NOTES

Collective Action at Home: Cooperative Housing as a Justice-Oriented Solution to the Climate and Affordable Housing Crises

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ABSTRACT

Across the United States, communities are facing two simultaneous and interrelated crises: climate change and scarce affordable housing. These crises are becoming more salient as severe weather events become more frequent, severe, and extensive, and as tens of millions of Americans struggle to afford a place to live. They also exacerbate each other: climate change mitigation and adaptation can make housing even more expensive, while deregulatory and supply-side affordable housing solutions can cause climate impacts. Nominally climate-friendly development can also cause "low-carbon gentrification," where decarbonized lifestyles marketed to higher-income residents actually increase greenhouse gas emissions. This Note argues that to avoid these unintended harms, climate and affordable housing solutions must incorporate housing and climate justice. Approaches to affordable housing rooted in the social and solidarity economy provide an especially helpful model for envisioning just solutions that can simultaneously address the climate and housing crises.

This Note begins by describing the problems posed by climate change and unaffordable housing, as illustrated by how the crises manifest in Montana. Part II identifies the mechanisms by which housing interventions accelerate climate change, describes the roles played by climate change mitigation and adaptation in increasing housing costs, and summarizes climate-related gentrification theories. Part III introduces the social and solidarity economy framework and argues that limited-equity housing cooperatives can provide climate benefits while making housing more affordable. Finally, Part IV concludes that the

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limited-equity housing cooperative model can provide housing and climate benefits in the Montana case study.

TABLE OF CONTENTS

INTRODUCTION

Climate change and affordable housing scarcity are urgent problems that threaten material wellbeing and personal livelihoods. Global temperatures continue setting records: the warmest ten years since 1850 happened in the last decade, and 2024 was the hottest year yet.[1] From June through August 2024, the Northern and Southern Hemispheres experienced their warmest summer and winter, respectively, in 175 years.[2] Material impacts from rising temperatures are no longer theoretical, future problems. Extreme weather events such as heat waves, torrential rainfall, hurricanes, and wildfires, have increased in frequency, severity, and/or extent across the United States.[3] In one particularly devastating example, climate change contributed to Hurricane Helene's high winds, heavy rainfall, and significant intensity that killed at least 227 people and devastated coastal and

1. *2024 Was the World's Warmest Year on Record*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Jan. 10, 2025), https://www.noaa.gov/news/2024-was-worlds-warmest-year-on-record [https://perma.cc/LD8L-V5VC]. Alarmingly, Earth hasn't experienced a colder-than-average year since 1976. *See 2023 Was the World's Warmest Year on Record, by Far*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Jan. 12, 2024), https://www.noaa.gov/news/2023-was-worlds-warmest-year-on-record-by-far [https://perma.cc/AW39-EQJD].

2. *Earth Had Its Hottest August in 175-Year Record*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Sept. 12, 2024), https://www.noaa.gov/news/2023-was-worlds-warmest-year-on-record-by-far [https://perma.cc/WZ52-NN2Z].

3. WENYING SU ET AL., *Ch. 2 Climate Trends*, *in* FIFTH NATIONAL CLIMATE ASSESSMENT 16 (Allison R. Crimmins et al. eds., 2023), https://nca2023.globalchange.gov/chapter/2/ [https://perma.cc/9G9X-Z55C].

Appalachian communities in 2024.[4] Registered voters nationwide and across political parties are increasingly likely to say that preventing extreme weather events is an important reason to act on climate change.[5]

Similarly, the shortage of affordable housing across the United States is commonly understood as a crisis.[6] Housing costs for renters, homeowners, and would-be homebuyers continue to rise, as home prices hit a record high in early 2024 and rents remain 26% higher nationwide compared to early 2020.[7] These high housing costs have outpaced income growth, leading one in four homeowners and half of renter households to become "cost-burdened," meaning that housing and utilities make up more than 30% of their household income.[8] These financial burdens are especially challenging for lower-income homeowners and renters who have less money left over each month to buy groceries, pay medical bills, or purchase other necessities.[9] Concerns about affordable housing are widespread and cut across political parties, according to nationwide public opinion polling.[10] The fact that housing affordability was a contentious issue in the 2024 presidential election, despite traditionally being a state or local issue,[11] demonstrates the strength of these concerns.

Affordable housing shortages and climate change are complex, large-scale problems that can appear intractable, especially to individuals or communities

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4. BEN CLARKE ET AL., CLIMATE CHANGE KEY DRIVER OF CATASTROPHIC IMPACTS OF HURRICANE HELENE THAT DEVASTATED BOTH COASTAL AND INLAND COMMUNITIES (Oct. 9, 2024), http://hdl.handle.net/10044/1/115024 [https://perma.cc/6HAF-EQUK].

5. JENNIFER CARMAN ET AL., YALE PROGRAM ON CLIMATE CHANGE COMMC'N, CHANGES IN U.S. VOTERS' TOP REASONS TO REDUCE GLOBAL WARMING (Sept. 12, 2024), https://climatecommunication.yale.edu/publications/voters-reasons-to-reduce-gw/ [https://perma.cc/9HYL-66KL] (finding significant nine percentage point increase in registered voters' endorsement of "to help prevent extreme weather events" as top three most important reason to reduce global warming between 2017 and 2024).

6. *See, e.g.*, U.S. Gov't Accountability Off., *The Affordable Housing Crisis Grows While Efforts to Increase Supply Fall Short*, WATCHBLOG (Oct. 12, 2023), https://www.gao.gov/blog/affordable-housing-crisis-grows-while-efforts-increase-supply-fall-short [https://perma.cc/GC62-ALXT]; Brian Callaci & Sandeep Vaheesan, *The Market Alone Can't Fix the U.S. Housing Crisis*, HARV. BUS. REV. (Sept. 12, 2024), https://hbr.org/2024/09/the-market-alone-cant-fix-the-u-s-housing-crisis [https://perma.cc/J79H-6S2M]; Marcus Baram, *On the Housing Crisis, Harris Pledges Major Investment as Trump Promises Federal Land*, USA TODAY (Oct. 31, 2024), https://www.usatoday.com/story/money/personalfinance/real-estate/2024/10/31/harris-trump-promise-different-housing-crisis-fixes/75796236007/ [https://perma.cc/WKB4-K7JP].

7. JOINT CTR. FOR HOUS. STUD. OF HARVARD UNIV., THE STATE OF THE NATION'S HOUSING 2024, 1–2 (2024), https://www.jchs.harvard.edu/state-nations-housing-2024 [https://perma.cc/X49H-S7CN].

8. *Id.* at 2. In 2022, a record 22.4 million renter households were cost-burdened, and a record 12.1 million renter households were severely cost-burdened (housing and utilities using more than half of household income). *Id.*

9. *Id.*

10. Press Release, Bipartisan Pol'y Ctr. & Nat'l Hous. Conf., Nearly 3 in 4 Adults Feel Lack of Affordable Homes a 'Significant' U.S. Problem (June 10, 2024), https://bipartisanpolicy.org/press-release/nearly-3-in-4-adults-feel-lack-of-affordable-homes-a-significant-u-s-problem/.

