

William & Mary Environmental Law and Policy Review

Volume 44 (2019-2020)
Issue 3 Symposium Issue: *Climate Change: It
Takes Everyone*

Article 3

July 2020

Community-Driven Climate Solutions: How Public-Private Partnerships with Land Trusts Can Advance Climate Action

Jessica Grannis

Follow this and additional works at: <https://scholarship.law.wm.edu/wmelpr>



Part of the [Environmental Health and Protection Commons](#), [Environmental Law Commons](#), [Estates and Trusts Commons](#), and the [Natural Resources Law Commons](#)

Repository Citation

Jessica Grannis, *Community-Driven Climate Solutions: How Public-Private Partnerships with Land Trusts Can Advance Climate Action*, 44 Wm. & Mary Env'tl L. & Pol'y Rev. 701 (2020), <https://scholarship.law.wm.edu/wmelpr/vol44/iss3/3>

Copyright c 2020 by the authors. This article is brought to you by the William & Mary Law School Scholarship Repository.
<https://scholarship.law.wm.edu/wmelpr>

COMMUNITY-DRIVEN CLIMATE SOLUTIONS: HOW PUBLIC-PRIVATE PARTNERSHIPS WITH LAND TRUSTS CAN ADVANCE CLIMATE ACTION

JESSICA GRANNIS*

INTRODUCTION

In 2018 and 2019, several landmark developments demonstrated the failings of past efforts to address climate change and the need for new and more ambitious solutions. In October 2018, the Intergovernmental Panel on Climate Change (“IPCC”) released a dire report indicating that the window is rapidly closing for countries to dramatically reduce emissions in order to avoid the worst consequences of climate change and predicting dramatic consequences to the environment and public health if countries fail to take action;¹ young activists started taking to the streets to demand more ambitious action to address climate change;² and, at the 25th Conference of the Parties in December 2019, the United Nations issued a report that showed that not only are greenhouse gas (“GHG”) emissions not falling, but that global emissions actually grew by 2 percent in 2018.³ These developments demonstrate the two major failings of climate

* Jessica Grannis is an adjunct professor of law at Georgetown University Law Center and the coastal resilience director for the National Audubon Society; she previously served as the adaptation program director for the Georgetown Climate Center.

¹ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5°C (Valérie Masson-Delmotte et al. eds., 2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf [<https://perma.cc/6F92-UXAJ>] [hereinafter IPCC 2018 SPECIAL REPORT]; see also Jonathan Watts, *We have 12 years to limit climate change catastrophe, warns the UN*, GUARDIAN (Oct. 8, 2018), <https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report> [<https://perma.cc/JED6-SY6U>].

² Adam Aton, *Greta’s young climate movement is maturing*, E&E NEWS (Dec. 9, 2019), <https://www.eenews.net/climatewire/2019/12/09/stories/1061760457> [<https://perma.cc/6A-S5-4X7P>]; Somini Sengupta, *Protesting Climate Change, Young People Take to Streets in a Global Strike*, N.Y. TIMES (Sept. 21, 2019), <https://www.nytimes.com/2019/09/20/climate/global-climate-strike.html> [<https://perma.cc/4YFB-NEYN>].

³ UNITED NATIONS ENV’T PROGRAMME, EMISSIONS GAP REPORT 2019 XIV (Nov. 2019), <https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y> [<https://perma.cc/J6W6-FTW5>]; see also Somini Sengupta, *‘Bleak’ U.N. Report on a Planet in Peril Looms Over New Climate Talks*, N.Y. TIMES (Nov. 26, 2019), <https://www.nytimes.com/2019/11/26/climate/greenhouse-gas-emissions-carbon.html> [<https://perma.cc/XT9D-JB7N>].

efforts to date. First, past debates about climate solutions have failed to account for key “stakeholders” who stand to lose the most if countries fail to address the problem: marginalized communities, youth and future generations, and the environment. Second, the failure of some countries to reduce emissions, even with commitments made under the 2015 Paris Agreement,⁴ demonstrates that climate change presents an intractable collective action problem. Polluters are not fully bearing the costs of the pollution they are generating and, instead, are gaining economic benefits from the exploitation of the world’s atmosphere and the consequent impacts to shared resources that will be affected by a changing climate.⁵

These failings demonstrate that dramatically different solutions are needed to address the dire threat that climate change poses to communities and ecosystems around the globe. Crafting effective climate policy will require a broad coalition of public and private stakeholders that include a diversity of voices, including those who face the greatest threats from the impacts of climate change and who have traditionally been left out of the policy debate. Effective climate action will also require that communities both reduce the carbon pollution that is causing the earth

⁴ In 2015, in Paris, France, at the 21st Conference of the Parties (“COP21”), the Parties to the United Nations Framework Convention on Climate Change (“UNFCCC”) reached an agreement on ways to reduce greenhouse gas emissions, called the “Paris Agreement.” In the Paris Agreement, the parties committed to strengthening emissions reductions efforts with the goal of keeping the rise in global average temperatures below a 2 degrees Celsius increase from pre-industrial levels. To reach these goals, countries agreed to binding commitments to reduce emissions to levels established by “nationally determined contributions” (NDCs). Paris Agreement to the United Nations Framework Convention on Climate Change (Dec. 12, 2015), in Rep. of the Conference of the Parties on its Twenty-First Session, Addendum UN Doc. FCCC/CP/2015/10/Add.1 [hereinafter Paris Agreement].

⁵ PETER BARNES, CAPITALISM 3.0: A GUIDE TO RECLAIMING THE COMMONS 6, 66–71 (2006) (Peter Barnes argues that the “commons” are “shared gifts” we receive by virtue of being members of a community and include natural (air, water, fisheries, aquifers, wetlands, forests, rivers, lakes, etc.), community (streets, playgrounds, universities, libraries, museums), and cultural assets (language, philosophy, religion, music, the internet)); ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 30, 61–65 (1990) (Ostrom defines “common-pool resources” or “CPR” as a “natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use” and describes community-based management of common pool resources, rather than privatization or state regulation of resource management). See generally Sheila R. Foster & Christian Iaione, *The City as a Commons*, 34 YALE L. & POL'Y REV. 281 (2016) (Professors Sheila Foster and Christian Iaione make a normative claim that the city and urban spaces (including parks, streets, community gardens, open space, and even vacant and under-utilized parcels) should be recognized as “common goods” where community has a right of access and shares in decision-making about how resources are used, distributed, and shared).

to warm (mitigation), and, at the same time, prepare for the inevitable impacts of climate change that are already locked in as a result of past emissions (adaptation). Effective solutions will also need to consider the roles and contributions of both the built and natural environments. Natural environments are not only important carbon sinks that can be critical components of mitigation efforts, but they also provide vital ecological services that will be critical to the capacity of communities to adapt to climate impacts.⁶ The built environment not only contributes significantly to greenhouse gas emissions; it also includes the systems that communities rely on to survive and thrive in the face of climate risks.⁷ Additionally, the solutions advanced need to address other socioeconomic and environmental stressors that weaken communities and ecosystems and reduce their capacity to cope with and withstand impacts from climate change (resilience). And, while governments have started to take some actions to mitigate and adapt to climate change, the efforts underway are not nearly enough to address the magnitude of the challenge. The pace and scale of action needed to slow climate change and prepare for its inevitable consequences requires dramatic changes at all levels of government and the participation of both the public and private sectors.

To that end, this Article examines the potential for innovative public-private partnerships between government and land trusts as one way of advancing climate solutions in both the built and natural environments. Land trusts are non-profit organizations that hold land in trust for the benefit of the public.⁸ Land trusts can help to address many of the failings of past climate debates because, at their core, land trusts are community-oriented organizations that involve and engage a diverse array of residents and stakeholders, and were founded to steward lands for the benefit of the environment and future generations.⁹ Land trusts are already playing important roles in rural and urban communities around the country to enhance environmental sustainability and community resilience.¹⁰ Through legal and policy approaches, the public sector can

⁶ See *More About Ecosystem Services*, U.S. FOREST SERV., https://www.fs.fed.us/ecosystem_services/About_ES/index.shtml [<https://perma.cc/W5XM-D5JK>] (last updated Oct. 7, 2016).

⁷ See C. Malalgoda et al., *Exploring Disaster Risk Reduction in the Built Environment* 1, 8–9 (Univ. of Salford, 2010).

⁸ See *infra* Section III.A.

⁹ Marcia Caton Campbell et al., *Community and Conservation Land Trusts as Unlikely Partners? The Case of Troy Gardens, Madison, Wisconsin*, 20 LAND USE POL'Y 169, 169 (2003).

¹⁰ See, e.g., HOUS. ASSISTANCE COUNCIL, COMMUNITY LAND TRUSTS AND RURAL HOUSING 1, 3–4 (Apr. 1993), <http://www.ruralhome.org/storage/documents/communitylandtrusts.pdf> [<https://perma.cc/6DNK-4WBZ>].

further catalyze land trust roles to broaden the support for and efficacy of climate actions on the ground.

This Article will first lay out the climate challenge, including how climate change and the solutions needed to address climate change will affect both the built and natural environments, and the failure of governments to mount an adequate response. Next, the Article will introduce land trusts and the roles that land trusts can, and are, playing in advancing sustainability and resilience in both the natural and built environments. Finally, the Article discusses ways that governments can adopt laws and policies to facilitate more robust roles for land trusts in advancing climate solutions.

I. BACKGROUND: THE CLIMATE CHALLENGE

A. *Physical Impacts*

Climate change is already having profound effects on our natural and built environments. Critical habitats—like wetlands, beaches, forests, and grasslands—are being degraded and lost at alarming rates.¹¹ More intense storms and rising sea levels are drowning and eroding coastal ecosystems (like wetlands and barrier islands), wildfires are consuming forests, warmer water temperatures are affecting riverine and coastal habitats and species, and drought is straining water supplies needed to sustain freshwater ecosystems, among other effects.¹² These impacts will have significant consequences for the communities that rely on these ecosystems for clean air, clean water, sources of food, and other uses.¹³ Similarly, built environments—the homes, businesses, and infrastructure that communities rely on to support and provide critical services to residents and to drive local economies—are also increasingly being affected by the impacts of climate change.¹⁴ Coastal communities are increasingly experiencing more damaging floods as a result of sea-level rise and more intense coastal storms; more intense rainfall events are overwhelming stormwater systems; changing precipitation and snow-melt patterns are

¹¹ *Climate Impacts on Ecosystems*, EPA, <https://archive.epa.gov/epa/climate-impacts/climate-impacts-ecosystems.html> [<https://perma.cc/8473-2TUE>] (last updated May 31, 2017).

¹² U.S. GLOB. CHANGE RESEARCH PROGRAM, FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II: IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES 272, 278, 284–86 (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf [<https://perma.cc/J8WQ-UKJP>] [hereinafter NCA4, VOL. II].

¹³ *Id.* at 284.

¹⁴ *Id.* at 439–40.

overflowing rivers; longer and more intense heat waves are threatening public health and degrading infrastructure; and increasing drought is straining the ability of some communities to meet demands for water.¹⁵ Even greater impacts are anticipated if countries fail to meet the goals of the Paris Agreement to reduce emissions to keep the planet's temperature rise under two degrees Celcius with efforts to limit temperature increases to 1.5 degrees Celcius below pre-industrial levels.¹⁶

B. *Adaptation*

Solutions to adapt to these impacts will need to address increasing risks to resources and assets in both the built and natural environments. In the built environment, many communities are already planning for and making changes needed to prepare. These changes include floodproofing homes, businesses, and infrastructure to adapt to changing flood risks; removing impervious surfaces to reduce urban heat islands and storm-water flooding; and modernizing the power grid to enhance resilience to extreme weather events, among other adaptation strategies.¹⁷ However, communities are also recognizing that the resilience of the built environment is critically dependent on the health and resilience of the natural systems that communities rely upon.¹⁸ Natural landscapes provide critical ecosystem services, and their health will affect the adaptive capacity of communities.¹⁹ For example, wetlands and natural flood-plains filter polluted runoff, provide natural flood buffers for communities, and serve as habitats and breeding grounds for fisheries and other important species.²⁰ Reducing or avoiding impacts from climate change will require significant investments to protect, preserve, restore, and adaptively manage

¹⁵ *Id.*; see also *id.* at 323–24.

¹⁶ IPCC 2018 SPECIAL REPORT, *supra* note 1, at 177–81.

¹⁷ NCA4, VOL. II, *supra* note 12, at 1319–21.

¹⁸ See *Built Environment: Key Points*, U.S. CLIMATE RESILIENCE TOOLKIT, <https://toolkit.climate.gov/topics/built-environment> [<https://perma.cc/738E-7NSR>] (last visited Mar. 9, 2020).

¹⁹ NCA4, VOL. II, *supra* note 12, at 278; see also U.S. FOREST SERV., *supra* note 6 (The U.S. Forest Service has adopted the United Nation's Millennium Ecosystem Assessment which defines ecosystem services as the "benefits people obtain from ecosystems." The Assessment categorizes ecosystem services into four categories: (i) "Provisioning Services or the provision of food, fresh water, fuel, fiber, and other goods;" (ii) "Regulating Services such as climate, water, and disease regulation as well as pollination;" (iii) "Supporting Services such as soil formation and nutrient cycling;" and (iv) "Cultural Services such as educational, aesthetic, and cultural heritage values as well as recreation and tourism.").

²⁰ See NCA4, VOL. II, *supra* note 12, at 284–86; see also U.S. FOREST SERV., *supra* note 6.

natural landscapes to preserve species, habitats, and natural resources in the face of a changing climate.²¹

C. *Mitigation*

Natural and built environments will also play critical roles in addressing the greenhouse gases that are causing climate change. Natural environments serve as important sinks that absorb and store carbon pollution and are increasingly becoming areas for siting renewable energy installations.²² Additionally, the built environment is a significant source of greenhouse gases, as most homes and businesses are currently heated and powered by fossil fuels, such as coal and natural gas.²³ To reduce GHG contributions from the building sector, significant changes will be needed to increase renewable energy sources of power and to weatherize, electrify, and increase the energy efficiency of buildings and infrastructure.²⁴

D. *Resilience*

In addition, actions will be needed to address the pervasive “stressors” that weaken the ability of built communities and natural landscapes to respond to and withstand climate-related impacts from increasingly extreme weather. From the standpoint of the built environment, many communities are recognizing that their resilience to climate change is

²¹ See R.I. SEA GRANT & U.R.I. COASTAL RES. CTR., BUILDING CAPACITY TO ADAPT TO CLIMATE CHANGE THROUGH LOCAL CONSERVATION EFFORTS: A SOUTH KINGSTOWN LAND TRUST PILOT PROJECT 8 (2013), https://www.crc.uri.edu/download/climate_skl_t_final-1.pdf [<https://perma.cc/2QUJ-URCL>] [hereinafter U.R.I. BUILDING CAPACITY] (This Rhode Island Sea Grant report provides a discussion of potential climate impacts to ecosystems and natural landscapes in Rhode Island and describes how adaptive management approaches can be used to address climate impacts to ecosystems. In the context of climate change, adaptive management of natural ecosystems calls for a flexible approach to management that uses monitoring data to determine how species are being affected by changing climate conditions and adjusting management actions to achieve predefined conservation goals.); see also *Adaptive management of natural habitats*, CLIMATE-ADAPT (2015), <https://climate-adapt.eea.europa.eu/metadata/adaptation-options/adaptive-management-of-natural-habitats> [<https://perma.cc/Q6WV-4APB>] (last updated Jan. 9, 2015).

