



2021 대한민국 도시재생 산업박람회  
Korea City Renaissance Industry EXPO 2021  
10.27 - 10.30 창원 마산해양신도시

# Using Vacant Land and Property to Promote Urban Revitalization and Disaster Resilience: Case Studies from the United States

Wilson Center – Korea Land and Housing Institute (LHI)  
Joint Research Initiative



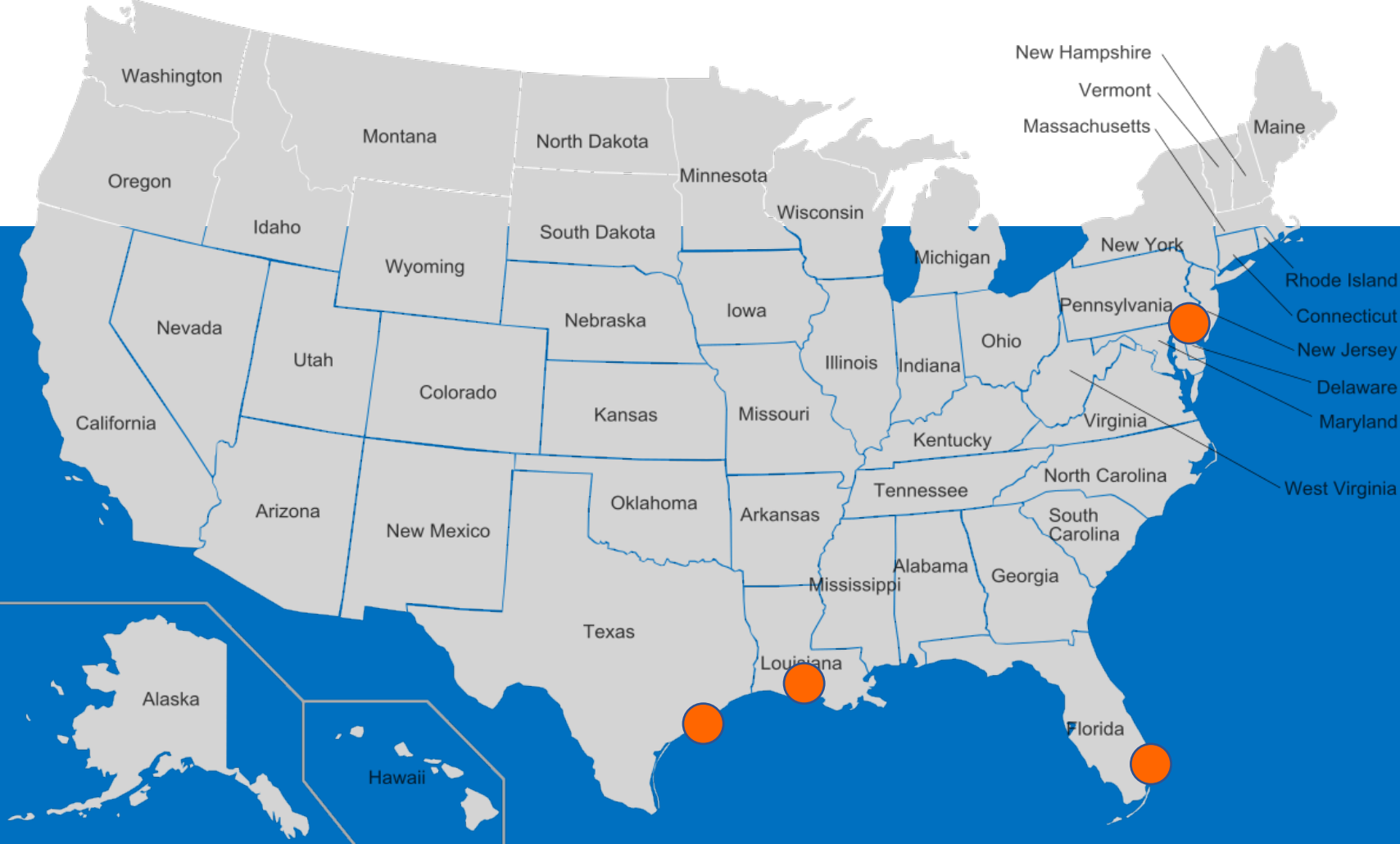


# U.S. Research Partners

- **Wilson Center**
  - Washington D.C.
- **U.S. Department of Housing and Urban Development (HUD)**
  - Washington D.C.
- **Penn Institute for Urban Research**
  - University of Pennsylvania, Philadelphia

# Research Initiative Overview

## U.S. Case Studies





# Research Objective

Our report examines U.S. policy frameworks at the federal and local level to manage vacant property for disaster risk reduction and urban regeneration. Case studies explore successful programs, policies, and incentives and analyzes impact of revitalizing vacant lots to build resilience to disaster, focusing on **flooding and heatwaves, building collapse and fire, as well as COVID-19 pandemic.**

# Part 1: Urban disaster resilience strategies that address:

## Natural disasters

1. Strong Winds
2. Heavy Rain
3. Heatwave
4. Heavy snow
5. Earthquakes

## Social Disasters

1. Explosions
2. Collapse
3. Fire
4. COVID-19

### PART 2 Development of optimal solution to improve urban resilience

#### Matching system of optimal solution package for Urban resilience improvement

- ✓ Optimal solution matching technology focused on declining areas
