

A satellite image of a large superstorm system over the Atlantic Ocean, with a prominent eye and spiral cloud bands. The storm is centered over the ocean, with the eastern coast of North America visible to the left.

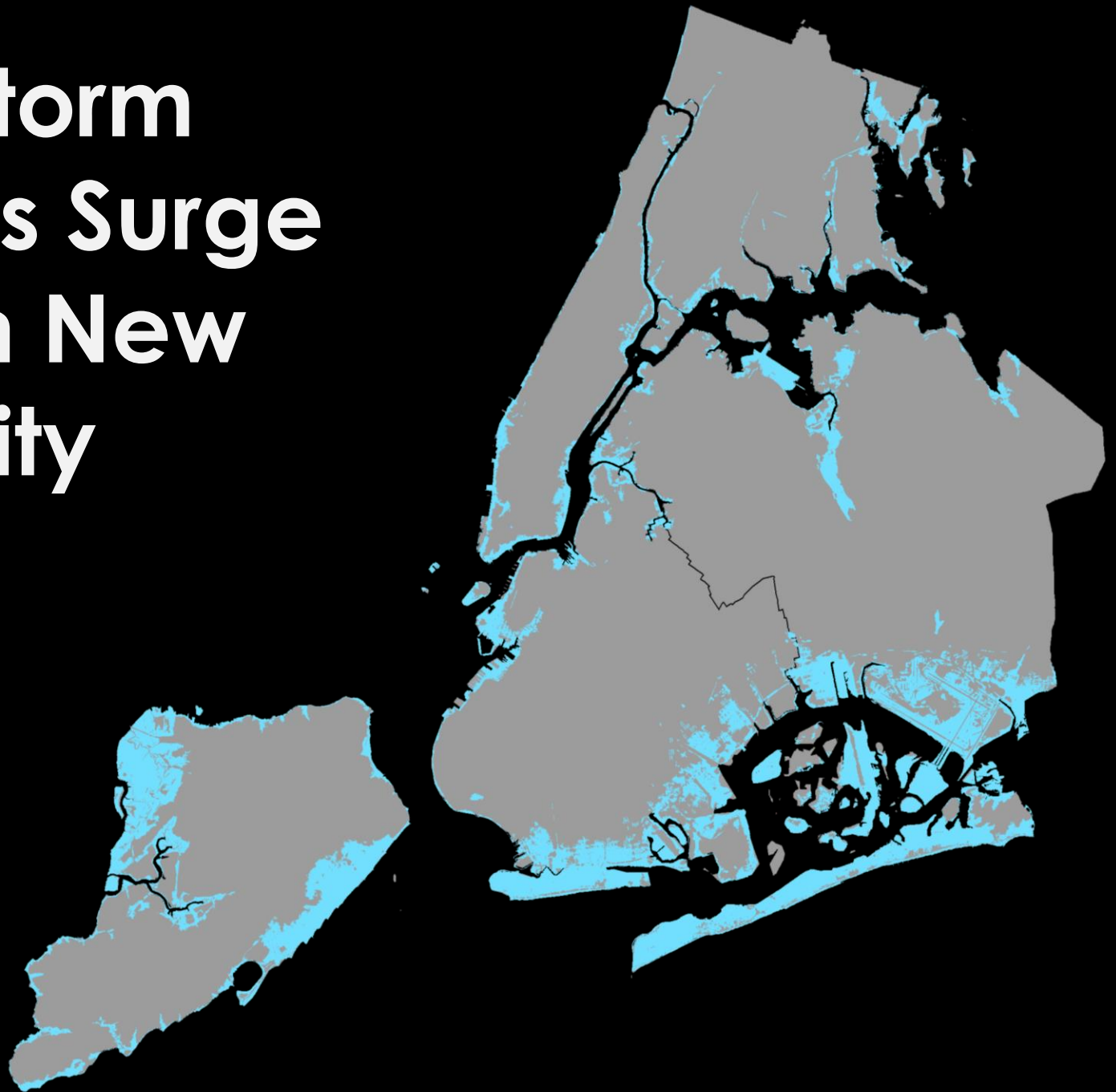
# Estimating Superstorm Sandy's Impact on Renters