²² The Land Trust Alliance estimates that natural lands—such as forests, prairies, and farmland—absorb approximately 15 percent of U.S. carbon pollution. *Climate Change: Land and Climate Program*, LAND TR. ALLIANCE, https://www.landtrustalliance.org/topics/climate-change#b_start=0 [<https://perma.cc/WH5W-5667>] (last visited Mar. 9, 2020).

²³ JESSICA LEUNG, CTR. FOR CLIMATE & ENERGY SOLUTIONS, DECARBONIZING U.S. BUILDINGS 1–2 (July 2018), <https://www.c2es.org/site/assets/uploads/2018/06/innovation-buildings-background-brief-07-18.pdf> [<https://perma.cc/ZJF9-X25T>].

²⁴ *Id.* at 4–5.

critically dependent on their ability to address chronic stressors that “weaken the fabric of communities,” such as poverty, crime, racial inequality, aging infrastructure, lack of affordable housing, and other stresses.²⁵ Similarly, in the natural environment, non-climate stressors—such as encroaching development, pollution, and invasive species—all undermine the ability of ecosystems to adapt to a changing climate and to provide the essential ecosystem services on which communities rely.²⁶ As a result

²⁵ In its work to promote urban resilience through the 100 Resilient Cities (“100RC”) initiative, the Rockefeller Foundation defined resilience as “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.” *What is Urban Resilience?*, 100 RESILIENT CITIES, [https://www.100resilientcities.org/resources/\[https://perma.cc/SF6E-5CX5\]](https://www.100resilientcities.org/resources/[https://perma.cc/SF6E-5CX5]) (last visited Mar. 9, 2020). In developing this definition of resilience, the Rockefeller Foundation relied on a Community Resilience Index developed by the consulting firm Arup. ARUP, THE CITY RESILIENCE INDEX: UNDERSTANDING AND MEASURING CITY RESILIENCE, <https://www.arup.com/perspectives/publications/research/section/city-resilience-index> [https://perma.cc/D8GF-ZU96] (last visited Mar. 9, 2020). This definition was also adapted by the U.S. Department of Housing and Urban Development (“HUD”), which defined resilience as a community’s ability “to resist and rapidly recover from disasters or other shocks with minimal outside assistance” in the National Disaster Resilience Competition, which HUD hosted after Hurricane Sandy to encourage communities to use disaster recovery funds to rebuild in ways that would enhance resilience to future impacts. U.S. DEP’T OF HOUS. & URBAN DEV., NATIONAL DISASTER RESILIENCE COMPETITION: PHASE 2 FACT SHEET 2 (June 2015), https://www.hud.gov/sites/documents/NDR_CFACTSHEETFINAL.PDF [https://perma.cc/XG8J-CH4Z].

²⁶ In the natural environment, resilience has been defined as “[t]he ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.” U.R.I. BUILDING CAPACITY, *supra* note 21, at 17 (citing IPCC and the Land Trust Alliance Climate Glossary). In its *Conserving Nature in a Changing Climate Guide*, the Open Space Institute and North Atlantic Landscape Conservation Cooperative define resilience in the natural environment as follows:

Ecological resilience is a term ecologists have used for decades to refer to the ability of plants, animals, and natural processes to persist in the face of change. Building on this concept, climate resilience is the specific set of conditions that makes systems better able to cope with the changes caused by a warming planet. Specifically, climate resilience demonstrates how the land’s specific characteristics can mitigate the effects of changing climate and weather patterns, such as gradual increases in temperature, changes in precipitation (both wetter and drier weather), sea level rise, and more severe and frequent storms. By definition, resilient sites are better able to tolerate these disruptions, and will require fewer interventions to restore species diversity and support natural processes.

OPEN SPACE INST. & N. ATL. LANDSCAPE CONSERVATION COOP., CONSERVING NATURE IN A CHANGING CLIMATE: A THREE-PART GUIDE FOR LAND TRUSTS IN THE NORTHEAST 12

of this developing understanding of the connections between resilience to climate threats and existing socioeconomic and environmental conditions, many communities are pursuing more holistic solutions that address both climate threats and also deliver other social, economic, and environmental benefits.²⁷

II. DEFICIENCIES IN CURRENT CLIMATE POLICY

Although many state and local governments across the United States have started taking actions to address climate threats, current efforts are insufficient for addressing the magnitude of the climate challenge facing our communities and natural landscapes. In the United States, climate policy is fragmented and climate action is inconsistent; while many states and local governments are taking leadership roles in advancing climate solutions, there is no consistent approach across all jurisdictions and few top-down mandates to reduce emissions or address vulnerabilities to climate impacts.²⁸ Federal efforts to address climate change have largely been stymied by changes in administrations and political opposition by groups that stand to lose economically.²⁹ Some also argue that

(2016), <https://lccnetwork.org/resource/conserving-nature-changing-climate-three-part-guide-land-trusts-northeast> [<https://perma.cc/4ZCP-ASWH>].

²⁷ See, e.g., Kian Goh, *A More Public Resilience? On Housing Justice and Climate Justice*, INST. ON INEQUALITY & DEMOCRACY, <https://challengeinequality.luskin.ucla.edu/2016/08/27/a-more-public-resilience-on-housing-justice-and-climate-justice/> [<https://perma.cc/9VGF-7M3Z>] (last visited Mar. 9, 2020).

²⁸ Although there were attempts by the Obama administration to reduce emissions from the power and transportation sectors and to encourage state and local governments to prepare for the impacts of climate change, many of these rule changes are in the process of being reversed by the Trump administration. As a result, there is no consistent requirement that state and local governments take action on climate change. And while many state and local governments are taking the lead and implementing innovative approaches to address climate change, there is no mandate that they do so and no comprehensive or systematic approach required across all state and local governments. For a discussion of the Trump Administration's rollback of climate policy at the federal level and state and local response, see Vicki Arroyo, *State and Local Climate Leadership in the Trumpocene*, 11 CARBON & CLIMATE L. REV. 303, 303, 305 (2017); see also Nadja Popovich et al., *95 Environmental Rules Being Rolled Back Under Trump*, N.Y. TIMES, <https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html> [<https://perma.cc/G7JV-37VU>] (last updated Dec. 21, 2019); Philip A. Wallach, *Where does US climate policy stand in 2019?*, BROOKINGS (Mar. 22, 2019), <https://www.brookings.edu/2019/03/22/where-does-u-s-climate-policy-stand-in-2019/> [<https://perma.cc/N4SF-8B5X>].

²⁹ See Eric Zusman et al., *Why the United States Lacks a Federal Climate Policy: Collective Action Problems, Tea Parties, and Blue Dogs* 6–7 (Inst. for Glob. Envtl. Strategies, Working Paper-CC-2011-05, 2011), https://iges.or.jp/en/publication_documents/pub/workingpaper/en/2441/us_climate_policy.pdf [<https://perma.cc/TZ8H-6Q3G>]; see also *Why is*

failings in climate policy derive from the fact that the key “stakeholders” that will be most affected by climate change have the least influence in the debate, including marginalized communities on the front lines of climate impacts, youth and future generations, and the environment.³⁰ Additionally, even if governments are able to mount a robust response to the climate crisis, a broad coalition of actors, including all levels of government and the private sector, will be needed to address the problem at the pace and scale needed. Past failings to adopt comprehensive climate legislation suggest that new innovative approaches and partnerships will be needed, including public-private partnerships that can bring new parties to the table and include those constituencies who have historically been undervalued or ignored in past efforts.

In this Article, opportunities for public-private partnerships between land trusts and governments are explored as an opportunity for advancing collective action and equitable solutions to climate change that value the environment and future generations. While there are any number of private actors and institutions that will play important roles in advancing climate solutions, land trusts are uniquely suited for fostering solutions that can reduce carbon pollution, increase community resilience, and address pervasive socioeconomic and environmental stressors that undermine the ability of communities and ecosystems to survive and thrive in the face of a changing climate.

III. BACKGROUND: WHY LAND TRUSTS?

Land trusts can play unique roles in the fight against climate change in both the built and natural environments. This section discusses ways in which land trusts can support sustainability and resilience initiatives and the unique value that partnerships with land trusts can bring to the development of climate solutions.

A. *What Are Land Trusts?*

Land trusts are non-profit organizations that are incorporated for the purpose of acquiring and holding land in trust for public benefit.³¹ Many states have adopted enabling legislation to specifically authorize land trusts to acquire and hold land and to provide tax and other incentives

climate change so hard to tackle?, ECONOMIST (Dec. 1, 2018), <https://www.economist.com/leaders/2018/12/01/why-is-climate-change-so-hard-to-tackle> [<https://perma.cc/9N42-8RCV>].

³⁰ BARNES, *supra* note 5, at 11, 38.

³¹ Campbell et al., *supra* note 9, at 169–70.

to encourage land stewardship activities.³² For purposes of this Article, two types of land trusts are considered:

- *Conservation land trusts* focus on preserving and protecting undeveloped lands for their natural resource values and are formed for the main purpose of stewarding land for conservation purposes, such as protecting natural habitats, watersheds, and natural open space or preserving land for farming, forestry, or recreational uses.³³ Conservation land trusts work to preserve important natural landscapes by acquiring land or interests in land (through conservation easements³⁴) with high ecological or conservation value. The land trust then limits uses and development on the land to achieve conservation goals and to ensure long-term stewardship for environmentally beneficial uses. Conservation land trusts often work more in rural and less developed areas with sensitive or valuable natural resources.³⁵ As of 2017, there were approximately 1,363 accredited conservation land trusts, stewarding approximately 56 million acres across the United States.³⁶

³² See Andrew Decker, *Community Land Trusts and State Legislation: A Model to Enable This Affordable Housing Tool*, 26 J. AFFORDABLE HOUSING & COMMUNITY DEV. L. 489, 496–97 (2018). For a discussion of tax incentives for conservation easements, see also Marc Campopiano, *The Land Trust Alliance's New Accreditation Program*, 33 ECOLOGY L.Q. 897, 902–03 (2006).

³³ Campbell et al., *supra* note 9, at 169–70.

³⁴ A conservation easement is an interest in land often donated by the landowner to a third-party organization, such as a land trust or government agency. The easement is recorded against the property to bind future landowners and includes terms that limit development of the property and sometimes require management activities to preserve important natural resources on the site. By dedicating a conservation easement, landowners qualify for state and federal tax incentives. For a discussion of conservation easements, see *Conservation Options*, LAND TR. ALLIANCE, <https://www.landtrustalliance.org/what-you-can-do/conserving-your-land/conservation-options> [<https://perma.cc/K3HU-HZ4L>] (last visited Mar. 9, 2020); see also Campopiano, *supra* note 32, at 902–03.

³⁵ See, e.g., Leslie Jones, *Land Conservation Strengthens Rural Communities: Examples of the Land and Water Conservation Fund at Work*, U.S. DEP'T AGRIC. (Feb. 21, 2017), <https://www.usda.gov/media/blog/2014/07/24/land-conservation-strengthens-rural-communities-examples-land-and-water> [<https://perma.cc/EJ2C-6CP4>].

³⁶ LAND TR. ALL., 2015 NATIONAL LAND TRUST CENSUS REPORT: OUR COMMON GROUND

- *Community land trusts*, on the other hand, focus more on the built environment and are formed with the purpose of acquiring, developing, and stewarding land for community uses including affordable housing, economic development activities, and other community amenities (parks, community gardens, etc.).³⁷ Community land trusts acquire land through purchase or donation and then build new or rehabilitate existing housing or other community assets on the land.³⁸ The land trust preserves permanent affordability by retaining title to the underlying land but selling (or renting) improvements or homes on the land.³⁹ By permanently separating the land from the value of the improvement, land trusts remove land from the speculative market, retain the public subsidy used to build the housing, and ensure permanent affordability for residents and future generations.⁴⁰ Community land trusts tend to work more in developed urban areas and regions.⁴¹ There are

AND COLLECTIVE IMPACT 3 (2015), <http://s3.amazonaws.com/landtrustalliance.org/2015NationalLandTrustCensusReport.pdf> [<https://perma.cc/3MC5-SMXP>]; *Number of Accredited Land Trusts Reaches Milestone*, LAND TR. ALLIANCE (Feb. 22, 2017), <https://www.landtrustalliance.org/number-accredited-land-trusts-reaches-milestone> [<https://perma.cc/XS8B-BNQM>].

³⁷ *Frequently Asked Questions*, NYC COMMUNITY LAND INITIATIVE, <https://nyccli.org/resources/clts-and-mhas-frequently-asked-questions/> [<https://perma.cc/TKM5-FL7T>] (last visited Mar. 9, 2020); *Overview: Community Land Trusts (CLTs)*, COMMUNITY-WEALTH, <https://community-wealth.org/strategies/panel/clts/index.html> [<https://perma.cc/TBQ9-R76U>] (last visited Mar. 9, 2020).

³⁸ See John Emmeus Davis et al., *Building Better City-CLT Partnerships: A Program Manual for Municipalities and Community Land Trusts* 27, 30 (Lincoln Inst. of Land Policy, Working Paper WP08JD1, 2008); see also NYC COMMUNITY LAND INITIATIVE, *supra* note 37.

³⁹ The buyers of the structures are granted a lease to the land (typically for a term of ninety-nine years) for a small annual fee (e.g., \$1,200/yr.). And resale of the property is restricted using a resale restriction formula to ensure permanent affordability, but that enables the homeowner to share in some of the appreciation in the home's value at sale. Davis et al., *supra* note 38, at 6–7.

⁴⁰ See *id.* at 3.

⁴¹ See, e.g., Alana Semuels, *Affordable Housing, Always*, ATLANTIC (July 6, 2015), <https://www.theatlantic.com/business/archive/2015/07/affordable-housing-always/397637/> [<https://perma.cc/TV4B-SKME>]; see also Oksana Mironova, *How Community Land Trusts Can Help Address the Affordable Housing Crisis*, JACOBIN MAG. (July 6, 2019), <https://www.jacobinmag.com/2019/07/community-land-trusts-affordable-housing> [<https://perma.cc/EA3R-CWVG>].

approximately 225 community land trusts supporting affordable housing and other community development initiatives across the United States.⁴²

B. Why Are Land Trusts Uniquely Suited to Supporting Climate Action?

There are several unique features of land trusts that make them especially powerful partners in helping communities address the climate crisis:

- *Community Empowerment and Control:* One of the key challenges policymakers face in addressing climate change is the collective action and behavior change that is required to significantly reduce emissions and climate risks.⁴³ Community land trusts, in particular, have a unique governance model that can help to build political will and resident support for actions to address climate change and other socioeconomic and environmental challenges at the community level.⁴⁴ The “classic” community land trust is governed by a tripartite board that includes residents, members of the broader community, and other public and private sector experts and stakeholders (e.g., relevant government agencies, non-profits, community finance

⁴² *Community Land Trusts*, GROUNDED SOLUTIONS NETWORK, <https://groundedsolutions.org/strengthening-neighborhoods/community-land-trusts> [<https://perma.cc/NZS9-NPUD>] (last visited Mar. 9, 2020).

