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The Dual Challenges of Climate Change and Housing Instability

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The Dual Challenges of Climate Change
and Housing Instability

Many US cities are struggling to address the effects of climate change. The number and intensity of weather disasters has increased dramatically, while dangerously high temperatures have become a normal occurrence each summer. At the same time, a nationwide shortage of affordable housing has left hundreds of thousands unhoused and millions of others without assurance of housing stability. This paper addresses these dual challenges. It provides examples of how cities are attempting to provide and preserve affordable housing and resilient neighborhoods.

THE IMPACT OF CLIMATE CHANGE ON CITIES

Cities in every state of the US are seeing the effects of climate change. Major hurricanes, winter storms, extreme rainfall events, droughts, and wildfires happen with alarming frequency. The recovery costs associated with these disasters is enormous. Information published by the National Oceanic and Atmospheric Administration (NOAA) shows that:

- The highest number of billion-dollar disasters occurred in 2020, with 22 disasters, followed by 2021, with 20 disasters.
- There were 18 separate billion-dollar weather and climate disasters in 2022. These disasters:
  - tied with the number of billion-dollar disasters that occurred 2017 and 2011, although 2022's disasters were more deadly; and
  - totaled more than $165 billion in costs.

  (NOAA: 2022 U.S. billion-dollar weather and climate disasters in historical context.)

The locations and types of the billion-dollar disasters that occurred in 2022 are shown in this map published by NOAA:



*This map denotes the approximate location for each of the **18 separate billion-dollar weather and climate disasters that impacted the United States in 2022.***

Beyond the Billion-Dollar Disasters

While large-scale disasters are alarming, life in hundreds of US communities has been disrupted by recent climate patterns and localized weather events. Even when the scale of these events is smaller on a regional level, they often cause death, property destruction, and major economic losses. The cumulative effect of climate change and destructive weather events negatively affects the quality of life in many places across the country.

Summer Heatwaves

The hottest recorded days on Earth occurred during a three-day period that started on July 3, 2023. According to the EPA, heat is the leading weather-related killer in the US (EPA: Climate Change Indicators: Heat-Related Deaths). The summer of 2023 was brutal in US cities like these:

Record-Setting Heat Waves in 2023	
Miami, FL	Most days at 95° or more
Austin, TX	31 days straight exceeding 100°
El Paso, TX	23 days straight exceeding 100°
Phoenix, AZ	31 days straight exceeding 110°
Las Vegas, NV	10 days straight exceeding 110°

As further evidence of the sudden and dramatic increases in heat:

- The ten warmest Junes on record have all occurred since 2010.

- August and September 2022 temperatures were the warmest on record in North America for those months.
- June and July 2023 were the hottest on record globally for both months.
- Arizona, Florida, Maine, and New Mexico had their warmest Julys on record in 2023.

(For more information, see NOAA: Annual 2022 Global Climate Report; Global Climate Summary for June 2023; and Global climate summary for July 2023.)

Warming Oceans

As the world's oceans continue to warm, the environmental impact will have an economic toll. Plant and animal life in the sea becomes vulnerable to the changes in habitat and either becomes extinct or moves to more hospitable waters, often disrupting ecosystems. These changes threaten the fishing industry, jeopardize the livelihood of those who work in it, and pose a risk to food security.

Sea Level Rise

Higher sea levels create greater damage from storm surges, coastal erosion, and wetland loss. Between 2000 and 2020, the frequency of coastal flooding more than doubled in places such as:

- New York City.
- Norfolk, Virginia.
- Miami, Florida.
- Charleston, South Carolina.

A NOAA report predicts that:

- From 2020 to 2050, sea levels along US coastlines will increase by 10 to 12 inches on average. Along the Gulf coast, the projected increase is 14 to 18 inches.
- As a result:
  - high tides and storm surges will increase and reach further inland; and
  - damaging floods are expected to occur more than ten times as often by 2050.

(NOAA: 2022 Sea Level Rise Technical Report).

THE DISPROPORTIONATE EFFECTS OF CLIMATE CHANGE

Beyond the reality that climate change affects different parts of the nation differently, it affects different segments of the population differently. This can be because:

- Areas that are vulnerable to climate change are frequently home to minority and lower-income populations. For example:

- hurricanes threaten more counties with large African-American populations than any other community type;
- droughts disproportionately affect Hispanic populations in more rural areas; and
- extreme rainfall events happen more frequently in largely African-American counties, working class counties, and blue-collar suburbs.