- ✓ Inventory establishment and application for suitable resilience technology use
- ✓ Algorithm development of solution extraction based on data q-rating



#### Urban resilience improvement planning and design technique

- ✓ Physical improvement technique
- ✓ Space design using BIM

#### Resilience study by disaster types

#### Development of Resilience improvement planning and design technique

#### Resilience study for risk factors in disaster types

### 1.4 Research content

- This research cover five natural disasters and three social disaster.
- We develop a response technology and a plan for disaster resilience to declining areas.
- We will select about 10 urban regeneration sites which are outbreak natural and social disaster to demonstrate resilience.

#### Five natural disaster



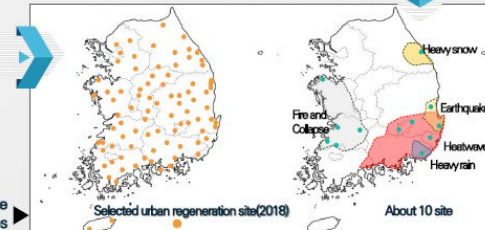
#### Three Social disaster



Explosion

Collapse

Fire



Selection of urban regeneration site to demonstrate developed technology and plan by disaster types

## Part 2: **Adaptive use of vacant urban land and buildings**

**Vacancy in declining urban neighborhoods in the U.S. has many causes:**

- Post-industrial population decline
- Historical disinvestment, poverty, economic decline
- Brownfields (environmental risk)
- Natural disasters
- Foreclosure or tax liens\* a particular concern during pandemic

**Adapting these for disaster resiliency require many strategies**



Empty Lot in North Miami, Florida (via Van Alen Institute)



Re-use of vacant lot for rain garden and park in New Orleans, Louisiana (via USGBC)