⁴³ See Daniel C. Esty & Anthony L.I. Moffa, *Why Climate Change Collective Action Has Failed And What Needs To Be Done Within And Without The Trade Regime*, 15 J. INT'L ECON. L. 777, 777–78 (2012).

⁴⁴ For a discussion of the various roles that land trusts are playing to activate community ownership and control of conservation and economic development activities and shifts to a “community conservation” model, see ERNIE ATENICO ET AL., CTR. FOR WHOLE CMTYS., LAND CONSERVATION AND THE PUBLIC TRUST: THE CASE FOR COMMUNITY CONSERVATION (Jan. 2013), <http://wholecommunities.org/wp-content/uploads/2015/12/CWCLandConservation2013.pdf> [<https://perma.cc/HY9V-3LNG>]. For a discussion of democratic control as a foundational principle for community land trusts established in the United States, see John Emmeus Davis, *Common Ground: Community-Owned Land as a Platform for Equitable and Sustainable Development*, 51 U.S.F. L. REV. 1, 6 (2017) [hereinafter Davis, *Common Ground*].

organizations, philanthropists, etc.).⁴⁵ By giving community members a voice in decision making around land use and stewardship of lands, land trusts can support more equitable climate solutions that reflect the needs and priorities of the community. Because of their strong emphasis on social justice and community control, community land trusts can be particularly powerful partners for engaging communities that have been historically marginalized and underrepresented in past climate debates—such as low income communities and communities of color.⁴⁶ Additionally, many conservation land trusts are engaging in community conservation initiatives to engage residents in land trust activities.⁴⁷ The community-oriented governance of many land trusts can also help to build political support for solutions that require collective action solutions to manage and maintain shared resources or ‘commons’—such as environmental resources and built assets that are facing threats from climate change.⁴⁸

- *Giving Voice to the Environment and Future Generations*: Land trusts can also help to ensure that the interests of the environment and future generations are considered when developing climate solutions. Land trusts are formed with the primary goal of holding land in trust for the benefit of the public and future generations.⁴⁹ Governing boards act as trustees of the land and, as a result, are charged with managing and stewarding land and assets in ways that will be sustainable over the long term.⁵⁰ Because environmental stewardship and generational equity are embedded in the DNA of land

⁴⁵ Davis et al., *supra* note 38, at 8.

⁴⁶ See Mironova, *supra* note 41; see also Davis, *Common Ground*, *supra* note 44, at 17–22.

⁴⁷ *What Is Community Conservation?*, LAND TR. ALLIANCE, <https://www.landtrustalliance.org/topics/community-conservation/what-community-conservation> [https://perma.cc/ECZ4-MNGM] (last visited Mar. 9, 2020).

⁴⁸ BARNES, *supra* note 5, at 85–86.

⁴⁹ *Id.* at 84–87.

⁵⁰ *Id.*

trusts, this makes them uniquely suited for giving voice for two key “stakeholders” that have been left out of past climate debates—the environment and future generations.⁵¹

In addition to these common characteristics of land trusts generally, land trusts are also uniquely situated to support climate action in two key sectors—the built and natural environments.

C. *Community Land Trust Roles in Supporting Climate Action in the Built Environment*

Community land trusts are already playing important roles in supporting sustainability and resilience in communities across the country.⁵² This section describes the roles that community land trusts can and are playing and also provides examples of how land trusts from around the country are partnering with state and local governments to implement projects that deliver important environmental, economic, and social benefits.

1. *Enhancing Community Resilience by Supporting Affordable Housing*

Community land trusts are already helping cities address a pervasive stressor that is undermining community resilience—the lack of safe, quality affordable housing.⁵³ Many communities are experiencing an affordable housing crisis, which is having significant consequences for local economies and community resilience.⁵⁴ Residents are spending an increasing amount of their budgets on housing, which is crowding out expenditures on other necessities (such as healthcare, education, and transportation).⁵⁵

⁵¹ *Id.*

⁵² See Hortense Leon, *Community Land Trusts in the Age of Climate Change*, SHELTERFORCE (Feb. 28, 2019), <https://shelterforce.org/2019/02/28/community-land-trusts-in-the-age-of-climate-change/> [<https://perma.cc/EX7X-D29N>].

⁵³ See Goh, *supra* note 27; see also Semuels, *supra* note 41.

⁵⁴ See 100 RESILIENT CITIES, SAFER AND STRONGER CITIES: STRATEGIES FOR ADVOCATING FOR FEDERAL RESILIENCE POLICY 40–42 (2018), <https://www.enterprisecommunity.org/download?fid=9064&nid=6436> [<https://perma.cc/K3JC-F8MS>].

⁵⁵ ROBERT WOOD JOHNSON FOUND., 2019 COUNTY HEALTH RANKINGS KEY FINDINGS REPORT 2, 6, 15 (2019), <https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report> [<https://perma.cc/NKY2-QAP9>] (“Severe housing cost burden

In addition, rising housing costs are undermining community resilience in many areas as key workers—like nurses, teachers, and emergency responders—cannot afford to live in the cities that they serve.⁵⁶ The challenges of delivering and maintaining affordable housing will only grow as housing is increasingly affected by climate impacts and as housing costs increase because of the investments that will be needed to enhance the resilience and sustainability of new developments and existing housing stock.⁵⁷ For example, significant retrofits will be needed to protect against increasing risks from flooding and heat and to electrify and power buildings with renewable-energy sources, which will increase the costs to build and maintain housing.⁵⁸ Community land trusts are already working to

affects health and is linked to barriers to living long and well. Across counties, increases in the share of households severely cost burdened are associated with more food insecurity, more child poverty, and more people in fair or poor health.”); *see also* JOINT CTR. FOR HOUS. STUDIES OF HARVARD UNIV., *THE STATE OF THE NATION’S HOUSING 2019*, at 36 (2019), https://www.jchs.harvard.edu/sites/default/files/Harvard_JCHS_State_of_the_Nations_Housing_2019.pdf [<https://perma.cc/KHK9-AT4D>]; Veronica Gaitán, *How Housing Can Determine Educational, Health, and Economic Outcomes*, HOUSING MATTERS (Sept. 19, 2018), <https://housingmatters.urban.org/articles/how-housing-can-determine-educational-health-and-economic-outcomes> [<https://perma.cc/5XCT-NZV4>]; Guillermo Ortiz et al., *A Perfect Storm: Extreme Weather as an Affordable Housing Crisis Multiplier*, CTR. FOR AM. PROGRESS (Aug. 1, 2019), <https://www.americanprogress.org/issues/green/reports/2019/08/01/473067/a-perfect-storm-2/> [<https://perma.cc/6ASW-KCSE>] (“Of the country’s 43 million renter households in 2016, nearly half—or more than 20 million—spent more than 30 percent of their household income on rent; 11 million of these households were severely cost-burdened, spending more than half of their income on rent. There is not a single county, metropolitan area, or state in the country where a full-time worker earning the prevailing minimum wage can afford to rent a two-bedroom apartment.” (citing NAT’L LOW INCOME HOUS. COAL., *OUT OF REACH: THE HIGH COST OF HOUSING* (2018), https://reports.nlihc.org/sites/default/files/oor/OOR_2018.pdf [<https://perma.cc/2U6E-N44N>])).

⁵⁶ *See* Leon, *supra* note 52.

⁵⁷ JOINT CTR. FOR HOUS. STUDIES OF HARVARD UNIV., *supra* note 55, at 36 (noting that homeowner expenses on disaster-related improvements to housing doubled from \$7 billion annually in the 1990s to \$14 billion in the 2010s); Allyson Wendt, *The Challenge of Existing Homes: Retrofitting for Dramatic Energy Savings*, BUILDING GREEN (July 10, 2007), <https://www.buildinggreen.com/feature/challenge-existing-homes-retrofitting-dramatic-energy-savings> [<https://perma.cc/9T86-CTUE>]; *see also* Shelby D. Green, *Building Resilient Communities in the Wake of Climate Change While Keeping Affordable Housing Safe from Sea Changes in Nature and Policy*, 54 WASHBURN L.J. 527 (2015).

⁵⁸ While sustainability and resilience improvements to homes may ultimately reduce the total cost of housing for residents (considering savings from losses avoided, savings on energy and water bills, and insurance discounts over the design life of the structure), these improvements add to the initial construction costs of building new homes and retrofits to existing structures can be ever more expensive. *See The Future of Resilience & Sustainability*, WIRED, <https://www.wired.com/brandlab/2019/06/future-resilience-sus>

enhance individual and community resilience in many communities, by building and maintaining safe, affordable housing options for residents.⁵⁹

In this way, community land trusts help to build the individual resilience of residents. By providing permanently affordable housing, land trusts help to keep the cost of housing down for homeowners and renters, enabling these individuals to free up resources to pay for other essentials (e.g., healthcare, childcare, transportation, and education).⁶⁰ Many land trusts also sell homes under a shared-equity model that provides wealth-building opportunities for homeowners.⁶¹ Under this model, any increase

tainability// [https://perma.cc/T8XK-7GQQ] (last visited Mar. 9, 2020) (The American Institute for Architects estimates that incorporating energy efficiency upgrades to build “passive home[s]” adds approximately 10 percent to the costs of construction); *see also Fact Sheet: Building Higher in Flood Zones: Freeboard—Reduce Your Risk, Reduce Your Premium*, FEMA (June 2014), https://www.fema.gov/media-library-data/1438356606317-d1d037d75640588f45e2168eb9a190ce/FPM_1-pager_Freeboard_Final_06-19-14.pdf [https://perma.cc/NJ8P-HX3J] (FEMA estimates that the cost to enhance the flood resilience of new construction by incorporating freeboard (i.e., elevation above minimum standards) is between 0.25 to 1.5 percent of total construction costs for each foot of freeboard); *but see* KEVIN FINDLAN ET AL., N.Y. UNIV. FURMAN CTR., *THE PRICE OF RESILIENCE: CAN MULTIFAMILY HOUSING AFFORD TO ADAPT?* 15–20 (July 2014), https://furmancenter.org/files/NYUFurmanCenter_ThePriceofResilience_July2014.pdf [https://perma.cc/C6FA-436K] (estimating costs of retrofits that could be made to enhance the flood resilience of multifamily structures (including elevating mechanical and electrical utilities, dry and wet floodproofing, conversion of ground floors and cellars to non-residential uses) in flood zones in New York City and the potential costs of rising insurance rates if landowners are unable to make needed retrofits).

⁵⁹ *See* Goh, *supra* note 27; *see also* Semuels, *supra* note 41.

⁶⁰ *See* sources cited *supra* note 55.

⁶¹ Shared equity refers to joint ownership of property between the lender and the resident. CLTs are among several shared equity homeownership and rental models, such as limited-equity cooperatives and mutual housing associations, that preserve affordability through resale restriction and enable owners to share in the proceeds of sale. CLTs allow residents to purchase a house on land owned by the CLT, while securing a long-term ground lease on the underlying land from the CLT. The ground lease builds in resale price restrictions for future income-eligible buyers. Upon resale, CLT homeowners retain a portion of the equity in the building and improvements (usually about 25 percent of the equity gain), while the CLT retains ownership of the land and the accrued value associated with it (usually about 75 percent of the equity gain). *See generally* JOHN EMMEUS DAVIS, *SHARED EQUITY HOMEOWNERSHIP: THE CHANGING LANDSCAPE OF RESALE-RESTRICTED, OWNER-OCCUPIED HOUSING* (2006), http://www.nhi.org/pdf/SharedEquityHome.pdf [https://perma.cc/3LSQ-N848] [hereinafter DAVIS, *SHARED EQUITY HOMEOWNERSHIP*]; U.S. DEP'T OF HOUS. & URBAN DEV., OFFICE OF POLICY DEV. & RESEARCH, *Shared Equity Models Offer Sustainable Homeownership*, EVIDENCE MATTERS (Fall 2012), https://www.huduser.gov/portal/periodicals/em/fall12/highlight3.html [https://perma.cc/VC3K-NJR6]; John Duda, *Community Land Trusts*, DEMOCRACY COLLABORATIVE (Mar. 17, 2014), https://democracycollaborative.org/content/infographic-community-land-trusts [https://perma.cc/Q6MN-VEUS].

in the home's value is shared by the homeowner and the community land trust, which not only helps to keep the cost of the housing down for future buyers, but also allows current owners to build up a "nest egg" of home equity savings.⁶² This enables residents to build up some capital while also "paying affordability forward" to the next owner.⁶³ In addition, many community land trusts also provide financial counseling and other supports that significantly reduce foreclosure risks for homeowners, providing housing stability and protecting residents from predatory lenders.⁶⁴

By providing permanently affordable housing, community land trusts are also helping to enhance broader community resilience. Community land trusts have been shown to be successful bulwarks against gentrification because they take land off the speculative market.⁶⁵ Preventing displacement enhances social cohesion, which research has shown is critical to overall community resilience.⁶⁶ Residents often rely on neighbors for childcare or support during emergencies, and when market pressures cause displacement of existing residents their social networks and support systems are broken, which weakens the overall ability of a community to cope with and withstand impacts from extreme events.⁶⁷ For

⁶² DAVIS, SHARED EQUITY HOMEOWNERSHIP, *supra* note 61; Duda, *supra* note 61.

⁶³ ANELIESE PALMER, STRATEGIES FOR SUSTAINABLE GROWTH IN COMMUNITY LAND TRUSTS 4–5 (Mar. 2019), https://www.jchs.harvard.edu/sites/default/files/harvard_jchs_palmer_strategies_sustainable_growth_community_land_trusts_2019.pdf [<https://perma.cc/F4DH-ZSXF>] (citing a 2013 Urban Institute study of three CLTs where homeowners saw a 2 to 39 percent rate of return when they sold shared equity housing under the CLT model); Kenneth Temkin et al., *Sharing Equity with Future Generations: An Evaluation of Long-Term Affordable Homeownership Programs in the USA*, 28 HOUSING STUD. 553, 567–69 (2013).

⁶⁴ A 2011 Lincoln Institute of Land Policy study found that CLT homeowners experienced foreclosure and delinquency at a fraction of the rate of traditional homeowners during the subprime mortgage crisis (0.52 percent rate of foreclosure of CLT-owned properties compared to 3.3 percent for market rates homes). *Survey finds low foreclosure rates in community land trusts*, LINCOLN INST. LAND POL'Y (Mar. 17, 2009), <https://www.lincolninst.edu/news/press-releases/survey-finds-low-foreclosure-rates-community-land-trusts> [<https://perma.cc/ZP6S-YSPR>].

