

SASAKI

**We create places
that prove
human potential.**



National Harbor, Oxon Hill, MD
Firm: Sasaki Associates Inc.

Mark Dawson, Managing Principal, Sasaki Associates Inc.



American Society of
Landscape Architects



Climate risks
are not new for
Boston, but they
will continue to
increase as the
global climate
changes.

Sea level Rise – Boston, MA





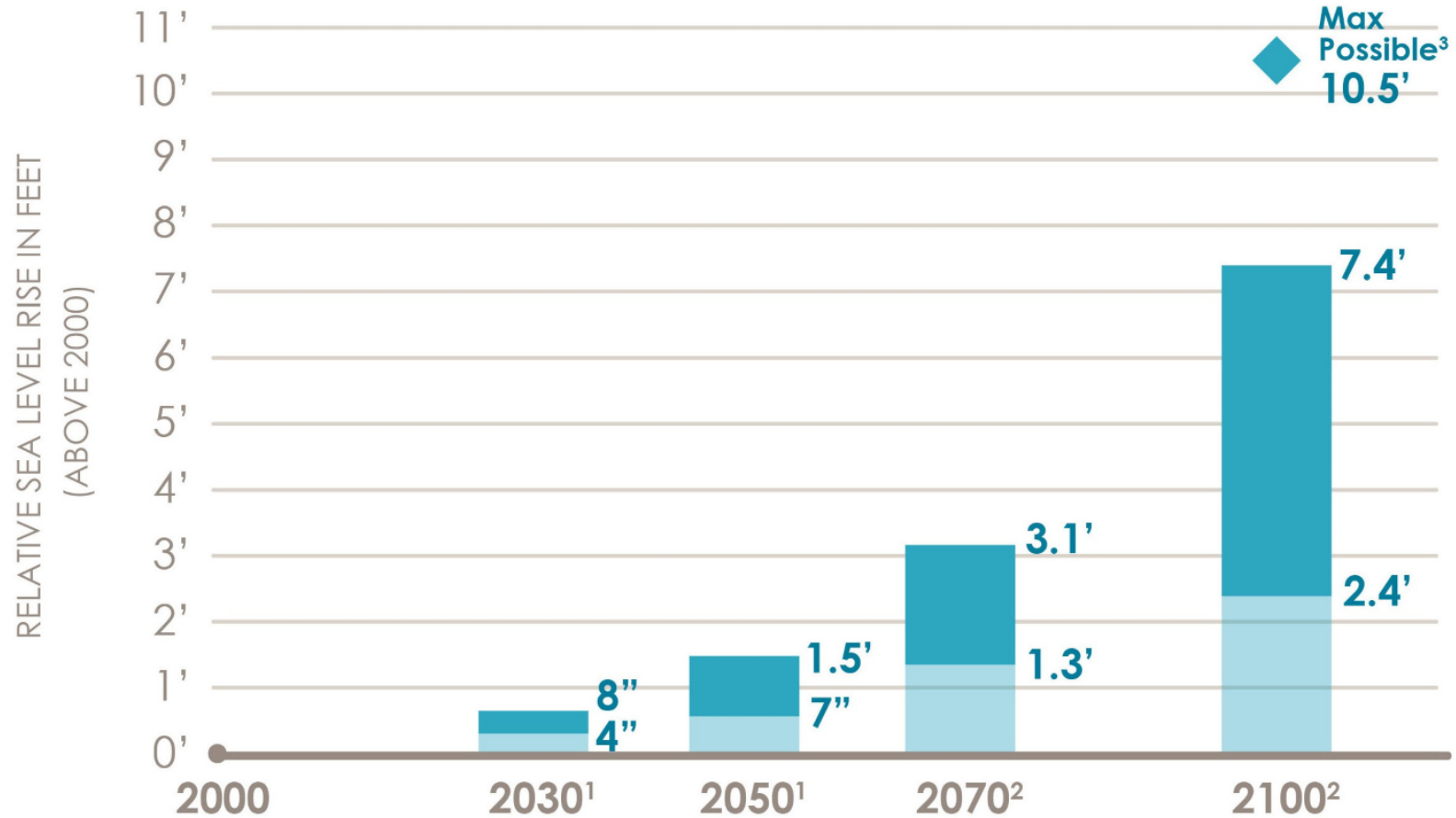
October 2016 - King Tide Flooding



Jan- March 2018 - Nor'easter with "100 Year" Flooding



Sea levels in Boston will continue to rise



1 - Likely under all emission scenarios

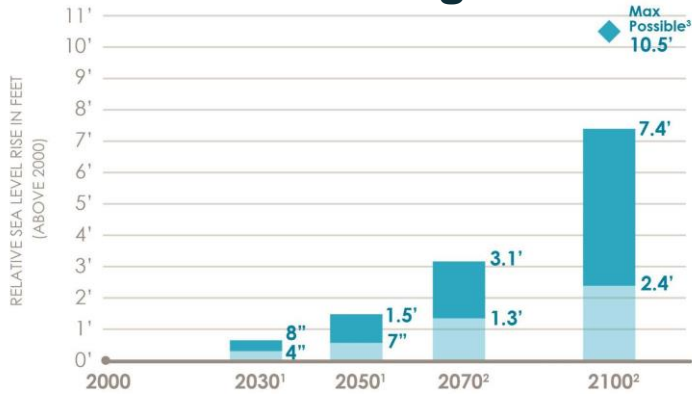
2 - Likely under moderate to high emission scenarios

3 - Low probability under high emission scenario



Sea level rise isn't the only concern

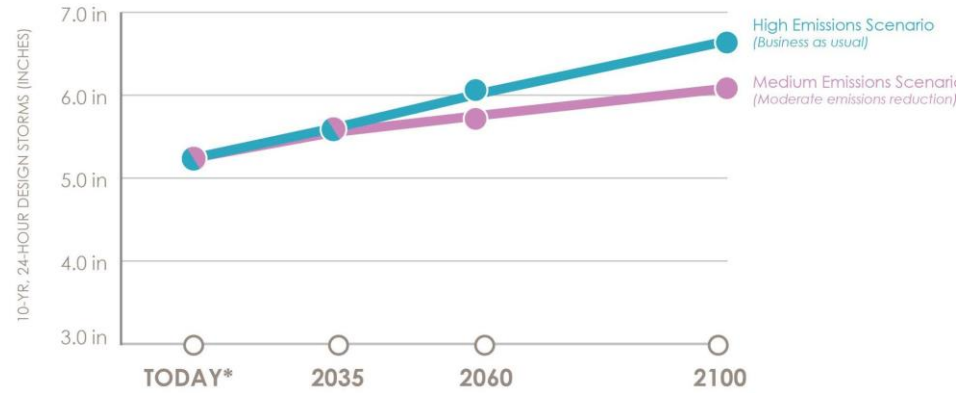
Coastal and Riverine Flooding



1 - Likely under all emission scenarios
 2 - Likely under moderate to high emission scenarios
 3 - Low probability under high emission scenario

Flooding risks will increase

Stormwater Flooding

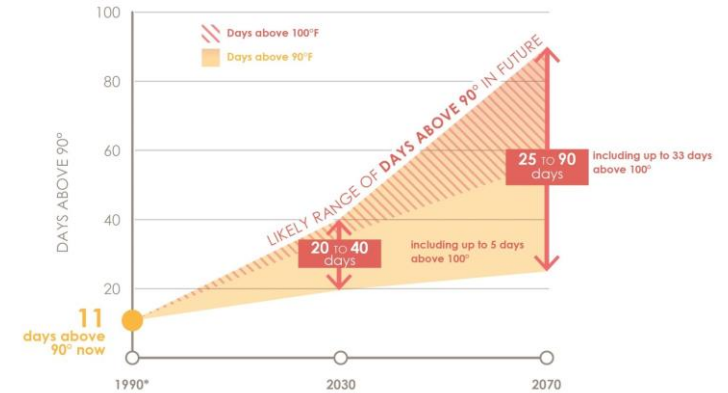


* "Today" baseline represents historical average from 1948-2012. Confidence intervals are not available for these projections but are likely large, so these numbers should be considered as the middle of a large range.