# CASE STUDIES

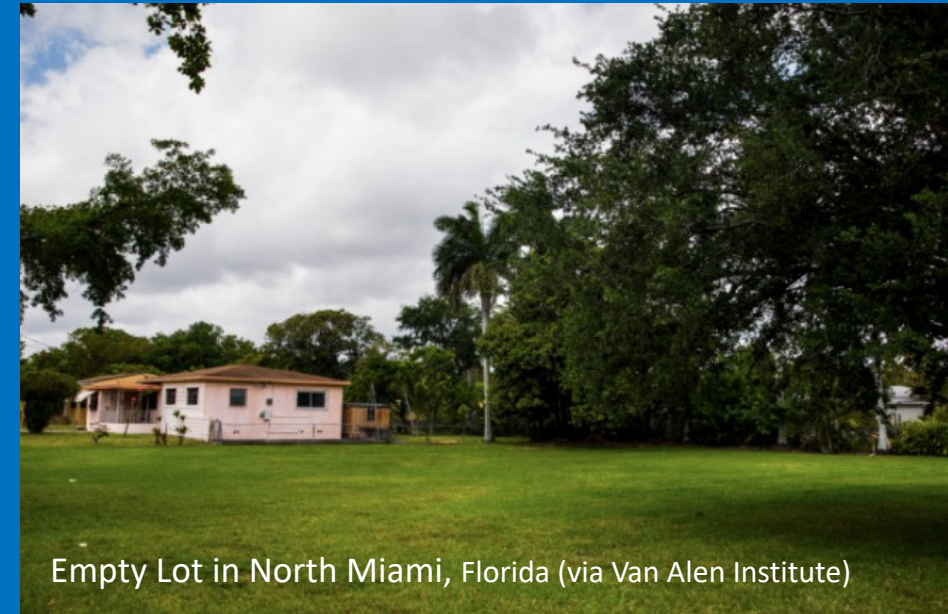
Four examples that combine adaption and regeneration in different ways

## 1. Greater Miami, Florida

- Regional collaboration between county and cities governments
- Targeted investment prioritization for vulnerable low-income homeowners
- Increasing natural disaster risks

## 2. New Orleans, Louisiana

- District-level planning coordination
- Post-disaster (hurricane) regeneration
- Low-income neighborhood



Empty Lot in North Miami, Florida (via Van Alen Institute)



Re-use of vacant lot for rain garden and park in New Orleans, Louisiana (via USGBC)

# CASE STUDIES

Four types of initiatives that combine adaption and regeneration

## 3. Houston, Texas

- Non-profit redevelopment leadership
- Integrated mixed-income development
- History of catastrophic risks

## 4. Philadelphia, PA

- Public-private corporation management
- Post-industrial campus regeneration
- Social and natural disaster risks