11. *See* Wendy Edelberg, *Commentary: What Can the Next Administration Do About the US Housing Shortage?*, BROOKINGS (Oct. 24, 2024), https://www.brookings.edu/articles/what-can-the-next-administration-do-about-the-us-housing-shortage/ [https://perma.cc/T2GF-HYR7]; Baram, *supra* note 6.

acting at a small scale. Potential solutions to these issues can seem at odds, especially when climate concerns are weaponized to block affordable housing development or the urgent need for housing seems to justify ignoring climate impacts. This Note argues that to counteract these forces, climate and housing solutions must acknowledge that the crises can mutually reinforce each other. Because these challenges are interrelated, effective solutions must consider climate justice and housing justice together to avoid unintended harms.

Using Montana as a case study, this Note describes concrete aspects of the affordable housing crisis and climate crisis. Part II explores the interrelated nature of the two crises by identifying the role of housing in accelerating climate change, climate change's effects on affordable housing, and climate-related gentrification theories. Part III articulates what a just solution that simultaneously addresses the housing and climate crises might look like. It then argues that limited-equity housing cooperatives and other approaches rooted in the social and solidarity economy (SSE) offer a compelling model. Part IV concludes that the potential housing and climate benefits of SSE approaches, such as limited-equity cooperatives, would be effective for the Montana case study.

I. CASE STUDY: MONTANA'S PRESSING HOUSING AND CLIMATE CRISES

It is difficult to escape two increasingly salient facts of life in Montana: affordable housing is increasingly scarce, and the climate is changing. Though Montana is not the obvious face of the U.S. housing crisis or global climate change, both problems are disrupting communities throughout the state and are topics of significant concern. In 2024, the Montana housing market was the least affordable of any state and the District of Columbia.[12] In 2022, 77% of registered Montana voters viewed the lack of affordable housing as an "extremely" or a "very" serious problem.[13] Montana's Lewis and Clark County saw the country's fifth highest increase in rents from 2020 to early 2022,[14] and the state's residential median sales price grew by 105% from January 2017 to June 2023, compared to 72% nationally.[15] From 2019 to 2022, Montana's available housing vacancy rate,

12. Nat'l Assoc. of Realtors, *REALTORS Affordability Distribution Curve and Score* (2024), https://www.nar.realtor/research-and-statistics/housing-statistics/realtors-affordability-distribution-curve-and-score [https://perma.cc/UUL6-YPZ6].

13. Amanda Eggert, *Poll Finds Three-Quarters of Montanans Worried About Housing Affordability*, MONT. FREE PRESS (May 3, 2022), https://montanafreepress.org/2022/05/03/poll-growth-affordable-housing-problem-for-montana/ [https://perma.cc/FSH4-3CC7]; UNIV. OF MONT. CROWN OF THE CONTINENT & GREATER YELLOWSTONE INITIATIVE, 2022 VOTER SURVEY ON PUBLIC LANDS 12 (2022), https://crown-yellowstone.umt.edu/voter-surveys/2022/2022-u-of-montana-statewide-analysis-1.pdf [https://perma.cc/ES9J-KH9R].

14. Susan Shain, *Has Montana Solved Its Housing Crisis?*, HIGH COUNTRY NEWS (Nov. 20, 2023), https://www.hcn.org/issues/55.12/housing-has-montana-solved-its-housing-crisis [https://perma.cc/85BV-MFQS].

15. Mont. Dep't of Com., *Workbook: Montana Housing Situation Report: Homeownership Affordability*, https://ceic.mt.gov/People-and-Housing/Housing [https://perma.cc/N6JN-H7A7] (click

including both homeowner and rental vacancies, fell from 3.4% to 2.0%, faster than the nation's decline from 3.2% to 2.4%.[16] Migration of high-income households into Montana between 2019 and 2021 increased the state's share of households earning more than $200,000 by more than a third, the largest change in the country.[17] Increasing housing demand from 40,000 net migrants to Montana from 2020 to 2022, combined with increased labor and material costs, increased housing costs faster than local wages.[18] Demand for emergency shelter and supportive services by people experiencing homelessness has increased across the state, including in Billings, Montana's largest city, which saw an increased number of people losing housing for the first time.[19]

Concern about the lack of affordable housing has motivated political and policy action at the state and local level. Montana Governor Greg Gianforte, a Republican, launched a bipartisan housing task force in July 2022, and many of its recommendations that focused on local zoning reform and deregulation of permitting and building processes became law in 2023.[20] In the summer of 2023, the "unprecedented" number of people lacking shelter led the mayor of Montana's second largest city, Missoula, to declare a "homelessness and sheltering state of emergency."[21] Affordable housing concerns drove the 2023 mayoral elections in Missoula and Bozeman, where voters selected, respectively, the executive

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"Montana Housing Situation Report" icon; then click "Homeownership Affordability" tab at top) (citing Redfin Monthly Housing Market Data [2017-2023] - September 2023 Release).

16. *Id.*

17. Bryce Ward, *The Future of Montana: What the New Wave of In-Migration Means for the State*, MONT. BUS. Q., Winter 2022, at 16, 16–18.

18. Shain, *supra* note 14; *see* DATA & OPERATIONS BUREAU, MONT. DEP'T OF LAB. & INDUS. & AMY WATSON, 2023 MONTANA LABOR DAY REPORT, 10 figs.4, 15, 34–36 (2023), https://lmi.mt.gov/_docs/Publications/LMI-Pubs/Labor-Market-Publications/LDR20221.pdf [https://perma.cc/E5VD-T3A3] (reporting greater increases in home purchase and rental costs compared to wage growth between 2019 and 2023).

19. Aislin Tweedy, *Officials: "Unprecedented" Humanitarian Crisis Around Montana Because of Homelessness*, DAILY MONTANAN (June 18, 2023), https://dailymontanan.com/2023/06/18/officials-unprecedented-humanitarian-crisis-in-missoula-around-montana-because-of-homelessness/.

20. Press Release, Governor's Office, Governor Gianforte Extends Housing Task Force (June 29, 2023), https://news.mt.gov/Governors-Office/Governor_Gianforte_Extends_Housing_Task_Force [https://perma.cc/WNN5-8VF2]. A "mobile home tenant bill of rights" proposal passed the Republican-dominated legislature with bipartisan support, but Governor Gianforte vetoed it for unreasonably interfering with landlords' rights. David Erickson, *Gianforte Vetoes "Mobile Home Tenant Bill of Rights" from Missoula Lawmaker*, MISSOULIAN (May 17, 2023), https://missoulian.com/news/local/gianforte-vetoes-mobile-home-tenant-bill-of-rights-from-missoula-lawmaker/article_0f146518-f4d0-11ed-a91b-8b09ed8f5e88.html. The legislature also rejected measures that would have used the state's $2.5 billion budget surplus to directly support cost-burdened renters or subsidize construction of low-income apartments. Shain, *supra* note 14; David Erickson, *Nowhere to Go: Montana's Affordable Housing Crisis*, MISSOULIAN (May 15, 2023), https://missoulian.com/news/local/nowhere-to-go-montanas-affordable-housing-crisis/article_beda4ebe-edc2-11ed-be8e-f3ae72e0fb81.html [https://perma.cc/AUY6-2VBM].