Data Source: Boston Water & Sewer Commission

Rainfall from storms will increase

Extreme Temperatures



* Baseline represents historical average from 1971-2000. Upper values from high emissions scenario. Lower values from low emissions scenario.

Data source: Rossi et al. 2015

Number of very hot days will increase



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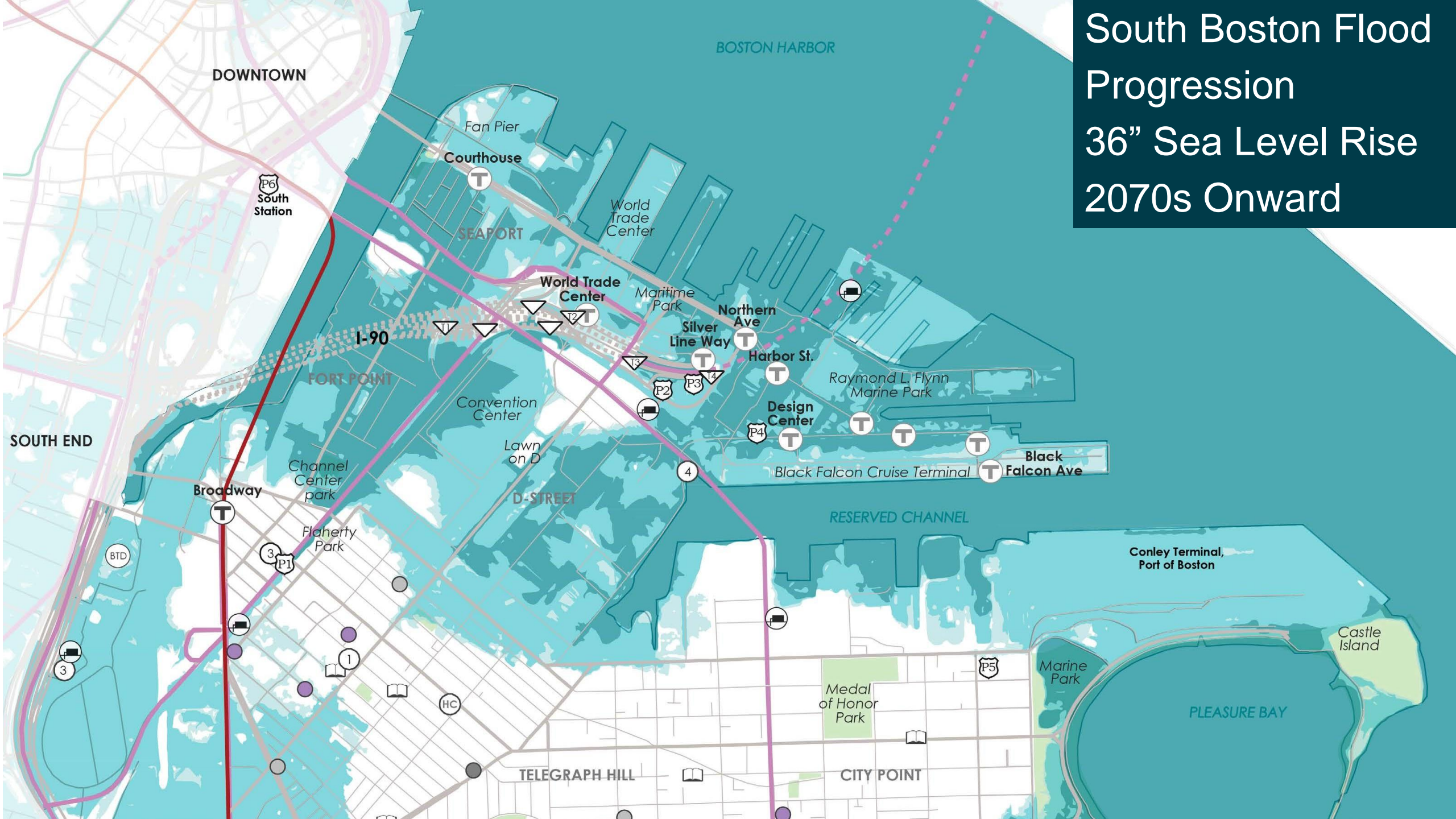
South Boston Flood Progression 9" Sea Level Rise 2030s-2050s