Bayou East Master Plan,  
Houston, Texas



2021 Naval Yards  
Redevelopment  
Plan, Philadelphia PA



# Special Section

## Data on the impact of COVID-19 Pandemic on vacancy rates in the U.S.

Office

Retail

Hospitality

Multifamily

Healthcare

Industrial

Farm/Land



Multifamily



Retail



Office



Industrial



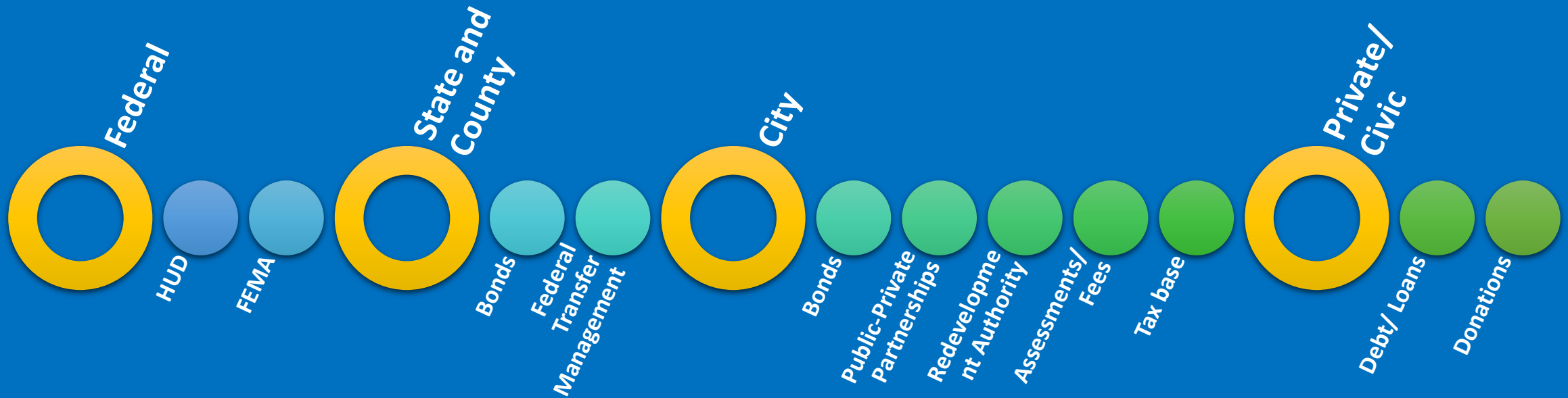
Land



Specialty

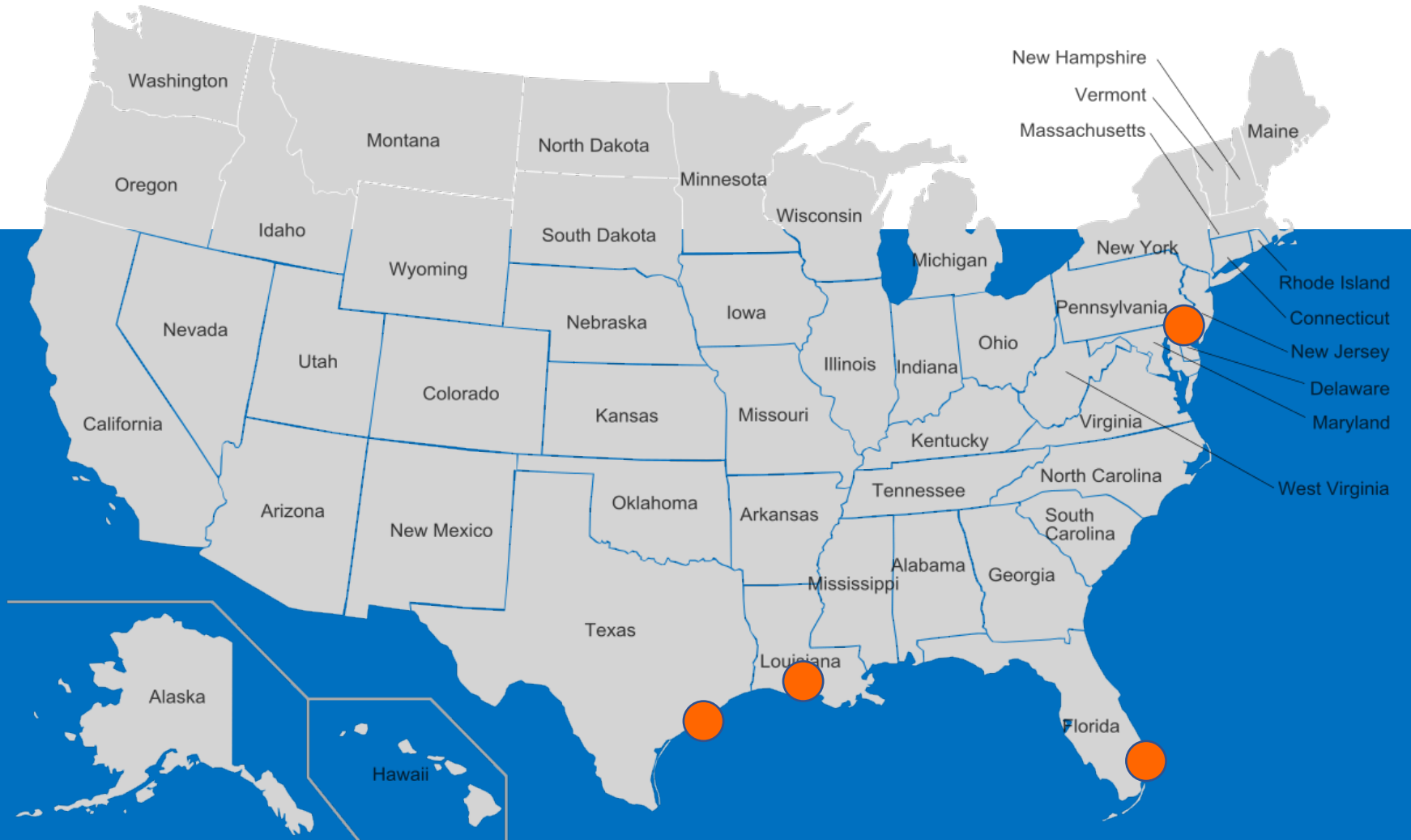
# U.S. CASE STUDIES

## Funding Layers – Blended Sources



# Case Studies Overview

- Houston, Texas
- New Orleans, Louisiana
- Greater Miami, Florida
- Philadelphia, Pennsylvania



# Houston, Texas

## *Embracing the Bayous*

### Environmental Risk

- Severe Flooding and Hurricanes
- Embrace the role of the bayous as Houston's front yard

### Equitable City

- Equitably resourced neighborhood plans
- Investment in arts and culture
- Healthy, safe and climate ready neighborhoods
- Smart growth to handle increasing population



# Buffalo Bayou Partnership

**Authentic** Create unique open spaces that reflect the cultural and industrial legacy of Buffalo Bayou East.

**Inclusive** Catalyze investment and inclusive neighborhood growth that does not leave current residents behind.

**Connected** Rethink how parks and neighborhoods interact and connect the water with communities.

**Resilient** Promote design that mitigate flooding, stabilize the Bayou's banks, and increase economic and social mobility



# New Orleans, Louisiana

## Hurricane Katrina 2005

- Levy failure = 80% of city flooded
- 70% of housing stock damaged
- Population decreased by 50%, today 380,000 (80% of pre-Katrina)
- Nearly **50,000 vacant homes** by 2015

## Hurricane Isaac 2012

- Failure of pumping and drainage infrastructure
