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Saving the World through Zoning: The Sustainable Development Code, Regeneration, and Beyond

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SAVING THE WORLD THROUGH ZONING: THE SUSTAINABLE DEVELOPMENT CODE, REGENERATION, AND BEYOND

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ABSTRACT

The land use and planning community began to address sustainability at the local level in the 1990s, but in reality, state-of-the-art development codes drafted in the 1990s and early 2000s did little to address climate change, energy conservation, community health, loss of biodiversity, shifting biochemical cycles, racial justice, food supply, and other key sustainability issues. This article reviews past challenges that had to be overcome for sustainable development codes to become mainstream. The good news is that an increasing number of local governments are adopting ambitious sustainable development codes that hold great promise to not only protect the environment and society but to encourage and facilitate regeneration of the environment and address past social inequities and injustices.

THE PROMISE OF THE SUSTAINABLE DEVELOPMENT CODES

"Sustainable developments meet the needs of the present while ensuring future generations have the same or better opportunities."

So wrote the United Nation's Brundtland Commission in its landmark 1987 report, one of the first international efforts to sound a clarion call for sustainable development. Over the next decade the sustainability movement gathered steam in the United States and around the world fueled by books like environmental guru Lester Brown's *Plan B: Rescuing A Planet Under Stress and A Civilization in Trouble.* Brown documented the challenges humankind faced and outlined the drastic measures needed in the way society lived and did business.

The land use and planning community began to address sustainability at the local level in the 1990s. For example, the American Planning Association in 1996 published a Planning Advisory Service report, *The Planners Guide to Sustainable Development,* that contained tips and advice for local officials to address

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sustainability issues in their community and development plans. Several cities like San Francisco began to integrate sustainability issues into their plans, but for the most part implementation through zoning and development codes lagged. At the federal level in 1994, President Clinton signed an executive order identifying the disparate and human health impacts environmental decisions have had on BIPOC (black, indigenous, and people of color) and low-income populations.[1]

In reality, state-of-the-art development codes in the 1990s and early 2000s did little to address climate change, energy conservation, community health, loss of biodiversity, shifting biochemical cycles, racial justice, food supply, and other key sustainability issues. Most codes devoted multiple pages to issues like nonconforming uses and, for example, nothing to solar and wind energy, regeneration of lost biodiversity, or social equity. All the wonderful flavors of zoning regulations that planners could draw upon at the time—Euclidean, form-based, performance, hybrid—all had their strengths, but also serious blind spots when it came to sustainable development and helping to create sustainable communities.

It was in this setting that the Sustainable Development Code (SDC) was created at the Rocky Mountain Land Use Institute based at the University of Denver School of Law. Ask any local official what their most powerful and effective tool is to shape and protect their community and most will say, "our development code." The idea behind the SDC was simple: Make sure development codes directly address major sustainability issues like energy, health, food security, conservation, and employment.

The devil was in the details. It took several years of work with leading land use planning and legal experts around the nation to hammer out how a sustainable development code would work and what would it look like.

The initial version of the SDC was published in 2011 and charted three paths to sustainability:

- Removing obstacles: Most codes of the day created barriers to sustainability, often unintentionally. For example, solar panels and small wind turbines were often prohibited by residential zoning regulations, height controls, or design standards.
- Creating incentives: Some sustainable technologies were relatively new and experimental—like green roofs. As an incentive to promote their use,

[1] President William J. Clinton, *Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Feb. 11, 1994.

zoning codes could offer increased height, density, and other bonuses to encourage their use.

- Enacting standards: While removing obstacles and creating incentives are important, no development code can succeed without some mandatory elements. As Teddy Roosevelt once said, "A smile and a six-shooter sometimes work better than a smile alone." For example, protective regulations might be essential to preserving trees that help sop up carbon dioxide, a major gas contributing to climate change.

The original Sustainable Development Code addressed 15 key sustainability issues such as energy conservation and production, climate change, and community health and safety. It set forth a range of options and code provisions proposed or already in use in other communities that local government planners and attorneys could pick and choose from to tailor a code that fit their jurisdiction. The response by local governments across the country to the SDC was encouraging. A range of communities from small towns like Greensburg, Kansas, to larger urban areas like Salt Lake City and the Capitol Region (Hartford) drew heavily from the code in revamping their development ordinances.