21. Tweedy, *supra* note 19.

director of Missoula's affordable housing nonprofit and a co-founder of Bozeman's citywide tenant union.[22]

Though lacking as much bipartisan concern as affordable housing, climate change has begun impacting Montana communities, and residents are becoming increasingly worried. In 2023, 70% of registered Montana voters believed climate change to be "at least a somewhat serious" problem, an increase from 54% in 2016.[23] Montana voters are even more concerned about specific hazards related to climate change: 94% believe wildfires are a serious problem (62% believe they are an "extremely" or a "very serious" problem), 90% believe that wildfire smoke is a serious problem, and 79% say that the West's current shortage of water is a serious problem.[24] In August 2023, Montana youth made national news when a state district court judge agreed that the state's refusal to consider climate change impacts of proposed development violated their state constitutional rights to a "clean and healthful environment."[25]

These widespread and increasing concerns about climate threats are rooted in impacts to physical and mental health, personal livelihoods, and community infrastructure. In August 2023, Montana experienced a record-breaking heatwave that caused the National Weather Service to issue warnings for vulnerable community members to stay cool indoors.[26] Though once rare, warm nights over 70°F are becoming more common in Montana,[27] and contribute to the danger of heatwaves. Montana has the highest per capita rate of premature deaths due to wildfire smoke, and rising temperatures will place outdoor workers, recreationists, and those without adequately cool spaces at risk of heat-related illness or death.[28] Climate anxiety (feelings of doom about future climate change) is already

22. Shain, *supra* note 14.

23. COLO. COLL. STATE OF THE ROCKIES PROJECT, 2023 CONSERVATION IN THE WEST POLL 81 (2023), https://www.coloradocollege.edu/other/stateoftherockies/conservationinthewest/2023.html [https://perma.cc/2LXY-BZ6S] [hereinafter COLO. COLL. STATE OF THE ROCKIES PROJECT 2023]; COLO. COLL. STATE OF THE ROCKIES PROJECT, 2016 CONSERVATION IN THE WEST POLL, 5 (2016), https://www.coloradocollege.edu/dotAsset/1ae5d935-6a3d-4139-a128-e62d2441ec1f.pdf [https://perma.cc/P2D4-T7B3] [hereinafter COLO. COLL. STATE OF THE ROCKIES PROJECT 2016].

24. COLO. COLL. STATE OF THE ROCKIES PROJECT 2023, *supra* note 23, at 14, 84, 86.

25. *See, e.g.*, David Gelles & Mike Baker, *Judge Rules in Favor of Montana Youths in a Landmark Climate Case*, N.Y. TIMES (Aug. 14, 2023), https://www.nytimes.com/2023/08/14/us/montana-youth-climate-ruling.html; Kate Selig, *Judge Rules in Favor of Montana Youths in Landmark Climate Decision*, WASH. POST (Aug. 15, 2023), https://www.washingtonpost.com/climate-environment/2023/08/14/youths-win-montana-climate-trial/; Held v. State, No. CDV-2020-307 (Mont. 1st Jud. Ct. Aug. 14, 2023), *aff'd*, 560 P.3d 1235 (Mont. 2024).

26. Aislin Tweedy, *Hot Temperatures in Montana This Week Will Set Records, Increase Wildfire Danger*, DAILY MONTANAN (Aug. 15, 2023), https://dailymontanan.com/2023/08/15/hot-temperatures-in-montana-this-week-will-set-records-increase-wildfire-danger/; Austin Amestoy, *The Pacific Northwest Sets New Records for Daily High Temperatures Amid Heat Wave*, NPR NEWS (Aug. 16, 2023), https://www.mtpr.org/montana-news/2023-08-16/the-pacific-northwest-sets-new-records-for-daily-high-temperatures-amid-heat-wave [https://perma.cc/D9RH-FMJL].

27. Corrine N. Knapp et al., *Ch. 25 Northern Great Plains*, *in* FIFTH NATIONAL CLIMATE ASSESSMENT (Allison R. Crimmins et al. eds., 2023), https://nca2023.globalchange.gov/chapter/25/ [https://perma.cc/YU92-9SNQ].

28. *Id.*

prominent among farmers, ranchers, and Indigenous Peoples in the Northern Great Plains region, which includes Montana.[29] Despair among Crow Tribal elders, for instance, results from the loss of environmental, cultural, and human health, and is exacerbated by feeling unable to address climate change's root causes.[30] Increasing rates and severity of extreme weather events, including drought, hailstorms, flooding, and wildfire, have already affected communities across the Northern Great Plains.[31] Tribal communities with fewer resources to prepare for extreme events, at a greater distance from large cities, and that lack resilient infrastructure are especially at risk.[32] Over 10% of Montana's homes are manufactured or mobile homes, almost double the national average, making residents more vulnerable to extreme heat, wildfires, and floods.[33] Finally, flooding damage has a disproportionate impact on renters and People of Color who are more likely to occupy homes in floodplains.[34]

In addition to feeling significant impacts from climate change, Montana contributes substantial greenhouse gas (GHG) emissions to the atmosphere. Even in a global context, Montana is a "major emitter . . . in absolute terms, in per person terms, and historically."[35] Taken together, Montana's fossil fuel-based economy annually produces about 166 million tons of CO_2, equivalent to the emissions from Argentina, the Netherlands, or Pakistan.[36] Montana contains 30% of the country's recoverable coal reserves, the largest of any state, and is the country's fourth largest coal producer.[37] In 2022, 42% of Montana's in-state electricity was generated from coal, and residential units consumed 37% of electricity sold in-state.[38] Montana's energy use and other emissions thus play a meaningful role in creating the climate crisis it faces.

II. THE HOUSING AND CLIMATE CRISES ARE MUTUALLY REINFORCING

The affordable housing and climate crises are interrelated and mutually exacerbating, especially when one's solutions ignore effects on the other. This Part describes (A) the housing sector's role in accelerating climate change, (B) how climate change makes housing unaffordable, and (C) the dynamics producing climate-related gentrification.