(See American Communities Project: Mapping Climate Risks by County and Community.)

- Communities of color are often especially vulnerable to weather disasters and other effects of climate change, due to disadvantages such as:
  - higher rates of asthma, hypertension, diabetes, and obesity;
  - limited access to health care;
  - significant heating and cooling costs as a percentage of income;
  - proximity to industries and other pollution sources; and
  - large expanses of ashphalt and fewer tree canopies, resulting in heat islands.

Heat Exposure and Older People

Older people are more likely than younger people to suffer from the effects of heat exposure. However, many retirees tend to migrate to warmer climates. A study published by Oxford University Press on behalf of The Gerontological Society of America finds that:

- The percentage of the US population aged 69 or older is expected to grow from 11% today to 17% in 2050.
- Historically warm areas will see the most dramatic increases in residents aged 69 or older.
- In those areas, demands will increase for support and services like:
  - suitable housing;
  - health care; and
  - heat exposure prevention and adaptations.
- The need for reliable cooling will increase in other areas and will be intensified by the prevalence of:
  - older housing stock; and
  - less efficient cooling systems or total lack of air conditioning.

(The Gerontologist: Population Aging and Heat Exposure in the 21st Century: Which U.S. Regions Are at Greatest Risk and Why?)

THE HOUSING CRISIS

At the same time communities are grappling with climate change, housing costs are spiraling and homelessness is increasing. Census Bureau information shows the contrast between increases in incomes and housing prices between 2010 and 2021 in the US.

	2010	2021	Increase
Median household income	$50,046	$70,784	41%
Median sales price: new home	$221,800	$397,100	79%
Median asking rent: vacant units	$698	$1,216	74%

The median sales price for a new home climbed to almost $500,000 in 2022 before the market adjusted. However, the median price was still above $400,000 in mid-2023, while rent costs for vacant units stood at $1,445.

Barriers to Affordable Housing

There are many factors that contribute to the critical shortage of affordable housing, including:

- Zoning regulations and other local government actions and policies that fail to accommodate diverse housing needs (see How Local Government Adds to the Problem).
- A confusing assortment of funding options.
- Preemptive state laws at odds with local efforts to encourage affordable housing opportunities.
- Demands for housing in general in growth areas.
- NIMBY (not in my backyard) opposition from residents and property owners.
- Gentrification of older neighborhoods that historically included affordable housing options.
- Conversion of affordable homes into short-term rentals.

For a thorough discussion of affordable housing issues, see Practice Note, Affordable Housing Issues for Local Government on Practical Law.

The New Normal of Homelessness

In the most extreme cases, the housing crisis leaves individuals and families with nowhere to live. In December 2022, the US Department of Housing and Urban Development (HUD) reported that:

- On a single night in 2022, roughly 582,500 people in the US were experiencing homelessness.
- Forty percent of those counted were unsheltered.
- Homelessness is not confined to urban core areas. Forty percent of unhoused individuals were in suburbs and rural areas.

(HUD: The 2022 Annual Homeless Assessment Report (AHAR) to Congress.)

Unhoused persons are generally more likely to be at risk from heat and other dangerous weather. As the impact of climate change continues to grow, communities must expand the support and services they provide to protect those without homes.

HOW LOCAL GOVERNMENT ADDS TO THE PROBLEM

In many areas, a combination of past local government actions and ongoing policies has exacerbated the combined effects of the climate and housing crises. Forward-looking communities must weigh the impact of maintaining the status quo versus taking new approaches.

Zoning and Land Use Policies

Although municipal zoning can provide the groundwork for well-planned and livable communities, it can also have the effect of excluding persons with lower incomes. When zoning regulations predominately encourage low density single-family residential neighborhoods, they lessen housing opportunities and drive up housing costs in general.

Beyond contributing to affordable housing shortages, too much single-family:

- Fails to accommodate the needs and preferences of older persons and others for other types of housing.
- Often results in less walkable, more disconnected neighborhoods where residents are heavily dependent on cars.
- Can have other environmental impacts, such as:
    - wildlife habitat displacement;
    - stormwater management and drainage issues from grading, tree removal, and changes in flows; and
    - higher carbon footprints for residents.

Other zoning and land use practices that contribute either to lack of affordability or environmental consequences include:

- Complex approval processes and permitting requirements for affordable housing developments, along with prohibitive fees.