South Boston Flood Progression 21" Sea Level Rise 2050s-2100s



South Boston Flood Progression 36" Sea Level Rise 2070s Onward





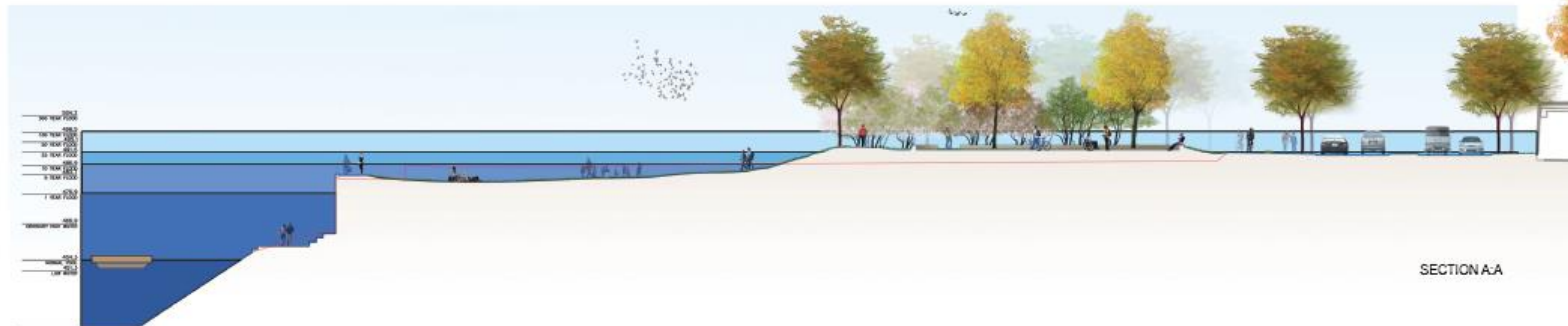
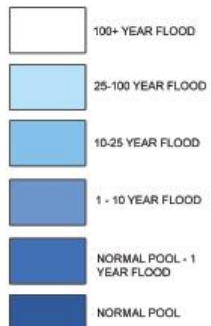
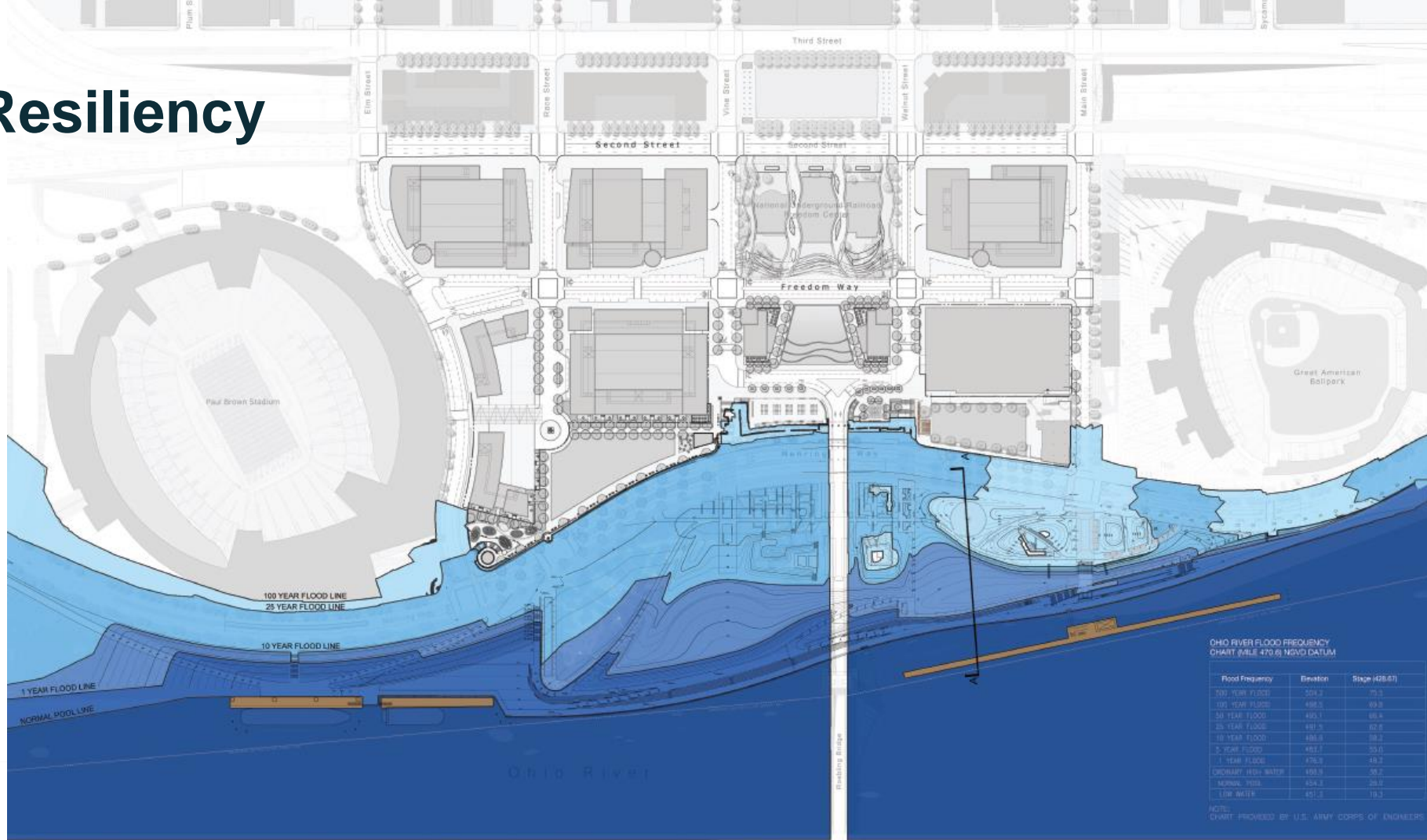
Sea Change Boston, Boston, MA
Sasaki Associates Inc.

Cincinnati John G. and Phyllis W. Smale Riverfront Park

Cincinnati Park Board | Cincinnati, OH



Flood Resiliency





2018

Designed to Flood



Normal Water Pool

Record Flood- February 2018
Cleaned and re-opened within
1 week



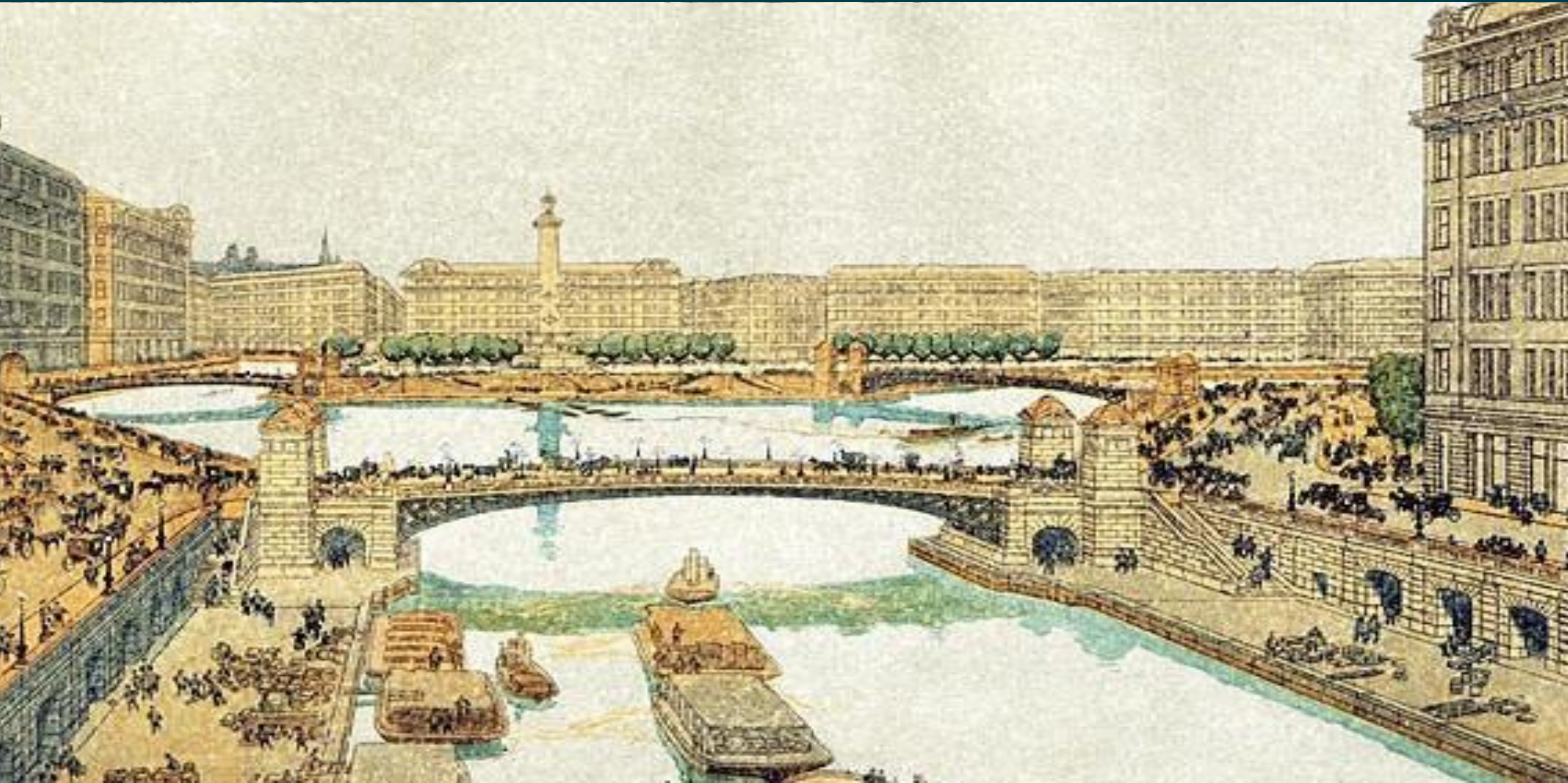
Deployable Details Minimize Damage and Ease Recovery

The park was cleaned and re-opened within 1 week of the February 2018 flood.