⁶⁵ Myungshik Choi et al., *Can community land trusts slow gentrification?*, 40 J. URB. AFFAIRS 394, 402 (2018); Davis, *Common Ground*, *supra* note 44, at 25–26.

⁶⁶ Joseph Gibbons et al., *Do Gentrifying Neighbourhoods Have Less Community? Evidence from Philadelphia*, 00 URB. STUD. 1, 16, 17–18 (2019) (finding that Black and Hispanic neighborhoods in Philadelphia experiencing White gentrification reported loss of community or social cohesion (defined as trust in neighbors, sense of belonging, and willingness to cooperate) and citing other studies that have found similar results).

⁶⁷ Danielle Baussan, *Social Cohesion: The Secret Weapon in the Fight for Equitable Climate Resilience*, CTR. FOR AM. PROGRESS (May 11, 2015), <https://www.americanprogress.org/issues/green/reports/2015/05/11/112873/social-cohesion-the-secret-weapon-in-the-fight-for-equitable-climate-resilience/> [<https://perma.cc/2PRC-ZV4S>].

example, during the Chicago heat wave in 1995, residents in neighborhoods with low social cohesion died at much higher rates than in areas where neighbors checked in on each other.⁶⁸ The way land trusts are governed as well as the activities they support in communities both contribute to building relationships among neighbors in communities. The tripartite governance model of community land trusts fosters active engagement among residents and enhances community control of land-use decisions within the neighborhood.⁶⁹ Additionally, many community land trusts see part of their role as “place-making.” In addition to supporting the development of affordable housing options for residents, many land trusts support community projects to build economic capacity through support for local businesses, address community problems (such as contamination and blight), and provide community assets (such as parks, greenspace, urban gardens, and community centers), as described in the examples below.⁷⁰ All of these activities and projects help to bring neighbors together in ways that build social cohesion and enhance community resilience.

One of the first examples of a city-land trust partnership designed to address a range of community challenges, including housing affordability, racial inequality, and blight is the Dudley Street Neighborhood Initiative (“DSNI”) in Boston, Massachusetts.⁷¹ In the 1980s, DSNI created the community land trust, Dudley Neighbors, Inc. (“DNI”), to combat blight in the Dudley Triangle neighborhood. The neighborhood, as a result of disinvestment, had numerous abandoned properties and became a frequent site for dumping and arson.⁷² The goal of the land trust was to

⁶⁸ *Id.*; see also Eric Klinenberg, *Heat Waves: A 20-Year Lesson*, 100 RESILIENT CITIES (July 13, 2015), <http://www.100resilientcities.org/heat-waves-a-20-year-lesson/> [<https://perma.cc/34VH-KSA3>] (stating hundreds of deaths during the 1995 Chicago heat wave were attributed to social isolation that undermined the community’s capacity to support its weakest members in the face of disaster).

⁶⁹ Davis, *Common Ground*, *supra* note 44, at 17–22 (arguing that the classic tripartite governance and ground lease models adopted by community land trusts facilitate democratic governance and community empowerment by sharing power with the community in terms of decision making, building power within the community through education and community organizing, and wielding power through collective ownership of land).

⁷⁰ *Id.* at 10, 13.

⁷¹ See SOLIDARITY ECON. INITIATIVE, SOLIDARITY RISING IN MASSACHUSETTS 23 (Feb. 2017), <https://www.solidaritymass.com/greater-boston-community-land-trust> [<https://perma.cc/K4HV-GUH4>].

⁷² Yvonne Abraham, *Trust and transformation in a Roxbury neighborhood*, BOS. GLOBE (July 24, 2014), <https://www.bostonglobe.com/metro/2014/07/23/roxbury-neighborhood-once-monument-racism-and-neglect-undergoes-transformation/QcWotBYJZYGoZD3OU4u0lO/story.html> [<https://perma.cc/A83Y-WY3V>].

facilitate redevelopment of the neighborhood without displacing existing residents and to empower community control over future development.⁷³

DNI acquired thirty acres of land and currently stewards 225 units of affordable housing, an urban farm, a greenhouse, a charter school, parks, and a town common on the land.⁷⁴ DNI's work in Boston has shown how land trusts can be powerful partners in helping to enhance community resilience and it has served as a model for many other cities. First, DNI has shown how land trusts can enhance community control of development through their governing boards. The DNI governing board includes representatives that reflect the racial and ethnic diversity of the neighborhood.⁷⁵ It has successfully prevented displacement of residents by preserving low-cost housing options, even as other areas of the City have experienced rapid gentrification. Additionally, the urban farms and greenhouse stewarded by the land trust have helped provide a low-cost source of healthy foods and has enhanced food security for residents.⁷⁶ By

⁷³ *Program Focus Areas*, DUDLEY STREET NEIGHBORHOOD INITIATIVE, <https://www.dsni.org/program-focus-areas> [<https://perma.cc/3VHQ-GCD9>] (last visited Mar. 9, 2020).

⁷⁴ *History of DNI*, DUDLEY NEIGHBORS INC., <https://www.dudleyneighbors.org/background.html> [<https://perma.cc/2F98-4E8S>] (last visited Mar. 9, 2020); *see also* SHARON CHO ET AL., BUILDING A LIVABLE BOSTON: THE CASE FOR COMMUNITY LAND TRUSTS 4 (Apr. 2016), <https://static1.squarespace.com/static/5515d04fe4b0263cc20b3984/t/57278aa6e321405ebaecaa74/1462209193078/Building+a+Liveable+Boston%2C+The+Case+for+Community+Land+Trusts+April+2016.pdf> [<https://perma.cc/3LN3-TQ8P>].

⁷⁵ DSNI is led by a governing board that is democratically elected by residents and is designed to be inclusive and representative of the ethnically and racially diverse neighborhood. Board members serve for a two-year term and all Board meetings are open to the public. Community members that participate in consecutive meetings earn the right to vote and provide input on DSNI's activities and projects. The Board is also set up to be inclusive and representative of the diversity of resident voices. Of the thirty-five Board seats, twenty are reserved for community residents and seats are reserved to represent the diverse demographics and stakeholders in the neighborhood: four seats are reserved for Black residents, four for Latinx residents, four for residents of Cape Verdean descent, four for White residents, and four for youth residents. The remaining seats include representatives from community development organizations (two seats), faith-based organizations (two seats), partner organizations (seven seats), and local small business (two seats). Then two additional Board members are selected by the thirty-three Board members according to the bylaws. The Board is charged with approving all decisions for the organization with community input and participation in decisionmaking. *Board of Directors*, DUDLEY STREET NEIGHBORHOOD INITIATIVE, <https://www.dsni.org/board> [<https://perma.cc/ZCA7-H9D8>]; *see also Boston, MA—Dudley Street Neighborhood Initiative*, COLLABORATIVE CITY, <https://www.collaborative.city/item/boston-ma-dudley-street-neighborhood-initiative/> [<https://perma.cc/JU4D-28N7>] (last visited Mar. 9, 2020).

⁷⁶ Kaid Benfield, *Why Community-Based Planning Works Better Than Anything Else*, CITYLAB (Mar. 26, 2012), <https://www.citylab.com/design/2012/03/why-community-based-planning-works-better-anything-else/1587/> [<https://perma.cc/3NRW-UQJ3>]; *see also* NAT'L

stewarding parks and other greenspaces, the land trust is helping to manage stormwater, reduce urban heat islands, and increase social bonds in the neighborhood.⁷⁷

2. Delivering and Stewarding Green, Resilient Affordable Housing Options

Many community land trusts are also incorporating green design features into their housing projects, which benefits both individual homeowners as well as the broader community. The examples below show how community land trusts in flood-prone areas are building homes that are designed to be more resilient to flooding. This not only protects residents during flood events, but these features can also reduce insurance costs for homeowners.⁷⁸ Similarly, some community land trusts are building homes that incorporate renewable energy, energy efficiency, and weatherization features. These features can protect residents during heat-waves and reduce energy costs for residents, which reduces the total cost of housing for the homeowner and frees up money for other household expenses.⁷⁹ By designing and building homes that incorporate resilience and sustainability features, community land trusts are also helping local governments advance work to meet adaptation and mitigation goals.

In Greater Seattle and King County, Washington, the Homestead Community Land Trust (“Homestead CLT”) is working to preserve and build permanently affordable housing that incorporates green design elements to reduce energy costs for residents and advance the City and County’s mitigation goals. The Homestead CLT currently has a portfolio of 211 homes that it stewards for low- and middle-income homeowners.⁸⁰ To reduce the greenhouse gas emissions from the development, the CLT

ACADS. OF SCI., ENG'G, & MED., *THE PRIVATE SECTOR AS A CATALYST FOR HEALTH EQUITY AND A VIBRANT ECONOMY: PROCEEDINGS OF A WORKSHOP 39* (2016), https://www.ncbi.nlm.nih.gov/books/NBK384986/pdf/Bookshelf_NBK384986.pdf [<https://perma.cc/9YYE-RQ6D>].

⁷⁷ Jennifer Fabiano, *4 ways urban green spaces can benefit the environment*, YAHOO! NEWS (Apr. 20, 2018), <https://www.accuweather.com/en/weather-news/4-ways-urban-green-spaces-can-benefit-the-environment/349863> [<https://perma.cc/T98A-GBRA>].

⁷⁸ Stephen G. Bushnell, *Insurance and Going Green*, INS. J. (Nov. 14, 2010), <https://www.insurancejournal.com/magazines/mag-features/2010/11/14/160495.htm> [<https://perma.cc/K6EG-NJEK>].

⁷⁹ Jocelyn Durkay, *Energy Efficiency and Renewables in Lower-Income Homes*, LEGISBRIEF (Nat'l Conf. for St. Leg., Denver, Colo. & Wash., D.C.), Feb. 2017, at 1–2.

⁸⁰ *Our Impact*, HOMESTEAD COMMUNITY LAND TR., <http://www.homesteadclt.org/our-impact> [<https://perma.cc/2NET-BW2T>] (last visited Mar. 9, 2020).

recently broke ground on several projects to build energy efficient, “net-zero” homes with solar panels in transit-accessible areas of King County.⁸¹

Similarly, in Irvine, California, the City helped to establish the Irvine Community Land Trust (“Irvine CLT”) to support infill development of sustainable, affordable housing. The Irvine CLT develops sustainable housing to meet the City’s green housing standards and recently completed development of a 2.2-acre LEED Gold certified urban infill site as part of Irvine’s Inclusionary Zoning Plan.⁸² One-, two-, and three-bedroom apartments were built using sustainable building methods such as low energy-conserving windows, water-saving plumbing fixtures, and LED lighting throughout the property.⁸³ The project also includes other community amenities including a half acre of open space, a 5,000-square-foot community space, and community gardens.⁸⁴ Additionally, the land trust is building housing to provide services to residents with special needs; for example, the Doria housing project reserved 10 percent of homes for people with a history of homelessness, including veterans and people with mental illnesses.⁸⁵ The City of Irvine, California, took a leadership role in establishing the Irvine CLT and is supporting initial CLT developments of affordable housing in the City, which demonstrates how city-CLT partnerships can foster the implementation of projects that address both housing affordability and sustainability goals.⁸⁶

⁸¹ *New Homes In Development*, HOMESTEAD COMMUNITY LAND TR., <http://www.homesteadclt.org/about-homestead/new-homes-in-development> [<https://perma.cc/T9Y6-FLQC>] (last visited Mar. 9, 2020); see also Press Release, Homestead Cmty. Land Tr., Homestead Community Land Trust Begins Construction on Zero-Energy Permanently Affordable Homeownership in Renton (Nov. 20, 2019), <http://www.homesteadclt.org/our-impact/homestead-in-the-media/homestead-community-land-trust-begins-construction-on-zero-energy-permanently-affordable-homeownership-in-renton> [<https://perma.cc/CLA4-K4E2>].

⁸² *Parc Derian*, IRVINE COMMUNITY LAND TR., <http://www.irvineclt.org/properties.php?id=15> [<https://perma.cc/2KYH-VQ3Z>] (last visited Mar. 9, 2020). Irvine’s inclusionary zoning rules require that developments over fifty units dedicate 15 percent of the units as affordable housing, and developments under fifty units can choose from a “menu of options” in lieu of providing affordable housing. The menu allows developers to convert existing market rate housing to affordable housing for a period of thirty years, extend existing affordable housing covenants for a period of at least forty years, pay in-lieu fees, transfer control of the units to a non-profit housing agency, dedicate land for affordable housing, among other options. Irvine Cal. Zoning Ordinances ch. 2–3, §§ 2–5 (2019). For a definition of the LEED rating system, see *infra* note 137.

⁸³ IRVINE COMMUNITY LAND TR., *supra* note 82.

⁸⁴ *Id.*

⁸⁵ *Doria: Award-Winning Workforce, MHSA Housing in Irvine CA*, JAMBOREE, <https://www.jamboreehousing.com/blogs/affordable-housing-communities/doria> [<https://perma.cc/FJH3-WE34>] (last visited Mar. 9, 2020).

⁸⁶ See Stephen R. Miller, *Community Land Trusts: Why Now Is the Time to Integrate This*

In Monroe County, Florida, the Florida Keys Community Land Trust (“Florida Keys CLT”) is supporting disaster recovery efforts by rebuilding resilient and sustainable workforce housing in communities that experienced significant damage from Hurricane Irma. The Florida Keys, a 125-mile-long chain of islands off the southern tip of Florida, were devastated in 2017 by Hurricane Irma.⁸⁷ Irma made landfall at Cudjoe Key as a Category 4 hurricane and its sustained winds of 132 mph and eight-foot storm surge damaged or destroyed an estimated 7 percent of homes in the Florida Keys with disproportionate impacts on workforce housing in the communities of Big Pine Key, Middle Torch Key, and Big Torch Key.⁸⁸ In the aftermath of the storm, the Florida Keys CLT was established to acquire disaster-affected properties and rebuild resilient workforce housing for middle- and lower-income renters in the Keys. The CLT has acquired almost thirty lots, has completed construction of four homes, has five additional homes in development, and another twenty-two homes planned.⁸⁹ The CLT is building energy efficient and resilient two- and three-bedroom cottages for families earning 80 percent or less of the area median income (“AMI”) and earning at least 70 percent of their income from work in Monroe County.⁹⁰ The cottages are built to withstand 200 mph winds and are elevated eleven feet, exceeding flood design standards required by the Federal Emergency Management Agency (“FEMA”).⁹¹

3. Delivering and Stewarding Other Community Amenities

In addition to housing, many community land trusts are also supporting other community uses that deliver important environmental,

Housing Activists’ Tool into Local Government Affordable Housing Policies, 23 J. AFFORDABLE HOUSING 349, 363–65 (2015); see also ADAM ELIASON & JOHN TRAUTH, CIVICSTONE, INC., CITY OF IRVINE HOUSING STRATEGY & IMPLEMENTATION PLAN i–iv (Mar. 14, 2006), <https://legacy.cityofirvine.org/civica/filebank/blobdownload.asp?BlobID=8842> [<https://perma.cc/VUQ5-D69K>].