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29. *Id.*
30. *Id.*
31. *Id.*
32. *Id.*
33. *Id.*
34. *Id.*
35. Held v. State, No. CDV-2020-307, at 68 (Mont. 1st Jud. Ct. Aug. 14, 2023), *aff'd*, 560 P.3d 1235 (Mont. 2024).
36. *See id.* at 67–68.
37. *Montana State Profile and Energy Estimates, Profile Analysis*, U.S. ENERGY INFO. ADMIN. (2023), https://www.eia.gov/state/analysis.cfm?sid=MT [https://perma.cc/526F-KCHH].
38. *Id.*

A. HOUSING AFFECTS CLIMATE CHANGE

The residential sector contributes to climate change at all life cycle stages, from land use planning to deconstruction. Homes contribute 20% of U.S. GHG emissions.[39] Montana's residential sector uses 23% of the state's total energy and has the highest per capita energy consumption in the country.[40] Low-density development can increase emissions by forcing reliance on carbon-emitting vehicles,[41] while high-density development can create urban heat islands, which increase energy demands and heat-related illness and death.[42] GHG emissions result from "operational" energy demands generated by heating, cooling, cooking, lighting, and otherwise using the building.[43] Other building life stages, including production, construction, maintenance, refurbishment, and end-of-life, create "embodied" energy demands and associated GHG emissions.[44] Embodied GHG emissions also include those generated from raw material extraction and processing, manufacturing, transportation, and other indirect activities necessary to the building's embodied energy demands.[45]

Housing affordability solutions often ignore climate change impacts or are seen as necessarily contradictory. Because they diagnose a primary cause of unaffordable housing as too few housing units to meet demand, supply-side interventions seek to quickly build more market-rate housing.[46] Common strategies include easing zoning restrictions to allow denser development, providing density bonuses, and streamlining permitting requirements.[47] Such deregulatory approaches sped through the 2023 Montana Legislative Session on a bipartisan basis, causing some commentators to call the legislation the "Montana miracle."[48] Some bills made it easier to review subdivision requests and forced cities with more than 7,000 residents to allow multi-unit

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39. JOINT CTR. FOR HOUS. STUD. OF HARVARD UNIV., THE STATE OF THE NATION'S HOUSING 2023 8 (2023), https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_The_State_of_the_Nations_Housing_2023.pdf [https://perma.cc/X63S-CWX8].

40. U.S. ENERGY INFO. ADMIN., *supra* note 37.

41. Brian J. Connolly et al., *Tackling the Affordability Crisis in the West: The Colorado Housing Affordability Project and the Challenge of Zoning Reform*, 58 IDAHO L. REV. 513, 535 (2022).

42. Eric K. Chu et al., *Ch. 12. Built Environment, Urban Systems, and Cities*, *in* FIFTH NATIONAL CLIMATE ASSESSMENT (Allison R. Crimmins et al. eds., 2023), https://nca2023.globalchange.gov/chapter/12/ [https://perma.cc/98LQ-59NR].

43. *See* Katie Skillington et al., *A Review of Existing Policy for Reducing Embodied Energy and Greenhouse Gas Emissions of Buildings*, 168 ENERGY POL'Y 112920, 1 (2022).

44. *Id.* at 2.

45. *Id.*

46. *See, e.g.*, Vicki Been et al., *Supply Skepticism: Housing Supply and Affordability*, 29 HOUS. POL'Y DEBATE 25, 27 (2019); SHANE PHILLIPS ET AL., RESEARCH ROUNDUP: THE EFFECT OF MARKET-RATE DEVELOPMENT ON NEIGHBORHOOD RENTS 4 (2021), https://escholarship.org/uc/item/5d00z61m.

47. Connolly et al., *supra* note 41, at 544 (surveying state and local land use regulation reforms addressing housing affordability); Been et al., *supra* note 46, at 26–27 (describing empirical research demonstrating relationship between less restrictive land-use regulation and lower housing prices).

48. Shain, *supra* note 14.

apartment buildings in most commercial zones.[49] Others created a right to build duplexes on lots zoned for single-family homes in cities with more than 5,000 residents and a right to build accessory dwelling units in most cities and towns.[50] Finally, the legislature reformed land-use planning processes used by counties with more than 70,000 people by requiring cities to plan for population growth and by shifting public participation to occur earlier in land-use planning and project review to reduce delays.[51]

If deregulation and other reforms simply encourage more building using carbon-intensive materials, processes, and designs, these policies may increase embodied and operational GHG emissions. Environmental activists often oppose such deregulatory measures, since they reduce opportunities for environmental review and mitigation.[52] In Montana, statewide, one-size-fits-all approaches such as reducing minimum lot sizes or allowing duplexes by right also drew criticism from city officials.[53] They expressed concern that such policies would encourage risky floodplain development or prevent comprehensive solutions better tailored to local needs.[54]

B. CLIMATE CHANGE AFFECTS HOUSING AFFORDABILITY

Climate change reduces housing affordability by increasing building and retrofitting costs, reducing housing supply, and affecting housing-related financial markets. Building and retrofitting costs can come from "mitigation" efforts such as reducing operational and embodied GHG emissions through energy-efficiency measures.[55] They can also arise from "adaptation" efforts that improve buildings' resilience to climate impacts.[56] To withstand increasingly frequent heatwaves, severe storms, flooding, wildfires, and other "natural" disasters, existing housing stock needs expensive retrofitting.[57] New housing units will also be more costly to build, especially if municipalities adopt building codes that require protection

49. Eric Dietrich, *How the 2023 Legislature Tried to Tackle Montana's Housing Crunch*, MONT. FREE PRESS (May 10, 2023), https://montanafreepress.org/2023/05/10/how-the-montana-legeislature-tried-to-tackle-housing-crunch/ [https://perma.cc/3QPQ-Y2QC].

50. *Id.*

51. *Id.*

52. Stephen R. Miller, *Prospects for a Unified Approach to Housing Affordability, Housing Equity, and Climate Change*, 46 VT. L. REV. 463, 478 (2021); Been et al., *supra* note 46, at 31.

53. David Erickson, *Legislators at Odds with Missoula over Housing as Wealthy Move In*, MISSOULIAN (Feb. 1, 2023), https://missoulian.com/news/local/legislators-at-odds-with-missoula-over-housing-as-wealthy-move-in/article_e6f172c5-9b3d-5fc3-bba7-4cbf3069b0e0.html; Martin Kidston, *Missoula Won't Oppose "One Size Fits All" Housing Bill*, MISSOULA CURRENT (Mar. 28, 2023), https://missoulacurrent.com/missoula-housing-bill/.

54. Erickson, *supra* note 53; Kidston, *supra* note 53.

55. *See* 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, 543 (2014).

56. *See id.*

57. *Id.* at 528.

mechanisms to physically defend the property from climate impacts.[58] The air filtration and cooling systems necessary to protect residents from wildfire smoke and extreme heat will increase direct costs and drive up energy prices from increased demand.[59]

Climate disasters also reduce housing supply by destroying units or by making them uninhabitable and too expensive to rebuild.[60] Significant rainfall on mountain snowpack can trigger devastating flooding, like a June 2022 storm that destroyed or damaged 400 homes in Montana near Yellowstone National Park.[61] Wildfires destroyed nearly 100,000 structures nationwide between 2005 and 2022, including 1,411 structures in Montana.[62] However, absolute numbers can mask the substantial, localized losses caused by fires. For example, the 2018 Camp Fire destroyed almost the entire town of Paradise, California, including 18,804 structures, and displaced tens of thousands of residents, most of whom did not return.[63] The 2025 Eaton Fire burned over 10,000 structures in Altadena and Pasadena, California,[64] but the destruction intensity mirrored Altadena's historical redlining and racial segregation patterns.[65] Black residents of West Altadena were disproportionately impacted by destroyed and damaged buildings compared to non-Black households.[66] In addition to being more likely to have lost their homes to the Eaton Fire, Black homeowners in Altadena are overburdened financially compared to their non-Black peers.[67] Thus the Eaton Fire's devastation compounded long-term racial inequalities, making it harder for Black Altadena homeowners to return and rebuild.[68]

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58. *Id.* at 555.