At the same time, an entirely new "green" body of law was rapidly emerging at the federal and state levels that supported local government sustainability initiatives such as revamping their development codes that included sustainability provisions.

At the federal level, the U.S. Supreme Court decided the landmark case of *Massachusetts v. EPA*, 549 U.S. 497 (2007), holding that the U.S. Environmental Protection Agency had authority to regulate greenhouse gases like carbon dioxide and indeed it *must* regulate them. The Obama Administration and Congress were also active. The 2009 America Recovery and Reinvestment Act Economic Recovery Act specifically allowed energy efficiency grants for local governments to be used to revamp their zoning codes to promote energy efficiency. Notably, the U.S. EPA created a Smart Growth/Sustainability Office that initiated several programs to work with local governments to incorporate sustainability measures in their development codes such as promoting green infrastructure as a stormwater management tool. Federal cap and trade legislation designed to rein in the release of greenhouse gases passed the House of Representatives in 2009 and was seriously considered in the Senate.

States were also active. By 2010, 25 states had adopted climate action plans, and a majority of governors issued executive orders related to sustainability, climate change, and greenhouse gas emissions. Sustainability-related topics were made mandatory elements in local plans in California, Vermont, Oregon, and Maryland. Ten northeastern states adopted a ground-breaking regional greenhouse

gas reduction initiative that included the nation's first carbon gas cap and trade system for electric utilities.

However, by 2016 the federal government began to retreat from the sustainability picture, first by withdrawing from the Paris Climate Treaty. Then, over the course of the next four years, the Trump administration rolled back over one-hundred additional actions addressing core environmental rules.[2] Several of these included weakening fuel economy and greenhouse gas standards for passenger cars and light trucks, revoking California's authority to set higher tailpipe emissions standards than the federal government, withdrawing the legal rational for an agency rule that would have limited mercury emissions from coal power plants, and no longer requiring oil and gas companies to report methane emissions.

Importantly from a perspective of sustainability, the Trump administration weakened rules not just concerned with climate change and forms of air pollution, but also wildlife, such as weakening the decades old law protecting migratory birds, cutting the northern spotted owl's critical habitat by more than three million acres and opening that area to timber harvesting, removing the gray wolf from the endangered species list, and allowing use of lead ammunition and fishing tackle on federal land. Loosening water pollution regulations was another target, such as allowing coal companies to dump mining debris into local streams, permitting more toxic discharges from power plants into public waterways, and doubling the time allowed for utilities to remove lead pipes from water systems with high levels of lead.

Particularly relevant to land use and buildings, the Trump administration threw out an agency regulation that would have almost doubled the number of light bulbs subject to energy-efficiency standards, weakened dishwasher, showerhead, residential furnace, commercial water heater, and washer and dryer energy efficiency standards, and lowered the standard for setting energy efficiency standards for appliances and other equipment and allowed industries to set their own test procedures.[3]

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[2] Nadja Popovich, Livia Albeck-Ripka, Kendra Pierre-Louis, *The Trump administration Rolled Back More Than 100 Environmental Rules. Here's the Full List*, The New York Times, Jan. 20, 2021, https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html.

[3] On January 21, 2021, President Biden signed *Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate* ("EO"). After referencing the triple bottom line in Section 1, the EO went on to rejoin the Paris Agreement, and reinvigorate a discussion around the true cost of ecosystems, noting the social cost of carbon, nitrous oxide and methane. Section 1 and 5 state, "empower our workers and communities; promote and protect our public health and the environment; and conserve our national treasures and monuments, places that secure our national memory." The EO also revoked numerous Trump administration Executive Orders, including several of those mentioned above. In addition, President Biden signed

The federal government's retreat from caring for the environment meant local government action became even more important. It was during this time that the SDC was reinvigorated. From 2015-2017, planners, architects, lawyers, city staff, and others from around the country engaged in an iterative process to determine what sustainable development meant at the local level as it related to development. During this process, the SDC revisited the original 15 key areas and looked at ways "sustainable development" had been operationalized in various contexts. For example, we examined the 17 United Nations Sustainable Development Goals, paying particular attention to the 169 targets identified for the 17 goals, and how they may inform sustainable development at the local level.

