

Gathering Water

*A Design Framework for Hydro-Focused and
Community-Centered Development in Eastwick, Philadelphia*



NEIGHBORHOOD ADJACENCIES

KEY

- Philadelphia city boundary
- Project planning sites
- Flood pathways



BUILT ENVIRONMENT

Much of the current built environment was constructed in the last 80 years, with the majority built during the 1960s and 1970s urban renewal. Foundation settlement in houses has been reported.

VEGETATION

While some pockets of native vegetation remain, the neighborhood supports high levels of disturbance-adapted invaders such as *Phragmites australis*.

DREDGE FILL TOPOGRAPHY

The topography as it exists today is formed by dredged silt and waste fill material, piped in during urban renewal period to create level ground for easy development.

HISTORIC MARSH

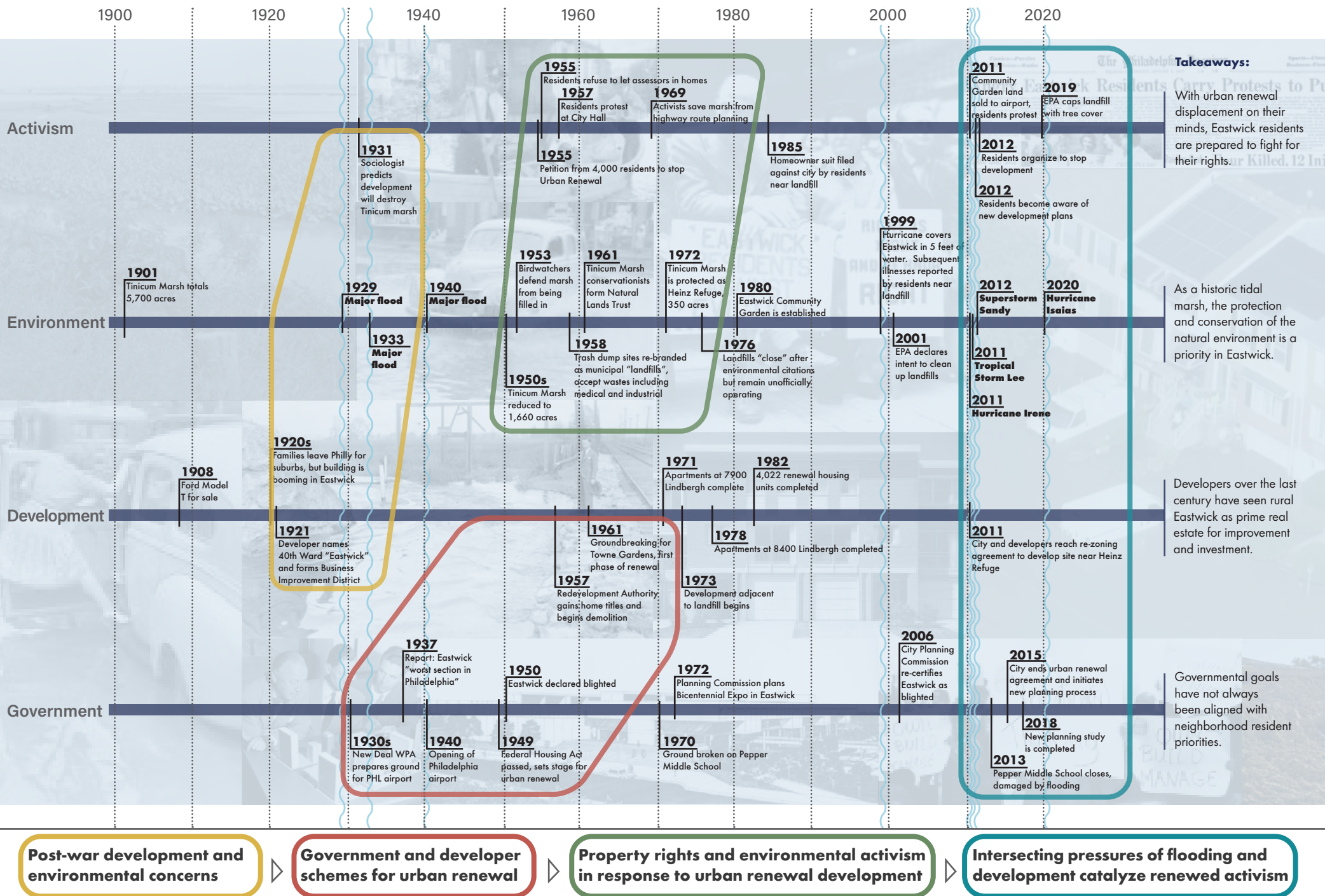
The site was historically a marsh interlaced by ephemeral waterways. Though paved over today, this hydrology continues to impact the neighborhood.

NEIGHBORHOOD BUILT ON A MARSH



FUTURE FLOODING IN EASTWICK...

‘Gathering Water’ investigates the relationship between hydrology and community in the Philadelphia neighborhood of Eastwick. Surrounded by environmental stressors including superfund sites, encircled by waterways, and built over a historic marsh, Eastwick residents are vulnerable to pollution and flooding.



Eastwick's history can be understood through tensions between developers, activists, government, and the environment. The neighborhood was targeted as blighted for urban renewal in the 1950s, and displacement of 8,000 residents followed. Current residents advocate for their rights and needs.



