M4

canal city-phase II

12-foot sea level rise

A1FI+ 2190

sea level infiltration

Sea level will rise 12 feet above the 2000 level, at which point 77% of the 2000 peninsula footprint will be under water unless protective measures are taken.

order-of-magnitude 4

At 12' above current sea level, the new sea level will make Charleston, like New Orleans, a city below the sea.

issues

SHORELINES: Shorelines are gone; rising water will cover the peninsula if not protected.
STORM EVENTS: Storms and hurricanes will become increasingly severe, dropping more water on the peninsula.
GROUNDWATER LEVEL: At this point, the water table will be so high that below grade water retention will be impossible, unless in sealed tanks.
SOCIAL MIGRATION: The whole coast will undergo mass migration.
VALUE: The cost of saving the peninsula will be so high that it will have to be intensively developed and exploited for historical tourism.
INFRASTRUCTURE: All 2007 urban infrastructure will have to be rebuilt, unless a regional levee system is installed.

principles-canal city

Accept water encroachment due to sea level rise.

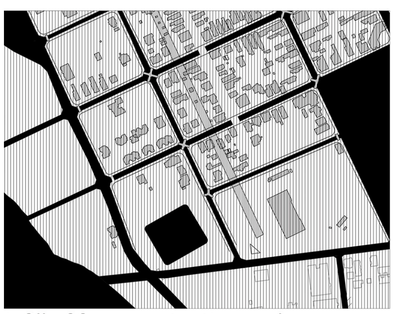
CANAL SYSTEM: Expanded from Phase I, all streets south of Calhoun would be converted into canals for stormwater management. Much of the peninsula's land area would have to be elevated and stabilized. (See M3-canal city for Phase I.)
TRANSPORT: The canal zone would be non-motorized, like Venice. Mass transit would be the major mode of transport to and from the city.
SEAWALLS: A seawall would be required, too, around the peninsula (including the canal zone in order to protect the city from storm surges). Previously built seawall-and-swale systems would need to be raised.

Manage internal stormwater through canal system.

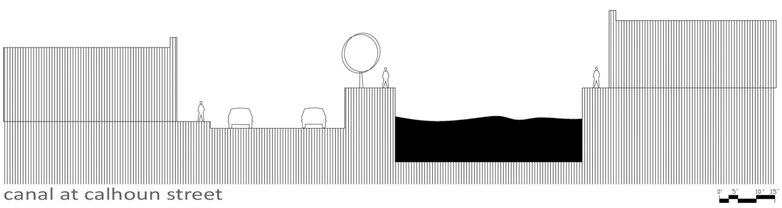
CANAL SYSTEM: The canal system also serves to manage stormwater.

M4-canal city plan

Acceptance of water encroachment as a positive urban amenity.

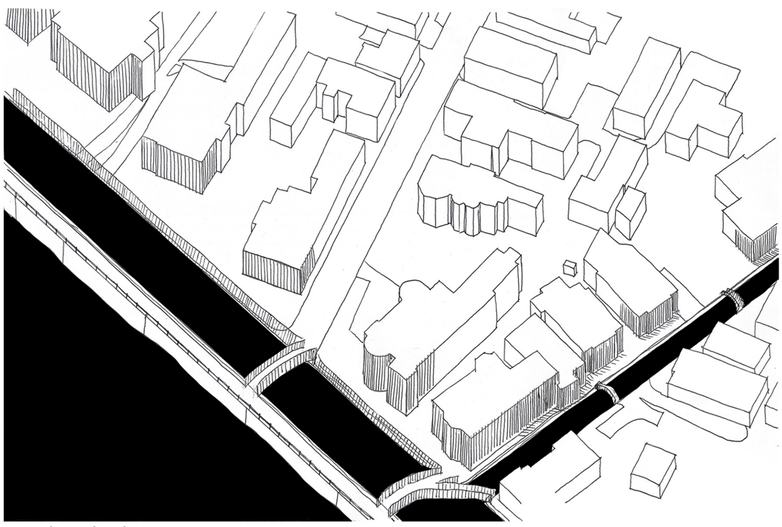


infill of former retention parks

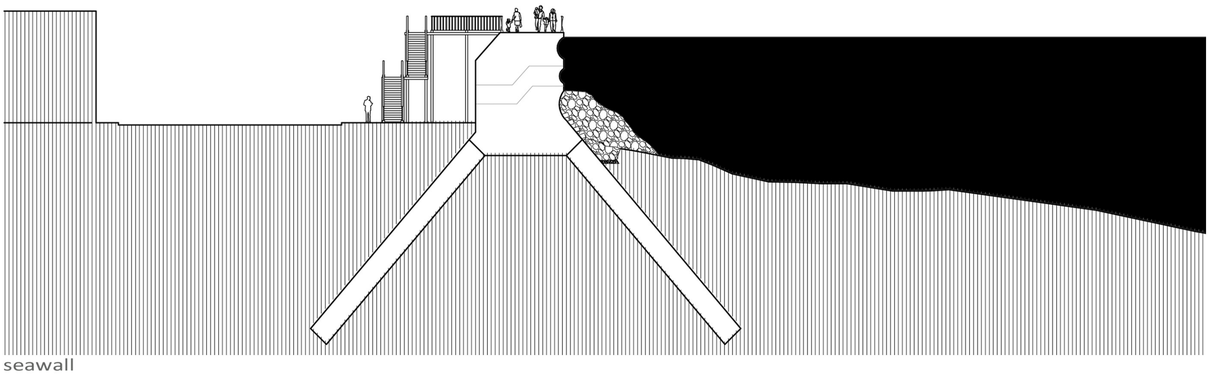


canal at calhoun street

east end of calhoun canal



canal at the historic Battery



seawall