The result was the identification of 32 areas where system sustainability is affected during the local development process. Since that time, we have made plans to expand it to 36 areas. Those areas are outlined in Table 1.

an Executive Order creating a White House council on environmental justice and a pledge that 40% of the benefits from federal investments in clean energy and clean water would go to communities that bear disproportionate pollution.

Table 1
Sustainable Development Code Chapters

Chapter 1 Environmental Health and Natural Resources	
Climate change (1.1)	Low-impact development and stormwater management (1.2)
Sensitive lands and wildlife habitat (1.3)	Water supply quality and quantity (1.4)
Water conservation (1.5)	Solid waste management and recycling (1.6)
Urban forestry and vegetation (1.7)	
Chapter 2 Natural Hazards	
Floodplain and river corridor land use (2.1)	Wildfire hazards (2.2)
Coastal hazards (2.3)	Steep slope hazards (2.4)
Hazard mitigation and resiliency (2.5)	Wildland-urban interface (2.6)
Chapter 3 Land Use and Community Character	
Development patterns and infill (3.1)	Development densities (3.2)
Mixed-use (3.3)	Transit-oriented development (3.4)
Historic preservation and adaptive reuse (3.5)	Parking (3.6)
Chapter 4 Mobility + Transportation	
Complete streets / safe streets (4.1)	Bicycle mobility (4.2)
Pedestrian mobility (4.3)	Public transit (4.4)
Autonomous vehicles (4.5)	Electric vehicles (4.6)

Table 1
Sustainable Development Code Chapters (continued)

Chapter 5 Community	
Housing affordability (5.1)	Housing diversity (5.2)
Social equity (5.3)	
Chapter 6 Healthy neighborhoods and Food Security	
Community health and safety (6.1)	Food security and sovereignty (6.2)
Environmental justice (6.3)	
Chapter 7 Energy	
Wind energy (7.1)	Solar energy (7.2)
Other energy generation systems (7.3)	District energy systems (7.4)
Energy conservation and efficiency (7.5)	

Source: Sustainable Development Code (see https://sustainablecitycode.org/).

WHAT THE FUTURE HOLDS—REGENERATIVE DEVELOPMENT AND PROGNOSTICATIONS IN KEY SUSTAINABILITY AREAS

Local governments cannot wait for the federal or state governments to act. While the Biden administration has already taken several positive actions, local governments can and should continue to move forward with aggressive steps to regenerate lost ecosystems and redress past inequalities.

The SDC presents an ambitious step toward making communities more sustainable, resilient, and equitable. And we can go farther. Many of the best steps local governments are taking today are directed at limiting the damage development does to the environment and society. The next generation of development codes can push beyond preservation of the environment and minimizing societal inequities--they can encourage and compel the regeneration of the environment and actively address past social injustice.[4]

A new regenerative approach to development codes integrates development with existing and lost social-ecological systems. It seeks a more cohesive relationship between the built environment and ecosystems.[5] A regenerative approach views development as an active force for positive change that reverses ecological damage and racial and class-based discrimination. Development codes can seek to better harmonize development and place by more closely integrating development into social-ecological systems.[6] To this end, development codes can help bring back lost wetlands, reverse climate change, increase native tree canopy cover, support biodiversity, increase inclusion, reduce inequities in the location of hazardous and toxic waste sites, and others.

In terms of regeneration and the environment, local governments can go beyond protecting what they have and work to rebuild lost biodiversity and ecosystems. Instead of simply maintaining existing ecosystems, development codes can work to restore and regenerate damaged environments.[7] For example, communities can require replacement of ten trees for every one tree removed or ten

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[4] *See* Pamela Mang, et al., *Regenerative Development and Design* in Sustainable Built Environments 115, 116 (Springer U.S. 2020)

[5] *Id.*

[6] *See also* Chrisna du Plessis, *Towards a regenerative paradigm for the built environment*, 40 Building Research 7 (2012).