59. *Id.* at 535–36.

60. *Id.* at 538.

61. *The Flooding in Yellowstone Reveals Forecast Flaws as Climate Warms*, NPR (July 7, 2022), https://www.npr.org/2022/07/07/1110219977/yellowstone-flooding-reveals-forecast-flaws.

62. Kimiko Barrett, *Wildfires Destroy Thousands of Structures Each Year*, HEADWATERS ECON. (May 2024), https://headwaterseconomics.org/natural-hazards/structures-destroyed-by-wildfire/ [https://perma.cc/5A5A-G2VC] (noting these figures are likely an undercount due to different reporting standards across agencies).

63. STEVEN M. OSTOJA ET AL., *Focus on Western Wildfires*, *in* FIFTH NATIONAL CLIMATE ASSESSMENT (Allison R. Crimmins et al. eds., 2023), https://doi.org/10.7930/NCA5.2023.F2 [https://perma.cc/UQ2C-4QZA]; *Facts and Statistics: Wildfires*, INS. INFO. INST., https://www.iii.org/fact-statistic/facts-statistics-wildfires#top [https://perma.cc/995U-KUEV].

64. *Eaton Fire: Incident Update*, CAL FIRE (Jan. 27, 2025, 10:04 AM), https://www.fire.ca.gov/incidents/2025/1/7/eaton-fire/updates/262ba0be-593a-463c-94b1-a15d1e7f2a1e [https://perma.cc/4HCW-UURR] (9,418 destroyed structures, 1,073 damaged structures).

65. PAUL ONG ET AL., RALPH J. BUNCHE CTR. FOR AFR. AM. STUD., CTR. FOR NEIGHBORHOOD KNOWLEDGE, LATINO POL'Y & POL. INST., UCLA, LA WILDFIRES: IMPACTS ON ALTADENA'S BLACK COMMUNITY 6–7 (2025), https://bunchecenter.ucla.edu/wp-content/uploads/sites/112/2025/02/LA_Wildfire_Altadena_Black_Community_Report.pdf [https://perma.cc/JA9R-GLX2].

66. *See id.* at 5. In Altadena, 61% of Black households were within the Eaton fire perimeter compared to 50% of non-Black households. Only 37% of non-Black homes were majorly damaged or destroyed, compared to 48% of Black homes. *Id.*

67. *Id.* at 8.

68. *Id.* at 9; *see also* Lois Beckett, *'Altadena Is Not For Sale': LA Residents Fear Being Forced Out by Wildfire Rebuild*, THE GUARDIAN (Feb. 14, 2025, 1:34 PM), https://www.theguardian.com/us-news/2025/feb/14/eaton-wildfires-altadena-gentrification-building-fears [https://perma.cc/3EKU-PF6Y]

Climate risk already ripples through housing-related financial markets, including secondary mortgage markets and consumer insurance. Potential catastrophic loss to the collateral underlying mortgage-backed securities makes secondary mortgage markets riskier, reducing the capacity of government-sponsored entities to facilitate homeownership.[69] Climate risk also reduces appraisal values of vulnerable homes and makes casualty insurance premiums more expensive or impossible to obtain, preventing the satisfaction of mortgage terms.[70] These financialized climate risk management strategies can lead to disinvestment in vulnerable communities, increased housing costs, and greater housing instability.[71]

C. LOW-CARBON GENTRIFICATION'S "CONTRADICTION"

The complex relationship between the housing and climate crises is demonstrated by climate-focused gentrification theories. "Climate gentrification" is a descriptive theory that recognizes property values will change depending on the properties' vulnerability to climate change impacts.[72] Put another way, climate gentrification is a "process that extends or intensifies general gentrification dynamics" through climate risk, its management, and other environmental interventions.[73] Climate gentrification is partly fueled by the wealthy's ability to pay premiums for property with superior risk management attributes, for example, high elevation above a floodplain (the "Superior Investment Pathway").[74] Climate-related costs of staying in risk-prone areas can also become prohibitive to vulnerable residents, forcing them to leave (the "Cost-Burden Pathway").[75] Finally, the unintended effects of public investment in building and community resilience will likely include increased private property values, which probably will be unevenly and inequitably distributed (the "Resilience Investment Pathway").[76] These three pathways can play out on multiple geographic and financial scales, from an individual homebuyer selecting a neighborhood for its higher ground to financial institutions inventing new insurance products to extract profit by managing climate risks across multiple states.[77]

(reporting advocates' goal to "keep Altadena the Black center it has been" and describing community concerns about loss of Black community with "hometown feel").

69. Green, *supra* note 55, at 536.

70. *Id*. at 537.

71. Zac J. Taylor & Manuel B. Aalbers, *Climate Gentrification: Risk, Rent, and Restructuring in Greater Miami*, 112 ANNALS AM. ASSOC. GEOGRAPHERS 1685, 1690 (2022).

72. Jesse M. Keenan et al., *Climate Gentrification: From Theory to Empiricism in Miami-Dade County, Florida*, 13 ENV'T RSCH. LETTERS 054001, 2 (2018).

73. Taylor & Aalbers, *supra* note 71, at 1686.

74. *See* Keenan et al., *supra* note 72, at 2.

75. *Id*. at 3.

76. *Id*. at 3–4.

77. *Id*. at 3 (noting climate gentrification can operate across "neighborhoods, municipalities, states, regions, [and] countries"); s*ee* Taylor & Aalbers, *supra* note 71, at 1689 (describing innovations in insurance markets and climate risk speculation).

The "low-carbon gentrification" theory expands the Resilience Investment Pathway by specifically describing the increased prices associated with homes and neighborhoods associated with "low-carbon" lifestyles and policy goals. Rather than primarily focusing on resilience to climate change impacts, low-carbon gentrification explores the relationship between high housing values and personal and municipal efforts to lower GHG emissions.[78] Low-carbon gentrification also builds on, but is distinct from, "ecological gentrification" theory, which describes cycles of disinvestment and environmental degradation followed by environmental improvements, which increase property values and displace lower-income residents.[79] Unlike the localized effects of urban greening projects, low-carbon objectives may have substantial gentrification power because they affect most aspects of urban design and are pervasive across North American cities' climate action plans.[80] The supply and demand forces behind low-carbon gentrification are also more attuned to decarbonization agendas. Developers and local governments are increasingly building and incentivizing dense, walkable, bikeable neighborhoods with energy-efficient homes, which are marketed for their "low-carbon living."[81] Demand for "low-carbon" neighborhoods appears driven by young professionals' preference to live and work where they can "do their part" to fight climate change.[82] Thus low-carbonization gentrification theorizes the potential for "the pretext of climate change and energy efficiency imperatives" to justify a "politically embedded process of changing the social and spatial composition" of cities.[83]

Low-carbon gentrification has been used to describe increased housing costs and internal displacement in multiple cities. State-led action in the Polish city of Gdańsk demonstrates the potential for decarbonization agendas, financed by external energy retrofitting programs, to be "co-opted" to produce social inequality.[84] Despite Gdańsk's post-communist history, researchers argue that its low-carbon gentrification process involved generalizable features that apply to European and North American cities more broadly, including its direct and indirect displacement pressures.[85] Direct displacement occurred through evictions before the demolition or renovation of energy-inefficient buildings.[86] Many households did not return to their old neighborhoods, despite being offered units in refurbished or new housing, suggesting

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78. *See* Jennifer L. Rice et al., *Contradictions of the Climate-Friendly City: New Perspectives on Eco-Gentrification and Housing Justice*, 44 INT'L J. URB. & REG'L RSCH. 145, 150 (2020); Stefan Bouzarovski et al., *Low-Carbon Gentrification: When Climate Change Encounters Residential Displacement*, 42 INT'L J. URB. & REG'L RSCH. 845, 846 (2018).