Chicago Riverwalk

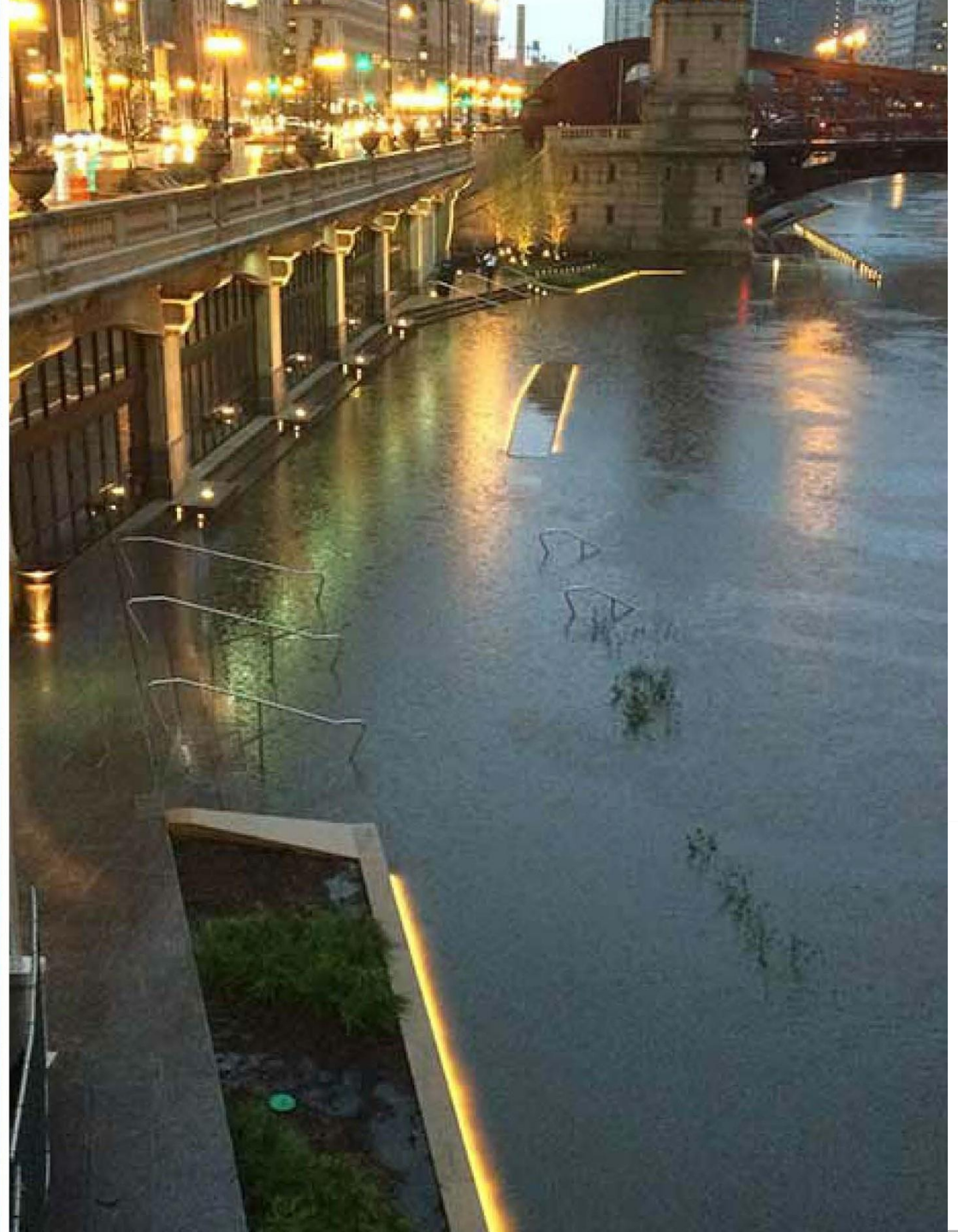
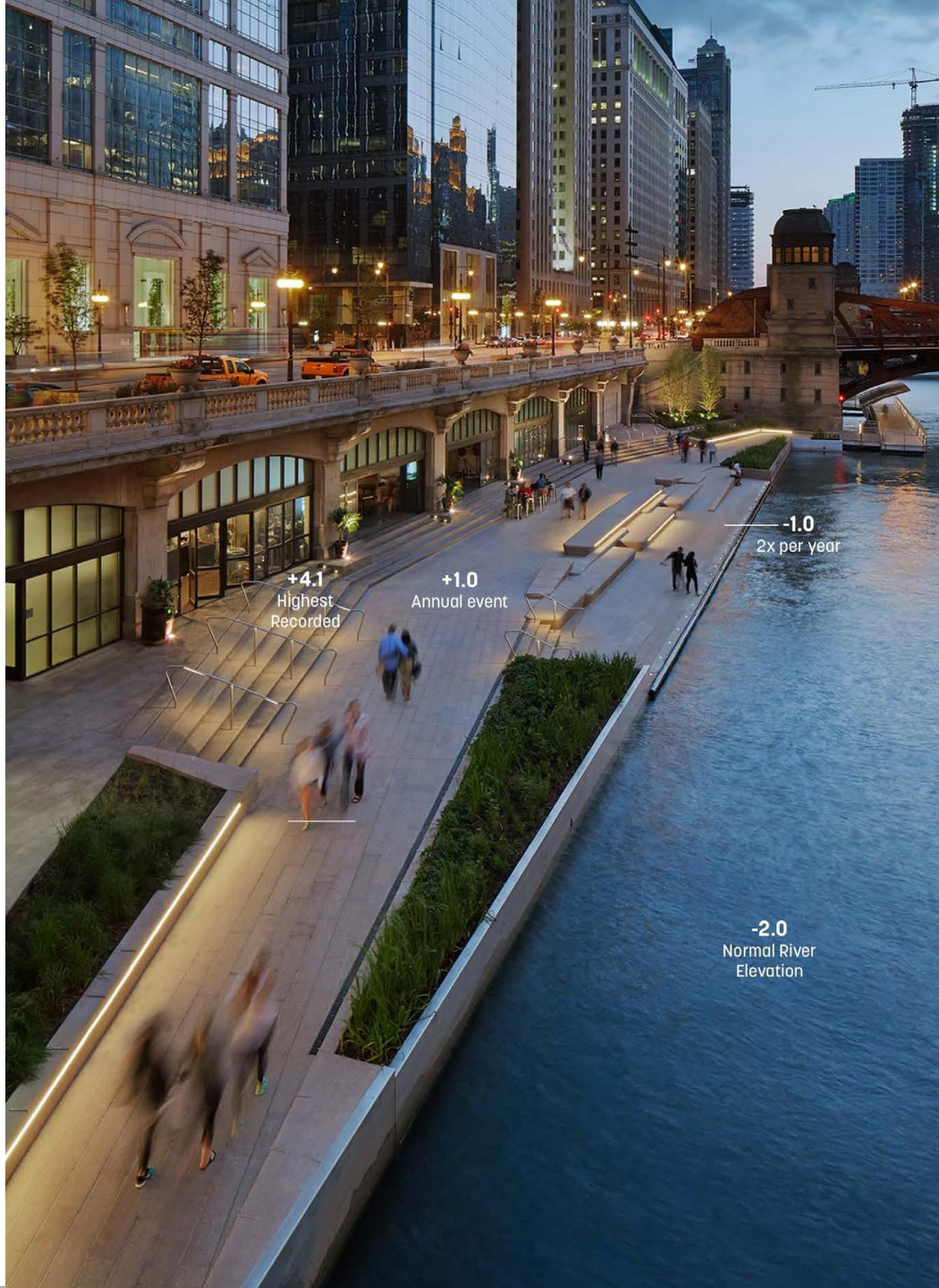
Chicago Department of Transportation | Chicago, IL