HISTORIC WATERWAYS
USGS TOPO MAPS 1890-1910



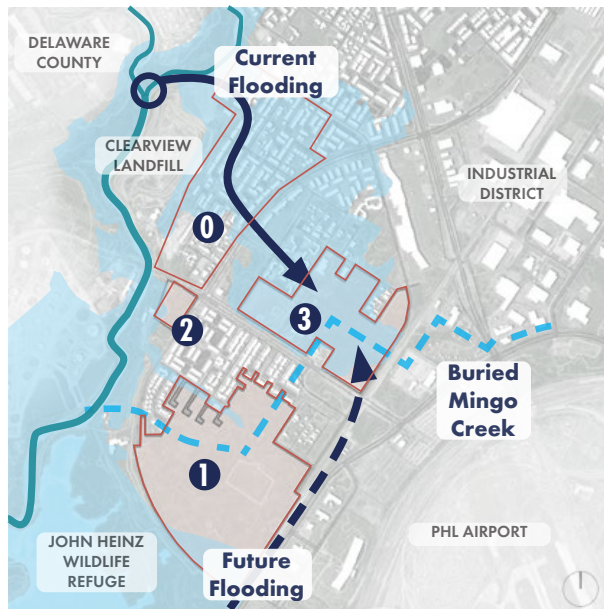
"Rain, rain, go away and never come back..."

1934, Philadelphia Evening Bulletin Photograph
Temple University Libraries



"Silt to be pumped from the Schuylkill River..."

1953, Philadelphia Evening Bulletin Photograph
Temple University Libraries



EXISTING WATERWAYS



Flooding during Hurricane Isaias

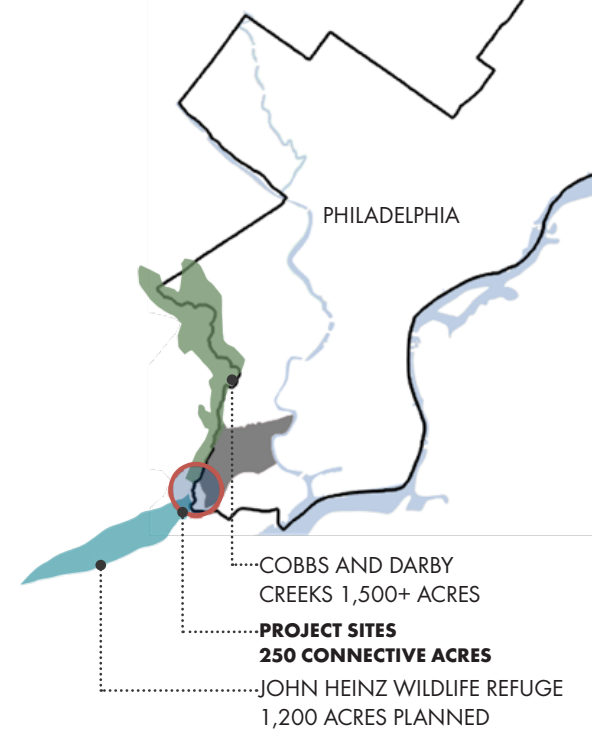
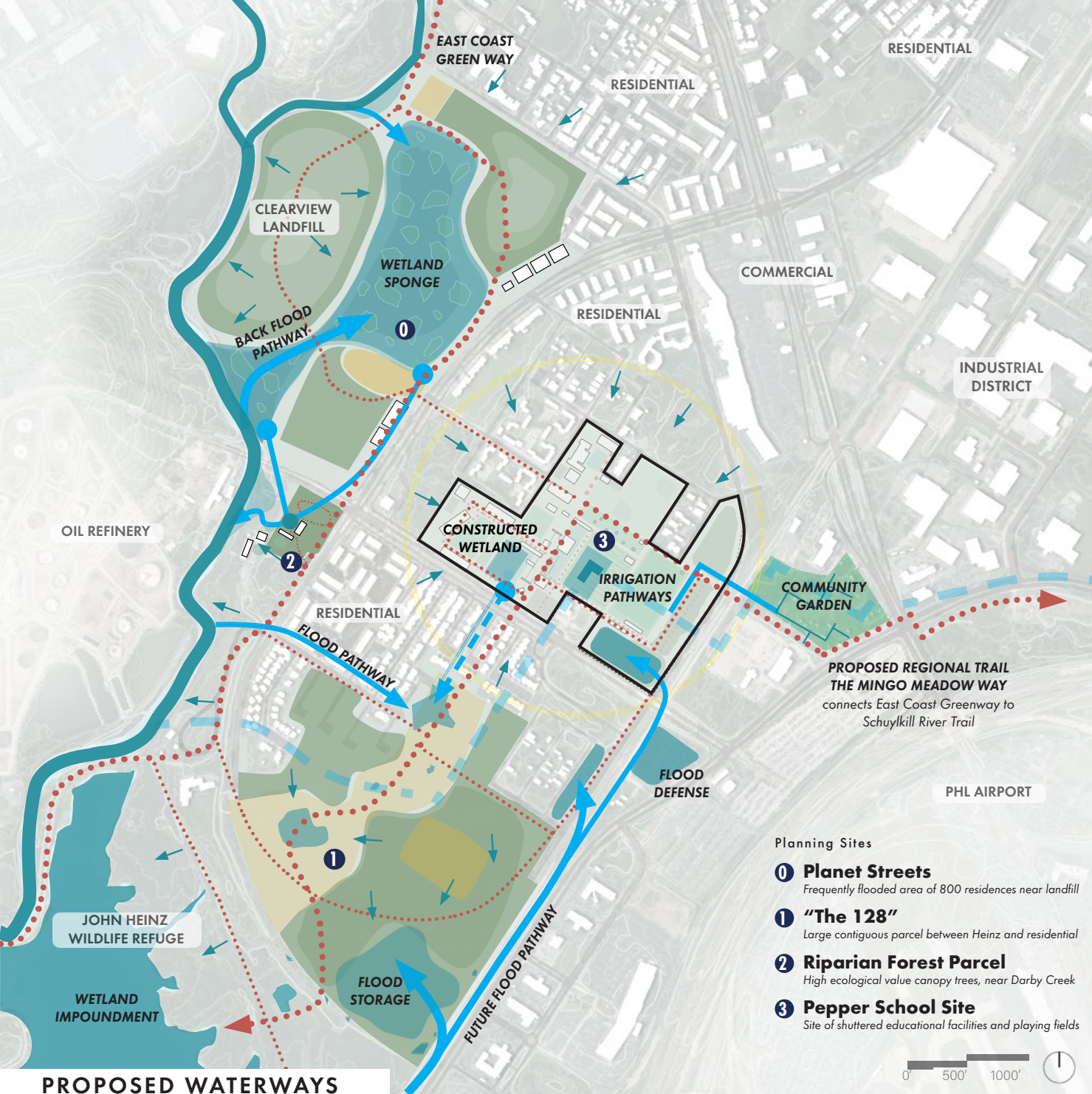
2020, Philadelphia Inquirer
Photo: Elizabeth Robertson