79. Rice et al., *supra* note 78, at 146–47; *see, e.g.*, Sarah Dooling, *Ecological Gentrification: A Research Agenda Exploring Justice in the City*, 33 INT'L J. URB. & REG'L RSCH. 621, 621–22 (2009) (demonstrating urban park development's displacement of unsheltered people).

80. Rice et al., *supra* note 78, at 148–49.

81. *Id.* at 149.

82. *Id.* at 149–50.

83. Bouzarovski et al., *supra* note 78, at 846.

84. *Id.* at 860–61.

85. *See id.*

86. *Id.* at 854–55.

substantial indirect displacement pressure.[87] The indirect pressure appeared to be fueled by concerns about higher rents, changed neighborhood character, and disrupted social networks.[88]

Other researchers find circumstantial evidence of low-carbon gentrification in central Seattle neighborhoods where low-carbon infrastructure investments have "converge[d]" with new technology, creative jobs, and rising housing prices.[89] Seattle's newly developed light rail, streetcars, protected bike lanes, and density-enhancing "green" condominium buildings were intended to reduce the city's transportation-related emissions.[90] They also attracted Microsoft, Amazon, and Google employees seeking to walk, bike, and ride the streetcar to their jobs located in the South Lake Union neighborhood.[91] Over a similar period, South Lake Union and adjacent neighborhoods experienced dramatic demographic changes indicative of gentrification.[92] The share of Black residents declined as the share of non-Hispanic white residents increased, educational attainment increased at higher rates than the rest of Seattle, and median household incomes grew compared to city-wide median income.[93] Finally, citywide median home values and median rents rose by more than twice the average growth rates nationwide, and median rents adjacent to South Lake Union increased at even greater rates.[94]

These dynamics result in a "socio-ecological contradiction," where essential ecological (and social) goals of reducing GHG emissions may not only lead to social costs like unaffordable housing and displacement, but may also fail to reduce actual emissions.[95] Cities traditionally measure the emissions generated directly from activities within their boundaries and the emissions from generating power used within the city and from disposing the city's solid waste.[96] Cities do not typically count emissions generated by their residents' consumption habits, from food production to air travel, despite their potential to almost double a city's emissions footprint.[97] Concerningly, studies using consumption-based accounting show that the emissions reductions gained from dense, transit-rich neighborhoods are significantly offset by the emissions from their wealthy residents' consumption patterns.[98] If lower-

87. *See id.* at 855–56.
88. *See id.*
89. *See* Rice et al., *supra* note 78, at 154–55 (acknowledging findings are supported by interviews, qualitative observations of neighborhood change, U.S. Census Bureau demographic data, and newspaper reports of Seattle's urbanization).
90. *Id.* at 155.
91. *Id.*
92. *Id.*
93. *Id.* at 157–58.
94. *Id.* at 158.
95. *Id.* at 145–46.
96. *Id.* at 152.
97. *See id.* at 152–53.
98. *Id.* at 153 (citing studies conducted in the United States, Finland, United Kingdom, and China). For example, per capita consumption-based models show that despite Manhattan's density, its residents have comparable emissions to residents in wealthy cities nationwide; density and low GHG emissions

income residents are displaced due to rising housing costs associated with low-carbon living, they may move farther from transit hubs or into less energy-efficient housing, thus increasing their emissions.[99] Therefore, rather than reducing overall emissions, low-carbon design and development may shift emissions around the city or increase them overall.

Despite the climate gentrification's challenges and the contradiction posed by low-carbon gentrification, the solution is not to abandon climate-resilience and decarbonization projects. As discussed in Part II and recognized by the scholars studying Seattle and Gdańsk, climate change is an existential threat that requires urgent decarbonization, including in the housing sector.[100] The call to action, instead, is to understand housing justice and climate justice as interrelated struggles.[101] If there is "no climate justice without a clear and central focus on housing justice,"[102] then what would just housing and climate solutions look like?

III. ENVISIONING JUST AFFORDABLE HOUSING AND CLIMATE SOLUTIONS

Though it might be naïve to think that all affordable housing interventions and climate change mitigation and adaptation efforts can avoid every social and environmental harm identified above, it is worth articulating what a policy must achieve to focus on both housing and climate justice. At the broadest conceptual level, a successful program would increase housing affordability and access, reduce operational and embodied GHG emissions associated with housing and/or enhance resilience to climate change impacts, and avoid socially inequitable displacement or accumulation of benefits. These outcomes are the necessary responses to the problems defining the affordable housing and climate crises, as outlined in Part II.

Cooperative housing models, such as limited-equity housing cooperatives, provide a transformative solution that advances housing and climate justice. The social and solidarity economy (SSE) provides an alternative economic system that prioritizes inclusive participation and economic democracy over profit extraction. SSE provides multiple approaches to housing, including community land trusts (CLTs) and cooperative housing. Although CLTs are better known,

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only co-occur in New York City in low- and mixed-income and transit-rich communities in the outer boroughs. *Id.* (citations omitted).

99. *See id.* at 153–54; Connolly et al., *supra* note 41, at 535 (noting that high urban living costs promote sprawling suburban development associated with greater transportation-related GHG emissions).

100. *See* Rice et al., *supra* note 78, at 146; Bouzarovski et al., *supra* note 78, at 845.

101. *E.g.*, Rice et al., *supra* note 78, at 161; *see* Bouzarovski et al., *supra* note 78, at 861 (calling for consideration of the "injustices associated with climate change and low-carbon transitions" using frameworks recognizing urban social inequality); Taylor & Aalbers, *supra* note 71, at 1697 (advocating for the reevaluation and reimagining of climate risk reduction strategies to focus on "housing equity and broader questions of sociospatial justice.").

102. Rice et al., *supra* note 78, at 160.

cooperative housing models, especially limited-equity housing cooperatives, have special potential to simultaneously address housing and climate justice.