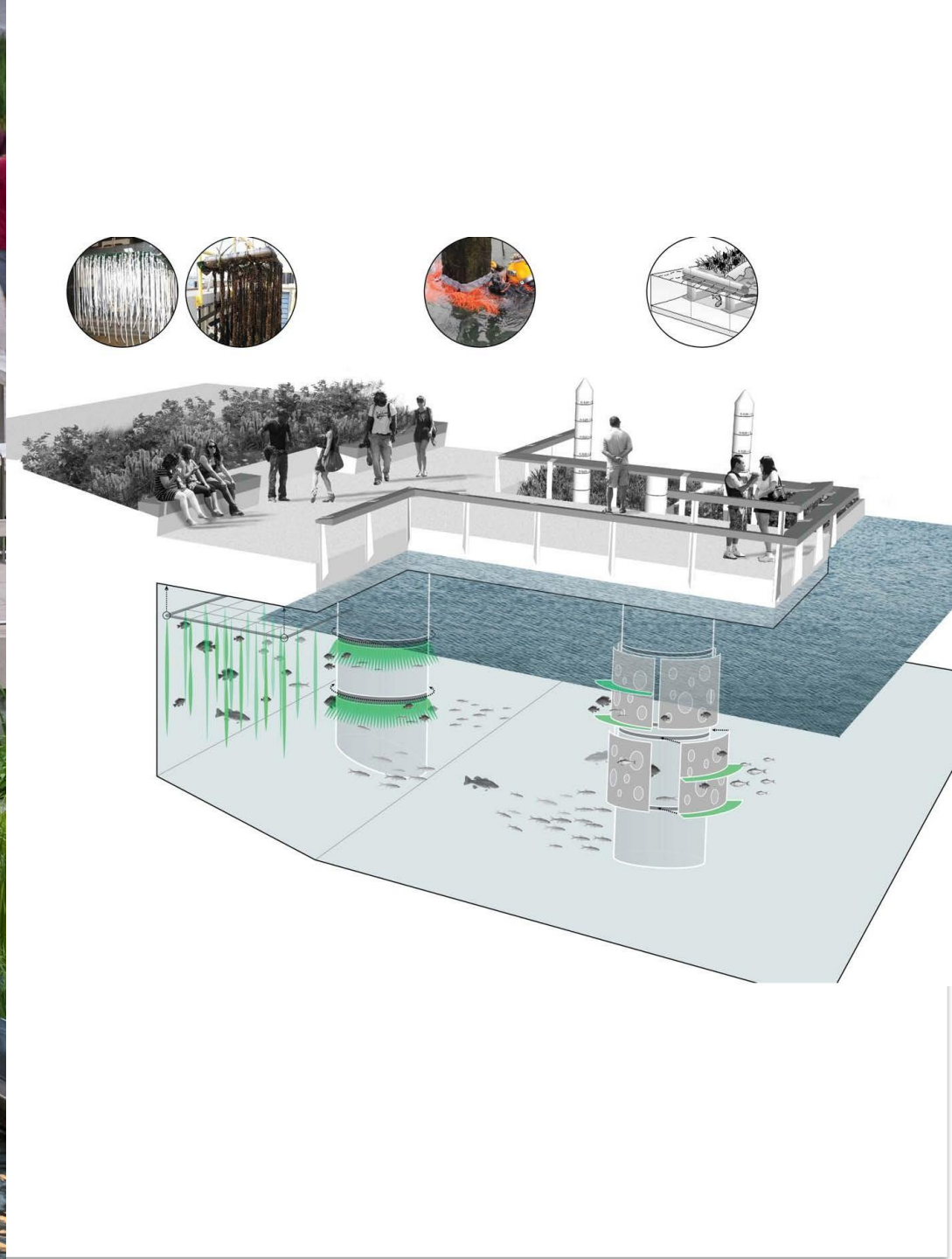




Chicago Riverwalk



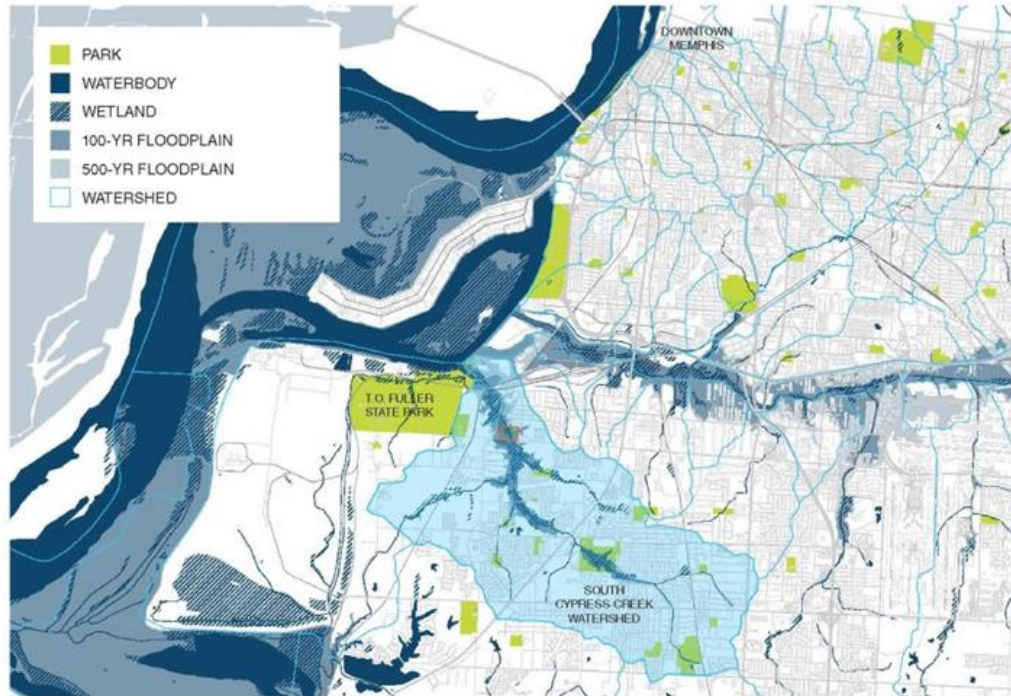




Memphis – Shelby County, TN

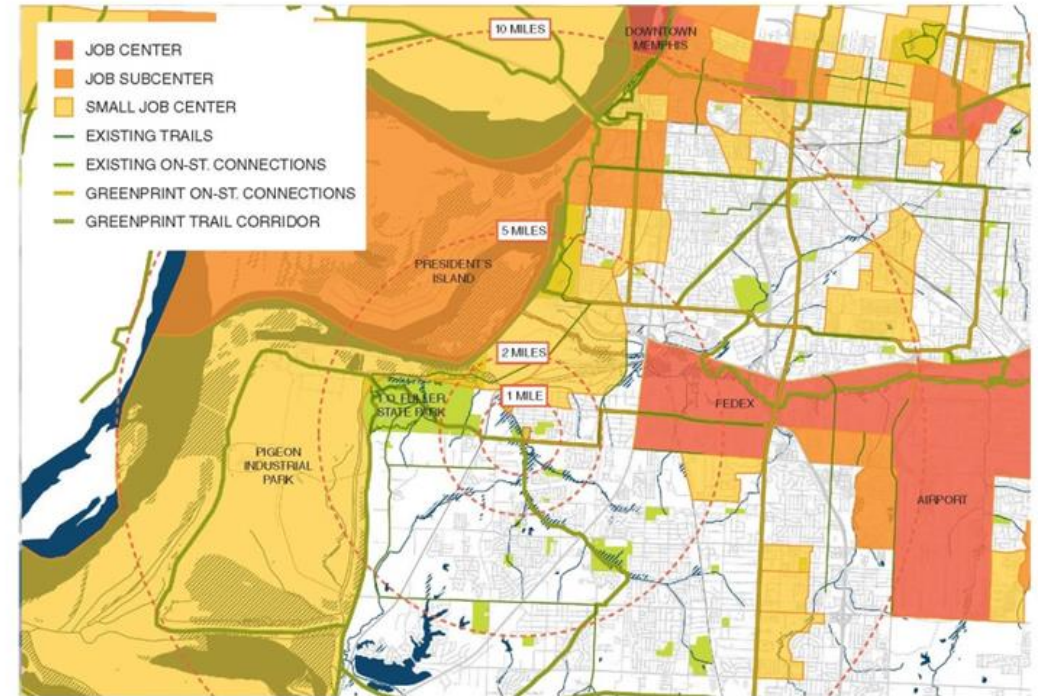


REGIONAL ANALYSIS: SOUTH CYPRESS CREEK WATERSHED AND JOB PROXIMITY



SOUTH CYPRESS CREEK WATERSHED HAS "HIGH SENSITIVITY"

8,400 ACRES
 18.5% IMPERVIOUS SURFACE
 EROSION FROM 2011 FLOODS



SOUTH CYPRESS CREEK RESIDENTS LIVE IN CLOSE PROXIMITY TO JOB CENTERS

42% RESIDENTS WITHIN 1 MILE OF WEAVER PARK COMMUTE EAST TO WORK

PROXIMITY TO JOB CENTERS COULD SUPPORT ALTERNATE MODES OF TRANSIT

34% COMMUTING EAST TRAVEL LESS THAN 10 MILES

GREENPRINT FOR RESILIENCE

Shelby County, Tennessee

Figure 3.3



WEST JUNCTION
NEIGHBORHOOD
ACTION PLAN

VACANT LOT RE-USE URBAN DESIGN PRINCIPLES

1. LEVERAGE EXISTING CHURCHES AND SCHOOLS
2. MAKE EXISTING PARKS VISIBLE FROM THE STREET
3. FOCUS REDEVELOPMENT IN NEIGHBORHOOD CORE
4. AVOID DEVELOPMENT WEST OF ANDERSON ROAD