[7] *See* Chris Duerksen, Cara Snyder, *Farmington Valley, Connecticut: A Valley's Biodiversity Project* in Nature Friendly Communities at p. 367 (Island Press 2005).

acres of wetlands for every one removed.[8] In addition, they can condition development on increasing the percentage of tree canopy cover or wetlands onsite or the removal of invasive species and replacement with native vegetation onsite. They can also work to reverse the catastrophic decline in insects which scientists are calling the Insect Armageddon, protecting not just animals and birds but also insects that provide vital ecosystem services such as food for wildlife and pollination for plants that sustain humanity.[9] Already, some communities such as Fort Lauderdale, Florida, restrict the use of certain pesticides on landscaping and others like Halifax, Virginia, and Champaign, Illinois, require planting of pollinator-friendly plants in certain developments. Unfortunately, local governments must also contend with common state preemption of these protections.[10]

Local governments can require buildings to go beyond net zero by increasing efficiency requirements, reducing square footage requirements, and increasing the amount of solar and wind so that new structures produce more than needed. For example, Seattle, Washington, has started the 20 Living Building Pilot Projects that create incentives for new buildings that meet a variety of criteria including those established by the International Living Future (ILFI) Living Building Challenge SM 3.1 or 4.0, or meets other restrictive criteria such as using only non-potable water to meet the demand for toilet and urinal flushing, irrigation, hose bib, and water features.[11]

In addition, they can prohibit using fossil fuels and create incentives for renovations that increase efficiency and convert to renewables, such as ordinances in San Mateo, California, effective January 1, 2021, require new residential buildings and new buildings with office use to be constructed all electric. Similarly, Brookline, Massachusetts, passed one of the nation's first prohibitions of gas heating systems in new construction and on significant renovations.[12] Further, local governments can evaluate the development process from a consumption-based

[8] *See, e.g.,* Ventura Cty., CA, Code of Ordinances § 8178-7.6.1 (2016) (requiring developers to plant 10 protected trees for each protected tree removed during development); Snowmass Village, CO, Municipal Code § 16A-4-20 (f) (1) (d) (requiring replacement for every one acre of elk or mule deer winter range affected, developer must enhance eight acres; and for every acre of elk or bighorn sheep concentration habitat removed the developer must enhance five acres).

[9] *Where Have All The Insects Gone?*, National Geographic, at 40, (May 2020).

[10] *See, e.g.,* I.C.A. (preempted local authority to regulate pesticides).

[11] Seattle, Washington Municipal Code Sec. 23.40.060.

[12] Brookline, MA Warrant Article 21 (2020).

perspective, seeking to reduce resource-intensive products and services and increase efficiencies.

On food, communities can open more areas to food production and sale. They can look to reduce food waste, increase healthy and local options, and keep costs down. For example, several local communities have sought to remove restrictions on growing fruits/vegetables and raising animals/livestock,[13] while others permit additional forums to sell agricultural-based goods.[14]

Focusing on transportation, local governments can reprioritize modes of movement, ensuring that pedestrian and bicycle mobility is primary and vehicular is secondary. This is the future of local governments and the future of a sustainable development code. They can create safer streets and complete streets that provide multiple benefits including stormwater management and healthy benefits; and eliminate minimum parking standards, such as Hartford, Connecticut, Hartford, CT, Zoning Regulations § 7.2.2 (B).

Local governments can also look to rectify past wrongs on social sustainability. For decades, poor and BIPOC communities have been discriminated against and experienced disproportionate adverse impacts when it comes to development. For example, many poor and BIPOC communities experience unsafe pedestrian modes of transportation, insufficient public transportation, adequate water service, poor indoor and outdoor air quality, lack of parks and trails, and limited health food options. Addressing these issues is a significant challenge that includes many areas of the law outside of the development code, such as tax and wealth distribution. However, the development code can play a role. For starters, local governments can begin to rectify past abuses by mapping and identifying areas in communities that have been disproportionately affected by land-use decisions. They may also begin to amortize removal of those uses.

Similarly, communities may look to establish development requirements including in-lieu or linkage fees to redress existing inequalities relative to a wide host of issues, such as schools, parks, trails, water quality, stormwater management, pedestrian mobility, public transportation, and others. For example, some local governments are actively addressing the state of many senior housing

[13] *See* Milwaukee, WI, Code of Ordinances § 78-6(2) (permitting bees); Christiansburg, VA, Code of Ordinances § 42-663 (permitting fowl); Columbus, OH, Mun. Code. § 3332 (permitting front-yard vegetable garden); and Cleveland, OH, Code of Ordinances §§ 336.04, 336.02, 336.05 (permitting accessory structures).