A. SOCIAL AND SOLIDARY ECONOMY APPROACHES TO HOUSING

Increasing recognition that liberal capitalism is driving climate change and exacerbating social inequalities has spurred interest in alternative economic systems.[103] The "social and solidarity economy" is one such alternative that emphasizes participation, inclusivity, and economic democracy.[104] SSE includes "social economy" approaches seeking to expand the capitalist system by including people-centered institutions and objectives.[105] SSE also includes more transformative "solidarity economy" approaches, which prioritize "redistributive justice, so-called 'deep' sustainability, alternatives to capitalism and the debt-based monetary system, as well as participatory democracy and emancipatory politics . . . ."[106] SSE thus seeks to "reassert[] social control . . . over the economy" by prioritizing "social and often environmental objectives over profits, emphasizing the place of ethics in economic activity and rethinking economic practice in terms of democratic self-management and active citizenship."[107] SSE institutions appear across economic and social spheres, including labor (worker cooperatives);[108] health (village-level mutual health organizations);[109] housing and land tenure (community land trusts);[110] and cross-sector, interlinked systems that drive local economic and social development.[111] SSE approaches to affordable housing provide material benefits by prioritizing people's housing needs over profits and create social benefits by democratizing property ownership.

Although community land trusts and cooperative housing both fall under the broad SSE umbrella, they produce affordable housing and social benefits in somewhat different ways. Community land trusts (CLTs) contribute to affordability by

103. Peter Utting, *Introduction: The Challenge of Scaling Up Social and Solidarity Economy*, *in* SOCIAL AND SOLIDARITY ECONOMY: BEYOND THE FRINGE 1, 1 (Peter Utting ed., 2015); Etienne C. Toussaint, *Dismantling the Master's House: Toward a Justice-Based Theory of Community Economic Development*, 53 U. MICH. J.L. REFORM 337, 340–41 (2019); Geoff Gilbert, *Who Plans Our Political Economy? A Solidarity Economy Vision for Democratic Political Economy Planning*, 12 HARV. UNBOUND 101, 105–06 (2019).

104. Toussaint, *supra* note 103, at 346.

105. Utting, *supra* note 103, at 2.

106. *Id.*

107. *Id.* (citations omitted).

108. Gilbert, *supra* note 103, at 110; Toussaint, *supra* note 103, at 408.

109. Utting, *supra* note 103, at 4.

110. Gilbert, *supra* note 103, at 109; Toussaint, *supra* note 103, at 402.

111. Utting, *supra* note 103, at 4. The Mondragón Corporation in Spain's Basque region is the quintessential example of a cross-sector, interlinked solidarity economy ecosystem. *See* Toussaint, *supra* note 103, at 408. Mondragón is a self-sustaining network of business enterprises that span the knowledge, retail, industry, and finance sectors. *Id.* at 408–09. In 1941, Mondragón began as a school where laborers could learn technical skills necessary to work in local businesses; it is now one of Spain's largest companies and has employed over 80,000 people in a federation of worker-owned cooperatives. *Id.*

removing housing from speculative real estate markets.[112] CLTs are diverse, but they are typically distinguished from other affordable housing programs by their unique ownership structure that splits ownership of land from the improvements on it.[113] The CLT, most commonly a nonprofit corporation, retains ownership of the land but sells the improvement as private property to a resident homeowner (or, less commonly, to another affordable housing institution).[114] CLTs achieve perpetual affordability by reserving the right to repurchase the improvement if sold and by limiting its resale price using a formula that allows the seller to benefit from building equity while maintaining the home's affordability.[115] Because CLTs are often governed cooperatively by its members, including owners and other community members, they provide opportunity for democratizing housing ownership and control.[116] The solidarity economy perspective sees them as valuable tools for "prefiguring social ownership of land," because they provide sites for community members to experience alternative land ownership structures and practice cooperative governance skills.[117]

Communities across the country have implemented CLTs to provide affordable housing, despite CLTs' associations with anti-capitalist economic theory. In 2022, at least 314 CLTs (or CLT-type entities) existed across 46 states, Washington, DC, and Puerto Rico, representing a 30% increase since 2011.[118] Montana has seven CLTs, tying for twelfth place nationwide with Connecticut and Michigan and putting it in second place in the Mountain West, just behind Colorado by one CLT.[119] CLTs' potential for transformative community change is currently limited by their relatively small share of subsidized residential units nationwide, limited funding and staffing, prospective buyers' challenges in obtaining mortgages, and the looming threat of climate change to properties and lower-income residents, who are not as equipped to withstand climate impacts.[120]

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112. Gilbert, *supra* note 103, at 122; Ruoniu (Vince) Wang et al., *The 2022 Census of Community Land Trusts and Shared Equity Entities in the United States* 1 (Lincoln Inst. of Land Pol'y, Working Paper WP23RW1, 2023), https://www.lincolninst.edu/publications/working-papers/2022-census-community-land-trusts-shared-equity-entities-in-united [https://perma.cc/TRN2-XX96].

113. Stephen R. Miller, *Community Land Trusts: Why Now Is the Time to Integrate This Housing Activists' Tool into Local Government Affordable Housing Policies*, 23 J. AFFORDABLE HOUS. & CMTY. DEV. L. 349, 355 (2015).

114. *Id*. at 355–56.

115. *Id*. at 357.

116. Toussaint, *supra* note 103, at 402; Gilbert, *supra* note 103, at 122.

117. Gilbert, *supra* note 103, at 121–22.

118. Wang et al., *supra* note 112, at 76.

119. *Id*. at 12–13 tbl.3. Montana's relatively high number of CLTs is particularly striking given its relatively small population. Montana's 2023 estimated population was about 1.1 million people, or less than one-third of Connecticut's population (about 3.6 million), almost one-ninth of Michigan's population (about 10 million), and less than one-fifth of Colorado's population (about 5.9 million). *See* U.S. Census Bureau, *Quick Facts: Connecticut; Michigan; Montana; Colorado*, CENSUS.GOV, https://www.census.gov/quickfacts/fact/table/CT,MI,MT,CO/PST045223#PST045223 (last visited Apr. 20, 2025).

120. Wang et al., *supra* note 112, at 78–79; *see infra* section II.C.

Though sometimes mentioned with community land trusts in SSE literature,[121] cooperative housing appears to be less thoroughly discussed as an affordable housing solution in the United States. Cooperative housing ranges in structure, goals, and scale, especially depending on location and animating theory. Housing cooperatives, for instance, provided 10% of Germany's total housing stock (2.2 million units) and included 3 million members in 2016.[122] By contrast, Boulder, Colorado, had only eleven legal housing cooperatives ranging from 7-person to 26-person occupancy within two years of legalizing them but imposing a lengthy, expensive licensing process.[123] Most, if not all, of the Boulder housing cooperatives were organized around communal living principles, including sharing cooking, food ordering, and household chores.[124]

Limited-equity housing cooperatives (LECs or "co-ops") occupy a middle ground between the German and Boulder models. LECs are a specific form of cooperative ownership where member-owners purchase their shares at low rates and must sell at low rates upon exiting the co-op.[125] LECs thus maintain affordability by removing the units from the speculative housing market,[126] like CLTs. Unlike CLTs, however, LECs are often formed by low-income tenants fighting to take over their building before it is sold, requiring significant collective labor both initially and over time.[127] Co-ops are theorized as a type of commons reclaimed from and maintained in spite of urban capitalist space, which is expensive and highly demanded.[128] LECs can thus decommodify housing[129] while conferring the "experience of ownership" on the resident-member.[130] Forming LECs can be challenging due to the significant capital needed to purchase the property and the difficulty of collective work among strangers.[131] LECs also face ongoing threats to their survival, since many co-ops may transition their buildings back to the market and

121. *See, e.g.*, Toussaint, *supra* note 103, at 402–03.

