Smart Growth A M E R I C A

Climate Adapted Housing & Zoning: Norfolk Case Study Katharine Burgess & Dr. Michael Rodriguez May 2025

SGA's MISSION

Smart Growth America envisions a country where no matter where you live, or who you are, you can enjoy living in a place that is healthy, prosperous, and resilient.

We empower communities through technical assistance, advocacy, and thought leadership to realize our vision of livable places, healthy people, and shared prosperity.



Each year, the U.S. incurs \$150 billion in direct losses due to weather related extreme events.







Damages to residential, commercial, and municipal buildings

Public infrastructure, such as roads, bridges, levees, and powerlines

And other assets, such as crops and livestock, disrupt local economies and household finances

THESE COSTS ARE ONLY EXPECTED TO GROW OVER TIME.



The challenge



- Housing is desperately needed and much-needed growth is continuing in high-risk areas
- Discriminatory planning policy compounds climate impacts
- Increased private sector awareness of climate risk perpetuates risk to lower income communities
- Indications of future migration & additional growth pressures

More than half (55.5%) of new listings have a major risk of **extreme heat** One third of new listings are at risk of extreme **wind exposure**

One sixth of new listings face major **wildfire risk**

One in eight new listings face major risk of **flooding**

Zoning reform to reduce emissions







THE HIDDEN ENVIRONMENTAL IMPACTS OF DRIVING



ONS

PAVEMENT & CONCRETE PRODUCTION

URBAN HEAT ISLAND EFFECTS

IMPERVIOUS SURFACE RUNOFF

PARTICULATE MATTER (from tires & brakes)

VEHICLE MANUFACTURING

LOSS OF NATURAL LAND DUE TO SPRAWL

PARKING CONSTRUCTION AND MAINTENANCE





Zoning reform for adaptation







Climate and Land Use Planning:

A Policy Guide for U.S. States and Territories

New free resource: <u>https://usclimatealliance.org/guide/l</u> <u>and-use-planning-guide-feb-2025/</u>

City Case Study: Norfolk

- Climate-informed approach to zoning and land use policy
- Initial disconnect with real estate market trends



HOW CAN WE BETTER PREPARE OUR COMUNITIES?





Prioritize pro-housing initiatives that connect housing, transportation, and amenities.

- Increases housing supply, helping alleviate rising costs and making more homes available for residents and newcomers.
- Reduces the costs of infrastructure construction and maintenance.
- Reduces the costs of providing services (like trash pick-up).
- Reduces household transportation costs.

Strengthen social infrastructure to support new and long-time community members.

- Supports community-building and the formation of strong social networks that residents can rely on.
- Improves residents' mental and physical health.



Recognize and prepare for climate hazards.

- Protects current and future residents from climate hazard impacts.
- Reduces the damages wrought by climate hazards and the costs of rebuilding and recovery.

 Better positions community for investments and economic growth.



- Climate-informed approach to land use policy
- Initial disconnect with real estate market trends
- Study asking "To what extent did the 2018 Vision2100 coastal resilience policy in the Upland Resilience Overlay impact the prices of for-sale homes?"





Norfolk Environmental Context:

- 144 miles of coastline; total geographic area is 96 square miles
- Ranked among the most vulnerable cities in the country for flooding hazards and sea level rise resulting from climate change.
- Sea level projections in the city for 2100 range from a rise of 1.6 feet to as much as ten feet above present-day levels
- The Naval base comprises a significant portion of development along the west coast.
- Downtown includes a historic district, the commercial core which traditionally served the port.





Demographic Context:

• Population: ~240,000

- White: 46%
- o Black: 40%
- Asian: 4%
- Hispanic or Latino: 8%
- Two or more races: 2%
- Median household income: \$50-\$60,000

• Existing neighborhood conditions

- Home to the world's largest Naval Base
- Majority of people in Norfolk live in owner-occupied single family homes
 - Renter v. owner-occupied units similar across racial demographics
- Downtown core, closest to the coast; majority white and higher income
- Neighborhoods near downtown separated from the core by two highways: Saint Pauls Blvd and Brambleton Ave
 - Majority Black; lower-income





- Norfolk 2030 and Vision 2100 sought to better protect the community against flooding and direct more development to higher ground.
- Vision 2100 assigns four categories to sites, using flood vulnerability as key criteria for future development plans.
- "Resilience Quotient" requires measures for flood risk reduction, stormwater management and energy resilience.