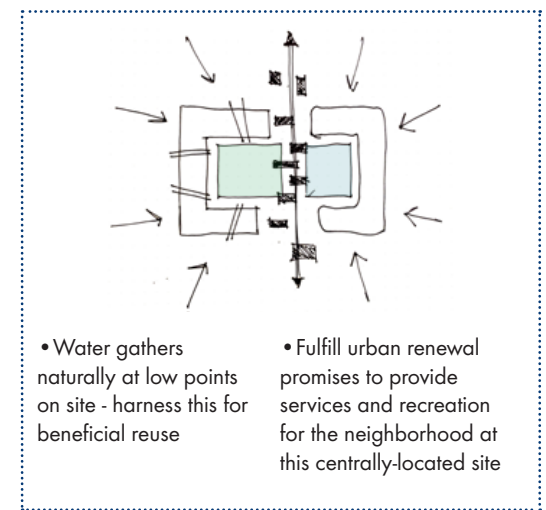
Flooding during Hurricane Isaias

2020, CBS News

Historically, residents in marshy Eastwick lived with water in a semi-rural condition. Redevelopment of the neighborhood included filling in and building over the marsh, but water and flood-born contaminants continue to plague disenfranchised residents and damage property.

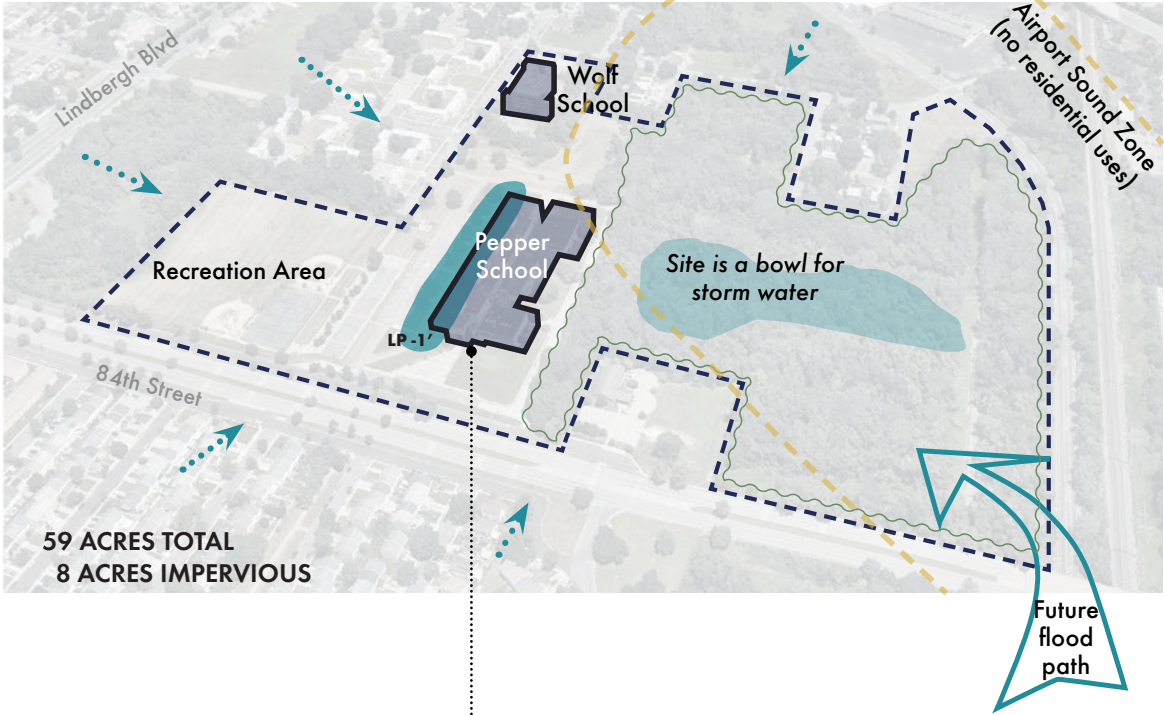


HABITAT CONNECTIONS

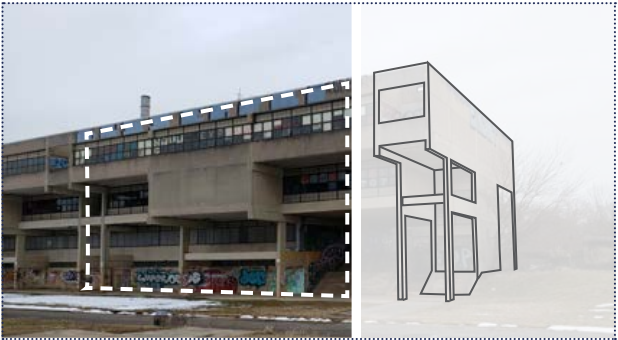


SITE 3 - DETAIL DESIGN

SITE 3 ANALYSIS



Landmark 1970s Brutalist building at low elevation in neighborhood, damaged by repeated flooding and deferred maintenance



