

Zoning's Role in Regional Efforts to Reduce Extreme Weather Risk

Arthur Smith

Significant risk reduction strategies are needed to adequately prepare for today's extreme weather. Current weather patterns are forecast to persist for decades, and likely worsen. *See generally* Intergovernmental Panel on Climate Change (IPCC), Sixth Assessment Rep., *Climate Change 2021: The Physical Science Basis* (2021). These climate change-induced impacts are outpacing the ability of existing infrastructure, environmental laws, and land use to prevent repeated negative consequences to property, regional economic stability, additional pollution, and public welfare. The vulnerability to these impacts varies regionally: drought, flooding, fires, groundwater depletion/salinization, water supply storages, etc. Regional landscape-scale strategies will require a mix of complementary efforts, including private/public funding, infrastructure investment, redirecting of infrastructure locations, and modification of building codes and land use.

Local governments largely determine what can be built on private land and how land can be used. These composite land use patterns are a critical component for regional resiliency, especially in more developed areas vulnerable to weather risks. Over 80% of the domestic population live in urban areas, overwhelmingly on private property. Nearly two-thirds of urban areas are in low-elevation coastal zones or along waterways. William Solecki, *Climate Change and U.S. Cities: Vulnerability, Impacts, and Adaptation*, Land & City 105 (2014). Compounding the situation, not only is population expansion trending toward these areas, but growing western states are experiencing drought and wildfires. It is unrealistic for private property owners to expect that they can avoid imposition of new land use conditions as a component of holistic strategies to reduce regional wildfires, conserve water, and minimize storm damage.

Despite cultural and legal limitations on imposing requirements on private property use, local governments have implemented land use requirements that can play an expanded

role in managing extreme weather. Examples of common land use conditions include percentage of impervious surface and building elevation (flooding), home setbacks and building material (fire), and landscaping (drought). The Federal Emergency Management Authority (FEMA) has compiled resources for communities to consider for various weather-related risks. FEMA, *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (Jan. 2013). Even if such land use techniques are broadly adopted, these techniques will not remove all extreme weather risk; however, their adoption can supplement and complement other infrastructure investment and environmental laws for cost-effective regional risk management strategies.

During the 1960s and 1970s, landmark federal environmental statutes established a federal/state environmental protection framework. Other federal programs focused on disaster recovery. However, there is a significant gap in this domestic framework to adequately address pre-disaster resiliency preparation. Today's gap results from the federal government's continued deference to state and local governments to implement adequate resiliency activities. While local governments have significant land use authority and understanding of their unique land circumstances, extreme weather is outracing adequate resiliency implementation. Unfortunately, local communities have traditionally used their land use capacity to accommodate future development (e.g., elevating buildings in floodplains), rather than to take measures to mitigate hazards, or channel development away from risk areas. Sarah J. Adams-Schoen, *Beyond Localism: Harnessing State Adaptation Lawmaking to Facilitate Local Climate Resilience*, 8 Mich. J. Env't & Admin. L. 185 (2018).

The Evolution of Zoning Toward Extreme Weather Resiliency

Local domestic zoning grew early in the 20th century as urban

areas recognized that civil law nuisance suits between individual property owners were inadequate to protect similar harms in larger areas. The pace of zoning accelerated when a national commission drafted a model state zoning enabling ordinance in 1921 that provided uniformity for comprehensive plans and zoning laws. See U.S. Dep't of Com., *A Standard State Zoning Enabling Act* (1922). All 50 states now have similar legislation providing local government authority to pass and implement zoning within their jurisdiction.

The Supreme Court has repeatedly upheld the constitutionality of local zoning as a valid exercise of local police power. In a landmark case, a property owner challenged newly imposed separate land use categories on his land. Noting the law of nuisance and local planning effort, the Court upheld the land restrictions because they had a substantial relationship to the public health, safety, morals, or general welfare. *Vill. of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 395 (1926). Early zoning had rigid land use categories as states adopted the Standard State Zoning Enabling Act that provided zoning be uniform for each building class.

After World War II, states allowed more flexible zoning conditions within district maps to address additional public purposes for growing and changing urban areas. Flexibility varied depending on whether each state's delegation legislation was interpreted broadly or more narrowly; however, zoning law trended toward a more complex array of public objectives and tailored land use tools.