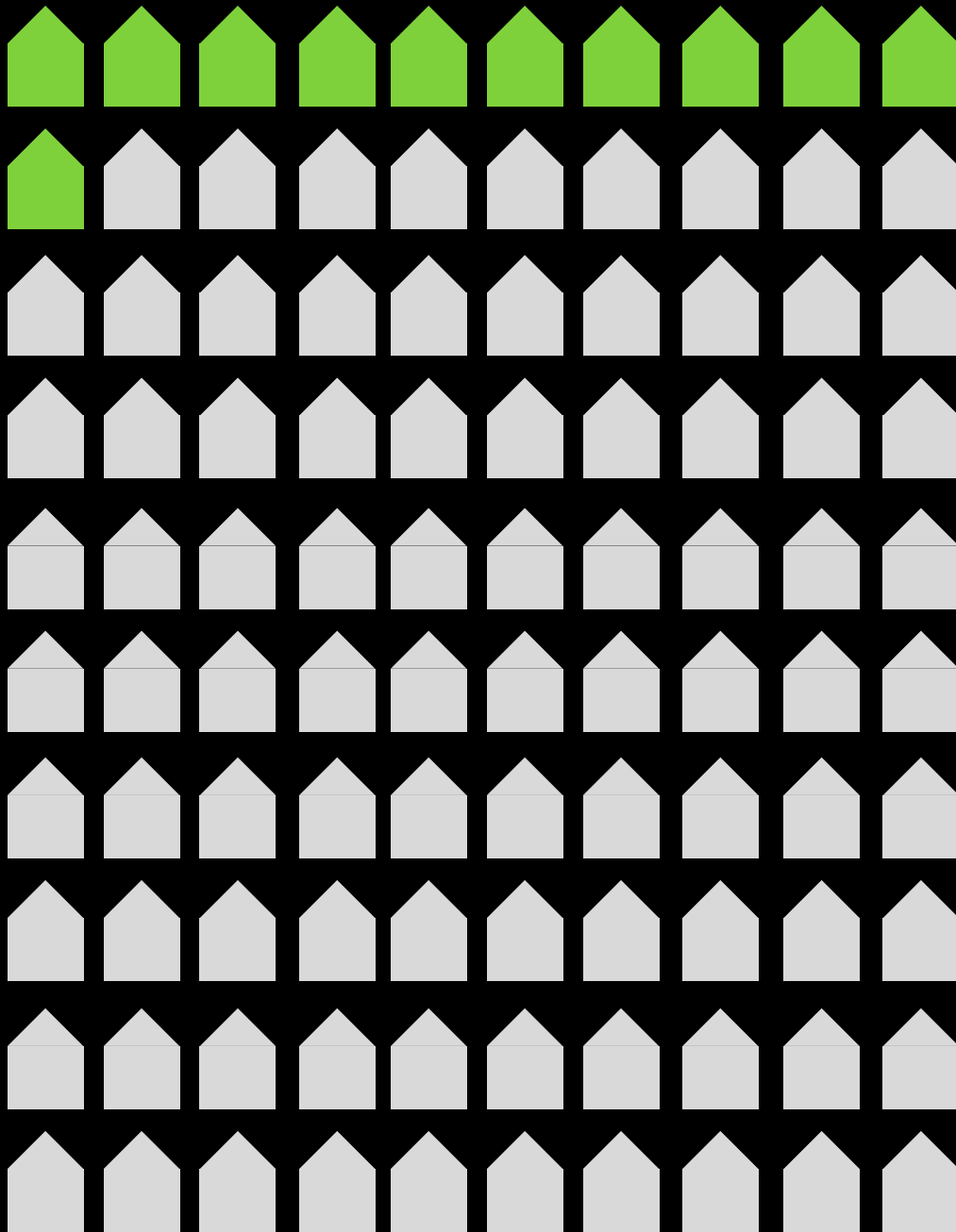
**Max Weselcouch**

**May 2014**

**@thatgirlmax | [furmancenter.org](http://furmancenter.org) | @FurmanCenterNYU**

# Superstorm Sandy's Surge Area in New York City

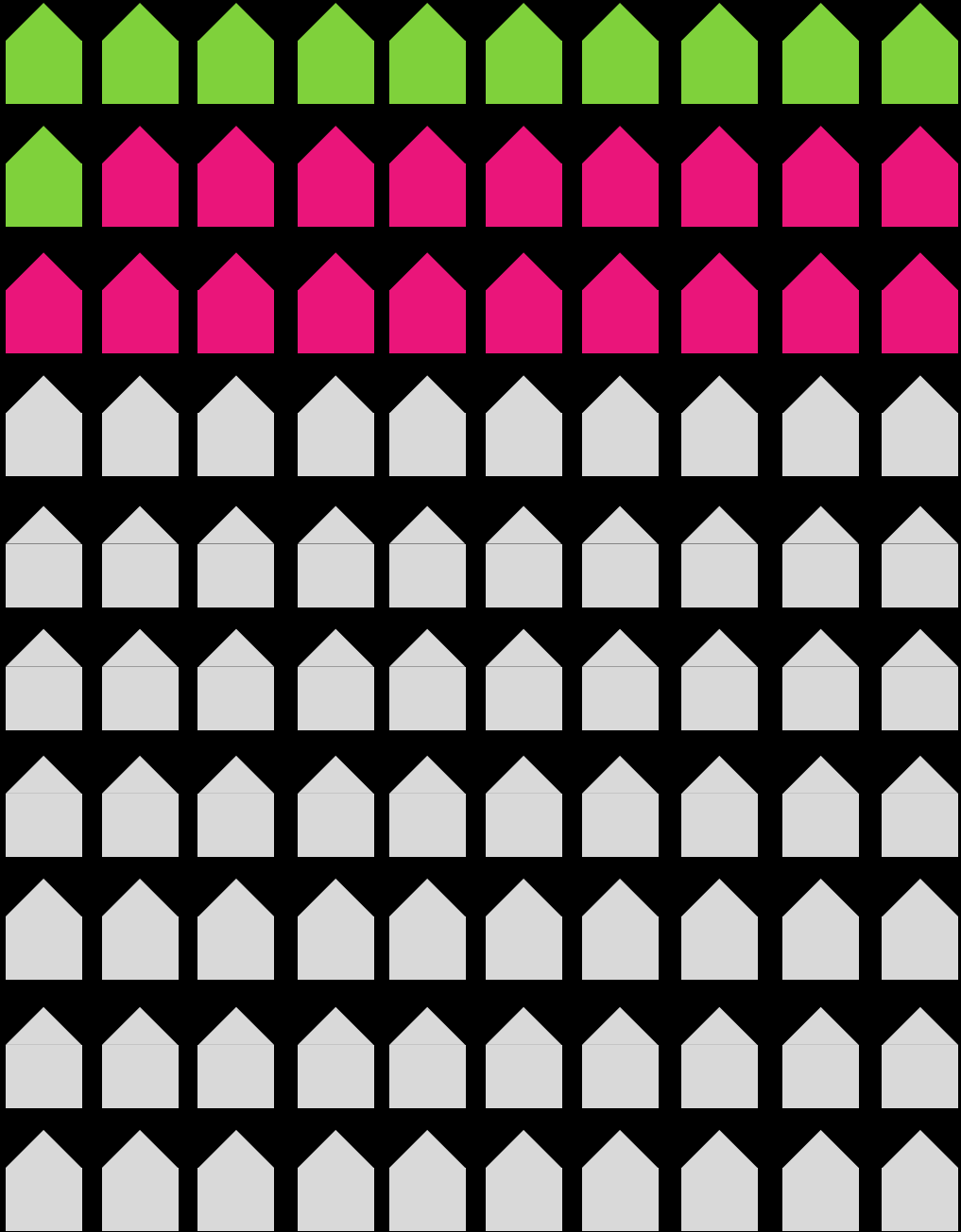




# Housing Units in Sandy's Surge Area in New York City

Single family – 11%

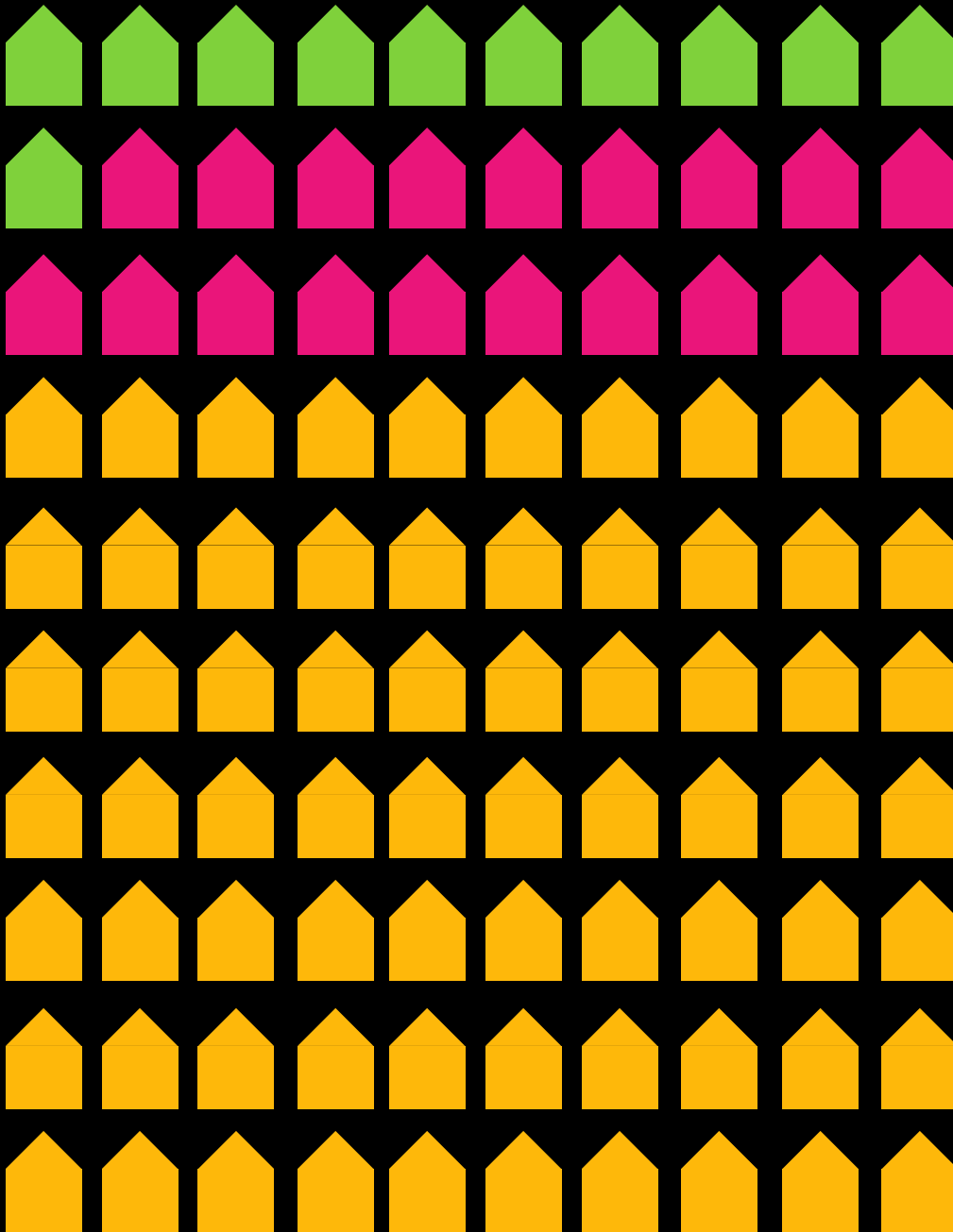
# Housing Units in Sandy's Surge Area in New York City