Demolish 66% of Pepper School

Maintain elements as artifacts on site

PEPPER SCHOOL VISION

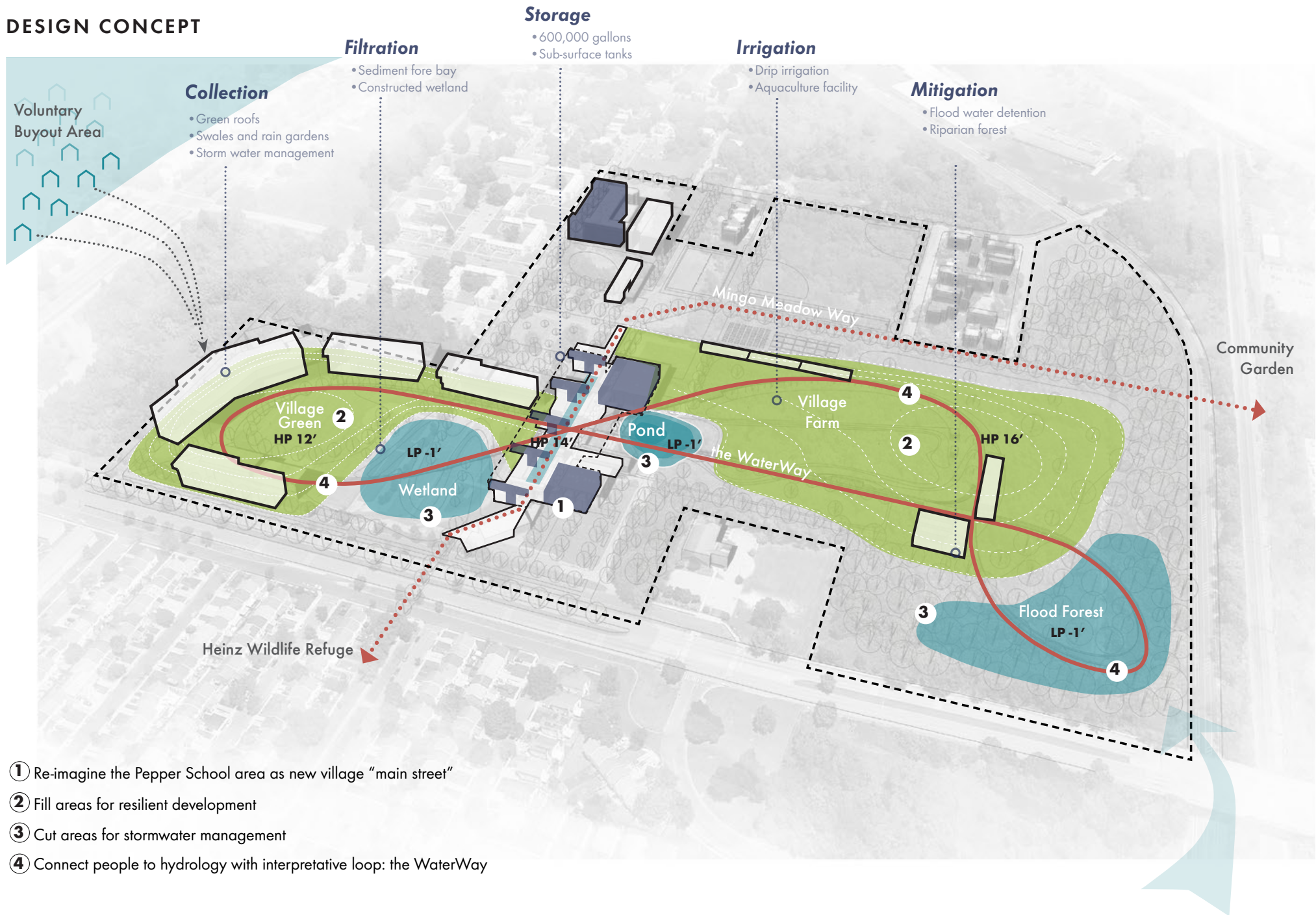
EXISTING | flood-damaged school building

PRESERVED | re-imagine artifacts to support a resilient community

PROPOSED | artifacts organize design of site

The site's Pepper School, planned during urban renewal and now closed due to flooding, is a reminder of the neighborhood's disinvestment. Elements of the school can be retained to anchor the design of a new mixed-use resilient development.