Support for land use flexibility originated in the commonly adopted Standard State Zoning Enabling Act that encouraged "the most appropriate use of land." Zoning was used to phase new development, provide open space, protect drinking water, preserve natural resources, encourage transportation-oriented density, etc. Increasingly, state delegation was interpreted favorably if the local vision was clarified in a comprehensive plan and related to a valid public purpose. (Several communities have added hazard planning in such visioning documents, sometimes called climate, resiliency, or adaptation reports.) Local communities developed land use tools to tailor ways to accomplish public objectives, including overlay zones, attaching conditions to zoning decisions, spot zoning, and granting development rights to channel use location. This local zoning flexibility has evolved into a larger potential role for community adaptation.

Impediments to Using Local Land Use Controls

Even though many local governments have substantial land use authority, there are cultural and legal impediments that explain why local governments are reluctant to impose conditions beyond standard classification districts, site coverage, building size/traditional building codes, and density. Much community reluctance is grounded in the classic notion of individualism and liberty in one's private property entrenched in domestic culture and jurisprudence. Eric T. Freyfogle, *Property and Liberty*, 34 Harv. Env't L. Rev. 75, 80 (2010). Recent extreme weather is raising the stakes to expand local land control to limit new weather externalities beyond traditional property use.

Paul Babie, *Property, Negligence and the Intergenerational Inequity of Climate Change*, 41 Alt. L.J. 179 (2016).

With the past federal focus on disaster recovery spending and entrenched private property culture, state and local governments have paid insufficient attention to prevention. This local lower priority for resiliency activity springs from the lack of a public constituency, immediate costs for mitigation, longer-term/uncertain benefits, and lack of observable public mitigation efforts. Raymond Burby et al., *Unleashing the Power of Planning to Create Disaster-Resistant Communities*, 65 J. Am. Plan. Ass'n 247 (1999).

Short-term revenue loss also discourages local governments from imposing additional land use conditions on residents, requiring too many restrictions on commercial development, or investing in infrastructure for community resilience. Because the common *ad valorem* taxing system (based on property market values) provides revenue to most municipal and special governmental districts, capital expenditures and zoning decisions are slanted toward supporting new development. Current lack of appreciation for increasingly certain future risk impact on property values and uncertain disaster timing compounds this impediment.

It is a significant undertaking for local governments to bring residents and businesses together to understand potential risks and form a consensus on potential local zoning. Communities have unique land and infrastructure characteristics and face different risks. Zoning requires a rational basis to achieve the intended purpose. Local governments often lack staffing and other resources to study and implement additional land use controls to manage predicted changes.

Existing data are limited and often dated. For example, FEMA's flood maps are based on 1970s technology using past flood data and land elevation mapping to delineate 100-year floodplains. These maps impact development because of mandated flood insurance and access to flood recovery funds. Unfortunately, mapping updates have been limited by underfunding and political negotiations. Furthermore, mapping does not account for all flooding events, existing infrastructure, and future climate changes. Thus, these current flood assessments are outdated and underestimate flooding risk. Michael D. Berman, *Flood Risk and Structural Adaptation of Markets: An Outline for Action*, 14 Cmty. Dev. Innovation Rev. (Fed. Rsrv. Bank S.F.), no. 1, 2019, at 13.

Today's digital technologies provide substantial risk knowledge and forecasts. The IPCC will follow its 2021 regional physical climate change forecasts with another report on the impacts from climate change, regional vulnerabilities, and steps for mitigating and adapting to the changes. This future assessment will supplement existing digital tools to drill down to a more granular level for local and regional land use mitigation efforts.

Tools already are being used to identify larger areas likely to be inundated with water levels from sea level rise, rainfall, or rising groundwater levels. Computer GIS software, aerial photography, and lidar facilitate expanding existing flood zones to additional areas likely to flood. Local governmental entities have a variety of computer tools to select local land use

restrictions, such as the Minnesota Pollution Control Agency's Minnesota Stormwater Manual. Amsterdam, Copenhagen, and New York City have used computer modeling to understand water conveyance within neighborhoods. This level of detail can support the rational basis for new zoning.

Although climate impact knowledge is more accessible, it takes resources to locate and use data and tools. Expertise is needed to locate databases, gain permission for data usage, and fund modeling runs. Yet this foundational effort can engage communities to understand risks, identify potential partnerships, and define the effectiveness of alternative land use solutions.