- Placing industrial uses and other pollutant producers near low-income residential areas.
- Burdensome parking space requirements, including:
  - on-site parking space requirements for residential uses when nearby off-site parking or reliable public transportation is available; and
  - minimum parking space requirements for commercial uses that exceed needs on most days. The result is large expanses of asphalt that increase stormwater runoff and take up valuable land that could be better used for other purposes.

Good Intentions with Unintended Consequences

In some cases, government measures aimed at climate resiliency have costs for residents who can least afford them. For example, municipalities may:

- Use federal government funding to buy out properties that are prone to flooding. While buyout programs help take people out of harm's way, they may leave residents without an affordable and convenient alternative within the same community. Some may be pushed to areas that require long commutes and disrupt social networks.
- Adopt climate-friendly initiatives that increase housing or living costs for individuals and families, such as:
  - green building requirements; and
  - stormwater management fees.
- Champion redevelopment projects that reclaim polluted areas and provide climate-friendly features. Environmentally focused amenities that make neighborhoods more attractive and resilient may also drive up property values and push lower income residents away.

PLANNING FOR RESILIENCY AND HOUSING EQUITY

Local government actions to fight climate change and provide for housing equity are most effective if they are part of a coordinated approach, rather than scattershot efforts. The US Climate Resilience Toolkit, a website managed by NOAA's Climate Program Office, provides an array of tools and resources. In addition to case studies that are searchable by region, topic, or climate threat, the website provides a process for developing a resilience plan with the following steps:

Steps to Resilience	Outcome
Understand exposure	List of climate hazards that may damage what the community values
Assess vulnerability and risks	Measure the probability of hazards against magnitude of consequences

Investigate options	Determine which options are feasible and can win community buy-in
Prioritize and plan	Rank expected values of proposals and integrate highest-value actions into plan
Take action	Begin implementation; continuously monitor and review results

(NOAA: US Climate Resilience Toolkit.)

Assessing Community Vulnerability

Adequate planning in the face of climate change and housing inequities requires communities to know the areas where citizens are most vulnerable. In addition to historical data and experience, there are several interactive online tools that can be useful in these efforts, including:

- The Climate and Economic Justice Screening Tool, developed to identify communities that qualify for programs under the federal government's Justice40 environmental justice initiative. Users can focus on individual census tracts to assess how residents are dealing with burdens directly attributable to climate change and seven other categories.
- EPA resources, including:
  - EJ Screen, the EPA's environmental justice mapping and screening tool that combines environmental and demographic socioeconomic information; and
  - the Climate Resilience Evaluation and Awareness Tool (CREATE) map, which provides scenario-based projections of climate-related challenges to water, wastewater, and stormwater utilities.
- Risk and vulnerability maps published by NOAA's National Centers for Environmental Information (NCEI). These maps allow analysis of individual counties' or census tracts':
  - risks from weather and climate disasters, including droughts, flooding, severe storms, wildfires, and others;
  - socioeconomic vulnerability of various categories of people, such as seniors, minorities, residents with limited English, mobile home residents, and people living in poverty; and
  - future risk predictions by categories such as agriculture, energy, and labor.

  (NCEI: U.S. Billion-Dollar Weather and Climate Disasters (2023): Risk and Vulnerability.)
- The American Communities Project's (ACP's) climate risk maps, showing each US county's levels of risk from sea level rise, hurricanes and

typhoons, extreme rainfall, drought, and heat stress (ACP: Mapping Climate Risks by County and Community).

Local governments may find it helpful to use a combination of these tools and others in assessing threats and exposures.

Documenting the Plans

A local government's plans for addressing climate change and achieving resiliency should be laid out in documents that are realistic, meaningful, understandable, and available to the public. A formal climate action plan (CAP) can provide a blueprint for how a community intends to reach its goals. At least 35 of the 50 the largest cities in the US have adopted CAPs, along with hundreds of other municipalities of all sizes.

In addition to addressing overall responses to climate change and setting goals for reducing greenhouse gas emissions, CAPs often incorporate objectives for achieving environmental justice. For example:

- The goals in Fairfax County, Virginia's CAP include:
  - retrofitting at least 100,000 housing units with energy efficiency measures by 2030, with an emphasis on low- and moderate-income homeowners; and
  - expanding tree canopies to 60%, with a minimum of 40% tree canopy coverage in every census block by 2030, with top priority for areas of highest socioeconomic need.

  (See Fairfax County: Community-Wide Energy and Climate Action Plan.)
- Cleveland, Ohio's CAP includes a Racial Equity Tool for use in analyzing climate action objectives and corresponding actions (see Cleveland CAP: Racial Equity Tool).