Single family – 11%

2 – 4 family – 19%

# Housing Units in Sandy's Surge Area in New York City



Single family – 11%

2 – 4 family – 19%

Multifamily – 70%

**up to \$31,900 from FEMA for  
each household**

# up to \$31,900 from FEMA for each household

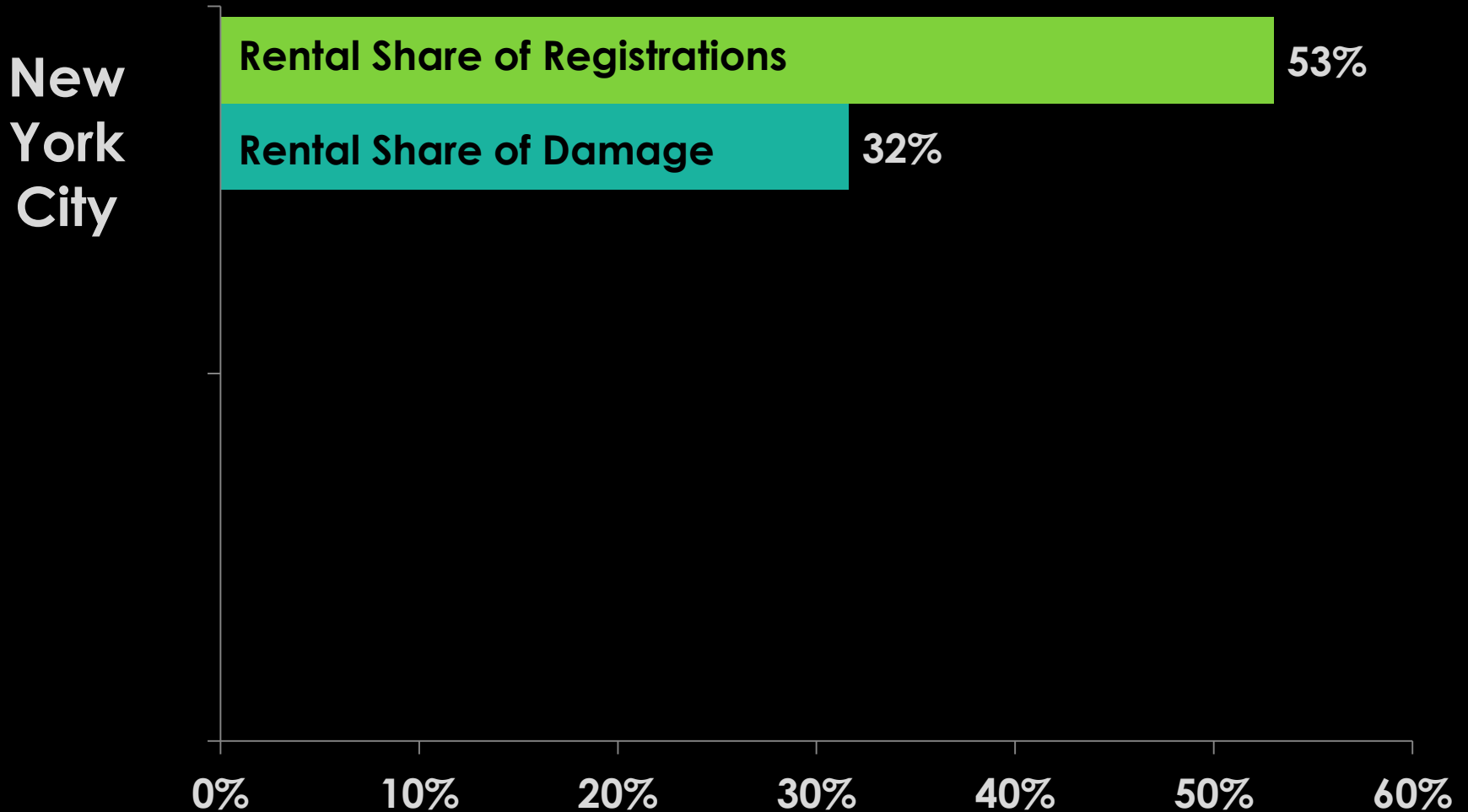


# Data

- FEMA Individual Assistance Registrations (HUD)
  - Block group level
  - Total number of individual assistance registrations
    - Renters
    - Owners
  - Total number of damage assessments
    - Renters
    - Owners