⁸⁷ *Hurricane Irma Recovery*, MONROE COUNTY, FLA., <https://www.monroecounty-fl.gov/726/Hurricane-Irma-Recovery> [<https://perma.cc/KT3P-LHLY>] (last visited Mar. 9, 2020).

⁸⁸ *Id.*; see also *Background*, FLA. KEYS COMMUNITY LAND TR., <https://www.affordablekeys.org/> [<https://perma.cc/UMK6-PKD3>] (last visited Mar. 9, 2020).

⁸⁹ Sara Matthis, *Affordapalooza 2: Florida Keys Community Land Trust Readies For More Projects*, KEY WEST WEEKLY, Dec. 5, 2019, at 38; Nicole Javorsky, *New Florida Keys Cottages Are Storm-Proof Affordable Housing*, CITYLAB (Aug. 27, 2018), <https://www.citylab.com/design/2018/08/new-storm-proof-cottages-will-help-house-the-florida-keys-workforce/568210/> [<https://perma.cc/JX2G-NZ9K>].

⁹⁰ Javorsky, *supra* note 89; *Who We Are*, FLA. KEYS COMMUNITY LAND TR., <https://www.affordablekeys.org/who-we-are> [<https://perma.cc/7LYJ-XWHF>] (last visited Mar. 9, 2020).

⁹¹ *Our Work*, FLA. KEYS COMMUNITY LAND TR., <https://www.affordablekeys.org/our-work> [<https://perma.cc/7B5F-7KG2>] (last visited Mar. 9, 2020).

social, and economic benefits to the community. For example, developments often incorporate parks, open space, and community gardens that green the community and advance community goals, such as improving public health and food security. As described above, these spaces encourage interaction and build social bonds between neighbors. Parks and green space in communities have been shown to provide a range of community benefits: parks and community gardens encourage outdoor activities that improve public health; green space and trees also provide important environmental benefits by absorbing rainwater and improving stormwater management, sequestering carbon, reducing air pollution, and reducing urban heat islands; parks have also been shown to provide important socioeconomic benefits by reducing crime, increasing property values, and spurring business and private investment.⁹² By incorporating or stewarding greenhouses and urban gardens, many community land trusts are providing residents with a source of affordable and healthy foods. Additionally, many land trusts work to revitalize blighted, vacant, underutilized, and sometimes contaminated properties,⁹³ which improves local economies and eliminates sources of pollution. Governments can expand upon these efforts and leverage partnerships with community land trusts to redevelop blighted and vacant parcels with publicly beneficial uses, such as parks, community solar installations, or green infrastructure.

For example, in Albuquerque, New Mexico, the Sawmill Community Land Trust (“Sawmill CLT”) redeveloped previously contaminated industrial properties to deliver both affordable housing as well as a broad array of other community amenities, including parks, community gardens, and a community center. The Sawmill CLT was established to support economic redevelopment of the Sawmill-Wells Park neighborhood (between Old Town and downtown Albuquerque), which had become blighted due to environmental and public health impacts caused by industrial uses in the neighborhood.⁹⁴ As part of its foundational goals, the Sawmill CLT highlighted environmental sustainability and intergenerational equity as being key drivers of its work in the community.⁹⁵ The City

⁹² *Why City Parks Matter*, CITY PARKS ALLIANCE, <https://cityparksalliance.org/about-us/why-city-parks-matter/> [<https://perma.cc/7RYN-U7UP>] (last visited Mar. 9, 2020).

⁹³ See generally ROBERT HERSH, CTR. FOR PUB. ENVTL. OVERSIGHT BROWNFIELDS BRIEFS, CLEANING UP BROWNFIELDS THROUGH COMMUNITY LAND TRUSTS (Apr. 2007), <http://cpeo.org/pubs/CLT.pdf> [<https://perma.cc/VWQ8-8582>].

⁹⁴ *History*, SAWMILL COMMUNITY LAND TR., <http://www.sawmillclt.org/about-us/history/> [<https://perma.cc/FC66-SDT2>] (last visited Mar. 9, 2020).

⁹⁵ In articulating its mission and goals, the Sawmill CLT lists goals to: “[h]elp protect existing residents from the negative impacts of new development; [e]mpower residents

helped to facilitate the transfer of a twenty-seven acre contaminated, former industrial site to the land trust.⁹⁶ The Sawmill CLT then used a Brownfield cleanup grant⁹⁷ to remediate the property and develop affordable housing and other community amenities like parks, community gardens, above ground cisterns for rainwater harvesting, and an orchard that contribute to community resilience in the neighborhood.⁹⁸

4. Supporting Green Infrastructure Approaches to Manage Stormwater

Land trusts could also play important roles in deploying green infrastructure solutions to address increasingly heavy rainfall events, stormwater pollution, and more intense heat waves as a result of climate change.⁹⁹ Green infrastructure projects are designed to reduce impervious surfaces and reintegrate natural landscapes to better manage and absorb rainwater and reduce stormwater runoff.¹⁰⁰ In addition to improving water quality, green infrastructure projects can provide numerous other benefits including reducing ambient air temperatures, improving air quality, providing habitats for species, reducing flood risks, and increasing property values.¹⁰¹ Green infrastructure projects can also help to reduce

to make informed decisions about their future; [c]reate a built environment that retains its physical integrity for future generations while preserving the natural attributes and cultural history of the community; [s]upport ecological renewal and energy conservation.” *Mission and Goals*, SAWMILL COMMUNITY LAND TR., <http://www.sawmillct.org/about-us/mission-and-goals/> [https://perma.cc/DC45-S82W] (last visited Mar. 9, 2020).

⁹⁶ HERSH, *supra* note 93, at 2.

⁹⁷ “Brownfield” is defined by the U.S. Environmental Protection Agency (“EPA”) as a site, “the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.” *Overview of EPA’s Brownfield Program*, EPA, <https://www.epa.gov/brownfields/overview-epas-brown-fields-program> [https://perma.cc/3FLD-EBJG] (last updated Oct. 4, 2019); *see also Types of Brownfields Grant Funding, Cleanup Grants*, EPA, <https://www.epa.gov/brownfields/types-brownfields-grant-funding> [https://perma.cc/7PJB-8WX6] (last updated Mar. 9, 2020).

⁹⁸ *Completed Projects*, SAWMILL COMMUNITY LAND TR., <http://www.sawmillct.org/about-us/completed-projects/> [https://perma.cc/LC9Y-Y2VB] (last visited Mar. 9, 2020).

⁹⁹ “Green infrastructure” is defined in section 502 of the Clean Water Act as “. . . the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.” *What is Green Infrastructure?*, EPA, <https://www.epa.gov/green-infrastructure/what-green-in-frastructure> [https://perma.cc/9LRW-MYBN] (last updated Dec. 4, 2019).

¹⁰⁰ *Id.*

¹⁰¹ *Green Infrastructure Toolkit: Introduction*, GEO. CLIMATE CTR., <https://www.george>

stormwater fees for residents (reducing the total cost of housing), and in some places, could be used as a way to diversify the land trust's income streams. For example, in Washington, D.C., the District is encouraging green infrastructure solutions as a strategy for reducing stormwater runoff through a stormwater credit system.¹⁰² In D.C., land trusts can incorporate green infrastructure that retains stormwater above what is required by the District's stormwater ordinance, and then sell the additional retention as a "credit" to other developers.¹⁰³ By doing so, the land trust would not only deliver important environmental benefits to residents but would also generate an income stream that could be used to manage or improve other properties.

Some land trusts are already supporting green infrastructure approaches for addressing stormwater pollution. For example, the Aquidneck Land Trust in Rhode Island has been working through a statewide Green Infrastructure Coalition of non-profits, government agencies, and businesses to deploy green infrastructure approaches to reduce stormwater pollution and flood risks on private property.¹⁰⁴ The Coalition is working in urban areas in Providence, Newport, and Aquidneck Island to bring financial resources and technical assistance to help private and government landowners design and construct green infrastructure projects.¹⁰⁵ The land trust works with other partners to educate residents about opportunities to incorporate green infrastructure in homes and gardens—including rain barrels and rain gardens—and the roles that green infrastructure approaches can play in protecting the environment and enhancing climate resilience.¹⁰⁶

townclimate.org/adaptation/toolkits/green-infrastructure-toolkit/introduction.html [https://perma.cc/D247-ARE7] (last visited Mar. 9, 2020).

¹⁰² *Stormwater Retention Credit Trading Program*, D.C. DEP'T ENERGY & ENV'T, <https://doee.dc.gov/src> [https://perma.cc/H97T-BL52] (last visited Mar. 9, 2020); see also *Washington D.C./District of Columbia Stormwater Ordinance—2013 Rule on Stormwater Management and Soil Erosion and Sediment Control*, ADAPTATION CLEARINGHOUSE, <https://www.adaptationclearinghouse.org/resources/washington-d-c-district-of-columbia-stormwater-ordinance-2013-rule-on-stormwater-management-and-soil-erosion-and-sediment-control.html> [https://perma.cc/X98M-37VS] (last visited Mar. 9, 2020).

¹⁰³ D.C. DEP'T ENERGY & ENV'T, *supra* note 102.

¹⁰⁴ *Collaborations*, AQUIDNECK LAND TR., <https://ailt.org/our-work/collaborations/> [https://perma.cc/L9UX-C8W7] (last visited Mar. 9, 2020).

¹⁰⁵ *Green Infrastructure Projects in Rhode Island*, R.I. GREEN INFRASTRUCTURE COALITION, <http://www.greeninfrastructureeri.org/projects.php> [https://perma.cc/F6VS-U6UY] (last visited Mar. 9, 2020).

¹⁰⁶ *Id.*

IV. CONSERVATION LAND TRUST ROLES IN SUPPORTING CLIMATE ACTION IN THE NATURAL ENVIRONMENT

Conservation land trusts are also playing important roles in helping to protect, restore, and manage natural landscapes that will be critical for both mitigating and adapting to climate change. Conservation land trusts throughout the country are already supporting climate action by developing renewable energy sources, preserving and protecting habitats that are important for carbon sequestration and ecological resilience, deploying natural infrastructure approaches for enhancing community resilience, and supporting community engagement and collaboration on climate action. This section describes some of the critical roles conservation land trusts can play and are playing in helping to steward natural landscapes in the face of climate change, and it provides examples of land trust efforts to advance sustainability and resilience in communities around the country.

A. *Supporting Mitigation Efforts*

Conservation land trusts are already playing important roles in helping to steward lands in ways that help to reduce carbon pollution. First, land trusts are preserving and managing natural landscapes that act as carbon sinks to contribute to climate mitigation efforts.¹⁰⁷ Additionally, many conservation land trusts are also working to integrate renewable energy (e.g., wind and solar) and community solar installations into trust lands to provide a clean energy source for neighboring communities in ways that do not compromise the environmental values of the land.¹⁰⁸

For example, in Marin County, California, the Marin Agricultural Land Trust (“MALT”) is supporting efforts to sequester carbon in agricultural lands through adoption of “carbon farming” practices.¹⁰⁹ In 2008, the

¹⁰⁷ LAND TR. ALLIANCE, *supra* note 22; see also *Solar Energy Development and Land Conservation*, PA. LAND TR. ASS'N, <https://conservationtools.org/guides/182-solar-energy-development-and-land-conservation> [<https://perma.cc/2Y7L-U8RX>] (last visited Mar. 9, 2020).

¹⁰⁸ Community-shared solar allows homeowners or renters who are not able to install rooftop solar to subscribe to a community solar facility that provides them credits on their monthly energy bills using a mechanism called “virtual net metering” that bases the credit received on the share of the electricity generated. See *Community and Shared Solar*, OFF. ENERGY EFFICIENCY & RENEWABLE ENERGY, U.S. DEP'T ENERGY, <https://www.energy.gov/eere/solar/community-and-shared-solar> [<https://perma.cc/CDQ5-DVCE>] (last visited Mar. 9, 2020).

¹⁰⁹ *Carbon Farming*, MARIN AGRIC. LAND TR., <https://malt.org/carbon-farming/> [<https://perma.cc/43G2-5KWK>] (last visited Mar. 9, 2020); see also Marina Schaufler, *Looking to the Land to Mitigate Climate Change*, LAND TR. ALLIANCE (Spring 2018), <https://www>

land trust initiated the Marin Carbon Project in partnership with scientists, ranchers, and state and local agencies to develop and adopt agricultural practices that would enhance carbon sequestration of soils on rangelands, agricultural lands, and forests.¹¹⁰ MALT assessed carbon levels across its different landholdings and evaluated how different management practices could enhance carbon sequestration.¹¹¹ The data were used to develop a Carbon Farm Plan to encourage farming and land management practices that enhanced the resilience and sustainability of farmlands.¹¹² Additionally, the research was used by the American Carbon Registry to certify a protocol that enables farmers and ranchers to earn carbon offset credits when they implement more sustainable land management practices.¹¹³

In Brunswick, Maine, the Brunswick-Topsham Land Trust helped to install a community solar project on its 321-acre Crystal Spring Farm preserve.¹¹⁴ The preserve supports a working dairy farm and also protects important habitats, water supply for the region, and the quality of waters draining into the Maquoit Bay.¹¹⁵ On the property, the land trust supports a broad array of uses that enhance community cohesion and resilience. A community solar project was installed in 2016, delivering 78.65 kilowatts of energy to generate electricity for the farm and other residents of Brunswick.¹¹⁶ The land trust also hosts a farmers market, community-supported agriculture program, and community gardens to provide locally sourced healthy food products for residents.¹¹⁷ The preserve also includes trails and a labyrinth to provide recreational opportunities for residents to enjoy the different habitats protected on the site—including forests, creeks, and vernal ponds.¹¹⁸

.landtrustalliance.org/news/looking-land-mitigate-climate-change [https://perma.cc/PAW3-KJYK].

¹¹⁰ *Cypress Lane Ranch*, 26 MARIN AGRIC. LAND TR. 1, 1–2 (2010); see *News & Events*, MARIN CARBON PROJECT, <https://www.marincarbonproject.org/news> [https://perma.cc/5PHN-5WFV] (last visited Mar. 9, 2020).

¹¹¹ *Case Studies: Marin Agricultural Land Trust—Enhancing Carbon Sequestration*, CONSERVATION CHANGING CLIMATE, <https://climatechange.lta.org/case-study/marin-sequestration/> [https://perma.cc/FH9S-5WKM] (last visited Mar. 9, 2020).

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Crystal Spring Farm*, BRUNSWICK-TOPSHAM LANDTRUST, <https://www.btlr.org/conserved-lands/brunswick-freeport-conservation-corridor/crystal-spring-farm/> [https://perma.cc/M2ZE-CGMA] (last visited Mar. 9, 2020).

¹¹⁵ *Id.*

¹¹⁶ *Crystal Spring Farm Community Solar Project*, BRUNSWICK-TOPSHAM LANDTRUST, <https://www.btlr.org/csf-solar/> [https://perma.cc/2AWC-NT44] (last visited Mar. 9, 2020).

