

The South Florida Coastal Zone WATERSHED PROJECT

Understanding the natural system functioning and applying that knowledge to urban and regional planning is a necessary step in achieving sustainable infrastructure. This “systems” approach reestablishes linkages between urban, agricultural and natural land uses - creating a mutually beneficial fabric that is functional, beautiful and sustainable. Urbanism that acts biologically, that is, symbiotically with the environment and climate, is a sustainable urbanism - biourbanism.

The South Florida Watershed Project creates urban greenways and blueways, transit orientated developments, agriculture preservation areas and economic opportunities. This project will supply users with a sustainable potable water storage while protecting agriculture, providing parks, increasing flood protection and creating a strong sense of place.

The Process:

a) reconnects the regional natural systems

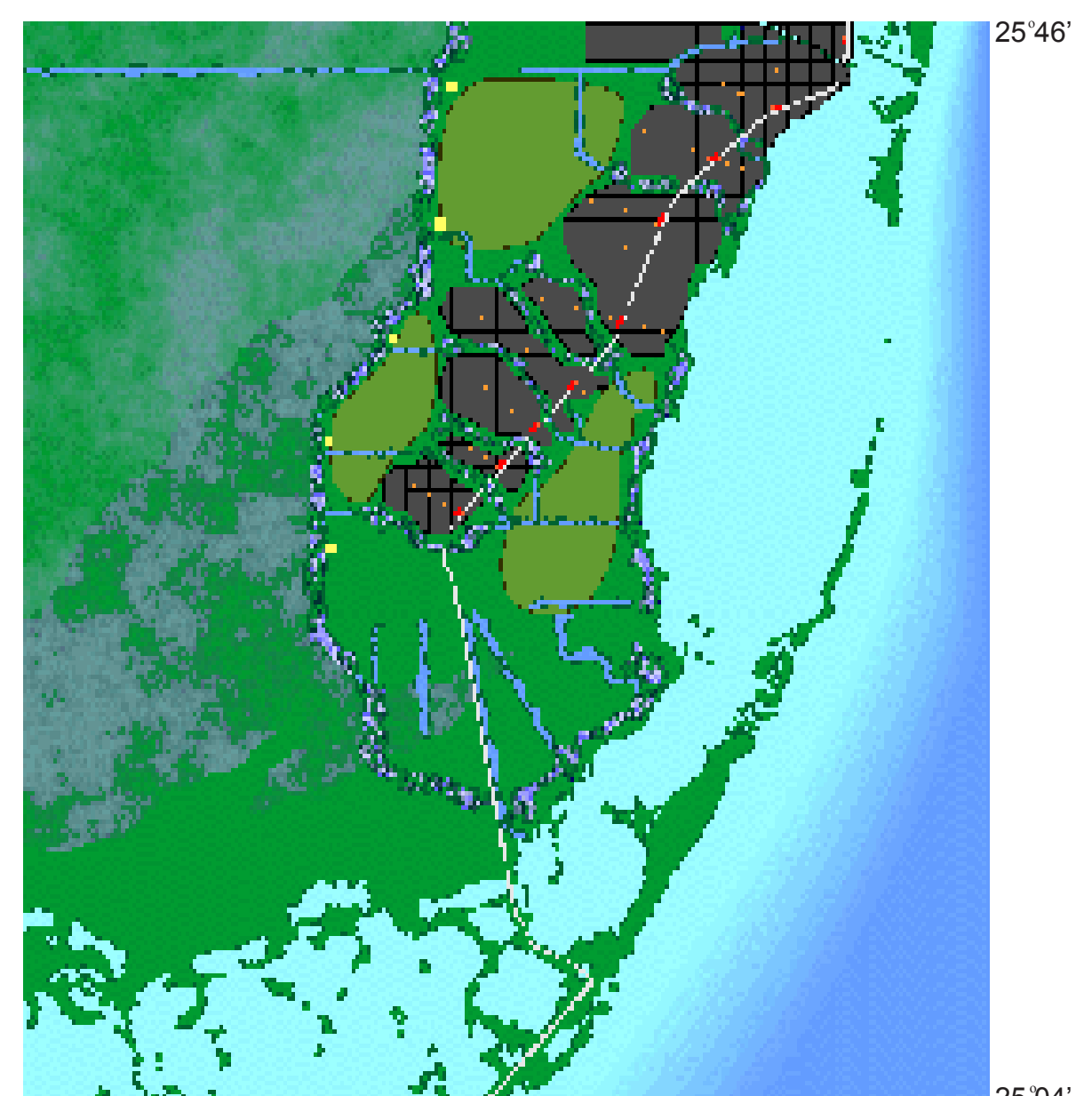
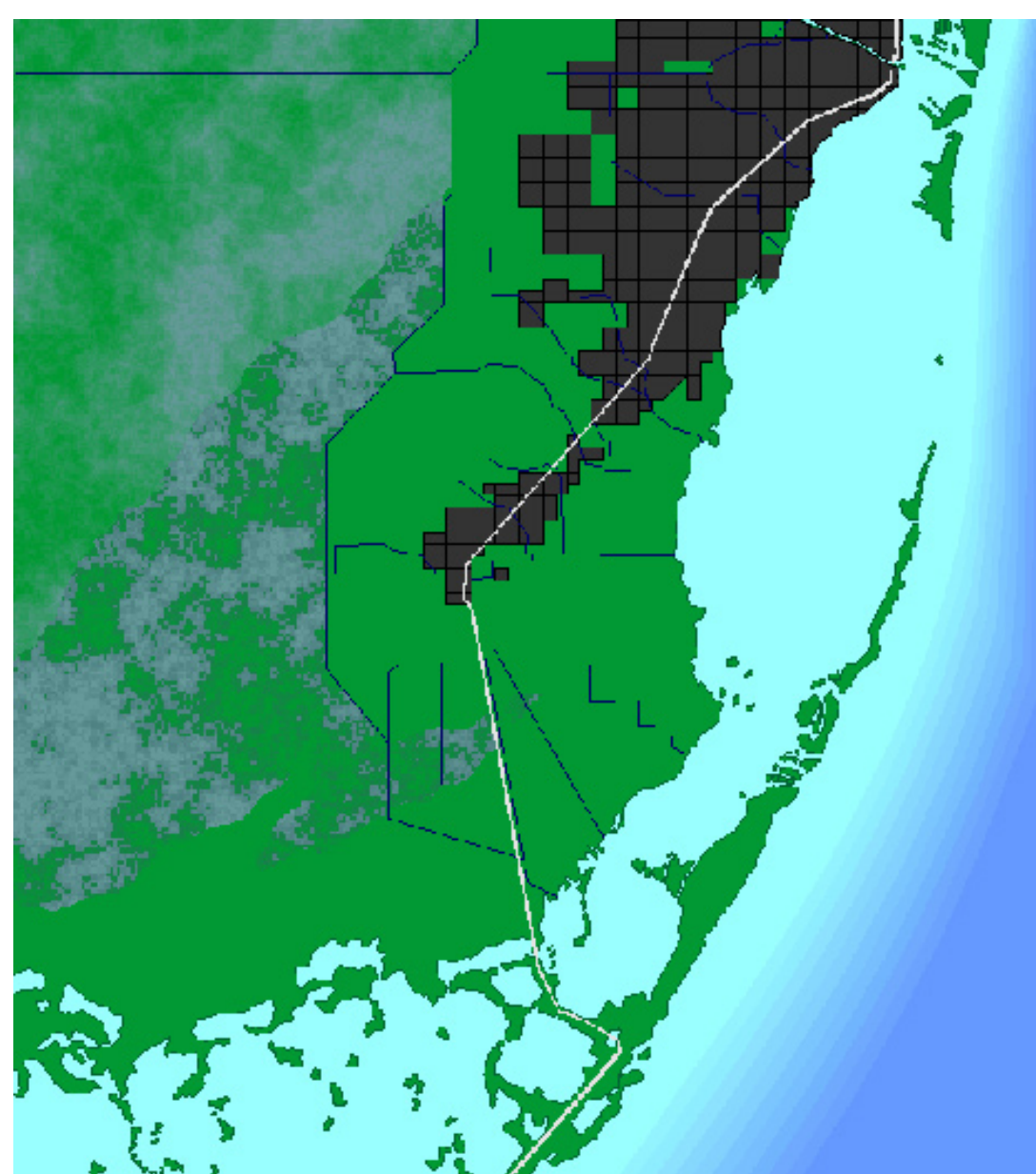
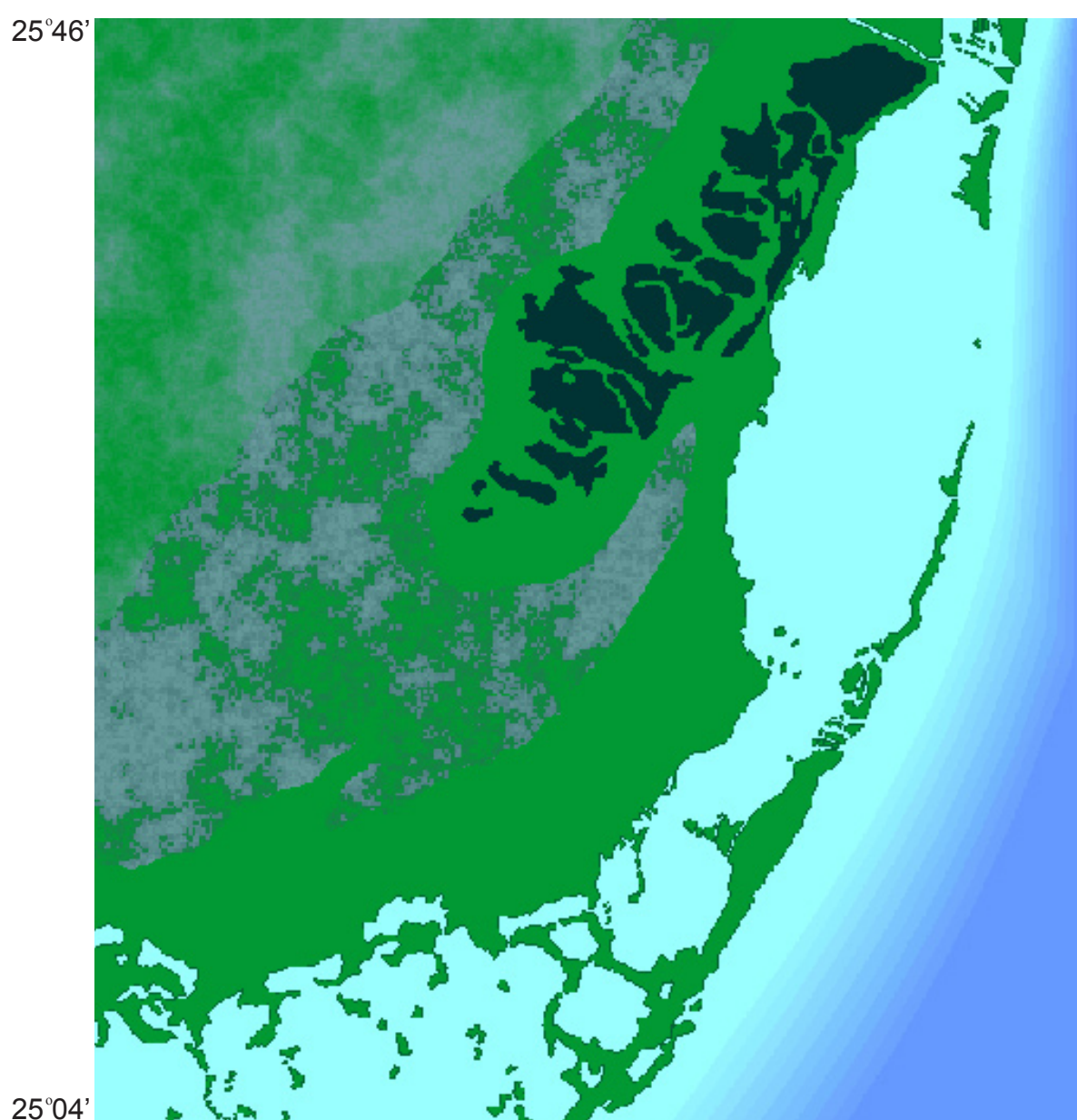
Below illustrates the historic conditions and natural systems. Shown are areas along the coastal ridge above 8 feet (dark areas), the Everglades (to the left), and the coastal waters. The transverse glades cut through the coastal ridge and are the historic connections between Biscayne Bay and the Everglades and historically received and distributed rainfall.