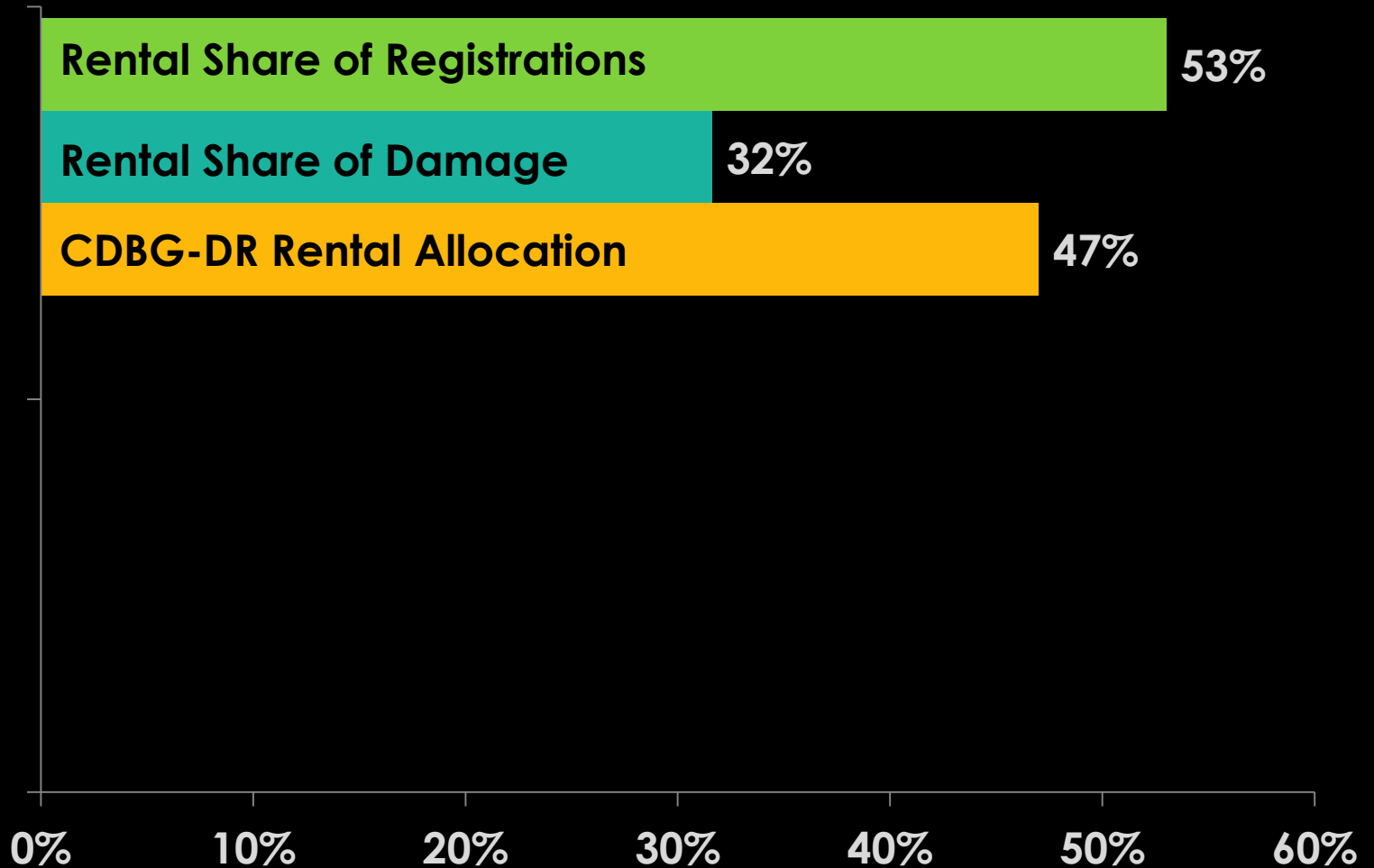


# FEMA Individual Assistance Registrations

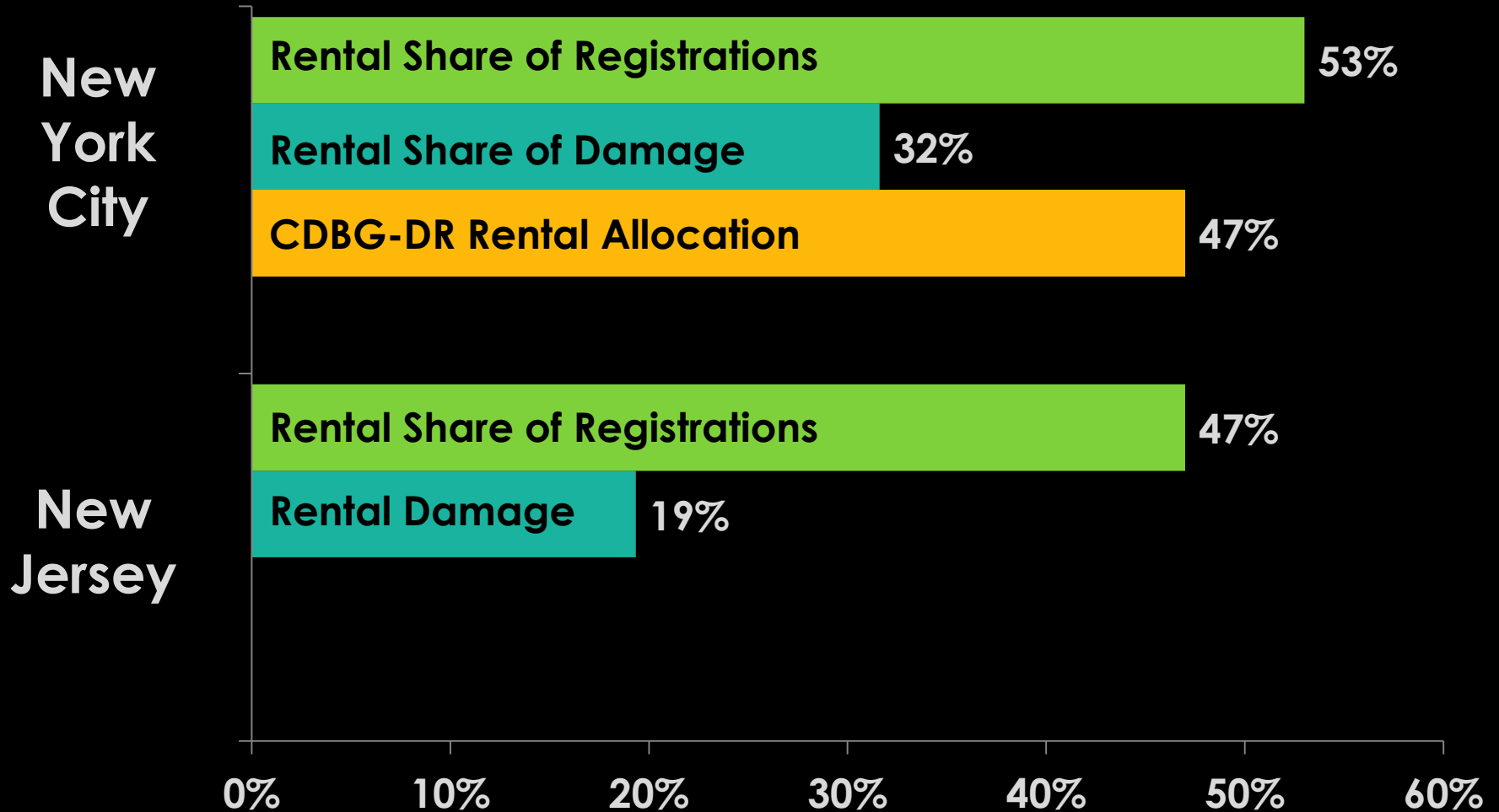


# FEMA Individual Assistance Registrations

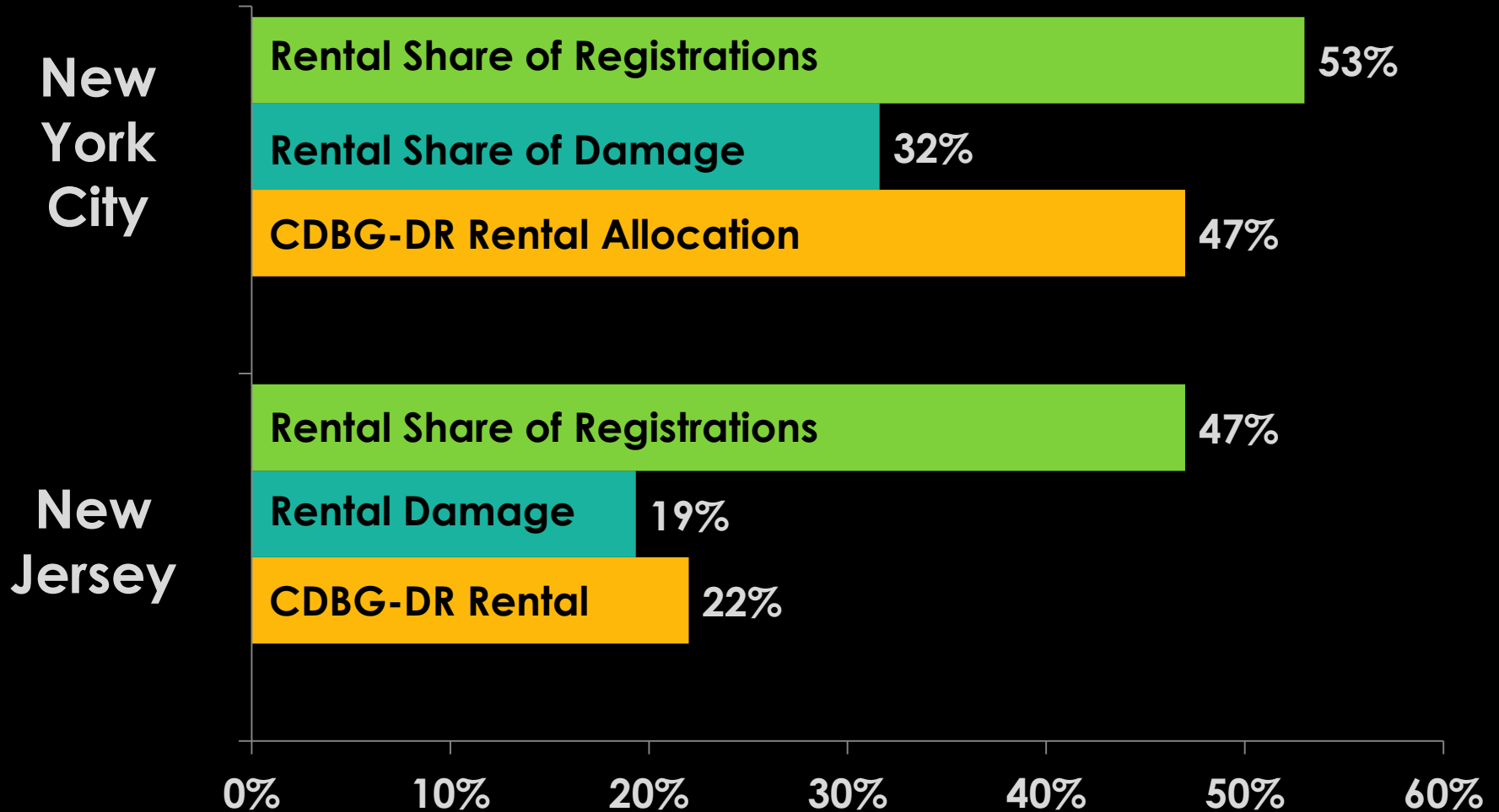