GREENPRINT FOR RESILIENCE
Shelby County, Tennessee

Figure 3.10

VACANT LOT RE-USE TYPOLOGIES



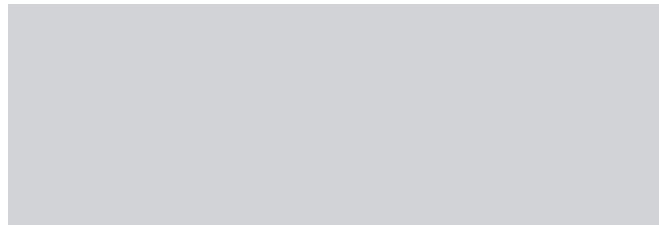
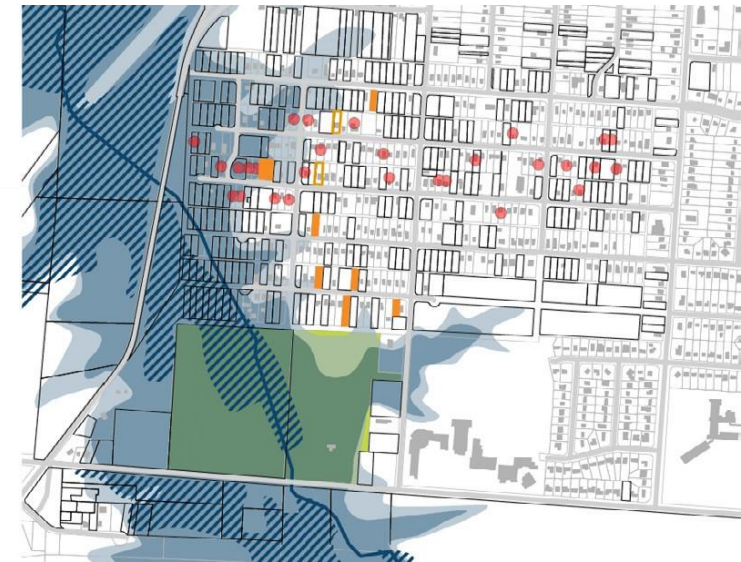
SOUTH CYPRESS CREEK WATERSHED AND NEIGHBORHOOD REDEVELOPMENT PROPOSAL



GREENPRINT FOR RESILIENCE
Shelby County, Tennessee

Figure 3.12

- Buyout of existing homes and replace with greenspace, wetlands, and other flood storage to accommodate water flow
- Better protection for nearby LMI homes
- Create affordable infill or rehabilitation nearby for displaced residents
- Creation of multi-purpose trails
- Local food production
- Development of vacant lot program



West Junction

Building Condition

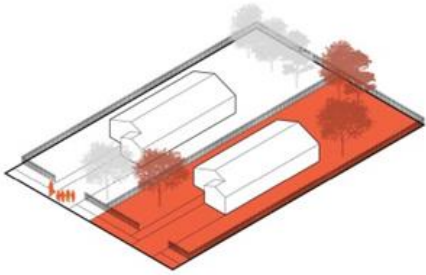
Many buildings in fair condition, interspersed with many vacant lots, and some buildings in good, excellent, or poor condition.

BUILDING CONDITION

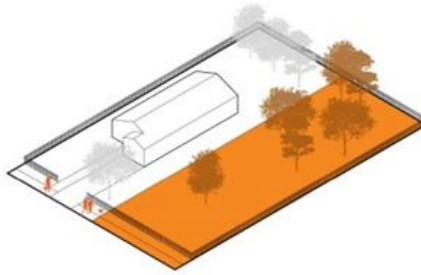
- EXCELLENT
- GOOD
- FAIR
- POOR
- NO DATA