[14] *See* Gastonia, NC, Unified Development Ordinance §§ 2.7, 7.1-1 (allowing farmers markets in more zoning districts); Hopkinton, RI, Code of Ordinances § 5.5-1 (allowing sales on-site); Passaic, NJ, Code of Ordinances § 245 (permitting sidewalk sales).

developments, particularly in poor and BIPOC communities. An increasing number of local codes in urban areas now require minimum green space for senior housing, *see* Yorba Linda, CA, Municipal Code, ch.18.18 § 60(C), location close to parks and outdoor recreation, *see* West Hollywood, CA, Municipal Code, art. 19.3 ch. 36 § 110, and minimum common land areas for education, conservation, recreation, horticulture, and other purposes, *see* Acton, MA, Zoning Bylaws § 9B.9 (2020) (requiring 60% of land set aside).

Further, local governments can integrate environmental justice into the decision-making process by establishing criteria in which the building is not viewed in isolation, but rather a part of a subsystem within a larger *social*-ecological system. Local governments may designate a spot-on boards and commissions for an environmental justice representative. On February 10, 2021, for example, Encinitas, California voted to create the Encinitas Equity Committee to "help the City …. [and] community create safe, healthy, accessible, and inclusive opportunities for everyone who lives, works and visits Encinitas."[15] In addition, communities can look to ensure more participation. For example, Chapel Hill, North Carolina has a language access plan that provides residents with free translation and interpretation services on a wide variety of services, including land use.[16]

Local development codes may also seek to increase equity in homeownership and security. For example, many codes across the country have minimum square foot requirements for family residences, and many others establish minimum lot sizes. Both of these provisions, while facially neutral, often have a disproportionate impact based on both race and class. We might rethink these by taking a variety of steps that provide increased and alternative housing options that can both drop the price and allow for different phases of a person's life to live in a given area. For example, some local jurisdictions are permitting tiny homes and compact living spaces, such as Spur, Texas, Ordinance 677, § III(1)-(2) and Fresno, CA., Municipal Code§ 15-2754. Other communities are establishing maximum sizes for single-family residences, such as Austin, Texas, Code of Ordinances, tit. 25, subchapter F, § 2.1 and Palo Alto, California, Municipal Code § 18.12.040. Similarly, some zoning codes prohibit multi family or mixed unit uses,

[15] City of Encinitas, *City of Encinitas Equity Committee Applications*, Feb. 23, 2021, https://encinitasca.gov/Home/City-News/ArticleID/367.

[16] TOWN OF CHAPEL HILL, LANGUAGE ACCESS PLAN (Nov. 2019) https://www.townofchapelhill.org/home/showpublisheddocument?id=44431; *see also* Language Assistance, SAN FRANS.PLANNING (2021) https://sfplanning.org/policies/language-assistance; DOMINICK ANSWINI,DCPLANGUAGE ACCESS PLAN at 5-6 (2018) https://www1.nyc.gov/assets/planning/download/pdf/about/language-access/lap_dcp.pdf?r=0818.

and bar accessory dwelling units. In response to these use restrictions, which often disproportionately affect BIPOC and poor individuals, some jurisdictions are permitting multi-unit residences in all formally single-family districts. Others are permitting a variety of unit sizes within more districts, such as Redmond, Washington, Redmond Zoning Code § 21.20.040 and Bainbridge Island, Washington, Municipal Code § 2.16.020 (Q). Further, across the country many local governments are seeing the value in providing additional housing options through accessory dwelling units.[17]

TO BE CONTINUED

We continue to remain optimistic as each week thousands of people visit the SDC searching for and accessing recommendations to help remove obstacles to sustainability, create incentives, and fill regulatory gaps. But we must continue to push development codes further. This is particularly relevant when discussing inclusion and equity through a lens of environmental justice.

A regenerative approach to local development codes is important not only because there is no guarantee that the federal and state governments will take action, but also because there are certain issues involving development and land use that local governments are best equipped to control. Further, issues around regeneration are centered on place. Because place-based discussions benefit from community-level conversations, addressing regeneration through local codes is essential. In this vein, stay tuned as the SDC continues to develop – do not be surprised to see a new chapter on protecting insects soon ….

[17] Ann Arbor, MI Code of Ordinances § 5:10.2 4(d); Town of Barnstable, MA Code § 9-12.