New  
York  
City



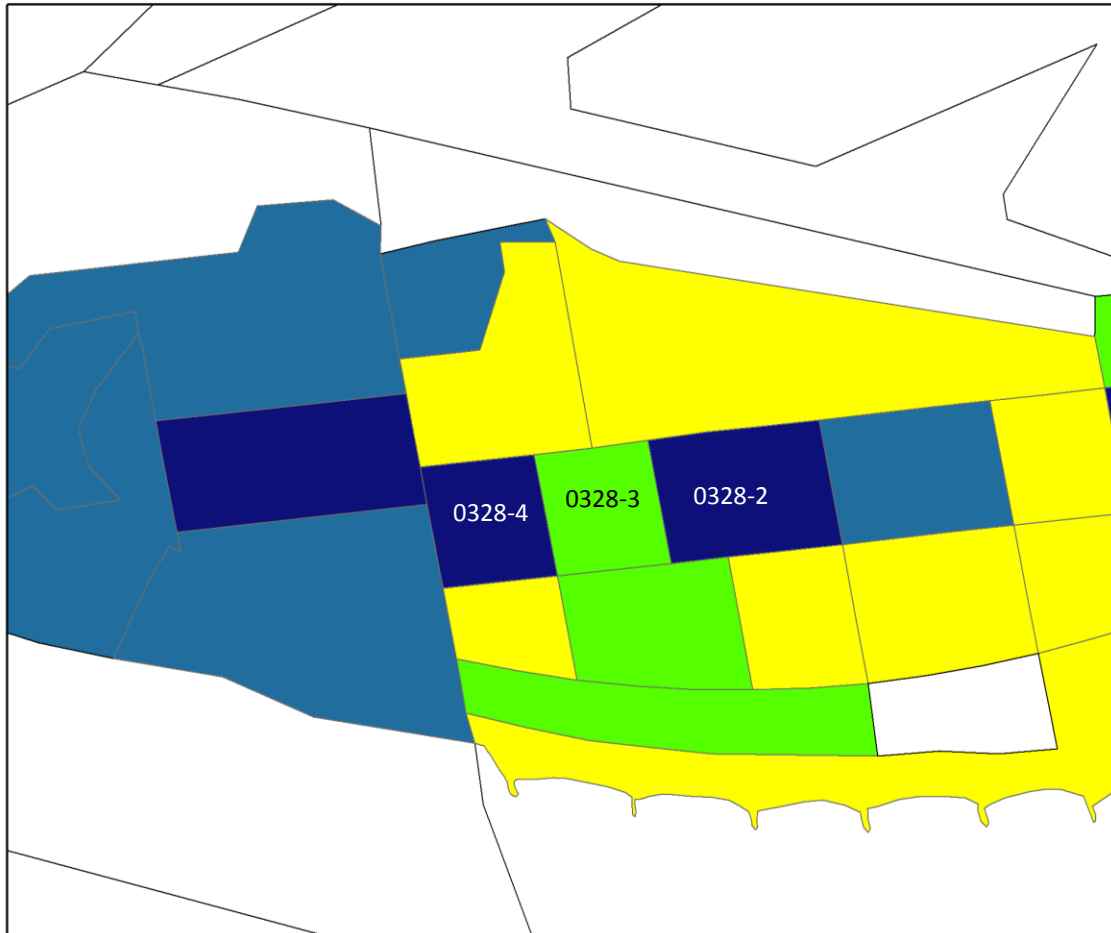
# FEMA Individual Assistance Registrations



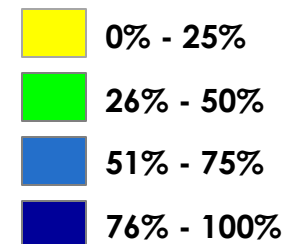
# FEMA Individual Assistance Registrations