¹¹⁷ *Crystal Spring Farm*, BRUNSWICK-TOPSHAM LANDTRUST, *supra* note 114.

¹¹⁸ *Id.*

B. Protecting Resilient Natural Landscapes

To protect wildlife and biodiversity, large networks of diverse and interconnected habitats will be required to enable species to adapt to a changing climate by migrating north or to higher ground.¹¹⁹ Some conservation land trusts have started to assess the vulnerability of different landscapes and ecosystems in their service areas and have developed acquisition and management plans to support the conservation of important habitats and migration corridors to ensure that ecosystems and species can adapt to changing environmental conditions as a result of climate change.¹²⁰

For example, in the North Quabbin region of Massachusetts, land trusts and other conservation organizations worked together through a regional conservation partnership to identify priority actions for enhancing the climate resilience of 560,000 acres of ecologically important habitats in the region.¹²¹ North Quabbin is a predominantly rural region of North Central Massachusetts characterized by farmland, forests, and wetlands, which provide habitat to a variety of species including moose, bobcat, and bear.¹²² In 2013, land trusts and other conservation organizations in the region worked with The Nature Conservancy (“TNC”) to develop a Geographic Information System (“GIS”) that compiled climate, biological, landscape, and landownership data to inform the development of a conservation plan for the region that incorporated considerations of climate resilience.¹²³ The GIS mapping tool helped the organizations in the partnership identify priority areas for acquisition with the goal of preserving and protecting a broad array of topographically complex and ecologically important landscapes that can provide habitats to wildlife in the region threatened by climate change.¹²⁴ The partnership used the GIS maps to obtain state

¹¹⁹ OPEN SPACE INST. & N. ATL. LANDSCAPE CONSERVATION COOP., *supra* note 26, at 14–15; see also *Resilient Landscapes Funds (Completed)*, OPEN SPACE INST., <https://www.openspaceinstitute.org/funds/resilient-landscapes-funds> [<https://perma.cc/HD8E-CJQF>] (last visited Mar. 9, 2020).

¹²⁰ OPEN SPACE INST., *supra* note 119.

¹²¹ OPEN SPACE INST. & N. ATL. LANDSCAPE CONSERVATION COOP., *supra* note 26, at 82. The U.S. Department of Agriculture supports coordination of conservation activities through the Regional Conservation Partnership Program. *Regional Conservation Partnerships Program*, NAT. RESOURCES CONSERVATION SERV., USDA, <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/rcpp/> [<https://perma.cc/2N5V-DCB7>] (last visited Mar. 9, 2020).

¹²² OPEN SPACE INST. & N. ATL. LANDSCAPE CONSERVATION COOP., *supra* note 26, at 82.
¹²³ *Strategic Biodiversity Map*, NORTH QUABBIN REGIONAL LANDSCAPE PARTNERSHIP, <https://northquabbinrlp.wixsite.com/northquabbinrlp/strategic-biodiversity-map> [<https://perma.cc/A3GK-2FT6>] (last visited Mar. 9, 2020).

¹²⁴ OPEN SPACE INST. & N. ATL. LANDSCAPE CONSERVATION COOP., *supra* note 26, at 9.

grants and to pursue acquisitions of important areas for the region's resilience. For example, the partnership received a \$1.285 million grant from the Massachusetts Landscape Partnership Program to acquire conservation easements for six properties totaling 1,380 acres, and the East Quabbin Land Trust engaged a landowner who agreed to protect his land, which was shown to be a "resilience zone" by the mapping products developed through the partnership.¹²⁵

C. *Supporting Managed Retreat and Nature-Based Community Resilience Efforts*

Conservation land trusts are also increasingly playing roles in advancing nature-based approaches for building broader community resilience. By supporting acquisitions, preservation, and restoration efforts, land trusts are advancing natural infrastructure solutions for protecting communities from flooding,¹²⁶ droughts, and other climate impacts.¹²⁷ Many land trusts are also supporting state and local disaster recovery efforts by facilitating buyouts of structures in flood-prone areas to help residents relocate out of harm's way and to restore natural flood-plains.

For example, in Monterey County, California, the Big Sur Land Trust is leading implementation of the Carmel River Floodplain Restoration and Environmental Enhancement ("Carmel FREE") project that will restore habitat and reduce flood risks in the lower Carmel River watershed.¹²⁸ The project will use nature-based approaches to reduce flood

¹²⁵ *Climate science for the rest of us*, U.S. FISH & WILDLIFE SERV. NORTHEAST REGION, <https://usfwsnortheast.wordpress.com/2016/10/25/climate-science-for-the-rest-of-us/> [<https://perma.cc/FJJ9-FMPM>] (last visited Mar. 9, 2020).

¹²⁶ See NAT'L AUDUBON SOC'Y, NATURAL INFRASTRUCTURE REPORT: HOW NATURAL INFRASTRUCTURE CAN SHAPE A MORE RESILIENT COAST FOR BIRDS AND FOR PEOPLE (Jan. 2018), https://www.audubon.org/sites/default/files/audubon_infrastructure_jan192018.pdf [<https://perma.cc/YP5A-6DJH>].

¹²⁷ For examples of the work land trusts do to protect "resilient landscapes," see OPEN SPACE INST., *supra* note 119.

¹²⁸ *Carmel River Floodplain Restoration and Environmental Enhancement Project (Carmel River FREE)*, BIG SUR LAND TR., <https://bigsurlandtrust.org/carmel-river-free/> [<https://perma.cc/6CGJ-ZE3D>] (last visited Mar. 9, 2020); *Carmel River FREE Project Overview Slides*, BIG SUR LAND TR., <https://secureservercdn.net/166.62.115.136/8k6.cba.myftpupload.com/wp-content/uploads/2018/10/Web-overview-FINAL-Slideshow-for-CR-FREE-WEb-page-10.1.pdf> [<https://perma.cc/PYL5-UB3Q>] (last visited Mar. 9, 2020); see also *Carmel River Floodplain Restoration And Environmental Enhancement Project (CRFREE)*, COUNTY MONTEREY, RESOURCE MGMT. AGENCY, <https://www.co.monterey.ca.us/government/departments-i-z/resource-management-agency-rma/-planning/current-major-projects/carmel-river-free> [<https://perma.cc/7RZV-236P>] (last visited Mar. 9, 2020).

risks to nearby properties by restoring the natural river corridor.¹²⁹ Old levees in need of maintenance along the river will be removed to allow restoration of the natural flood-plain, which will improve water quality, habitats, and groundwater recharge.¹³⁰ A new causeway bridge for Highway 1 will be built to restore hydrological connectivity and facilitate restoration of wetlands on the project site that are adjacent to the Carmel Lagoon.¹³¹ Additionally, new trails will be constructed throughout the project site to create recreational amenities for residents.¹³² These activities are anticipated to restore approximately 100 acres of wetlands and other habitats delivering environmental benefits and also enhancing resilience to sea-level rise and more frequent storms for businesses and residents in the Carmel Valley.¹³³ This project demonstrates how public-private partnerships with land trusts can be used to facilitate land acquisitions and ecosystem-based restoration projects to enhance community resilience.

The Louisiana Land Trust (“LLT”) is supporting disaster recovery efforts in the state by acquiring flood-prone properties, preventing new development in flood-plains, and facilitating resettlement of communities repetitively affected by flooding to safer inland locations. The LLT was originally established by the state to support flood-plain buyouts after Hurricanes Katrina and Rita in 2005, through the state’s Road Home Program.¹³⁴ Since 2005, LLT has expanded its role to support buyouts and resettlement of communities to address more recent storm events, including a heavy rainfall event in 2016 that caused widespread flood impacts throughout the state.¹³⁵ In this expanded role, LLT has been supporting ambitious state efforts to help whole communities relocate away from flood-prone areas that are vulnerable to sea-level rise and land loss. For example, through the Pecan Acres Resettlement project, LLT is supporting

¹²⁹ See COUNTY MONTEREY, RESOURCE MGMT. AGENCY, *supra* note 128.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Carmel River FREE Project Overview Slides*, BIG SUR LAND TR., *supra* note 128.

¹³⁴ LLT was created by the Louisiana Road Home Corporation Act, Senate Bill 445 (June 29, 2006), which created a non-profit corporation to “finance, own, lease as lessee or lessor, sell, exchange, donate or otherwise hold or transfer a property interest in housing stock damaged by Hurricane Katrina or Hurricane Rita.” LA. LAND TR., <https://www.lalandtrust.us/> [<https://perma.cc/AE2E-MNEB>] (last visited Mar. 9, 2020). The LLT has powers to hold and dispose of land, to take in funds from any source, to borrow against properties that it holds, and to enter into agreements to implement its mission. *Id.*

¹³⁵ See *August 2016 Record Flooding*, NAT’L WEATHER SERV., NAT’L OCEANIC & ATMOSPHERIC ADMIN., <https://www.weather.gov/lix/August2016flood> [<https://perma.cc/9N28-KRZ5>] (last visited Mar. 9, 2020).

the construction of a new community to help residents of Pointe Coupee Parish move out of harm's way. The Pecan Acres subdivision is a lower-income neighborhood just north of the City of New Roads, which experienced significant flooding in 2016 and has suffered repetitive flood damage seventeen times since the 1970s, earning the neighborhood the nickname "Flood City."¹³⁶ LLT is trying to facilitate the resettlement of thirty to forty households in Pecan Acres by acquiring flood-prone properties and supporting the development of new housing that incorporates resilient and green design features (elevation above FEMA minimum standards, LEED certified construction,¹³⁷ and green infrastructure to reduce storm-water flooding) and other community amenities (playgrounds, outdoor recreation, and walkability).¹³⁸

D. *Providing Technical Assistance and Support for Climate Action*

Conservation land trusts are also working with local partners to provide technical assistance, funding, and other support to help governments work together at the regional scale, understand climate risks, and develop regional climate solutions. In this way, land trusts are providing scientific expertise, bringing other partners to the table, facilitating conversations with residents and businesses about climate change and climate risks, and bringing additional financial resources to support work on climate change.

¹³⁶ Daniel Cusick, *40 homes and 17 floods. Now the neighborhood is moving*, E&E NEWS (May 29, 2019), <https://www.eenews.net/stories/1060418681> [<https://perma.cc/PPL9-BP3P>]; Terry L. Jones, *Leaving 'Flood City:' Pecan Acres residents prepare for move to New Roads subdivision thanks to home buyouts*, ADVOCATE (Dec. 24, 2017), https://www.theadvocate.com/baton_rouge/news/communities/westside/article_71b051bc-e4e8-11e7-8d89-abd5600fb9c7.html [<https://perma.cc/3SCM-HN2L>].

¹³⁷ The LEED Green Building Certification program is administered by the U.S. Green Building Council ("USGBC"). *Green Building 101: What is LEED?*, USGBC (Sept. 14, 2017), <https://www.usgbc.org/articles/green-building-101-what-leed> [<https://perma.cc/947S-2W99>]. Buildings earn credits for water savings, energy efficiency, sustainable materials, waste reduction, indoor environmental quality, and other factors. *Id.*

¹³⁸ See LA. LAND TR., REQUEST FOR QUALIFICATION STATEMENTS PACKAGE ENGINEERING DESIGN AND RELATED SERVICES FOR THE PECAN ACRES SUSTAINABLE RESETTLEMENT PROGRAM POINTE COUPEE PARISH 3–4, https://www.lalandtrust.us/index.php?option=com_phoca_download&view=category&id=45:llt-rfq-for-pecan-acres-resettlement-program&download=230:llt-rfq-for-pecan-acres-resettlement-program&Itemid=2 [<https://perma.cc/6JYN-VP9J>]. However the resettlement efforts have faced significant obstacles, including challenges finding a site that would take in the predominantly Black residents of the Pecan Acres subdivision. Terry L. Jones, *Black community in flood-prone New Roads area feels pushback from white neighborhood over relocation site*, ADVOCATE (Aug. 5, 2018), https://www.theadvocate.com/baton_rouge/news/article_ee6b7b88-95db-11e8-a52e-cb57c9eb7d0.html [<https://perma.cc/LH3V-V5B9>].

For example, the Eastern Shore Land Conservancy (“ESLC”) has been an active partner helping rural communities on the Eastern Shore of Maryland prepare for impacts from sea-level rise and more intense rainfall events. The low-lying Eastern Shore of Maryland along the Chesapeake Bay is considered one of the regions of the country that faces the greatest threats of sea-level rise.¹³⁹ The region also supports wetlands and other ecosystems that are ecologically important for the health and resilience of the Chesapeake Bay, which faces threats from sea-level rise, acidification, pollution, and increasing water temperatures.¹⁴⁰ Eastern Shore communities are predominantly rural, and the local economy is driven by agriculture, fishing, and tourism.¹⁴¹ ESLC is supporting adaptation on the Eastern Shore through strategic land conservation and acquisitions to conserve natural buffers that protect development and agriculture from sea-level rise and increasing flood risks. Through the Delmarva Oasis project, ESLC is partnering with other conservation organizations on the Delmarva Peninsula¹⁴² to preserve important ecosystems and migration corridors to protect biodiversity, habitats, and agriculturally productive farmlands to enhance both environmental and economic resilience as well as food security for the region. ESLC also supports “place-making” projects that deliver important social and recreational benefits to Eastern Shore communities, including projects to create parks, urban gardens, and other recreational amenities.¹⁴³ Finally, ESLC is providing important technical assistance to Eastern Shore communities through the Eastern Shore Climate Adaptation Partnership (“ESCAP”). Through ESCAP, six Eastern Shore counties and three municipalities collaborate regionally on sea-level rise adaptation efforts.¹⁴⁴ ESLC facilitates regional collaboration and has

¹³⁹ BRIAN AMBRETTE, E. SHORE LAND CONSERVANCY, PRIORITIZING LOCAL CLIMATE ADAPTATION THROUGH REGIONAL COLLABORATION ON MARYLAND’S EASTERN SHORE 1, 11, 25 (July 2017), <https://www.eslc.org/wp-content/uploads/docs/coastal-resilience/escap-white-paper-2017.pdf> [<https://perma.cc/N5RQ-7Q4B>] [hereinafter AMBRETTE, PRIORITIZING LOCAL CLIMATE ADAPTATION].

¹⁴⁰ *What Climate Change Means for Maryland*, EPA (Aug. 2016), <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-md.pdf> [<https://perma.cc/Y4JM-RBNM>].

¹⁴¹ AMBRETTE, PRIORITIZING LOCAL CLIMATE ADAPTATION, *supra* note 139, at 4.

¹⁴² *ESLC aims to protect half of the Delmarva Peninsula*, ELSC NEWS (July 27, 2018), <https://www.eslc.org/eslc-aims-to-protect-half-of-delmarva-peninsula/> [<https://perma.cc/5QRA-G6RX>].

¹⁴³ *Thriving Towns: Protecting Quality of Life for All*, E. SHORE LAND CONSERVANCY, <https://www.eslc.org/towns/> [<https://perma.cc/BTR2-KAPB>] (last visited Mar. 9, 2020).