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While the domestic legal system provides state and local governments much authority to control land, there are constitutional limits. The Supreme Court upheld a 32-month development moratorium while the government studied the impact of impervious surfaces on lake clarity. The Court used an ad hoc factual finding resulting in the decision that the moratorium did not go “too far.” The Court considered the economic impact on the claimant (represented by now Chief Justice John Roberts), the interference with the developer's expectations, and the character of the governmental action. *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Plan. Agency*, 535 U.S. 302 (2002). Previous Supreme Court decisions struck land conditions that went “too far,” including permanent physical intrusions and conditions resulting in losing all productive or economic value (unless it would be a nuisance). *Lucas v. S.C. Coastal Council*, 505 U.S. 1003 (1992).

Lucas presents a dilemma because forecast climate changes, such as sea level rise, may render private property economically useless. The *Lucas* Court itself recognized that changed circumstances or new knowledge may make what was previously permissible no longer so. *Id.* at 1031. But until the Supreme Court clarifies *Lucas* with new climate change knowledge, there are various nonregulatory tools to put developers and property owners on notice for market decisions for future investment in vulnerable areas, thus avoiding the *Lucas* “useless” test. John R. Nolon, *Choosing to Succeed: Land Use Law and Climate Control* 130–50 (2021).

Generally, unless the government allows a physical property occupation and the property retains some beneficial value, the Court still adheres to the test in *Penn Central Transportation Co. v. New York City*, 438 U.S. 104 (1978). See Steven J.

Eagle, *The Four-Factor Penn Central Regulatory Takings Test*, 118 Pa. St. L. Rev. 601 (2014). While the measuring stick is fact-dependent and vague, the Supreme Court has generally upheld limited land use restrictions with a rational basis for public welfare.

To avoid constitutional limitations and litigation, and to satisfy constituents, many states allow local governments to exercise zoning and impact fee tools to balance these impediments with incentives and tailored tools to achieve public objectives. Local governments have methods to ameliorate financial impact on private property owners. While local governments impose new land use conditions, e.g., imposing an overlay zone or stormwater fees, they can provide developers transferable development rights in less affected areas, zoning variances, planned unit developments, spot zoning, density bonuses, impact fee credits, and a host of additional zoning devices.

Given these impediments, local governments have been reluctant to restrict land use to mitigate potential extreme weather. A 2014 study examined the effects of a federal mandate and incentive program on adoption of land use policies in local hazard mitigation plans. The study found that local governments gave the lowest priority to land use mitigation actions compared to other types of policies. Local governments prioritized easier-to-achieve activities (e.g., emergency services, public information campaigns, and structure protection) that avoid property rights issues, economic interests, and political opposition. Philip R. Berke, Ward Lyles & Gavin Smith, *Impacts of Federal and State Hazard Mitigation Policies on Local Land Use Policy*, 34 J. Plan. Educ. & Rsch. 60 (2014).

Tools and Incentives for Integrating Zoning into Regional Resiliency Plans

Federal Activity. Congress and federal agencies are increasingly encouraging state and local land use involvement in regional strategies. The National Oceanic and Atmospheric Administration's (NOAA) Coastal Zone Management Act of 1972 was an early example of encouraging local smart growth management for protecting coastal natural features. 16 U.S.C. §§ 1451–1465 (2019). With predicted sea level rise, NOAA's programs are a valuable source of information and funding for local governments to plan and justify land use conditions. EPA worked with NOAA to provide several toolkits to assist the process.

Congress recently amended the CWA to promote voluntary state/local integrated community flood reduction activity. Water Infrastructure Improvement Act (WIIA), Pub. L. No. 115-436, 132 Stat. 5558 (Jan. 14, 2019). EPA continues to offer opportunities for leveraging point source compliance into state trading programs with limited success.

Similarly, FEMA has tried to coordinate with state and local partnerships for hazard mitigation and promote resilient and sustainable communities. See FEMA, *Local Mitigation Plan Review Guide* (Oct. 2011). Under the Disaster Mitigation Act of 2000, FEMA is pursuing a blueprint for an integrated federalist approach to a host of land use and environmental problems. Nolon, *supra*, at 159. There are indications that the federal

government, including FEMA and EPA, will take more aggressive actions and channel incentives to accelerate local and regional involvement in adaptive and water quality-related land use requirements.