DESIGN CONCEPT

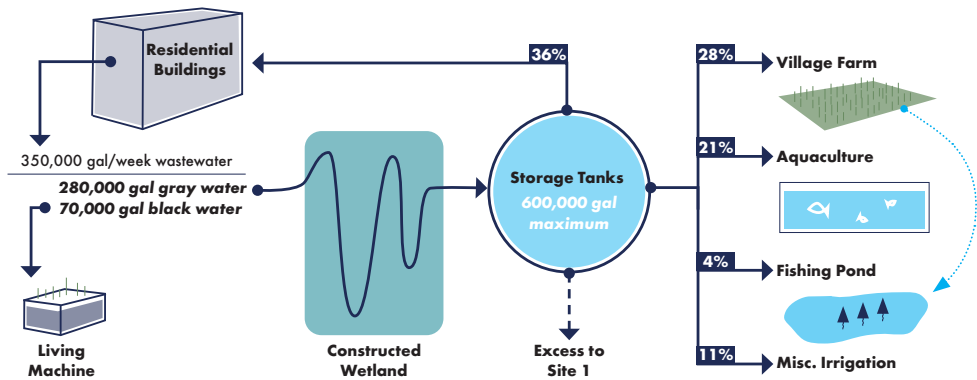
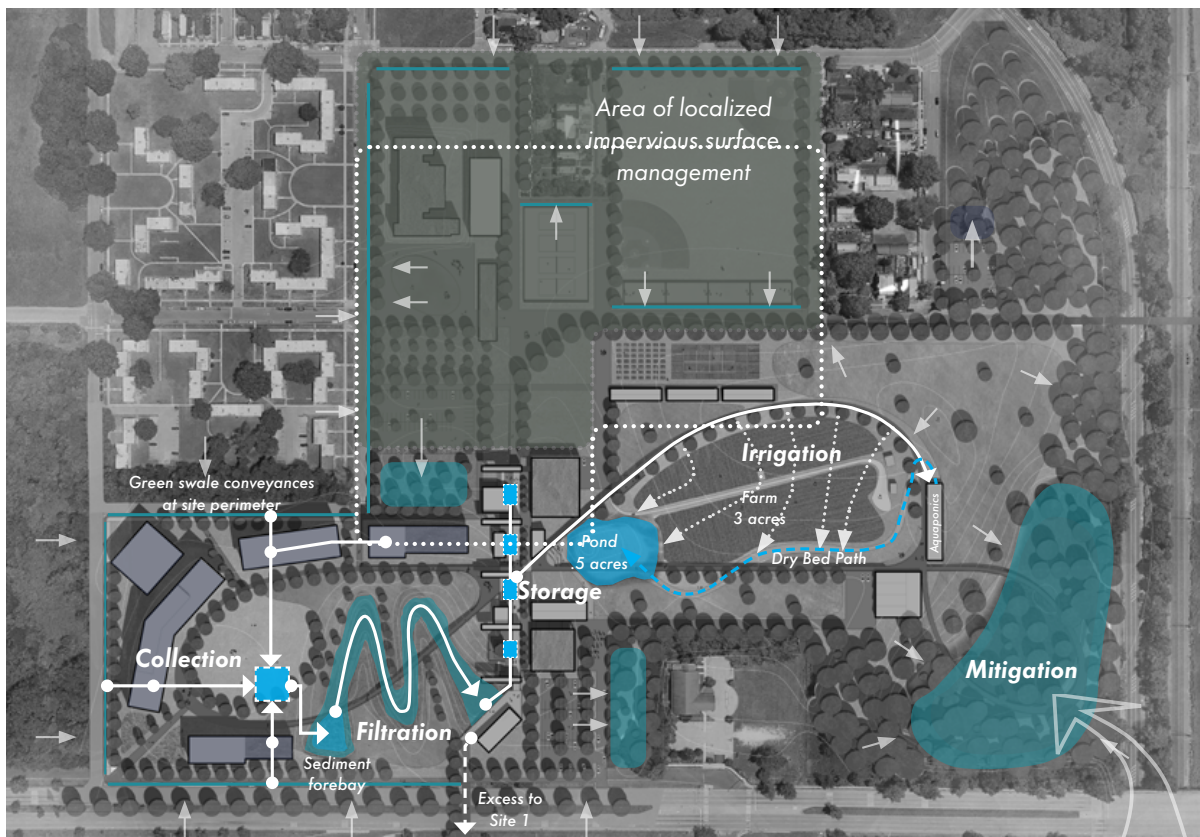


The proposed design acknowledges the reality of flooding but supports new uses through cutting and filling. The entire site is designed as a hydrological system to allow for beneficial reuse of water, and a flood-resilient walkway weaves the site together.