- Severe rain-based flooding in the same low-lying, mostly low-income neighborhoods



# Gentilly Resilience District



**HUD National Disaster Resilience Competition** provided funding to create a **master plan** that leverages the history, culture of African-American community to generate investment, neighborhood support and spillover effects.

## Land Stewardship Programs for Vacant Properties

- **NORA Green** - vacant lots into stormwater management lots
- **Lot Next Door** - Property owners can purchase adjacent empty property at Fair Market Value
- **Growing Green**- General public may lease property for uses such as community gardens and urban farming



# Greater Miami, Florida

- **Sea Level Change:** By 2040: increase by at least 10-17 inches (25-43cm) and up to 24 inches by 2060.
- **Sunny Day Floods:** Severe Seasonal tide floods due to low elevation
- **Hurricanes:** Increased frequency, increased severity
- **Heatwaves:** Already sub-tropical, Miami area is breaking records every year.
- **High Water Table:** Miami is in an area called the Everglades, a swamp ecosystem with sandy soil and limestone





# Southeast Florida Regional Compact

## A Coordinated Regional Approach

The Compact develops regional research such as GHG emissions, is a conduit for federal funding, and advocates for resilience strategies and policies across Miami-Dade, Monroe, and Palm Beach Counties and over 100 local municipalities including Miami, North Miami and Miami Beach.

To coordinate severe climate change threats such as sea level rise and increase flooding, Miami-Dade County, The city of Miami and Miami Beach formed a partnership and were selected as one of **Rockefeller Foundation's 100 Resilient Cities**, resulting in RESILIENT305 Plan in 2019.