On October 1, 2021, FEMA implemented its risk rating methodology update called Risk Rating 2.0. FEMA's phased effort to reduce flood insurance subsidies is already politically uncomfortable for coastal states. By aligning insurance rates closer to predicted property damage, FEMA will provide greater market awareness to encourage risk preparedness. The nonprofit First Foundation worked with FEMA by using advanced computer models to consider climate change and additional flood risks, including heavy rainfall. Knowledge of the risk relationship to property value will aid market-based development decisions, including project financing, and foster consensus on mitigative land use conditions. FEMA recently solicited public comment on transforming its Community Rating System to better align with the current understanding of flood risk and incentivize community mitigation approaches to manage flooding. Request for Information on the National Flood Insurance Program's Community Rating System, 86 Fed. Reg. 47,128 (Aug. 23, 2021).

In significant debt after recent disasters, FEMA is also seeking to leverage additional funding sources. On June 4, 2019, the EPA and FEMA entered a memorandum of understanding that streamlines coordination between FEMA and the EPA-funded state revolving fund (SRF) programs to expedite water infrastructure restoration funding. In addition, Congress and FEMA are increasing pre-disaster funding to lower disaster relief funding. Analysis shows that each dollar of pre-disaster funding saves six dollars of flooding disaster relief. Multihazard Mitigation Council, Nat'l Inst. of Bldg. Sci., *Natural Hazard Mitigation Saves: 2017 Interim Report—An Independent Study* 27 (2017).

Until recently, the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act) only allowed the federal government to aid requesting states after declared major disasters and emergencies. 42 U.S.C § 5131 *et seq.* However, after historic hurricanes and wildfires, Congress transformed emergency management to build a culture of disaster preparedness with the Disaster Recovery Reform Act of 2018. This legislation greatly increases the federal government's commitment to increasing mitigation investments, including for wildfires, flooding, windstorms, and earthquakes. *See* FEMA, *Disaster Recovery Reform Act Annual Report* (Oct. 2019).

FEMA's pre-disaster mitigation funding strategy includes engaging local entities to plan and implement larger regional projects. FEMA established the Building Resilient Infrastructure and Communities Program (BRIC) to implement section 1234 of the Disaster Recovery Reform Act of 2018. BRIC makes \$500 million available to states, local governments, tribes, and territories for mitigation activities designed to strengthen the nation's efforts to build a culture of preparedness. In the first cycle of funding, FEMA awarded \$377 million to 22 large projects in seven categories: elevation, flood control, floodproofing, relocation, safe room/shelter, utility and infrastructure protection, and wildfire management.

In 2021 Congress added section 205 to the Stafford Act to

create a hazard mitigation revolving loan program, Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act, which increases capitalization loans for regional resilience activity that reduces damage to natural and built infrastructure. Pub. L. No. 116-284, 134 Stat. 4869 (Jan. 1, 2021). The Act incentivizes local governments to pursue larger projects that cross jurisdictional boundaries for more impactful regional-scale risk minimization, including private owner land use controls. These features include (1) Projects must be regional: Funds flow to local governments, reducing a broad range of disaster risks. The grant application must include "the systematic and regional approach to achieve resilience in a vulnerable area. . . ." Sec. 205(b)(1)(E); (2) Grants can combine with other revolving funds: Although the Act's financial authorizations are limited (\$100 million a year in 2022 and 2023), the funds can be stacked with other revolving funds. Sec. 205(c)(3). EPA has significant state revolving funds that assist a wide range of water infrastructure projects. 33 U.S.C. §1383, as amended 2014. The Act also allows bundling related projects; (3) Priority for partnerships: To overcome limited jurisdictional coverage, the Act prioritizes coordination "between two or more eligible entities to carry out a project or similar projects." Sec. 205(d)(B); (4) Long repayment period: The receiving entity has 20 years to repay the annual principal and interest after the project is completed (30 years within low-income areas). Sec. 205(f)(1)(A). This allows time for integrating related efforts and phasing activity; for example, natural infrastructure activity may depend on future property modification permits; (5) Zoning and land use planning: Up to 10% of any grant is available for local governments to implement zoning and land use changes with resiliency features. In addition, local entities can study and create land use incentives that reward developers for greater reliance on low-impact development to mitigate risk. Sec. 205(f)(4)(C); and (6) Updated building codes: The Act allows participating entities to establish and update building codes for the protection of the health, safety, and general welfare of the building's users against disasters. Sec. 205(f)(4)(D).