b) locates opportunities and fits

The current conditions are shown below. Developed urban areas (dark squares), the Everglades (to the left), canals (dark lines), and highway US 1 (white line) are depicted. Urban development has covered over the wetland connections between the Bay and the Everglades. In their place, canals now remove water - this water, critical to recharge, is permanently lost to tide.

c) sets the incremental steps for the future

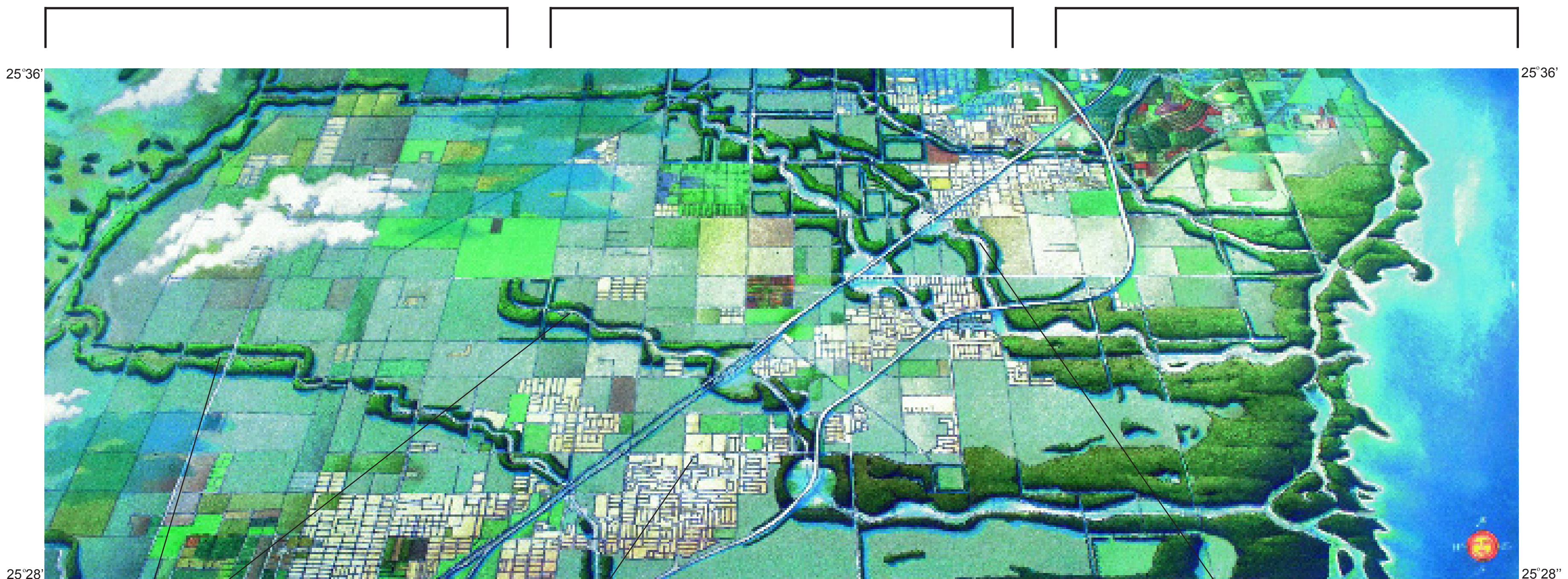
Redevelopment must occur as “urban infill” in areas such as the coastal ridge. Agriculture and historic wetland connections are reestablished on the lower ground, while urban connections are made with an integrated transit system. Sewage treatment plants are strategically located to recycle/reuse water and nutrients while additional storage within the coastal ridge, maximizes potential gravity fed storage.



EVERGLADES-AGRICULTURAL ZONE: a water storage and aquifer recharge area. Locate new sub-regional wastewater treatment plants with 100% reuse. Recharge the aquifer at the “rate of use” creating a sustainable supply of nutrients for the agricultural industry and potable water for Dade County’s immediate and future needs.

COASTAL RIDGE DEVELOPMENT ZONE AND TRANSVERSE GLADES: the urban development area. This zone receives the highest amount of rainfall but has the most amount of impervious surface. The collecting, cleaning and distributing of this water and storing it underground will increase the total available supply of water while reducing the losses to evapotranspiration.

BISCAYNE BAY COASTAL ZONE: a coastal resource protection area. Provides a natural buffer from hurricane storm-surge, while enhancing the distribution, timing, quantity, and quality of freshwater flows. Improving the fishing industry while protecting the estuarine values of the Bay, this plan is a win-win for economics and the environment.



Linear “hydric parks” combine the recreational and aesthetic benefits of “greenways and blueways” with water resource objectives. These parks help create strong edges that define neighborhoods and communities while reconnecting habitat and increasing land value.

The greatest potential for additional water storage lies within the coastal ridge. The development of neighborhood “hydric parks” increases local aquifer recharge, reduces local flooding, enhances community identity and increases property value.

Water storage areas, located within communities, will recharge local wellfields and reduce the saltwater intrusion while creating neighborhood parks. The largest new storage of water for regional use would occur here in underground and surface storage.

Mimicking the historic function of the transverse glades - collection, storage and biological cleanup of stormwater - these areas also restore the regions image and identity. This coastal zone stops point source loading into the bay while incorporating the free work of nature.