¹⁴⁴ ESCAP includes participation of local agency representatives from Dorchester, Talbot, Queen Anne’s, Cecil, Kent, and Caroline counties and the towns of Oxford, Cambridge, and St. Michaels. See AMBRETTE, PRIORITIZING LOCAL CLIMATE ADAPTATION, *supra* note

helped to bring financial and technical assistance to the region to support the development of a vulnerability assessment and legal and policy guidance to help Eastern Shore communities adapt to future sea-level rise and increasing flood risks.¹⁴⁵ One way that Eastern Shore communities are working to enhance flood resilience through ESCAP is by exploring regional opportunities to participate in the Community Rating System (“CRS”), a subprogram of the National Flood Insurance Program (“NFIP”) that offers lowered flood insurance rates in communities that adopt better flood-plain management practices.¹⁴⁶ Regional collaboration has also helped Eastern Shore communities advance important adaptation initiatives at the local level. For example, Dorchester and Queen Anne’s counties both used sea-level rise analyses supported through ESCAP to update their local hazard mitigation plans, and Cecil County used climate information to inform the development of a green infrastructure plan to address sea-level rise and increasingly heavy rainfall events.¹⁴⁷ Through these initiatives, ESLC is helping Eastern Shore communities build their technical capacity to respond to threats from sea-level rise and climate change.

E. Policy Options for Scaling Up Land Trust Roles in Climate Action

Although land trusts are providing important benefits in communities across the United States, their current impact is limited by the small amounts of land held in trust¹⁴⁸ and their lack of financial resources and

139, at 4; E-mail from James Bass, Eastern Shore Land Conservancy, to author (Jan. 9, 2020) (on file with author).

¹⁴⁵ JAMES BASS ET AL., E. SHORE LAND CONSERVANCY, MAINSTREAMING SEA LEVEL RISE PREPAREDNESS IN LOCAL PLANNING AND POLICY ON MARYLAND’S EASTERN SHORE 1–5, 15–18 (Jan. 2019), <https://www.eslc.org/wp-content/uploads/docs/coastal-resilience/regional-sea-level-rise-study-2019.pdf> [<https://perma.cc/P9KJ-6XJU>].

¹⁴⁶ *Id.* at 18.

¹⁴⁷ DORCHESTER CTY. EMERGENCY MGMT. AGENCY, DORCHESTER COUNTY 2017 HAZARD MITIGATION PLAN UPDATE i, <https://www.dorchestercountymd.com/wp-content/uploads/2018/05/Public-Copy-2017-Dorchester-County-Hazards-Mitigation-Plan-1-11-18.pdf> [<https://perma.cc/L87Z-MTPE>]; QUEEN ANNE’S CTY. DEPT OF EMERGENCY SERVS., MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 8-19, 8-23 (Dec. 2018), <https://www.qac.org/DocumentCenter/View/11693/2018-QAC-Hazard-Mitigation-Plan> [<https://perma.cc/9TC2-7JCS>]; CECIL CTY. DEPT OF LAND USE & DEV. SERVS., CECIL COUNTY GREEN INFRASTRUCTURE PLAN 1–2 (June 2019), <http://www.ccgov.org/home/showdocument?id=34792> [<https://perma.cc/2VFE-HKDA>].

¹⁴⁸ As of 2015, 56 million acres were held in trust by conservation land trusts (of a total 2.3 billion acres or 2.4 percent of total acreage in the United States). LAND TR. ALL., 2015 NATIONAL LAND TRUST CENSUS REPORT: OUR COMMON GROUND AND COLLECTIVE IMPACT 3 (2015), <http://s3.amazonaws.com/landtrustalliance.org/2015NationalLandTrustCensusReport.pdf> [<https://perma.cc/7VJQ-L8N2>]; Daniel Bigelow, *A Primer on Land in the United*

technical capacity to incorporate climate resiliency and sustainability into land trust initiatives. To realize the full potential of land trusts as partners in addressing climate change and other environmental and socioeconomic challenges affecting communities across the United States, the work of land trusts needs to be scaled up significantly. To do so, state and local governments could adopt laws and policies to support and foster important land trust work in communities. This section discusses policy changes that could be adopted at the state and local levels to catalyze land trust work on climate resilience and sustainability initiatives. It also provides examples of laws and policies that could serve as models for other communities—including policies governing the disposition of land, access to funding and financing, tax and other incentives, and technical assistance programs.

1. Access to Land

The first and most important way that governments can support land trusts is by putting their most important asset—land—into uses that benefit the public and future generations. Land is the most valuable resource that governments have to address the social, economic, and environmental challenges facing communities.¹⁴⁹ And while governments often adopt goals for promoting equity, affordable housing, environmental protection, sustainability, and resilience, these governments at the same time are selling off the land, which is their most important asset for addressing these challenges. Rather than sell land to the highest bidder, governments should seek to put public lands to use for the public benefit through partnerships with land trusts.

As non-profit organizations with the foundational mission of stewarding lands for the benefit of the public, land trusts are uniquely suited for helping governments put public lands to use to meet community sustainability and resilience goals. Land trusts around the country have helped to revitalize blighted, vacant, and under-utilized properties and

States, ECON. RESEARCH SERV., USDA (Dec. 4, 2017), <https://www.ers.usda.gov/amber-waves/2017/december/a-primer-on-land-use-in-the-united-states/> [<https://perma.cc/Z2S7-DH5T>]. And while there are approximately 224 community land trusts and interest in community ownership of housing is growing in the United States, in a study of land trusts in Cascadia (including the states of Washington, Oregon, Idaho, and the province of British Columbia) only 0.03 percent of housing stock in this region was held in trust by community land trusts. Nisma Gabobe, *The Role of Community Land Trusts in Cascadia's Quest for Affordable Housing*, SIGHTLINE INST. (Sept. 25, 2019), <https://www.sightline.org/2019/09/25/the-role-of-community-land-trusts-in-cascadias-quest-for-affordable-housing/> [<https://perma.cc/5QWA-T36G>].

¹⁴⁹ See generally Davis, *Common Ground*, *supra* note 44.

have implemented projects that are delivering important public benefits. As demonstrated above, conservation and community land trusts are already helping governments build sustainable, resilient, and affordable housing; create parks and greenspace that enhance social cohesion; generate renewable energy to reduce the carbon footprint of communities; steward urban gardens that increase food security; restore natural flood buffers that protect communities from sea-level rise and coastal storms; and preserve as well as enhance the resilience of important ecosystems and habitats, among other roles.¹⁵⁰ By providing land trusts with low-cost and donated lands, governments can help to scale up and expand upon these important initiatives.

One way to do so is to adopt land disposition policies that prioritize community-led initiatives and projects that deliver permanent community benefits. For example, state and local governments can:

- Adopt policies to offer surplus, under-utilized, or tax-foreclosed lands at below-market rates to organizations, such as land trusts, that will deliver projects that provide important public benefits;
- Provide regulatory incentives, such as inclusionary zoning incentives,¹⁵¹ that encourage partnership with land trusts; and
- Use criteria in bidding processes for the redevelopment of publicly owned land that prioritize community-ownership models and projects that deliver permanent community benefits, including environmental, economic, and social benefits.¹⁵²

Some jurisdictions have already taken steps to facilitate the transfer of lands to ensure that lands are put to use in ways that will benefit the public, which may be instructive for other communities grappling with similar sustainability and resilience challenges.

In the built environment, several cities have adopted laws and policies to facilitate the transfer of land for affordable housing and other uses that benefit the public. The City of Boston granted Dudley Neighbors, Inc., the power of eminent domain to enable the land trust to acquire vacant and blighted parcels for redevelopment as affordable housing and

¹⁵⁰ See *infra* Part III, Sections IV.A–IV.D.

¹⁵¹ For a discussion of inclusionary zoning, see *supra* note 82.

¹⁵² See Davis et al., *supra* note 38, at 16–18.

other community uses, such as urban farms and community centers.¹⁵³ In Seattle, Homestead CLT has also benefitted from significant support from both the County and local governments in the region through donations and below market sales of surplus lands.¹⁵⁴ The City of Seattle adopted a law allowing the city to donate or sell surplus lands at below-market rates to facilitate the development of permanently affordable housing.¹⁵⁵ To facilitate community access to surplus lands, Seattle developed an “Enterprise Map” of surplus and under-utilized city-owned properties to show potential sites for affordable housing.¹⁵⁶ The City is also working with King County and neighboring jurisdictions to promote similar policies and a regional approach to addressing the housing affordability crisis.¹⁵⁷ Similarly, the Seattle Regional Transit Authority has a policy requiring the agency to provide 80 percent of its surplus property to affordable housing developments.¹⁵⁸ By reducing or eliminating the cost of land, public agencies can help to reduce the total cost to develop affordable housing and open up opportunities for community land trusts to be able to acquire and develop affordable, sustainable housing options for lower-income residents.

Additionally, many states have adopted enabling legislation to authorize the creation of land banks to facilitate the conversion of vacant and under-utilized private parcels to productive uses.¹⁵⁹ Land banks help cities

¹⁵³ DNI was granted eminent domain authority from the Boston Redevelopment Authority as an urban redevelopment corporation authorized pursuant to MASS. GEN. LAWS ANN. ch. 121A, § 11 (West 2019); see also *Community-led Use of Eminent Domain*, LOY. UNIV. CTR. FOR URBAN RESEARCH & LEARNING, <https://www.luc.edu/eminent-domain/siteessays/bostonma/community-leduseofeminentdomain/> [<https://perma.cc/2GQL-Y74G>] (last visited Mar. 9, 2020).

¹⁵⁴ See *FAQs About CLTs*, HOMESTEAD COMMUNITY LAND TR., <http://www.homesteadclt.org/support-our-work/faqs-about-clts> [<https://perma.cc/C3EK-A5DW>] (last visited Mar. 9, 2020). See generally *About Homestead*, HOMESTEAD CMTY. LAND TR., <http://www.homesteadclt.org/about-homestead> [<https://perma.cc/BUU5-VBB7>] (last visited Mar. 9, 2020).

¹⁵⁵ *Building More Affordable Housing Using Surplus Public Land*, SEATTLE CITY COUNCIL, <https://www.seattle.gov/council/issues/past-issues/land-disposition-policy> [<https://perma.cc/2A74-ZFYD>] (last visited Mar. 9, 2020).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Board adopts policy promoting equitable development near transit stations and facilities*, SOUNDTRANSIT (Apr. 26, 2018), <https://www.soundtransit.org/get-to-know-us/news-events/news-releases/board-adopts-policy-promoting-equitable-development-near> [<https://perma.cc/EGG2-ETB9>].

¹⁵⁹ See John Emmeus Davis, *The Untapped Potential of Land Bank/Land Trust Partnerships*, SHELTERFORCE (Oct. 31, 2012), https://shelterforce.org/2012/10/31/the_untapped_potential_of_land_bank_land_trust_partnerships/ [<https://perma.cc/P9V7-94XJ>] [hereinafter Davis, *Untapped Potential*].

clear title to and facilitate the transfer of ownership of vacant and abandoned privately owned properties to promote community revitalization efforts.¹⁶⁰ And several jurisdictions are looking at ways that land banks could be used to convert under-utilized land to publicly beneficial projects that will address affordable housing, sustainability, and resilience goals.¹⁶¹ For example, in 2016, the New York City Comptroller conducted an audit and found that the City owned almost 1,500 vacant or under-utilized properties and had almost 250 tax-delinquent properties that could be developed to meet the City's goals of delivering affordable housing options for lower-income residents.¹⁶² The Comptroller issued a report recommending that the City establish a land bank that could facilitate the conversion of tax-delinquent and vacant lands to productive use, such as affordable housing.¹⁶³

Other cities could consider similar policies to prioritize disposition of surplus lands to community-led organizations that can deliver projects that advance the jurisdiction's sustainability, resilience, and affordable housing goals. For example, greater flexibility could be offered to allow the transfer of surplus lands to support affordable housing and other publicly beneficial uses, such as community solar, green and natural infrastructure, urban gardens, parks and green space, natural flood buffers, conservation areas, among other community uses. And preference could be given to uses supported by community-led organizations and land trusts that not only steward land for public uses, but also give residents a voice in decision making and deliver important social cohesion benefits that may not be offered by other potential partners, such as non-profit developers.

2. Funding, Financing, and Tax Incentives

State and local governments have also set up programs to provide funding and financing to provide start up capital for land trusts to support initial land acquisitions and the design and construction of publicly beneficial projects that promote sustainability and resilience initiatives.

For example, in 2006, the District of Columbia created a community land trust pilot program to generate and preserve workforce housing,

¹⁶⁰ FRANK S. ALEXANDER, CTR. FOR CMTY. PROGRESS, LAND BANKS AND LAND BANKING 21–23 (2015), <https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-alexander15.pdf> [<https://perma.cc/98ML-9YX7>].

¹⁶¹ See Davis, *Untapped Potential*, *supra* note 159.

¹⁶² OFFICE OF THE N.Y.C. COMPTROLLER, BUILDING AN AFFORDABLE FUTURE: THE PROMISE OF A NEW YORK CITY LAND BANK 4 (Feb. 2016), https://comptroller.nyc.gov/wp-content/uploads/documents/The_Case_for_A_New_York_City_Land_Bank.pdf [<https://perma.cc/TRD3-SEB2>].

¹⁶³ See generally *id.*

which has helped spur the development of other land trusts in the District to address gentrification and displacement. The legislation called for the District to issue a Request for Proposals for an organization that could establish a community land trust and deliver 1,000 units of permanently affordable workforce housing.¹⁶⁴ The District provided start-up funding to establish the CLT and to leverage tax credits to support the development of affordable housing.¹⁶⁵ The District also adopted tax legislation to adjust property taxation for CLT-owned properties subject to resale restrictions. Ensuring fairness for owners that do not receive full equity at resale, D.C.'s tax code provides that taxes should be assessed based upon the amount initially paid for the property and adjusted for inflation.¹⁶⁶ City First Homes was selected to be the District's pilot land trust and helped implement affordable workforce housing throughout the District.¹⁶⁷ City First Homes also helped to incubate the Douglass Community Land Trust ("Douglass CLT," named after Frederick Douglass). The Douglass CLT launched in Southeast D.C. in response to recommendations included in a community-led planning process initiated to address potential displacement concerns due to redevelopment of the 11th Street Bridge into a city park (similar to the High-Line Park in New York City).¹⁶⁸ Based upon recommendations included in the 11th Street Bridge Park's Equitable Development Plan, the Douglass CLT was established to develop and preserve permanent affordable housing in Southeast D.C., an area of the District that is experiencing redevelopment and gentrification pressures.¹⁶⁹ The Douglass CLT's foundational goals include preventing displacement and preserving the right of residents to "stay and thrive," empowering community control and decision making, providing quality affordable housing, and using sustainable building practices that benefit residents, the community, and the environment.¹⁷⁰ The District's program demonstrates how a pilot initiative and start-up funding can be used to catalyze land trust work in communities.