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There is bipartisan support for additional appropriations for the STORM Act and state and local resiliency planning and projects. The November 15, 2021, Infrastructure Investment and Jobs Act authorized \$1 billion for FEMA's BRIC program to complement STORM Act funding.

State Activity. States can allow local public/private land use partnerships and interlocal agreements. These local authorities can increase the cost-effectiveness of large-scale regional risk reduction efforts when local governments can coordinate parties with similar interests.

States can create special purpose entities (e.g., wastewater and stormwater utilities) with their own authority to enter community agreements. For example, in 2014 Illinois gave expanded authority to the Metropolitan Water and Reclamation District (MWRD) to engage in regional watershed planning and activity with local governments to accommodate stormwater runoff in Cook County. Ill. Pub. Act 98-0652 (June 2014). Like the MWRD, Philadelphia has requirements for certain new development. The Philadelphia Water Department (PWD) prepared a *Stormwater Management Manual* as a comprehensive resource for the development community, including specific stormwater requirements. Developers must receive PWD approval before a zoning or building permit is issued.

States can allow local governments to enter interlocal agreements. See Advisory Comm'n on Intergovernmental Rel., *An Information Report: A Handbook for Interlocal Agreements and Contracts* (Mar. 1967). Most states delegate this authority. The Council of State Governments passed the initial model act in 1957 to authorize both agreements for services and joint exercise of powers in functional areas where there is less standardization, including public welfare. These interlocal agreements can coordinate a range of regional hazard minimization activities.

States can also authorize local governments to enter private-public financial arrangements that can benefit regional risk reduction efforts. One such financing arrangement is called pay-for-performance, which allows local governments to secure private funds that can be less expensive than bond funding because the structure allows partners to find cost-effective techniques due to aggregation of projects or locations for projects that have lower costs. These private-public partnerships can provide upfront project capital, transfer performance risk, and enable private parties to provide incentives for property owner cooperation for certain land use changes. In addition, communities can negotiate benefits to reach multiple objectives like local job creation, community outreach, and educational advancement for underserved communities. Kristina Twigg, *Bringing Cleaner Water, Green Jobs to D.C.'s Suburbs*, Next City, Oct. 23, 2019. These private-public partnerships can also leverage funding from EPA's revolving fund loans.

Prince George's County in Maryland entered into public-private agreements for a multi-community stormwater reduction project with specific water metrics, economic development,

and local jobs. In another example, a private company entered a community-based partnership with the Milwaukee sewer district. The private company provides community outreach and incentivizes property owners to allow installation and maintenance of green infrastructure on private property. In the future, local governments can pass zoning changes to secure additional private property changes as permits are sought for property modifications or new development.

Because of the importance of regional planning for extreme weather events, a few states have passed legislation to require coordinated adaptation planning. In 2014, New York amended three statutes to require agencies to consider future physical climate risks due to sea level rise, storm surges, and/or flooding. Community Risk and Resiliency Act, N.Y. Laws (2014). New York became one of the few states to require an analysis of state-specific climate projections. These climate-specific projections must be considered in approval and funding of critical public infrastructure projects. This law also requires consideration of climate change risks in several state funding determinations, including the water pollution control activities involving flooding, landfill closures, local waterfront revitalization, and coastal rehabilitation. The law also expands local government adaptive capacity by providing data and technical and legal support.

In the last few years, over 100 local governments have participated in the New York Rising Reconstruction Program that empowers communities to both recover from and prepare for extreme weather events. Various reports have been prepared that discuss various land use and other resiliency techniques to increase community resilience to future storm damage.

Regional efforts to manage extreme weather will necessitate coordinating infrastructure investment with local land use strategies. While local land use authorities are broad, the federal government and states will need to shift focus from disaster relief to carrots and sticks, thus combining mitigation rewards and recovery relief consequences to promote regional cooperation. Federal funding and new private-public funding partnerships can help accelerate regional action, including land use controls more capable of mitigating future risk. A shift toward pre-disaster planning and action is likely to further channel limited domestic resources toward activity that produces sustainable regional communities. The pace of this shift with community engagement will affect the extent of weather damage in many regions. 🌱

Mr. Smith is the founder and president of Sustainable Futures, L3C, and a former EPA attorney and corporate executive. He may be reached at sustainable_futures@mac.com.