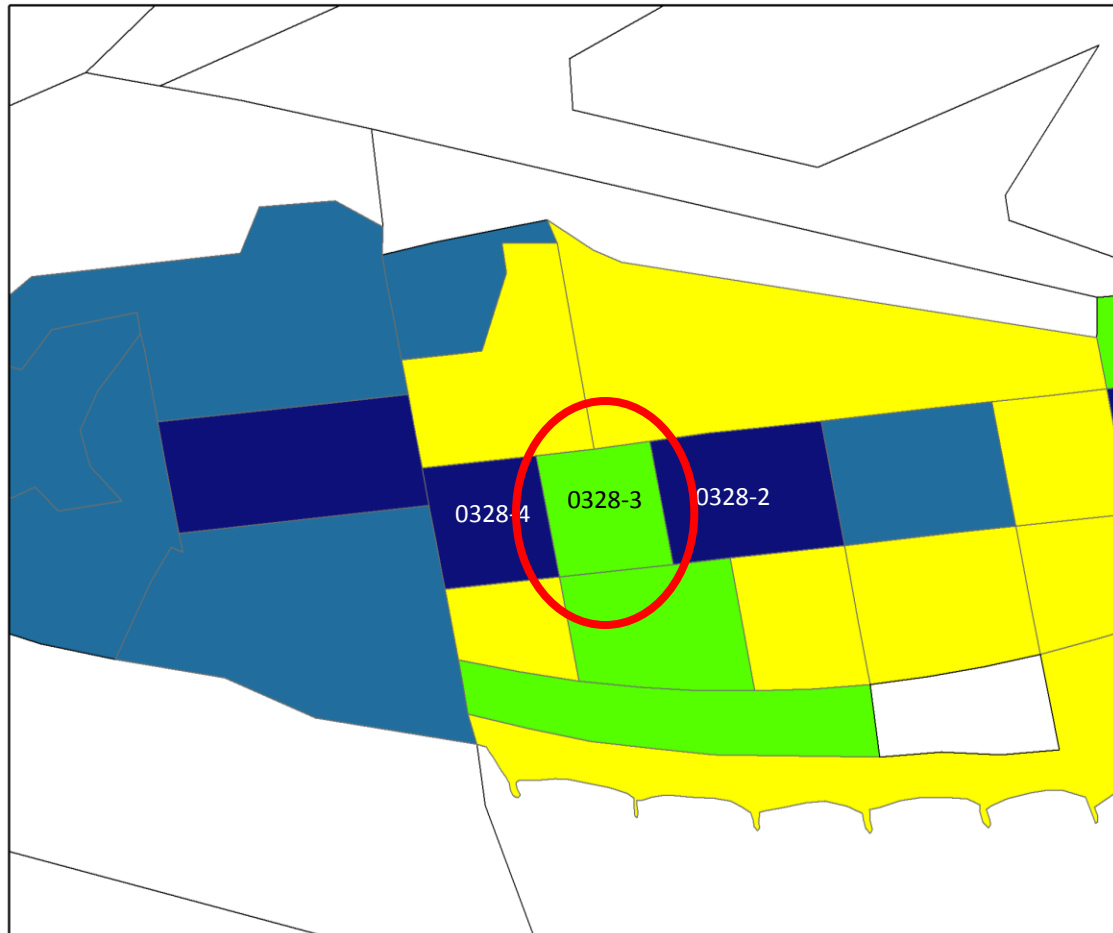
# NY – Coney Island, Brooklyn



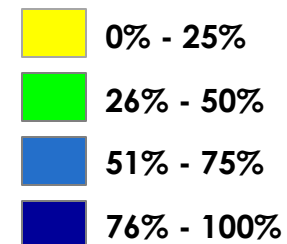
## Damage Rate



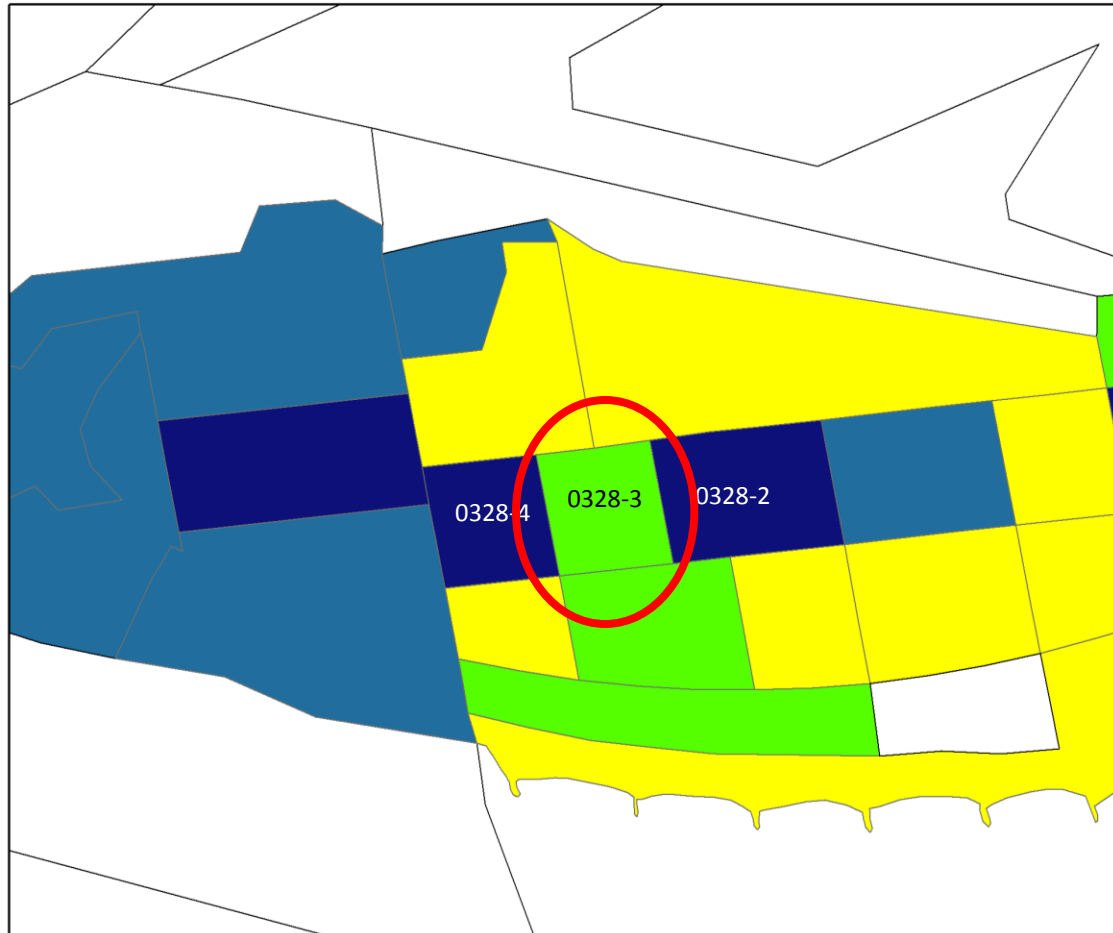
# NY – Coney Island, Brooklyn



## Damage Rate

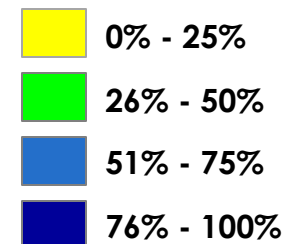


# NY – Coney Island, Brooklyn

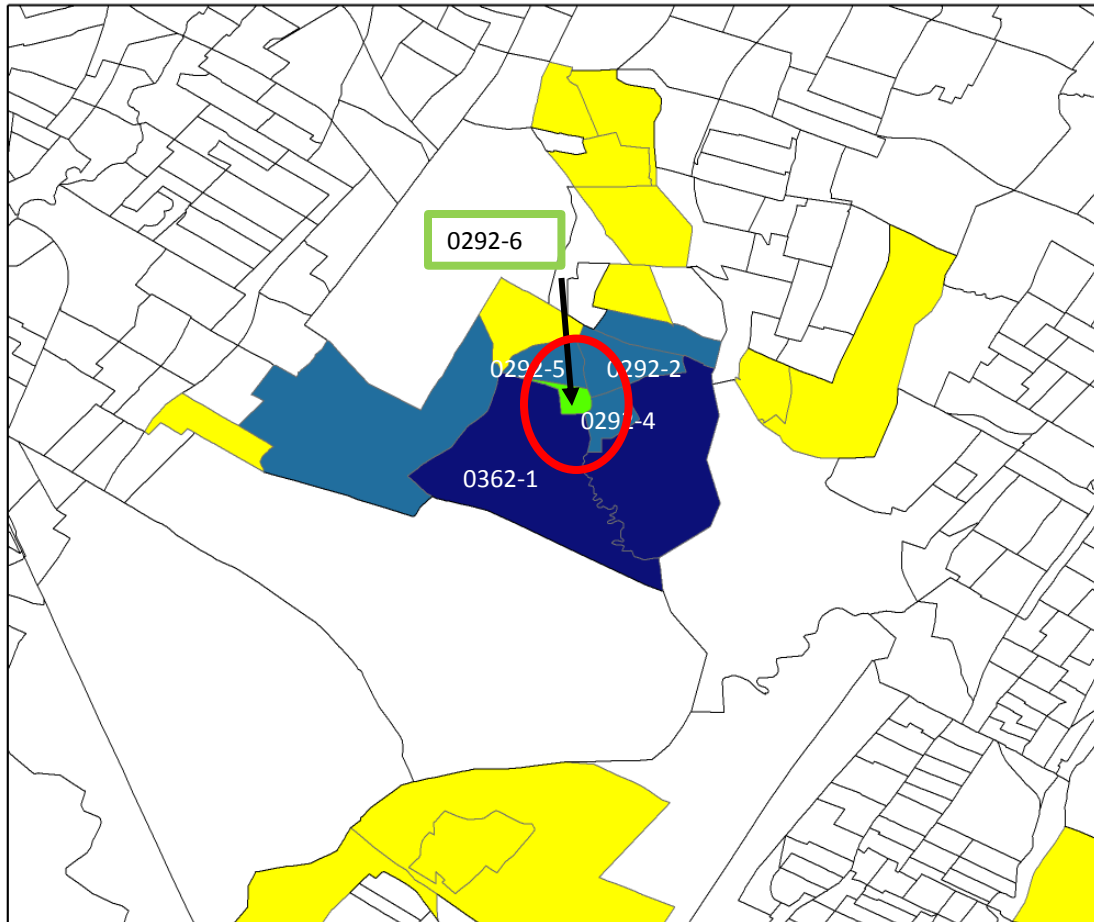


BG	Homeownership Rate
0328-3	20.0%
0328-2	93.9%
0328-4	59.2%

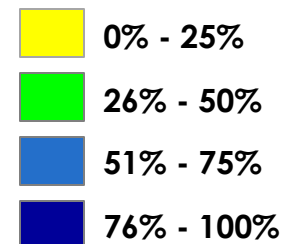
## Damage Rate



# NJ – Bergen County

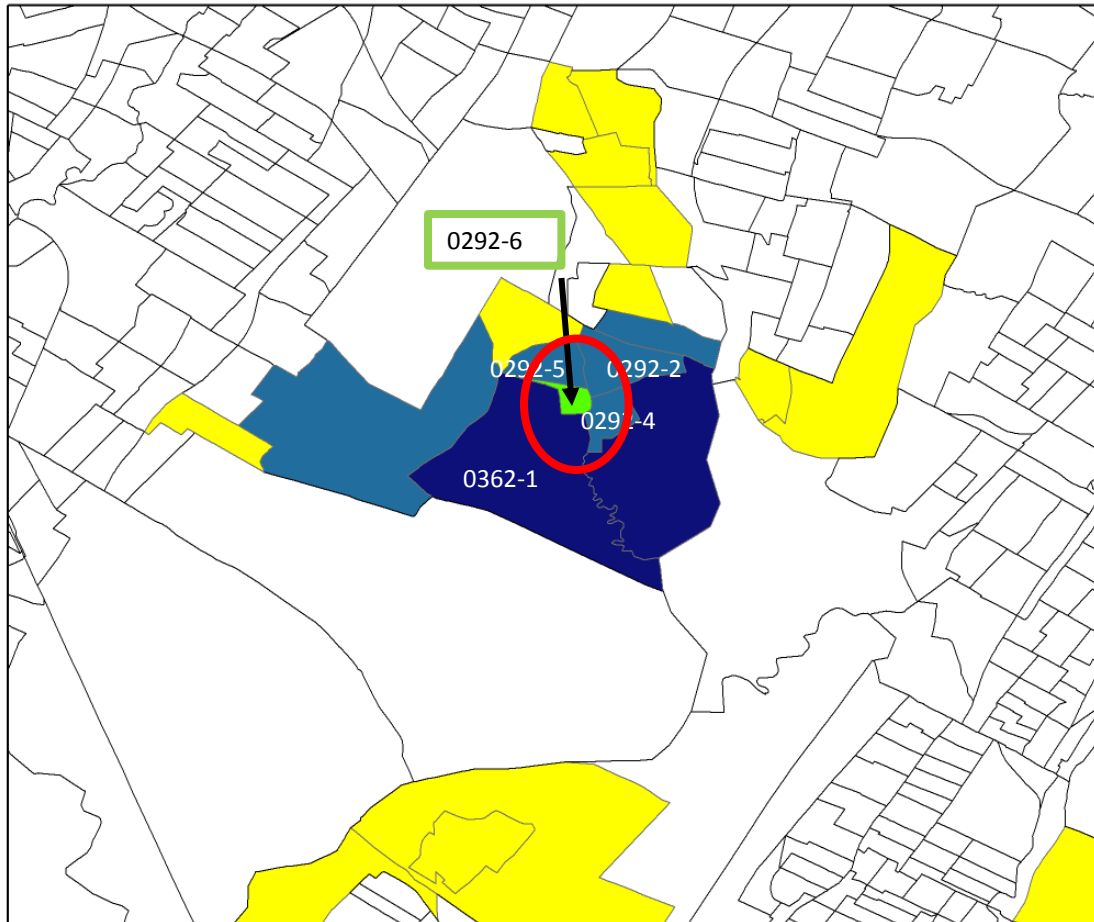


## Damage Rate



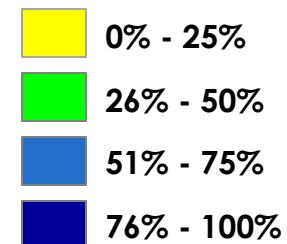


# NJ – Bergen County

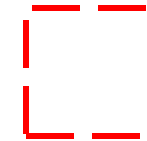
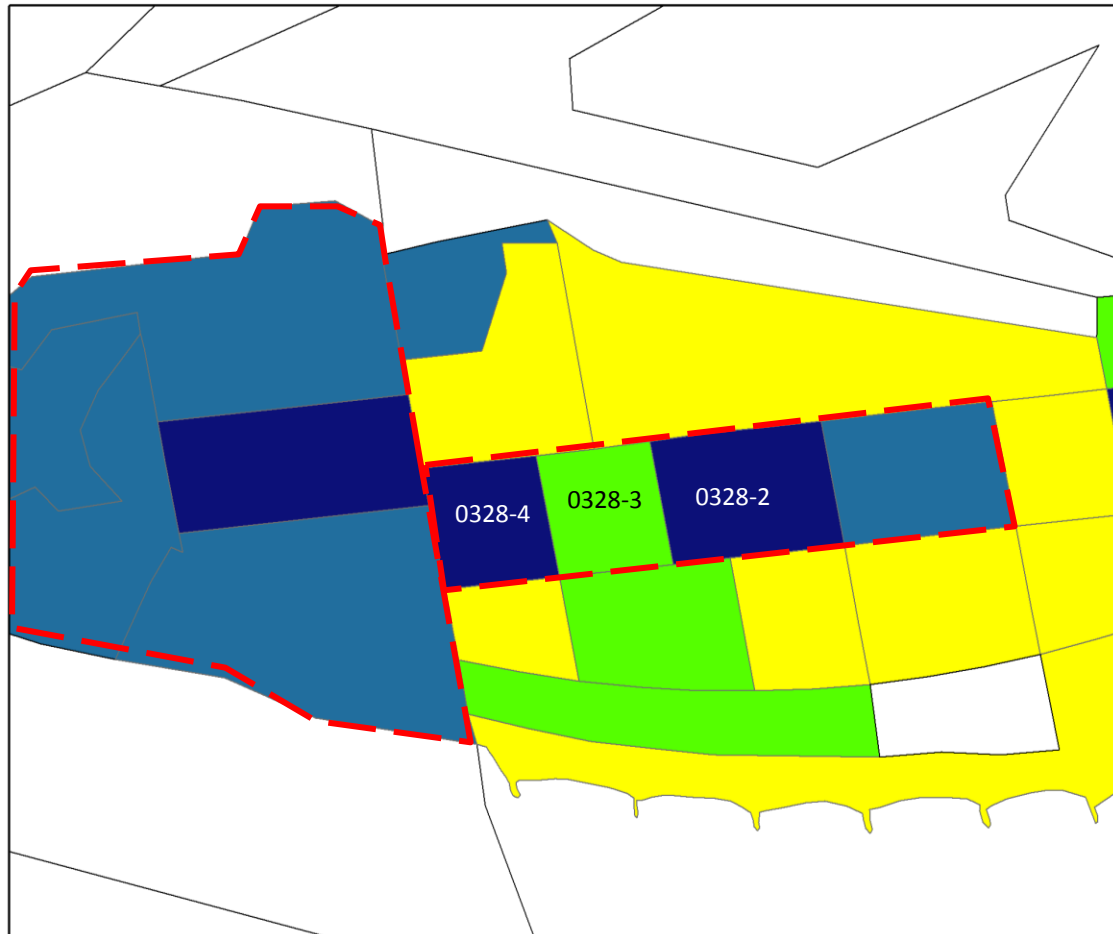


BG	Homeownership Rate
0292-6	23.0%
0292-2	52.5%
0292-4	78.9%
0292-5	53.2%
0362-1	85.2%

## Damage Rate



# Compare Census Block Groups within Census Tracts



Census Tracts

# Data

- FEMA Individual Assistance Registrations (HUD)
  - Block group level
  - Total number of individual assistance registrations
    - Renters
    - Owners
  - Total number of damage assessments
    - Renters
    - Owners

# Data

- FEMA Individual Assistance Registrations (HUD)