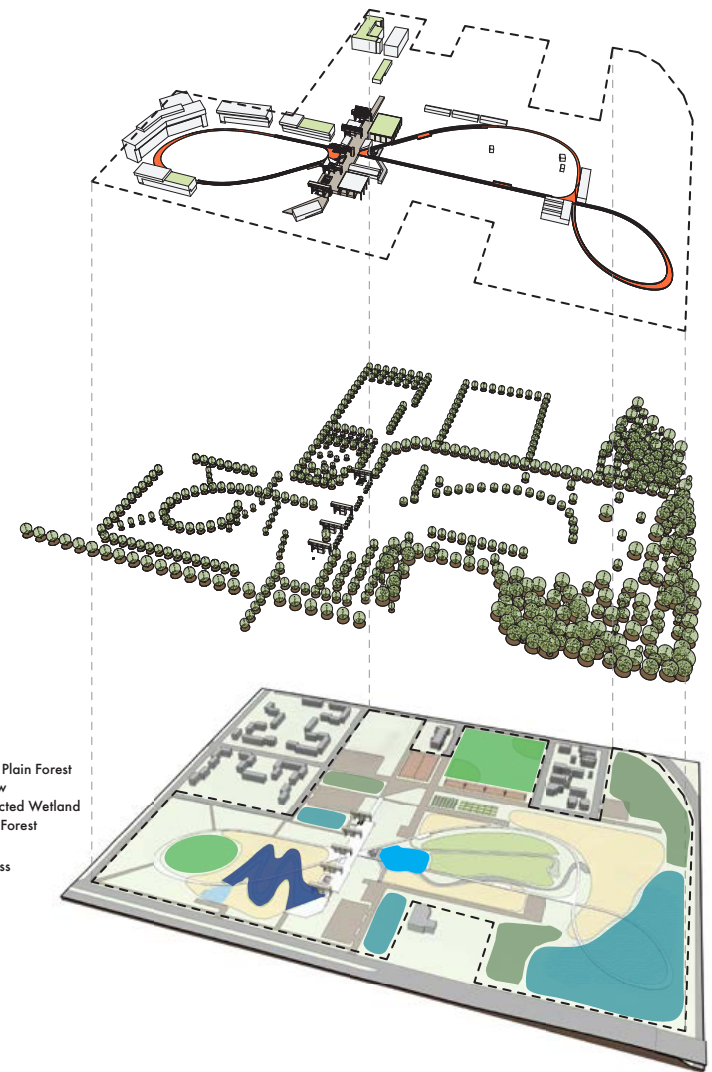
SITE PLAN



The site is a resilient “village” through which community-led industries, goals, and initiatives can be advanced locally. As water gathers and flows naturally on site, other resources such as food, energy, people, and stories will also gather here.



WATER SYSTEM - COLLECTION TO IRRIGATION



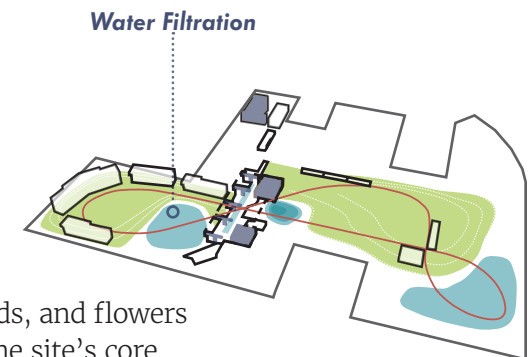
LAYER AXONOMETRIC

Stormwater and greywater from residential buildings are filtered through a designed wetland, stored in the center of the site, and used for farm irrigation, aquaculture, and to nourish a recreational pond. Planting and development is organized around this hydrological system.



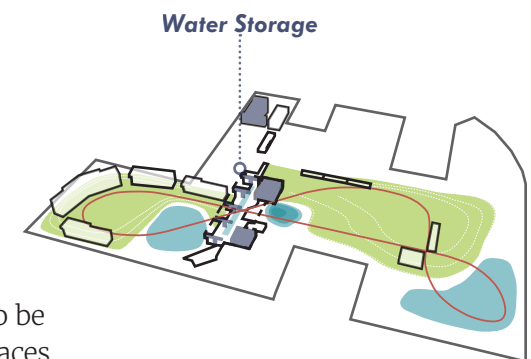
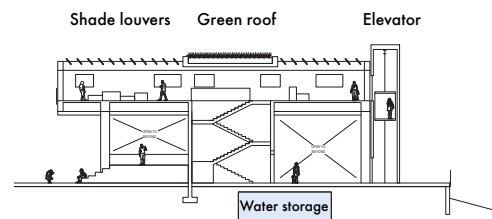
DESIGNED WETLAND

The filtration wetland is designed as a meandering watercourse with sloping margins planted with rushes, reeds, and flowers supporting habitat. The WaterWay elevated loop connects over the wetland between the residential area and the site's core.





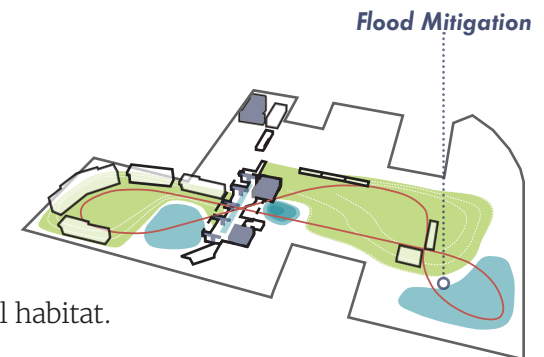
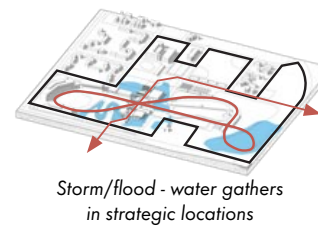
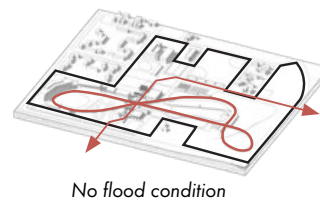
OBSERVATION TOWER + PLAZA



The site's core contains artifacts of the former Pepper School which are repurposed as resources and are able to be occupied. A new gathering plaza built over water storage tanks connects residents to retail and community spaces.