Local government intentions for fighting climate change and surviving its effects should also be reflected in comprehensive plans, zoning ordinances, and capital budgets.

REAL WORLD APPROACHES

There is no one-size-fits-all solution for addressing both climate change and housing instability. The most successful communities will take multi-pronged approaches, based on their specific obstacles and community dynamics. Looking at what other local governments are doing can help generate ideas and inspire potential actions as part of an overall plan.

Honolulu's Big Picture Approach

The City and County of Honolulu developed the O'ahu Resilience Strategy, with 44 actions that address the challenge of long-term affordability and the impacts of the climate crisis. The strategy includes four pillars:

- Remaining Rooted.
- Bouncing Forward.
- Climate Security.
- Community Cohesion

The strategy document provides for three goals to support each pillar, identifying specific actions for each goal and assigning responsibility.

Neighborhood Densification

Some recent state laws and local zoning measures have taken a counterapproach to low density single-family residential neighborhoods that have been prominent in many cities (see Zoning and Land Use Policies). These actions are primarily aimed at affordability but have overlapping environmental benefits. Examples of cities approving neighborhood densification include:

- Minneapolis, which adopted its 2040 Plan, allowing up to three units of lots previously limited to single-family residences (see Minneapolis 2040: Access to Housing).
- Portland, Oregon, which implemented a Residential Infill Project. The project includes provisions for a "deep affordability bonus," which allows up to six units on a site when half are affordable to low-income households (see City of Portland: About the Residential Infill Project).
- Lexington, Massachusetts, where the town approved changes to allow multifamily zoning on 227 acres near public transit. A new state law requires 177 communities served by the Massachusetts Bay Transit Authority to allow multifamily near transit stops. Lexington became the first in the state to comply with the law, with changes that nearly tripled the 80 acres it was required to rezone. (See Massachusetts Municipal Association: Lexington OK's MBTA communities zoning well ahead of schedule.)

Accessory Dwelling Units

Many cities allow some or all single-family residences to have accessory dwelling units (ADUs). These self-contained living quarters can be within, attached to, or separate from the primary residence. They can provide housing for renters or an option for family members of the property owners. California, New Hampshire, Oregon, Washington, and Vermont are among states that require cities to allow ADUs to some extent.

Stretch Codes

To assure that buildings are resilient and energy-efficient, some communities have adopted "stretch codes." Also known as "reach codes" in some areas, these codes go beyond the standards included in other building codes to emphasize higher energy savings. States that encourage cities to adopt stretch codes include Massachusetts, Maine, New York, Oregon, and Vermont. More

than 200 cities in Massachusetts have implemented stretch codes. Santa Monica, California has published a construction guide as a companion to its reach code (City of Santa Monica: Climate-Friendly Buildings).

To address both climate resiliency and affordability, the cost of complying with stretch codes should not deter builders and buyers. Rebates and incentives can defray upfront costs, while long-term savings in utility costs can keep homes built to stretch code standards affordable over time (see Massachusetts Energy Rebates and Energy Incentives and Massachusetts: Residential Stretch Code Costs and Benefits Case Studies).

Priority Review Programs

To incentivize development of affordable and sustainable housing, some cities move qualifying permit applications to the front of the line in the review process. For example, Tacoma, Washington's prioritizes the review of projects that either:

- Have ten or more housing units, of which at least 20% are reserved as affordable.
- Incorporate sustainable development features.

(Tacoma: Priority Review Program and Sustainable Development/Green Building Permit Program.)

Revitalization Plans

Municipal projects that revitalize older neighborhoods provide opportunities to address environmental issues and housing affordability. An example comes from Providence, Rhode Island's Smith Street Revitalization Plan, a 2023 recipient of the US Department of Transportation's (USDOT's) Thriving Communities Program. The city's Smith Hill neighborhood has faced a loss of affordable housing, poor health outcomes, and safety and quality of life issues. The neighborhood is located near four major highways and bisected by a busy arterial. It is susceptible to climate change due to impervious pavement, limited tree canopy, brownfield sites, and flooding potential. To tackle these challenges, the Revitalization Plan includes priorities for:

- Mixed-income housing on key sites.
- Redevelopment of vacant properties as parks, plazas, and community gardens.
- Road safety and connectivity improvements.

(City of Providence: Smith Street Revitalization Plan.)

