

# Green Community Development through Ecodistricts

Yonah Freemark, Samantha Fu, and Joseph Schilling

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Transportation and buildings contribute more than 40 percent of US greenhouse gas emissions—and while the nation’s overall pollution is trending downward, emissions from these two sectors have stayed largely flat for the past two decades.<sup>1</sup> The sources of these emissions are a by-product of the ways cities and regions have been built and the ways people live; the more people drive and the larger the houses become, the greater the pollution.<sup>2</sup> People who live in denser areas generally pollute less than people who live in suburban areas. This is to a large degree because people in denser neighborhoods drive less and tend to live in smaller homes that are grouped together and insulate one another. Even so, they are still subjected to the effects of climate change, such as worsening exposure to heat and an increasing number of deadly storms.<sup>3</sup>

Ecodistricts, or climate-resilient development, can help communities transform the way neighborhoods minimize their carbon footprints while adapting to severe weather conditions caused by climate change. The ecodistrict concept provides city and community leaders with a policy and planning framework for developing neighborhoods that not only cut down greenhouse gas emissions but also reduce vulnerability to stormwater runoff, lower the severity of urban heat islands, encourage a broader set of transportation options, increase housing affordability, and improve quality of life.

Given current market conditions and availability of vacant or underused property in and around downtown, Fresno may benefit from integrating the ecodistrict framework into its current and future plans for downtown and its adjacent neighborhoods. These plans could be informed by undertaking an inventory of underused properties, which could identify and assess promising ecodistrict locations.

## WHAT ARE ECODISTRICTS?

Ecodistricts are neighborhood-scale development plans that promote and pilot a range of environmentally sustainable strategies. They incorporate sustainability practices related to new construction or retrofitting buildings in existing neighborhoods as well as create green neighborhoods that reduce environmental impacts and increase social equity. Cities like Fresno may enact complementary zoning and building code regulations that further support the development of an ecodistrict.

The ecodistrict concept has been around for more than two decades. There are many examples of ecodistricts in Europe that support strengthening economic prosperity, promoting equity, and protecting the environment (Flurin 2017). In some cases, ecodistricts incorporate new green technologies and new ways of thinking about the planning process and community governance (Fitzgerald and Lenhart 2016).

The definition of ecodistrict is somewhat broad, and it can encompass many different sustainability concepts simultaneously. Contemporary ecodistricts are designed to incorporate a mix of the following components (Poli, Ravagnan, and Ricci 2022):

- **Ecological elements**, such as preparations for stormwater runoff (e.g., bioretention, bioinfiltration, and permeable pavements), provisions to reduce the urban heat island effect (e.g., tree cover, green space and

open space, and green roofs), and protection of biodiversity (e.g., specific conditions designed to protect local species).

- **Intentional measures to reduce carbon emissions**, such as linking public transportation lines at the heart of neighborhoods; developing low-energy-consumptive buildings, including retrofitting buildings to LEED or Passivhaus standards (i.e., the buildings contribute as much energy to the grid as they consume); integrating renewable energy systems; creating district energy infrastructure; and using heat pumps in new and renovated buildings.
- **Provisions for increased quality of life and affordability**, such as subsidized housing and a mix of retail and service developments within walking distance to save on transportation costs.

A successful ecodistrict is one that achieves a reasonable combination of these elements. This fundamentally requires a different way of thinking about urban development schemes. Most development planning in the US is typically undertaken by rezoning a district and then expecting private-market developers to come up with concepts for new projects. But the ecodistrict framework proposes a more substantial role for the public and nonprofit sectors, notably in leading innovative and inclusive development planning. This is necessary because ecodistricts require coordination between infrastructure and buildings that goes beyond the basic utility access standard needed for most new US urban projects.

Generally, to develop an ecodistrict, the local government—perhaps through quasi-government agencies, such as land banks or development authorities—must acquire and/or take control of (or have significant management over) large parcels of land on which it can plan for building construction, utilities, integrated parks, and more. Because ecodistricts are designed for diverse residents, publicly owned land can reduce development costs. In many cases, ecodistricts are most feasible on brownfield sites, which has the advantage of encouraging infill growth—rather than growth on the suburban edge, which is more environmentally damaging, since it often requires demolishing natural ecosystems. (In some cases where ecodistricts are implemented in existing neighborhoods, publicly owned land can be interspersed with private land.)