¹⁶⁴ D.C. Code Ann. § 6-1061.02(c) (West 2012).

¹⁶⁵ Davis et al., *supra* note 38, at 21.

¹⁶⁶ See D.C. Code Ann. § 47-820.02 (West 2015).

¹⁶⁷ See D.C. Code Ann. § 6-1061.02(m) (West 2012).

¹⁶⁸ See 11TH STREET BRIDGE PARK, 11TH STREET BRIDGE PARK'S EQUITABLE DEVELOPMENT PLAN 4-6, 15 (2018), https://bbardc.org/wp-content/uploads/2018/10/Equitable-Development-Plan_09.04.18.pdf [<https://perma.cc/HEJ2-PAKS>].

¹⁶⁹ *Our Mission*, DOUGLASS COMMUNITY LAND TR., <http://douglassclt.org/#Mission> [<https://perma.cc/7HVG-SE9L>] (last visited Mar. 9, 2020).

¹⁷⁰ *Our Values*, DOUGLASS COMMUNITY LAND TR., <http://douglassclt.org/#Values> [<https://perma.cc/PY5Y-6C98>] (last visited Mar. 9, 2020).

Cities are also using other innovative ways to help land trusts acquire land at lower costs and to compete with developers on the private market. For example, in Minneapolis, Minnesota, the City established an interest-free deferred loan program where community land trusts are eligible for loan forgiveness so long as they are meeting the City's performance standards.¹⁷¹ And in San Francisco, California, the City is providing financial support through its Small Site Program, which helps land trusts compete with developers to acquire properties in neighborhoods at the highest risk for gentrification.¹⁷² The program provides loans to non-profit organizations to help them purchase buildings to avoid conversion to market-rate housing and to prevent displacement of existing tenants.¹⁷³ The program offers some renovation assistance to ensure the building meets health and safety standards, and requires that the building be permanently converted to affordable housing.¹⁷⁴

The Dudley Street Neighborhood Initiative in Boston attributes its success partly to the support the land trust received from public partners. In addition to granting the land trust eminent domain authority, the land trust has received significant financial resources from the City and the State of Massachusetts that were used to support the development of housing and other community amenities.¹⁷⁵ DSNI gets a third of its current annual budget from government sources and the rest from corporate and foundation grants, events, individual donations, and earned income.¹⁷⁶ Additionally, DSNI benefits from state-level Community Investment Tax Credits, which provide a 50 percent tax credit to create incentives for private and corporate donors to give to "high-impact, community-led economic development initiatives," including land trusts like DSNI.¹⁷⁷

¹⁷¹ CHO ET AL., *supra* note 74, at 10.

¹⁷² BEN BALDWIN ET AL., TUFTS UNIV. URBAN & ENVTL. POLICY & PLANNING, DEVELOPMENT WITHOUT DISPLACEMENT: THE CASE FOR COMMUNITY LAND TRUSTS 32 (2015), <http://www.berkshirecommunitylandtrust.org/wp-content/uploads/2015/07/TUFTS-CommunityLandTrust.pdf> [<https://perma.cc/4V7D-E5N2>] (citing Adizah Eghan, *Mission Tenants Avoid Eviction and Gain a Long-Term Home*, KQED NEWS (Feb. 18, 2015), <http://www.kqed.org/news/2015/02/18/mission-tenants-avoid-eviction-and-gain-a-long-term-home> [<https://perma.cc/8VDV-UCCP>]); *Small Sites Program*, S.F. MAYOR'S OFF. HOUSING & COMMUNITY DEV., <https://sfmohcd.org/small-sites-tenants> [<https://perma.cc/L6BU-Y5H2>] (last visited Mar. 9, 2020).

¹⁷³ S.F. MAYOR'S OFF. HOUSING & COMMUNITY DEV., *supra* note 172.

¹⁷⁴ *Id.*

¹⁷⁵ *Dudley Street Neighborhood Initiative*, COMMUNITY-WEALTH.ORG, <https://community-wealth.org/content/dudley-street-neighborhood-initiative> [<https://perma.cc/D2ET-KC77>] (last visited Mar. 9, 2020).

¹⁷⁶ See text & sources cited *supra* note 75.

¹⁷⁷ See text & sources cited *supra* note 75; see also *Support community control and reduce*

California recently passed legislation—S.B. 196—to foster land trust roles in helping the state address its affordable housing crisis. The law adjusts property taxation to tax CLT properties at the affordable sale value rather than the market value to account for resale restrictions and to make CLT-owned projects more cost effective.¹⁷⁸

In South Carolina, the legislature has proposed a Resilience Revolving Fund that would facilitate flood-plain buyouts and restoration projects, and specifically contemplates “land trusts” as eligible fund recipients.¹⁷⁹ The program is being designed to provide grants and low-interest loans to support flood resilience initiatives at the local level.¹⁸⁰ The program would be capitalized with “seed funding” from the state that could serve as the match for federal flood mitigation and disaster recovery programs.¹⁸¹ The program also provides various incentives to ensure that funding recipients are applying the best practices for implementing flood-plain buyouts. First, the program prioritizes buyouts that involve blocks or groups of homes and multifamily homes rather than individual properties to ensure that bought out lands provide sufficient acreage to support restoration efforts and to avoid the “checkerboard” that is created when some property owners agree to be bought out but their neighbors stay.¹⁸² Second, the program requires that the land be used to implement “beneficial flood mitigation practices,” including practices that help residents relocate outside of the flood-plain, restore the natural flood-plain, prohibit redevelopment of the property, or implement other activities that contribute to the community’s “flood resilience.”¹⁸³ The legislation shows how funding programs can be designed to specifically leverage partnerships with land trusts to implement buyout and restoration programs that deliver flood resilience benefits, while also minimizing the social and financial consequences of managed retreat approaches to sea-level rise and increasing flood risks.

These examples show how state and local legislation can be adopted to provide financial resources and other incentives to help land

your tax liability with CITC, DUDLEY NEIGHBORS, INC., <https://www.dudleyneighbors.org/citc.html> [<https://perma.cc/WBZ6-E83R>] (last visited Mar. 9, 2020).

¹⁷⁸ 2019 Cal. Legis. Serv. Ch. 669 (S.B. 196) (West) (amending Revenue and Tax Code sections 75.11, 402.1, and 532, and adding to and repealing section 214.18).

¹⁷⁹ S. 259, 123rd Gen. Assemb., Reg. Sess., at § 48-61-20(4)(c) (S.C. 2019).

¹⁸⁰ Chloe Johnson, *Proposed state fund would help facilitate flood buyouts in SC*, POST & COURIER (Dec. 22, 2018), https://www.postandcourier.com/news/proposed-state-fund-would-help-facilitate-flood-buyouts-in-sc/article_12b57dde-fef7-11e8-9a1a-abc58c71d2ed.html [<https://perma.cc/PNL2-FYGM>].

¹⁸¹ S.C. S. 259 at § 48-61-70.

¹⁸² *Id.* § 48-61-50(A).

¹⁸³ *Id.* § 48-61-50(B)(2).

trusts acquire land and implement publicly beneficial projects to enhance resilience and sustainability in both natural and built environments. In the built environment, states and communities can prioritize land trusts in local housing production and preservation trust funds¹⁸⁴ to foster the unique benefits that land trusts bring in stewarding permanently affordable housing, enhancing community control, building community cohesion, and delivering other environmental and economic benefits in communities. In the natural environment, bonds, disaster recovery funding, and other environmental programs could be directed to land trusts to support buyouts, flood-plain restoration, relocation efforts, and adaptive management of important habitats and ecosystems to address climate risks.

State and local governments can also offer funding and tax incentives to help land trusts incorporate sustainability and resilience features into land trust projects—such as green or natural infrastructure, renewable energy, or community solar. For example, in Austin, Texas, the Austin Housing Finance Corporate is providing financing to the Guadalupe Community Land Trust to help the land trust incorporate green design features into affordable housing projects, such as solar panels and energy efficiency upgrades, to help the land trust build “net zero” CLT homes for lower-income residents.¹⁸⁵ By offering funding and other incentives, governments can provide the financial resources land trusts need to not only implement beneficial projects, but also incorporate climate resilience and sustainability features into project designs.

3. Training and Technical Assistance

Finally, governments can provide training and technical assistance to help land trusts start up and develop the capacities needed to fund, finance, and implement a range of projects that deliver broad community benefits and help to address climate change. Technical assistance can be

¹⁸⁴ To address affordable housing many state and local governments are creating housing trust funds that can be capitalized with state, local, and federal funds to support new development and preservation of existing affordable housing. For a description of housing trust funds, see U.S. DEPT OF HOUS. & URBAN DEV., OFFICE OF POLICY DEV. & RESEARCH, *Models for Affordable Housing Preservation*, EVIDENCE MATTERS (Summer 2013), <https://www.huduser.gov/portal/periodicals/em/summer13/highlight3.html> [<https://perma.cc/BT2A-NGRZ>].

¹⁸⁵ Other models deployed in Austin include the installation of solar projects owned by Austin Energy on CLT homes that will eventually be donated to the CLT. See *Guadalupe-Saldaña Net Zero Subdivision*, GUADALUPE NEIGHBORHOOD DEV. CORP., <https://www.guadalupenc.org/guadalupesaldaa-net-zero-subdivison> [<https://perma.cc/Y77X-ZV38>] (last visited Mar. 9, 2020).

offered at different stages of their work to build the capacity of land trusts to support community initiatives:

- At the initial start-up phase, technical assistance could be provided to help land trusts incorporate as non-profits, develop bylaws and other governing documents, and to craft legal agreements to facilitate land acquisition and stewardship (such as acquisition documents, ground leases, conservation easements, etc.).
- During project planning stages, assistance could be provided to help land trusts identify suitable properties, funding programs, and financing tools to both acquire lands and implement projects that deliver multiple community benefits.
- At planning, management, and design stages, technical assistance could help land trusts better understand and use climate risk assessments to implement projects that incorporate considerations of sustainability and resilience.

This section discusses some examples of how public agencies have provided technical support and training to build the capacity of land trusts and offers recommendations for how governments might provide training to broaden the roles land trusts are playing in supporting resilience and sustainability initiatives in communities.

Land trusts are a somewhat new innovation and often require significant start up support and assistance to navigate the legal landscape that varies from state to state. Land trusts often need support getting established, acquiring properties, accessing funding and financing to implement projects, as well as addressing other barriers. One way that governments can support land trust work in communities is by providing technical assistance, training, and other resources to help land trusts get established and develop their initial portfolio of properties. For example, in the City of Irvine, the City provided an initial grant of \$250,000 in funding to start up the Irvine Community Land Trust with the goal of preserving affordable housing.¹⁸⁶ The City Redevelopment Agency also staffed the Irvine CLT and provided the technical “know-how” to help the land trust initiate its first projects. The Mayor and a City Councilmember served

¹⁸⁶ ELIASON & TRAUTH, *supra* note 86, at iv.

on the CLT's board to help ensure coordination between the CLT and the City's housing programs.¹⁸⁷ Additionally, the City helped create an initial pipeline of affordable housing units into the CLT's portfolio by providing for the direct transfer of affordable units required through the City's Inclusionary Zoning Program to the CLT.¹⁸⁸ Governments could also facilitate land trusts' roles in incorporating resilience and sustainability features into land-trust projects (such as renewable energy, community solar, microgrids, green and natural infrastructure, etc.) by providing training and technical assistance on how to implement, fund, and finance these types of features in the design and implementation of projects. In this way, land trusts can be empowered to implement projects that deliver multiple benefits in communities.

In some areas, land trusts are banding together to form peer-learning networks to help other land trusts establish and begin work in other neighborhoods. For example, in Boston, with support from the Boston Mayor's office, Dudley Street Neighborhood Initiative brought advocates, researchers, and non-profits together to launch the Greater Boston Community Land Trust Network with the objective of sharing best practices in the development and application of the community land trust model throughout the greater Boston area.¹⁸⁹ A group of member organizations participate—including newly formed land trusts in the Chinatown and Mattapan neighborhoods.¹⁹⁰ The Network helps to raise awareness about the land trust model for delivering and preserving affordable housing, build political support for CLT projects, and refine best practices by learning from the success of other community land trusts. In addition to local networks, the Grounded Solutions Network and the Strong, Prosperous, and Resilient Community Challenge ("SPARCC"), a coalition of foundations, non-profits, and other organizations supporting equitable resilience initiatives in cities,¹⁹¹ are providing technical support and guidance to community land trusts to help them establish and incorporate climate

¹⁸⁷ Michael Brown & Rick Jacobus, *City Hall Steps In*, SHELTERFORCE (Apr. 23, 2007), https://shelterforce.org/2007/04/23/city_hall_steps_in/ [<https://perma.cc/CR9Z-KUYL>].

¹⁸⁸ See Davis, *Common Ground*, *supra* note 44, at 30 n.65; IRVINE COMMUNITY LAND TR., *supra* note 82.

¹⁸⁹ CHO ET AL., *supra* note 74, at 7.

¹⁹⁰ See *id.* at 2.

¹⁹¹ Chris Kabel et al., *The SPARCC Initiative: Fostering Racial Equity, Health, and Climate Resilience in the Built Environment*, 12 COMMUNITY DEV. INNOVATION REV. 43, 46–47, 49 (2017), <https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/sparcc-initiative-fostering-racial-equity-health-climate-resilience-in-built-environment.pdf> [<https://perma.cc/VWS4-PUKF>]; GROUNDED SOLUTIONS NETWORK, <https://groundedsolutions.org/> [<https://perma.cc/CM9J-RRN6>] (last visited Mar. 9, 2020).

resilience into their work. And the Land Trust Alliance provides similar support for conservation land trusts at a national level and is actively working to help its members better understand climate risks and integrate climate resilience into their work.¹⁹² State and local governments can foster peer-learning networks and provide resources to build the technical capacity of land trusts to operate in their communities and implement projects that address climate resilience and sustainability.

CONCLUSION

Impacts from climate change are already significantly affecting communities and ecosystems, and delivering solutions that effectively address the challenge at the pace and scale needed will require action at all levels of government and in the private sector. The foundational goals of land trusts—to protect and preserve shared community resources for the benefit of the environment and future generations—make them uniquely suited to partner with governments on initiatives to reduce carbon pollution and prepare for climate impacts in both the built and natural environments. In fact, many land trusts around the country are already playing these roles. In the built environment, community land trusts are enhancing resilience by building high-quality, permanently affordable housing and stewarding parks, urban gardens, and other community amenities that deliver multiple community benefits. And in the natural environment, conservation land trusts are preserving vulnerable ecosystems and habitats, restoring natural landscapes to enhance community resilience, and providing training and technical support for local partners. The public sector can spur these types of public-private partnerships by aligning laws and policies to better support and enable land trust roles in sustainability and resilience initiatives in communities across the United States. These types of partnerships and projects that deliver multiple benefits to residents and communities will be critical to addressing the climate crisis in ways that enable communities and ecosystems to survive and thrive.

¹⁹² LAND TR. ALLIANCE, *supra* note 22.