## Arch Creek Basin, North Miami

- Area is low-income with high unemployment and expensive housing
- Miami-Dade County used Voluntary Buy out Program funded by the FEMA Repetitive Loss Site Program
- Design Competition funded by the North Miami and the Van Alen Institute for empty lot
- Good Neighbor Stormwater Park opened in 2019



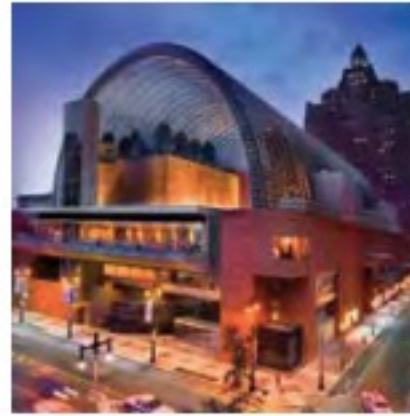
Stormwater Park, North Miami, FL. December 15, 2019. Photo: Saul Martinez

# Philadelphia, Pennsylvania

## Philadelphia Industrial Development Corporation (PIDC) – unique partnership

PIDC is a non-profit organization founded by the City of Philadelphia and the Chamber of Commerce for Greater Philadelphia in 1958 and run by an appointed 30-member Board. PIDC

- Manages real estate and land
- Provided capital and technical assistance to low-income communities
- Issues Bonds for development
- Attract private funding to the City



# The Philadelphia Naval Yard

PIDC acquired the 1,200-acre waterfront site from the federal government in 2000 and leads strategic planning, development, and operations. Responsibilities include repurposing and rehabilitating military and shipbuilding facilities, finding tenants, planning development for vacant lots and developing a comprehensive sustainability plan, including green flood management.



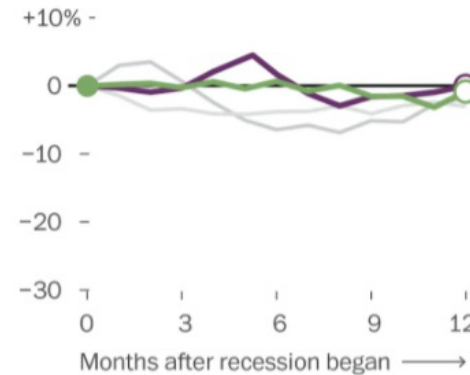
# COVID-19 Response - Equity

There are Disproportionate economic, health, and social effects of the COVID-19 pandemic and economic shutdown on lower-income communities and communities of color in the U.S.

