented. As a result, families have settled but are extremely vulnerable to climatic events.

This project is a partnership between Sol es Vida, the non-profit cooperative organization of Villas del Sol community, and many Alliance collaborators. The framework plan addresses infrastructure that the community currently lacks, including stormwater management, potable water, electricity, sewage, and green open space.

This engagement resulted in a due-diligence analysis that provides the community with a thoroughly vetted, contextual framework plan as well as a self-advocacy story that will help procure public and grant funding. This work impacts 50 families—170 total community members—currently living without basic infrastructure.



Existing Conditions

→
Site Location
Barrio Ingenio



Complete Framework

Stormwater Management

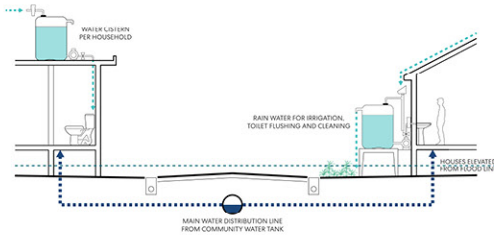
A passive stormwater system discharges into bioswales and a wetland as a back-up strategy. This concept requires permission from the Authority of Land as it is beyond the community property line.

Septic System

By regulation, every two parcels should share a septic tank; However, some residents have built their own tanks. A leaching field system around the property has been studied with advice from EPA.

Domestic Water System

An elevated water tank of 35,000 gallons, powered by a 14kW solar and battery storage system. The tank water is treated with chlorine and distributed under the streets. When there is not enough sun to power the system, there is a pressurized tank system to ensure delivery.



Domestic Water System strategy in action

Electric Microgrid System

The electric microgrid system is conceptualized in incremental phases, giving priority access to residents already occupying a parcel. A central 100kW battery, providing energy storage capacity for every 20-25 houses, can expand as development grows, and a 5kW solar array can be hosted on each house.



STORMWATER MANAGEMENT



SEPTIC SYSTEM



DOMESTIC WATER SYSTEM



ELECTRIC MICROGRID SYSTEM

Open Space Framework

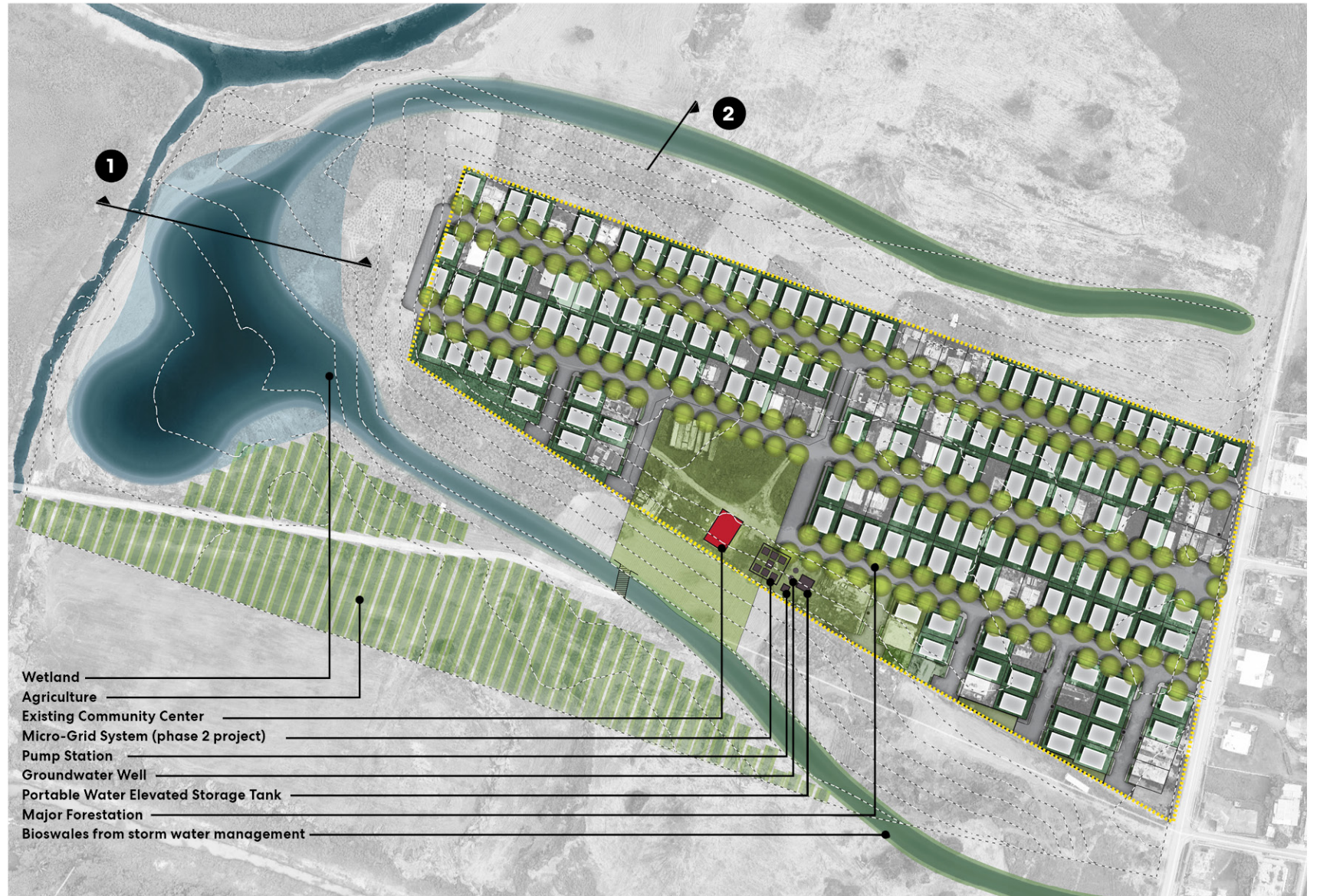
The open space framework plan respects the regulation street and parcel layout plan, introduces trees in main streets, invests in a recreational loop of flora and fauna, and identifies a clear open 'heart' adjacent to the community center.



1 Existing Río Cocal and Wetland



2 Bioswale



- Wetland
- Agriculture
- Existing Community Center
- Micro-Grid System (phase 2 project)
- Pump Station
- Groundwater Well
- Portable Water Elevated Storage Tank
- Major Forestation
- Bioswales from storm water management