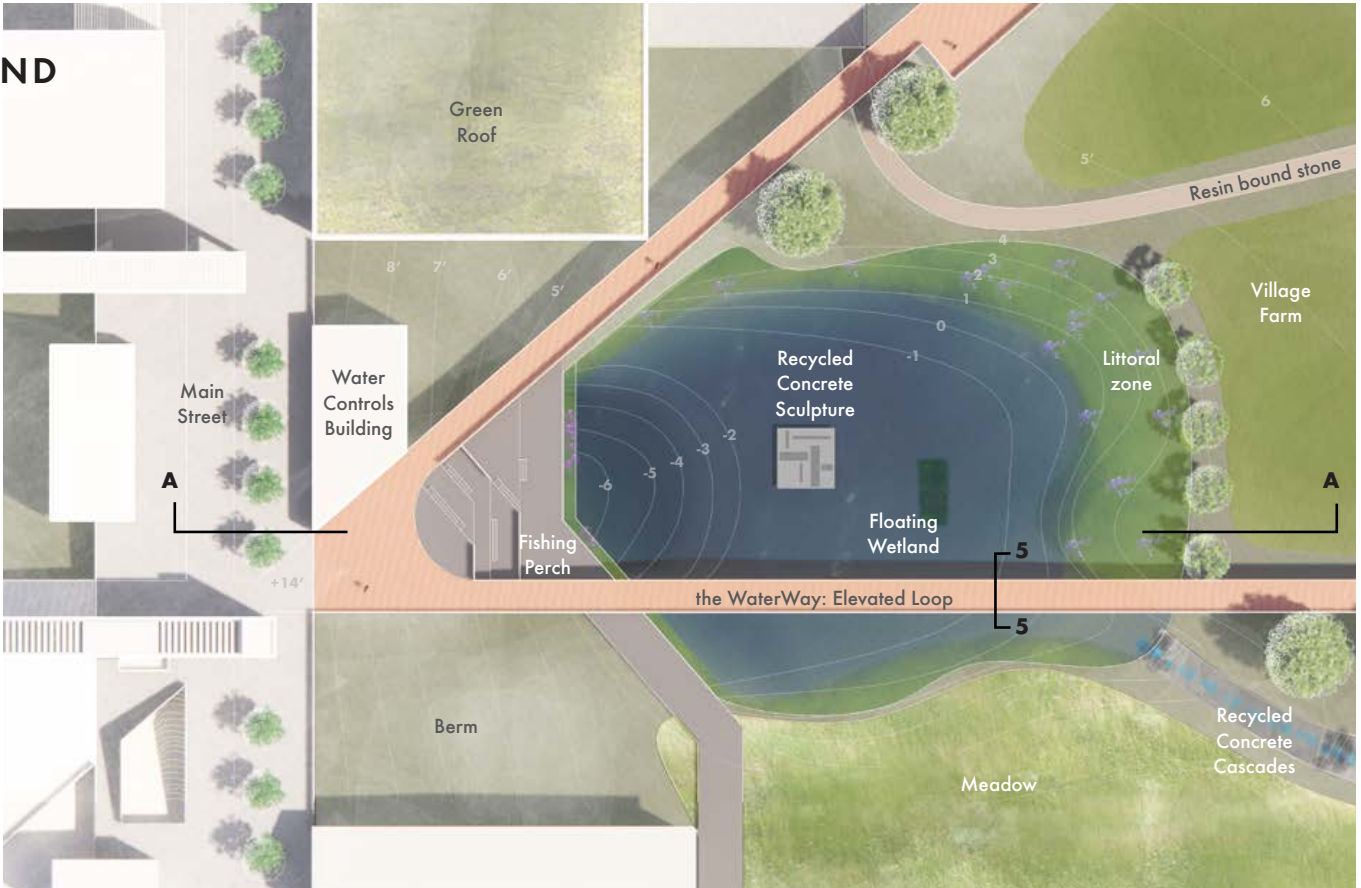


FLOOD FOREST

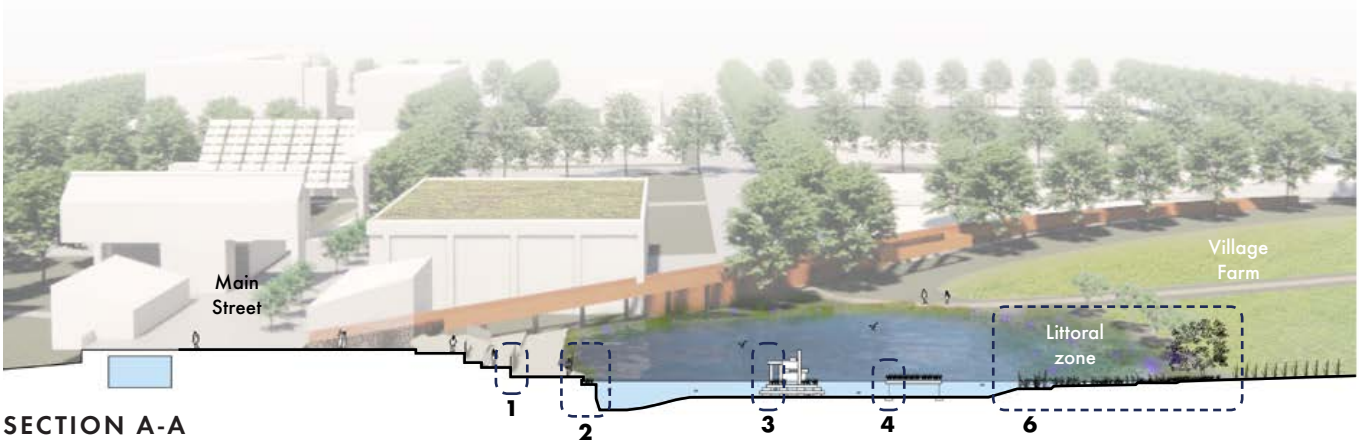


At the site's western edge, storm infrastructure takes the form of a floodable forest which doubles as waterfowl habitat. Proposed tree, shrub, and grass communities are based on similar inner coastal plain reference sites.