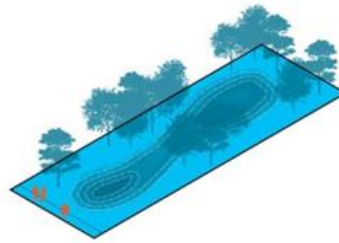
VACANT LOT RE-USE TYPOLOGIES



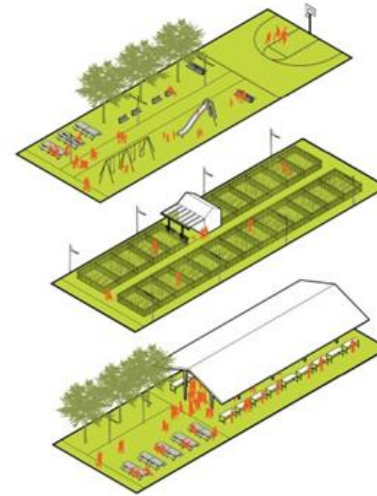
HOME LOT



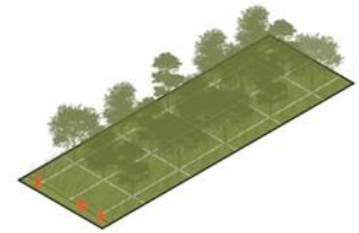
EXPANDED LOT



FLOOD LOT

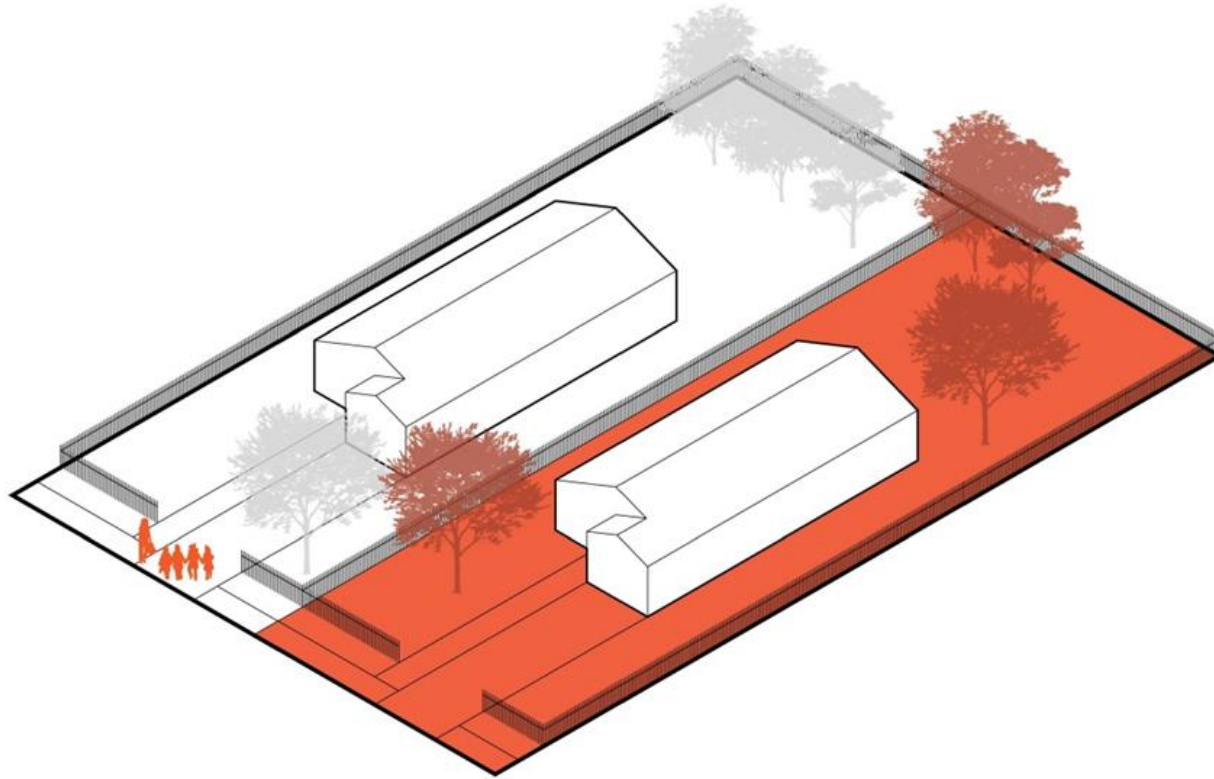


COMMUNITY LOTS



NATURE LOT

HOME LOT



Ownership transferred to residents in floodplain with unmet need from 2011 floods (11 properties)