#### **WHAT ARE SOME EXAMPLES OF HOW ECODISTRICTS HAVE BEEN IMPLEMENTED ELSEWHERE?**

In 2009, Portland, Oregon, began planning for one of the first US ecodistricts in its Lloyd area, which is just east of downtown with easy public transit access to the rest of the city. The neighborhood's transformation is being led by a local nonprofit.<sup>4</sup> The city has focused on retrofitting existing buildings to LED lighting, by taking advantage of mass purchasing to reduce costs, and increasing energy efficiency. At the same time, the nonprofit has encouraged biking in the neighborhood; supported residents' goal of having more green space; and increased ecological diversity, such as through a program that supports pollinating bees.

Ecodistricts have become very popular in Europe, as noted earlier. The French government, for example, has developed an "EcoQuartier" charter designed to aid cities throughout the country develop low-carbon-emissions neighborhoods with a mixed group of residents. There are now more than 300 ecodistricts in France, in which almost 300,000 housing units are planned.<sup>5</sup> One particularly innovative ecodistrict in Paris is in the Clichy-Batignolles area, a brownfields industrial site. The area is scheduled to have 3,400 housing units, half of which will be dedicated to affordable housing. The project is almost completed, and it includes a 25-acre park, access to two new subway stations, on-site renewable energy production, vacuum waste collection, and Passivhaus-standard building designs.<sup>6</sup>

#### **WHAT ARE SOME KEY CONSIDERATIONS AND POTENTIAL LIMITATIONS OF ECODISTRICTS?**

To make the vision of an ecodistrict a reality, its proponents must first inventory potential sites and assess their feasibility to accommodate a range of aligned projects and buildings. Based on this initial assessment, many

communities then need to adopt formal neighborhood or district plans (e.g., a specific plan in California) that incorporate ecodistrict elements (and possible certification) into those sites. Establishing an ecodistrict requires considerable collaboration and coordination between many public officials working across multiple agencies as well as building strong partnerships with community residents, nonprofits, green businesses, and developers. This effort is time-consuming and can potentially result in a dead end. It may require a green intermediary—in essence, a local “champion”—to promote the project and bring together stakeholders from across public agencies. And, in some cases, a nonprofit or institutional intermediary organization may need to continue to staff and facilitate the eventual governance of the ecodistrict.

Because ecodistricts are ambitious, encompassing a wide range of plans, some projects may fall short of meeting all proposed goals. This can make it difficult to promote undertaking an initiative as large and complex as a neighborhood-wide development plan (Bottero et al. 2019).

### FOR DISCUSSION: CONSIDERATIONS FOR ENCOURAGING ECODISTRICTS IN FRESNO

- How can Fresno stakeholders learn more about the range of existing ecodistrict models in Oregon and elsewhere?
- Which models, if any, might make sense for downtown and its adjacent neighborhoods? Are there other places in Fresno that could be a good home for an ecodistrict?
- What are the inherent challenges in coordinating between different agencies and nonprofits to build ecodistricts?
- How can the socioeconomic and ecological benefits of ecodistricts be cultivated and promoted to property owners and adjacent communities? Could the city create a public-private partnership that incubates green buildings and green businesses?
- What is the best way for the city to coordinate with energy and water utilities to construct ecodistricts? Are there incentives and/or regulations that could encourage these types of improvements?
- How could the design and development of an ecodistrict pilot in Fresno be funded? Are there existing federal or state resources that could be leveraged to pilot the ecodistrict concept in Fresno?

### NOTES

- <sup>1</sup> US Environmental Protection Agency, “Sources of Greenhouse Gas Emissions,” accessed March 26, 2024, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.
- <sup>2</sup> Ananya Hariharan and Yonah Freemark, “What Are the Emissions and Climate Implications of Land-Use Regulations?” *Urban Wire* (blog), Urban Institute, May 24, 2022, <https://www.urban.org/urban-wire/what-are-emissions-and-climate-implications-land-use-regulations>.
- <sup>3</sup> CoolClimate Network, “CoolClimate Maps,” accessed March 26, 2024, <https://coolclimate.berkeley.edu/maps>.
- <sup>4</sup> “Home,” Lloyd EcoDistrict, accessed March 26, 2024, <https://www.ecolloyd.org/>.
- <sup>5</sup> “Approach,” Ministère de la Transition Écologique, accessed March 26, 2024, <http://www.ecoquartiers.logement.gouv.fr/demarche/>.
- <sup>6</sup> Paris & Métropole Aménagement, “Clichy-Batignolles (Paris 17th): A New Urban Quality for Northwest Paris,” accessed March 26, 2024, <https://www.paris-et-metropole-amenagement.fr/en/clichy-batignolles-paris-17th>.

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