COMMUNITY POND



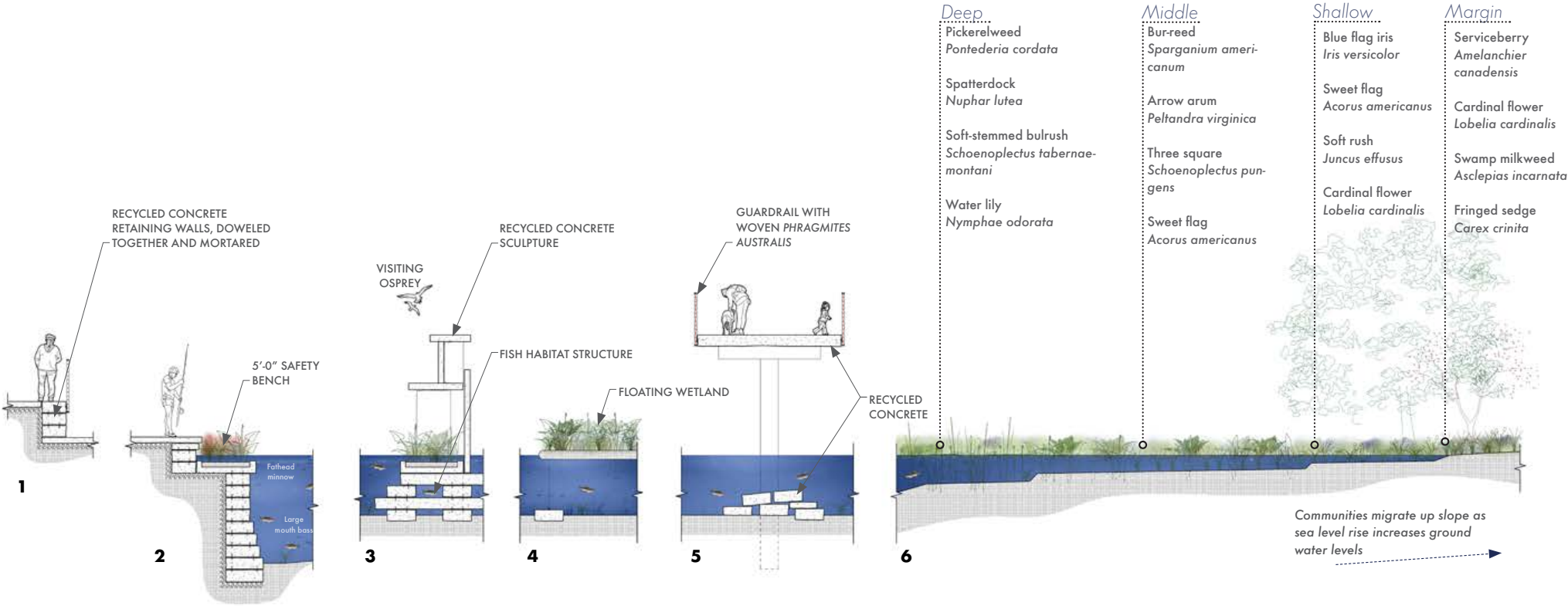
PLAN ENLARGEMENT



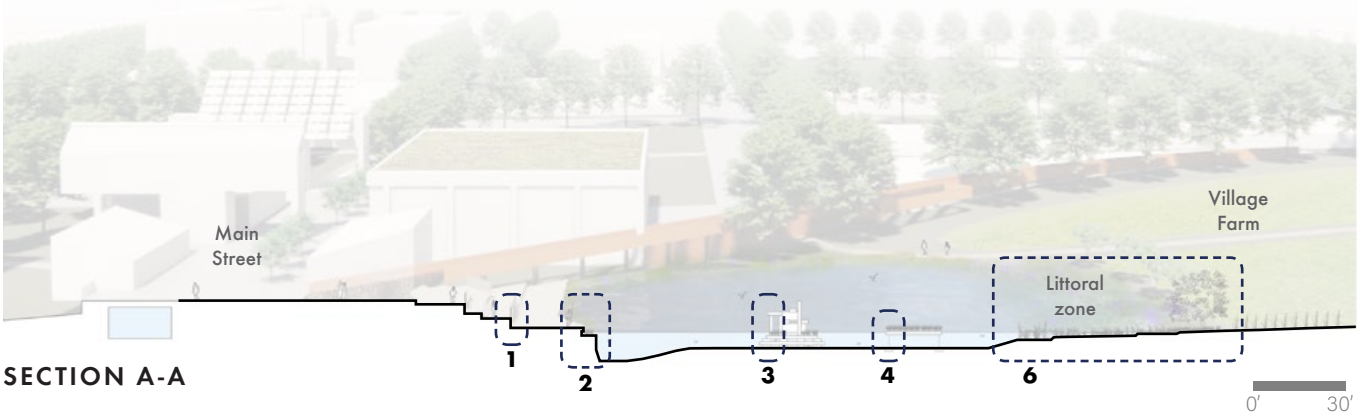
SECTION A-A

The hydro-social center of the site is the fishing pond. Many residents of the neighborhood reminisce on now-lost swimming holes, and catch-and-release fishing is popular. Adjacent to circulation paths, the pond is a natural gathering point for water and residents.

COMMUNITY POND



DETAIL SECTIONS



The pond contains fish habitat structures made of recycled concrete, has a variety of water depths, and is heavily-planted with a gradual littoral zone. Floating wetlands help filter contaminants and agricultural nutrients from the adjacent village farm.

COMMUNITY POND



As a social resource, aquatic habitat, and recreational opportunity, the pond connects community residents to water in ways which are mutually beneficial to both human and ecological health.