- ACS 2007 – 2011
  - Homeownership Rate
  - Multifamily Share (5+ Units)
  - Tenure by Units in Building

## Dependent Variable: Share of Households with FEMA Assessed Damage

---

	(1)	(2)
Homeownership Rate	0.2364*** (0.0459)	
Multifamily Share		-0.3319*** (0.0372)
Census Tract Fixed Effects	X	X
Observations	1,617	1,617

---

Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Dependent Variable: Share of Households with FEMA Assessed Damage

---

	(1)	(2)	(3)
Homeownership Rate	0.2364*** (0.0459)		0.0787* (0.0429)
Multifamily Share		-0.3319*** (0.0372)	-0.2967*** (0.0382)
Census Tract Fixed Effects	X	X	X
Observations	1,617	1,617	1,617

---

Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Dependent Variable: Share of Households with FEMA Assessed Damage

	(1)	(2)	(3)	(4)
Homeownership Rate	0.2364*** (0.0459)		0.0787* (0.0429)	
Multifamily Share		-0.3319*** (0.0372)	-0.2967*** (0.0382)	

### Detailed Tenure (Omitted Category: Single Family Homeowners)

Multifamily Owner Share

-0.3507\*\*\*  
(0.0570)

Single Family Renter Share

-0.1025\*\*  
(0.0518)

Multifamily Renter Share

-0.3704\*\*\*  
(0.0476)