NGRFOLKVISION2100





- Zoning overlay: land use tool that can be used to change or modify the provisions of the zoning code to a defined area in the city without re-zoning any of the land
- Upland Resilience Overlay (URO) & Coastal Resilience Overlay (CRO)
 - Overlay zones are applied to high flood risk areas and prescribe unique statutory policy changes within each overlay zone.
 - Overlay zones seek to concentrate investment in more prepared areas and increase resilience to sea level rise.
- Tools and enforcement mechanisms in the overlay
 - Transfer of Development Rights (TDRs)
 - Density bonuses
 - Inclusionary Zoning (IZ)



Norfolk Waterfront and Naval Shipyard, Vrbo



NOAA Technical Reports, University of Richmond Digital Scholarship Lab

- Purple zones: neighborhoods at less risk of coastal flooding
 - *Goal:* make investments & improve connections; maintain housing affordability
- Yellow zones: neighborhoods more at risk of flooding
 - *Goal:* resilient investment; develop solutions to prepare for sea level rise; develop mechanisms to protect economic assets
- Green zones: commercial and residential areas with low-risk of flooding
 - *Goal:* encourage high-density development; focus on intermodal transit development
- Red zones: home to key economic assets at high risk of coastal flooding
 - *Goal:* encourage additional mixed-use inland development; expand flood protection systems; diversify housing mix





- Our research sought to understand the short and long-term fiscal impact of Norfolk's climate-informed zoning, considering:
 - **Residential property prices** Evaluates the sales price of properties within each of the Vision2100 Zones;
 - **Building Permits** Analyzes the number of building permits, or the approval given by a locality to proceed on s construction project;
 - **Retail** Analyzes the sale of consumer goods;
 - **Office** Analyzes the usage of a building for office management, administrative, financial, educational, medical or other professional services.



Key Findings: Relative Lack of Fiscal Impact

- There is evidence to suggest that the Upland Resilience Overlay (starting in 2018) influenced sales prices in the **green** zone upward, compared to what they would otherwise have been based on similar properties
- Controls for various factors of the home characteristics
- The effect size is approximately **0.8% in real sale price** (inflation adjusted), or generally a NULL effect on price
 - This is a relatively small effect size compared to other treatments (like TOD, or major infrastructure improvements, where impact is usually +15-20%)
 - Could be the result of signaling to the market
 - Results are not statistically significant from zero

Zone	Stat. policy impact: sales prices	Simple correlation on # of permits
Purple	-0.7% (not stat. sig.)	+3,000 from 2018-2019
Yellow	-0.3 (not stat. sig.)	-1,500 from 2018-2019
Green	+0.8% (not stat. sig.)	NA
Red	-3.4% (not stat. sig.)	-800 from 2018-2019



Key Findings: Residential Sales Prices



- Trend lines remain about the same over time, even after the policy was enacted in 2018
- Slight jump in the increase in sales price in red zones post-2018







Improving lives by improving communities



- Mixed results in commercial real estate prices and metrics; small results (many not statistically significant) in single-family home (SFH) prices; statistical tests on SFHs do NOT support evidence of a strong causal relationship
- Potential initial trends in building permits
- Why might Upland Resilience Overlay impact the market?
 - Signaling: communicates to market "this is where it is good/safe to build"
 - Incentives for building can increase immediate demand



Key Findings: Relative Lack of Fiscal Impact

May have occurred on account of:

- The relatively recent implementation of climate-informed zoning in Norfolk;
- The disruptive nature of the pandemic and subsequent market impacts, which complicates the data set from this relatively short period of time;
- The predictability of continued economic activity in and associated with the Naval Base despite climate risk;
- Lack of immediate increased associated costs relevant to climate risk and flooding such as insurance;
- An overall lack of recognition of, or concern about, climate risk by homebuyers, businesses and investors in Norfolk at the time of the study.





- Increasing use of widely available climate data
- FEMA's Risk Rating 2.0; rolled out in October 2021, which increases prices of flood insurance in order to deliver rates that are more 'actuarily sound' and better reflect flood risk
- Fannie Mae to use Risk Ractor data for internal research on physical climate risk & the mortgage market
- The Federal Reserve has announced that six of the country's largest banks will participate in a pilot program scenario testing their exposure to the consequences arising from climate change;
- Hurricane Ian devastated western Florida, causing over 100 deaths and destroying communities and infrastructure, and offering another tragic example of the extent of risk faced by coastal communities.

The many other interconnected factors discussed today....





- What do you think could lead to market changes in Norfolk or other coastal cities?
- How could the city continue to maintain real estate value while disincentivizing development in comparatively risky areas?

• What steps can policymakers take to ensure that potential financial benefits arising from climate adaptation do not solely accrue to those already benefiting from the status quo?





Katharine Burgess Vice President Programs & Operations Smart Growth America

Dr Michael Rodriguez Director of Research Smart Growth America mrodriguez@smartgrowthamerica.org