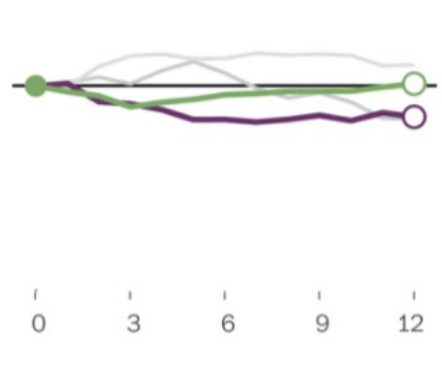
## The coronavirus crisis is different

Job growth (or loss) since each recession began, based on weekly earnings

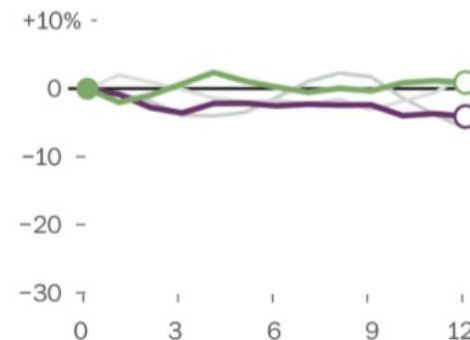
### 1990 recession



### 2001 recession



### 2008 recession



### Coronavirus crisis



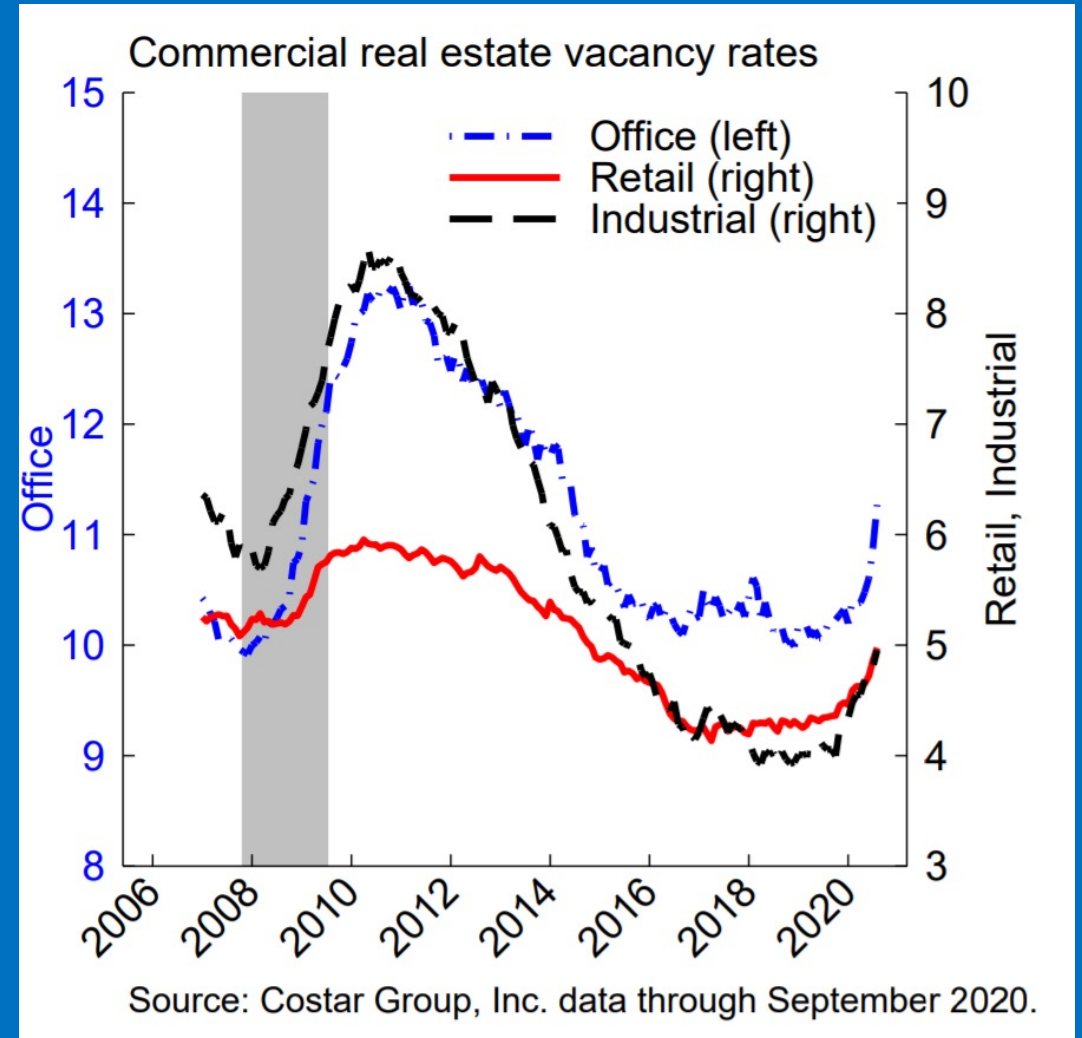
Notes: Based on a three-month average to show the trend in volatile data.

Source: Labor Department via IPUMS, with methodology assistance from Ernie Tedeschi of Evercore ISI

THE WASHINGTON POST

# Impacts of COVID-19 on commercial vacancies

- The COVID-19 pandemic has not had as dramatic effects on commercial vacancy as the global financial crisis.
- The effects are more temporary; recovery is and will be faster.
- COVID accelerated changes in the use of commercial space that were started by longer-term trends before the pandemic.
- Strategic adaptive reuse of long-term commercial vacancy can boost social and natural resilience.



Source: <https://www.federalreserve.gov/econres/feds/files/2020089pap.pdf>

# Thank You.



Land and Housing Institute  
Korea Land & Housing Corporation