Census Tract Fixed Effects

X

X

X

X

Observations

1,617

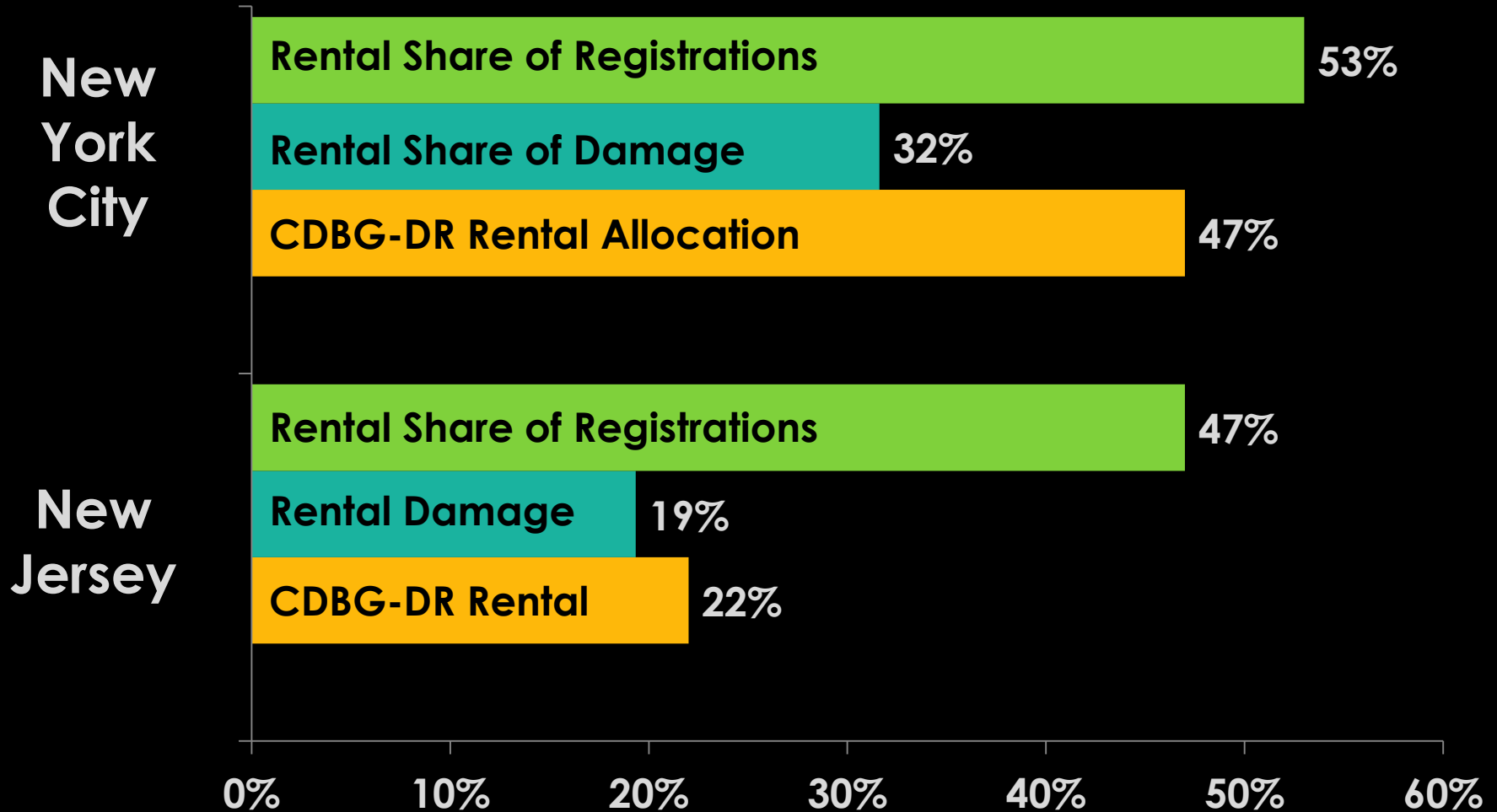
1,617

1,617

1,617

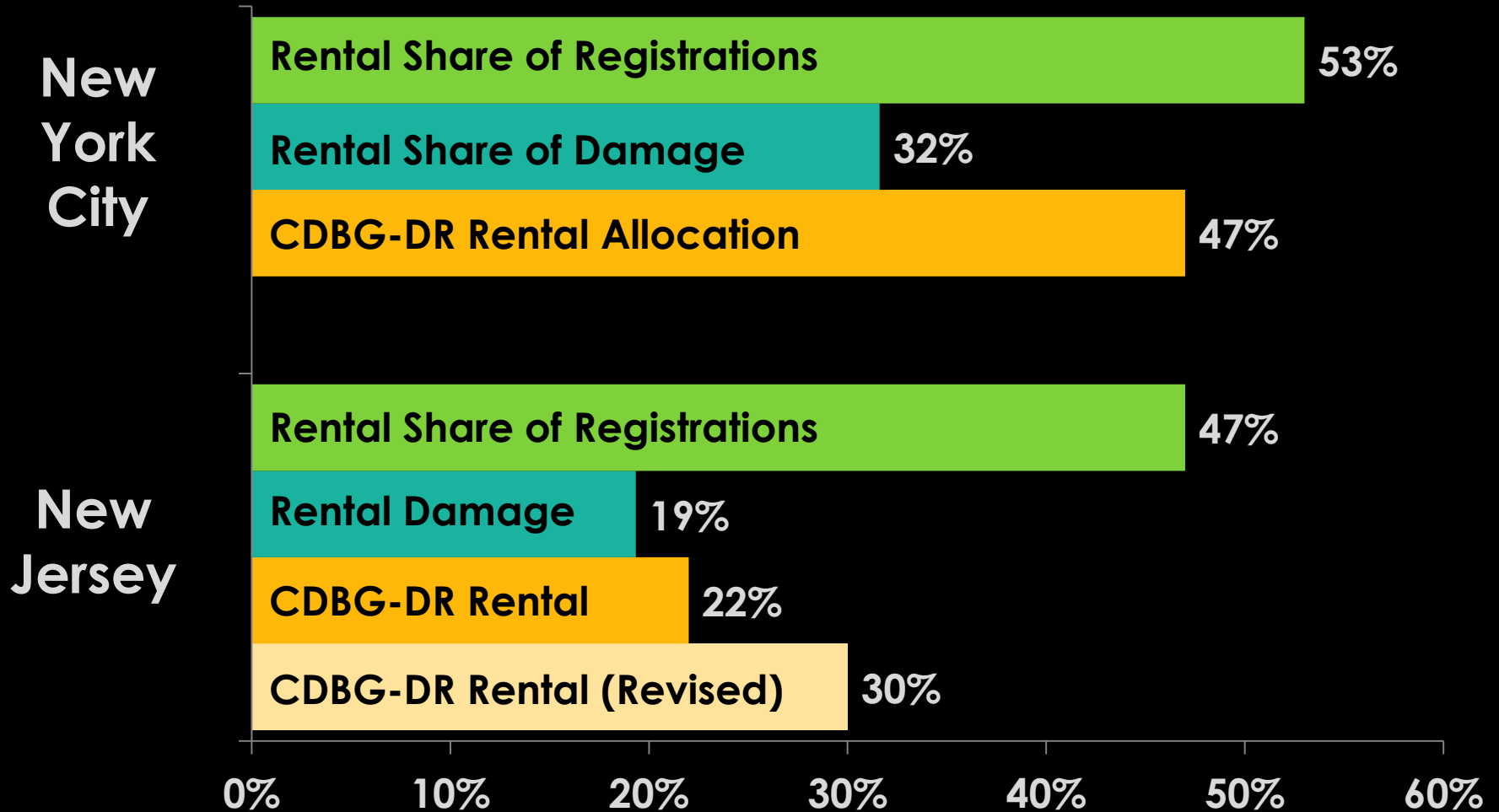
Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# FEMA Individual Assistance Registrations





# FEMA Individual Assistance Registrations



A satellite image of Earth showing a large, swirling storm system over the Atlantic Ocean. The storm is characterized by a dense, white cloud core with a distinct eye-like structure. The surrounding clouds are lighter and more diffuse. The ocean below is a deep blue, and the landmasses of North and South America are visible in the lower-left quadrant, appearing in shades of green and brown. The overall image has a dark, slightly desaturated appearance.

# Max Weselcouch

[max.weselcouch@nyu.edu](mailto:max.weselcouch@nyu.edu) | [@thatgirlmax](https://www.instagram.com/thatgirlmax)  
[FurmanCenter.org](http://FurmanCenter.org) | [@FurmanCenterNYU](https://www.instagram.com/FurmanCenterNYU)