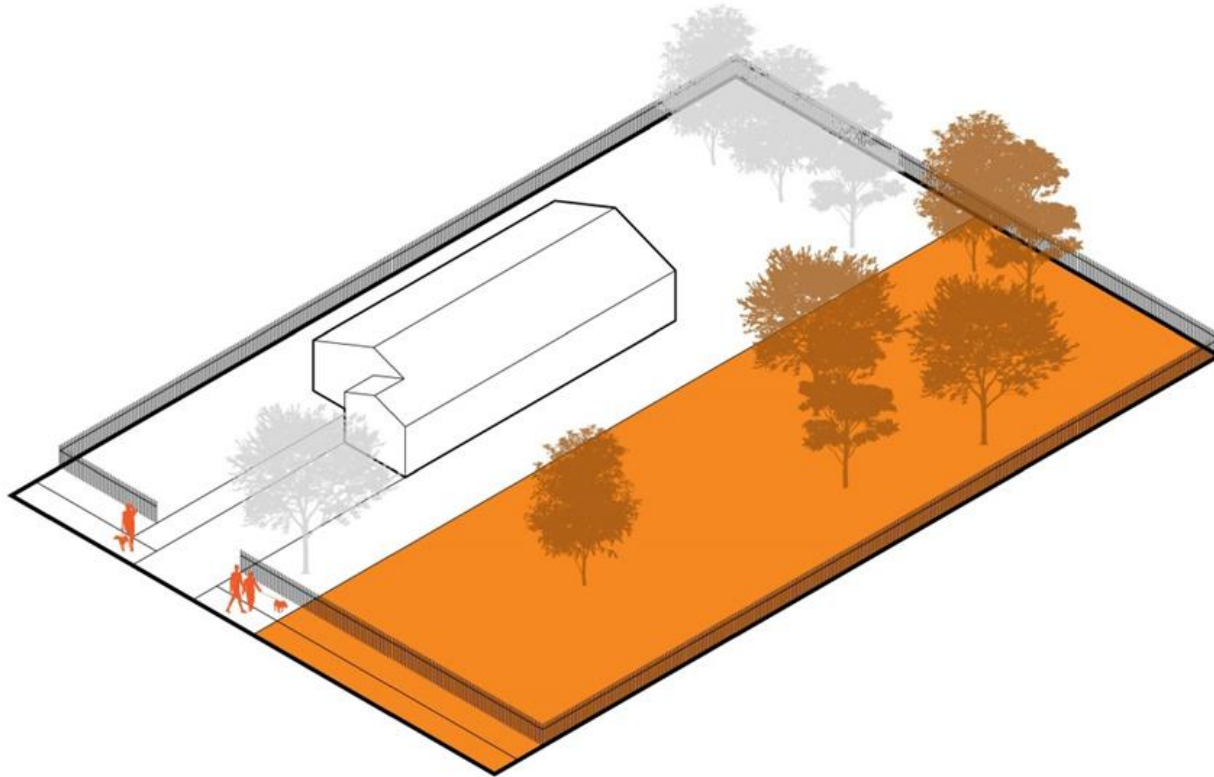
PRECEDENTS

Shelby County Landbank, Memphis, TN
Genesee County Landbank, Flint, MI

POTENTIAL LOCAL PARTNERS

Shelby County Landbank
HUD
Habitat for Humanity

EXPANDED LOT



Ownership transferred to willing adjacent owner

PRECEDENTS

Shelby County Landbank, Memphis, TN

Detroit BLOTS program, Detroit, MI

Genesee County Landbank, Flint, MI

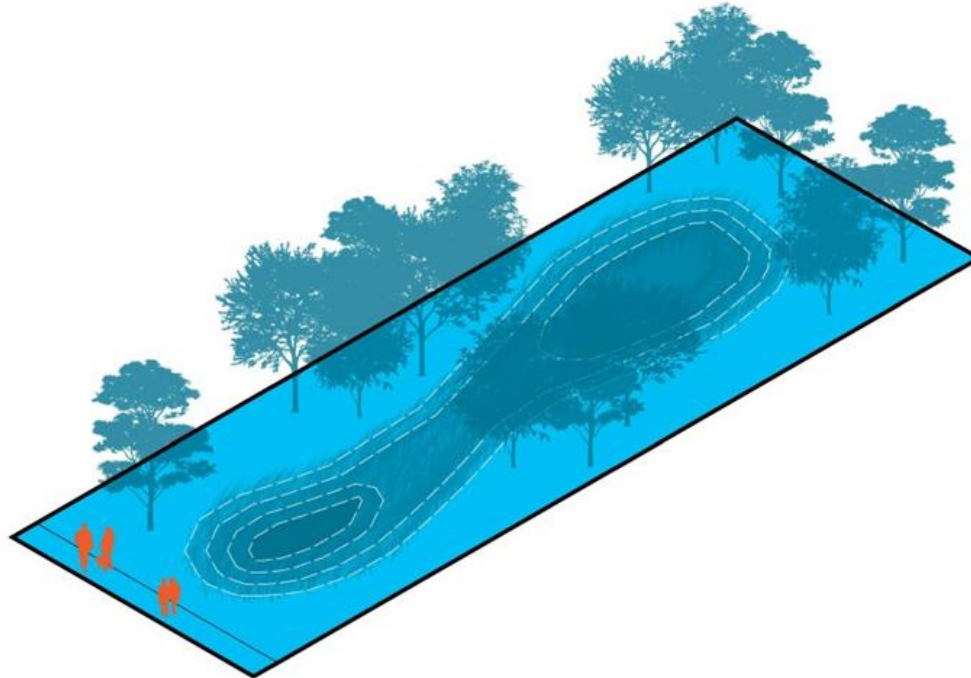
POTENTIAL LOCAL PARTNERS

Shelby County Landbank

GREENPRINT FOR RESILIENCE

Shelby County, Tennessee

FLOOD LOT



Designed to treat stormwater, absorb floodwater

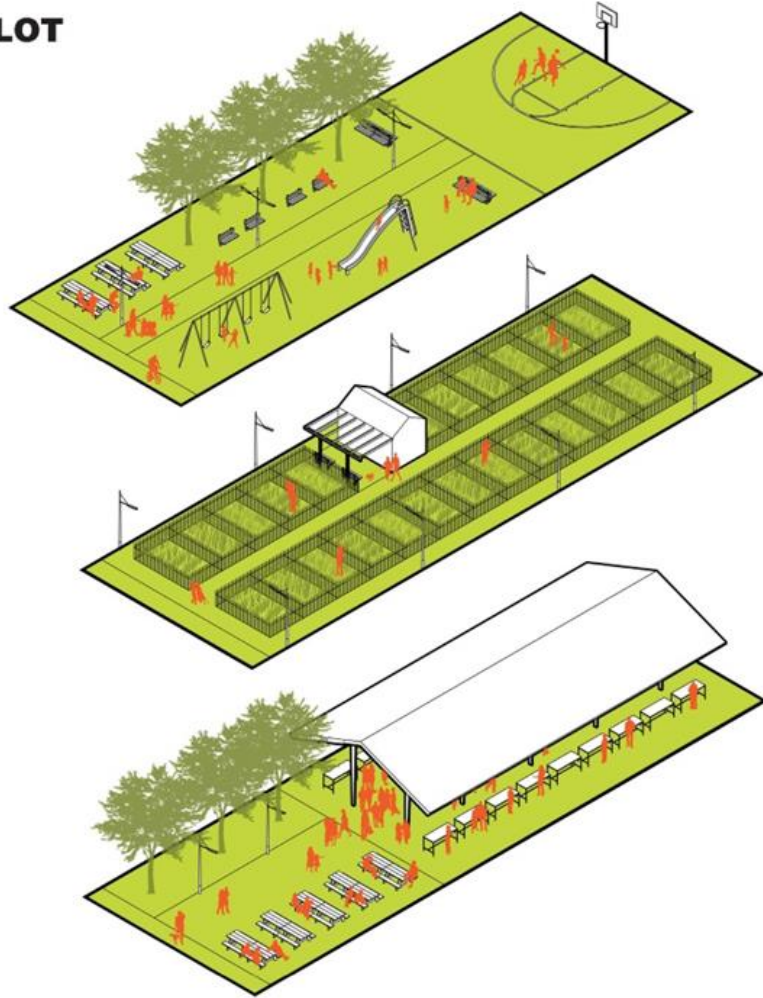
PRECEDENTS

Detroit Future City, Detroit, MI
Future Ground, New Orleans, LA

POTENTIAL LOCAL PARTNERS

City of Memphis Division of Engineering
City of Memphis Stormwater Master Plan
Army Corps of Engineering
Cypress Creek Watershed Alliance

COMMUNITY LOT



Designed for recreation, event plazas, markets, or urban agriculture

PRECEDENTS

Detroit Future City, Detroit, MI
LandCare Program, Philadelphia, PA

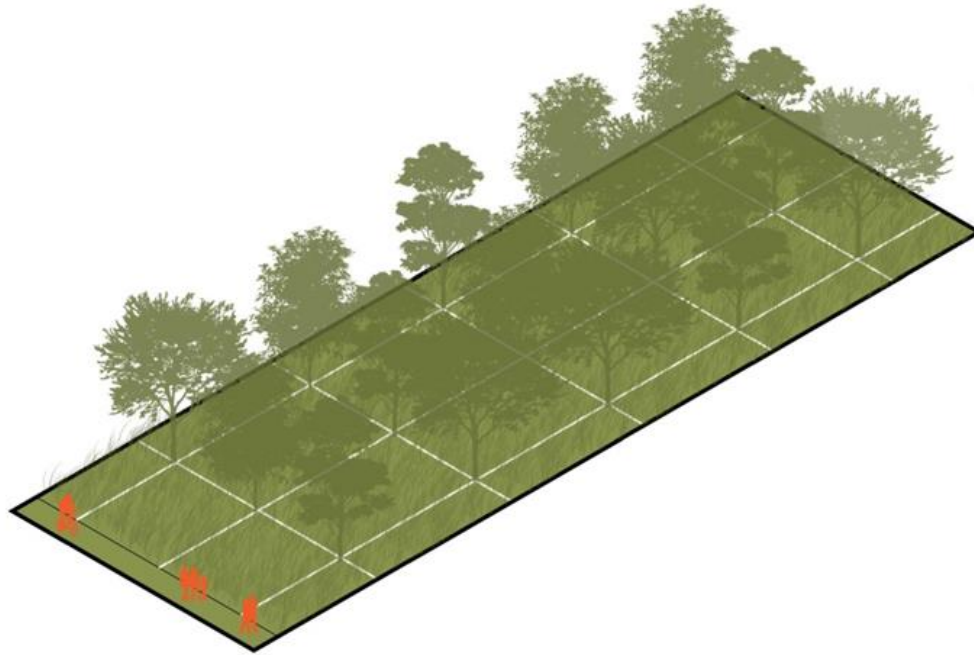
POTENTIAL LOCAL PARTNERS

Michell High School - Mitchell Community Center
City of Memphis Parks & Neighborhoods Department
UT Agriculture Extension - 4H Clubs
Root Memphis - Boys & Girls Clubs

GREENPRINT FOR RESILIENCE

Shelby County, Tennessee

NATURE LOT



Designed as urban forest or urban meadow

PRECEDENTS

Detroit Future City, Detroit, MI
LandCare Program, Philadelphia, PA
Nashville Tree Foundation, Nashville, TN
Hantz Woodlands, Detroit, MI

POTENTIAL LOCAL PARTNERS

TN Department of Environment and Conservation



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