Cool Pavement and Cool Corridors

To lower surface temperatures and the heating effects that asphalt produces, US cities have been experimenting with the use of "cool pavement" that reflects sunlight rather than absorbing it. In a pilot program conducted by

Phoenix, cool pavement surface temperatures were cooler by up to 12° F (City of Phoenix: Cool Pavement Program; see also City of San Antonio: Cool Pavement Program). Permeable pavement materials can also reduce stormwater runoff. For more information on the potential benefits of cool pavement, see EPA: Using Cool Pavements to Reduce Heat Islands.

Strategic tree planting can also provide relief in heat island areas. Phoenix uses its "cool corridor" program to plant low water-use trees in the right places and add much-needed shade (see City of Phoenix: Cool Corridors Program).

Holistic Solutions from Canada

US cities are not alone in seeking approaches to address both housing affordability and climate change. A report from the Tamarack Institute, an organization focused on solving major community challenges, describes multi-pronged solutions that communities in Canada have turned to (Tamarack Institute: The Intersection of Housing Affordability and Climate Action). The strategies include:

- Converting vacant buildings into affordable housing units (for more information, see University of Calgary: Obsolescence as an Opportunity: The Role of Adaptive Reuse in Calgary's Office Market).
- Retrofitting older housing units (for more information, see Green Municipal Fund: Sustainable Affordable Housing).
- Encouraging "passive houses," designed and built for lower energy use (see Canada Mortgage and Housing Corporation: Passive Approaches to Low-Energy Affordable Housing).
- Adopting inclusionary zoning to increase the supply of affordable housing (for example, see City of Toronto: Inclusionary Zoning Policy).
- Allowing "backyard homes," similar to ADUs increasingly allowed in US cities (for example, see City of Victoria: Garden Suites).

FINDING THE FUNDING

Meaningful action to mitigate climate change and provide stable housing carries a large price tag. However, failing to meet the challenge carries a much greater long-term cost. With some effort, local governments can find funding sources for many initiatives. For example:

- The Inflation Reduction Act, passed by Congress in 2022, includes $375 billion to fight the climate crisis. Much of that funding is available to help state, local, and tribal governments, with a significant percentage dedicated for low-income and disadvantaged communities. For more information, see Columbia Law School: Cities & The Inflation Reduction Act.
- Under the Bipartisan Infrastructure Law, passed in 2021:

    - the EPA awards funding to help communities combat the climate crisis and advance environmental justice (see EPA: Bipartisan Infrastructure Law);
    - the USDOT administers the Thriving Communities Program, which provides planning and technical assistance for infrastructure projects serving disadvantaged and under-resourced communities (see USDOT: Thriving Communities Program); and
    - the federal government has established the Justice40 Initiative, committing to allocating 40% of the funding from certain programs to disadvantaged communities. Programs supported by the initiative will provide funding for affordable and sustainable housing and remediation and reduction of legacy pollution (see The White House: Justice40).
- A network of federal and state programs, supplemented by private sources, provides funding for:
    - developing new affordable housing;
    - rehabilitating and preserving existing affordable housing; and
    - assisting persons in need of housing.

  For more information on these funding sources, see Practice Note, Affordable Housing Issues for Local Government: Sources of Funding.

THE MUNICIPAL ATTORNEY'S ROLE

While local government attorneys may not play a central role in developing resiliency plans, they can provide important support. In planning and implementing responses to the climate and housing crises, municipalities rely on their attorneys to:

- Know the scope and limits of the local government's authority, including what state law allows and what it preempts.
- Prepare and review ordinances, resolutions, contracts, rules and regulations, and other legal documents.
- Ensure compliance with grant requirements.
- Provide legal perspective and analysis for proposed initiatives.
- Monitor and advise on changes in federal and state law.
- Prosecute violations of housing and environmental codes.
- Assist with acquiring property and using eminent domain powers for infrastructure needs.

The Interplay of Legal and Nonlegal Factors

There is frequently more than just a legal issue involved when clients need their attorneys' advice. This may be especially true in municipal law, where the local government's actions directly affect long-term quality of life for neighborhoods and the people living in them. Rule 2.1 of the American Bar Association's (ABA's) Model Rules of Professional Conduct includes this guidance:

> "In rendering advice, a lawyer may refer not only to law but to other considerations such as **moral, economic, social, and political factors** that may be relevant to the client's situation" (emphasis added).

Preparing for community resiliency in the face of climate change and housing shortages can involve many moral, economic, social, and political factors, in addition to legal considerations. Rule 2.1, a version of which is applicable in all US states, gives lawyers leeway to recognize those factors in rendering advice.