122. Carolin Schröder & Heike Walk, *Co-Operatives and Climate Protection: Housing Co-Operatives in Germany*, *in* MAINSTREAMING CO-OPERATION 201, 208 (Anthony Webster et al. eds., 2016). Despite Germany's greater cooperative tradition being founded under market-based principles to support middle-class business interests, its modern housing cooperatives are more likely to actively support solidarity and sustainability than cooperatives in other sectors. *Id.* at 205, 208–09.

123. Emma Sargent, *Boulder Is for People: Zoning Reform and the Fight for Affordable Housing*, 94 U. COLO. L. REV. 857, 865 n.59 (2023); Cassa Niedringhaus, *Once-Controversial, Boulder Housing Co-Ops Proving Worth in Affordability, Community*, DENVER POST (June 17, 2019, 10:07 AM) https://www.denverpost.com/2019/06/16/boulder-housing-co-ops-affordability/ [https://perma.cc/R7UB-EN25].

124. *See* Niedringhaus, *supra* note 123.

125. Amanda Huron, *Working with Strangers in Saturated Space: Reclaiming and Maintaining the Urban Commons: The Urban Commons*, 47 ANTIPODE 963, 964 (2015).

126. *Id.*

127. *Id.* at 970–71, 975.

128. *Id.* at 969, 973.

129. Duncan Kennedy, *The Limited Equity Coop as a Vehicle for Affordable Housing in a Race and Class Divided Society*, 46 HOW. L.J. 85, 124–25 (2002).

130. J. Peter Byrne & Michael Diamond, *Affordable Housing, Land Tenure, and Urban Policy: The Matrix Revealed*, 34 FORDHAM URB. L.J. 527, 548 (2007).

131. Huron, *supra* note 125, at 977.

because it can be difficult to maintain the working relationships and social trust necessary to maintain the cooperative spirit.[132]

LECs benefit their members by providing "affordable housing, physical and social control over their homes, long-term stability, and the creation of supportive, tightly meshed communities."[133] LEC units in Washington, DC, remained "deeply affordable" over decades; the average co-op member paid slightly more than half of the HUD Fair Market Rent level for a comparable unit in 2011.[134] Having the power to make decisions about physical repairs and upgrades, participate in democratic decision-making processes that would affect co-op life, and creating and enforcing community social expectations (including the selection and expulsion of members) improves members' quality of life.[135] The benefits of stability go beyond housing affordability, and encompass the ability to will units to heirs and reduced psychological stress caused by fears of losing housing due to eviction, rent hikes, or the building being sold.[136] Finally, many LECs provide a deeply-valued sense of community where members support each other financially, emotionally, and socially.[137] This support manifests as throwing community parties, looking after each other's children, visiting neighbors in the hospital, providing intergenerational technology support, organizing food drives, or facilitating robust mutual aid efforts.[138]

LECs are less common across the United States than CLTs. Substantial numbers exist in New York City, and some are found in other cities like Los Angeles, Chicago, and Minneapolis.[139] Washington, DC, has the most LECs per capita of any U.S. jurisdiction.[140] LECs have even made news in Missoula, Montana, where two co-ops formed in 2023 with the help of two affordable housing nonprofits, the North Missoula Community Development Corporation (NMCDC) and NeighborWorks Montana.[141] The first, a three-building complex comprising eight units, took two years to finalize.[142] The second, a mixture of fourteen mobile homes, duplexes, and single-family homes, took only ten months.[143] NMCDC

132. *Id.* at 975–77.

133. Amanda Huron, *Creating a Commons in the Capital: The Emergence of Limited-Equity Housing Cooperatives in Washington, D.C.*, 26 WASH. HIST. 56, 63 (2014).

134. *Id.*

135. *Id.*

136. *Id.* at 64.

137. *Id.*

138. *Id.* at 64–65; Zachary Lamb et al., *Resident-Owned Resilience: Can Cooperative Land Ownership Enable Transformative Climate Adaptation for Manufactured Housing Communities?*, 33 HOUS. POL'Y DEBATE 1055, 1066–67 (2023).

139. Huron, *supra* note 125, at 964.

140. *Id.*

141. Eric Dietrich, *Missoula Housing Co-Ops Aim to Prove an Anti-Gentrification Tool Can Work*, MONT. FREE PRESS (Oct. 10, 2023), http://montanafreepress.org/2023/10/10/missoula-housing-co-ops-aim-to-prove-an-anti-gentrification-tool-can-work/ [https://perma.cc/XY89-ZW6F].

142. *Id.*

143. *Id.*

used city funding to help purchase both parcels of land, which were placed in the CLT that NMCDC manages.[144] Both efforts benefitted from NeighborWorks Montana's similar work organizing mobile home park residents to form resident-owned communities, which also serve to insulate residents from housing instability caused by speculative markets in analogous ways.[145]

Despite their small scale and challenges, limited-equity housing cooperatives are a particularly useful tool to provide affordable housing that creates opportunities for climate mitigation and adaptation, but avoids triggering the worst effects of climate or low-carbon gentrification. Their durable, "deep" affordability provides stable housing for existing and future residents, while keeping people in their homes and neighborhoods and protecting them from landlords' real estate speculation. Resident control over physical and social spaces and participation in democratic decision-making within supportive communities also make LECs an effective climate intervention. Because LECs have yet to be examined in this context, the next section theorizes how they contribute to climate mitigation and adaptation.

B. LIMITED-EQUITY HOUSING COOPERATIVES AS A CLIMATE SOLUTION

Limited-equity housing cooperatives are a compelling climate solution tool for many of the same reasons that help them deliver affordable housing. First, residents' physical and social control over the site allows for meaningful emissions reductions and resilience improvements in their buildings. Second, collaborative governance and building supportive communities prepare residents to improve the co-op's internal resilience and participate in collective climate action and other solidarity work outside of the LEC. Third, LECs interrupt wealth extraction from renters, instead keeping profits that landlords could use for climate-destructive purposes available to the community. Fourth, LECs may provide an escape route from the low-carbon gentrification contradiction.

1. Physical and Social Control

Residents' physical and social control theoretically allows them to invest in reducing their building's operational and embodied emissions and in improving resilience to climate change impacts. Though some operational emissions are set by original construction or building design, energy-efficiency improvements and electrification can still play a meaningful role in reducing residential GHG emissions.[146] In some cases, making homes more habitable can reduce emissions, such as when newer appliances reduce operational energy demand or when residents demand low-carbon building

144. *Id.*

145. *Id.*; Lamb et al., *supra* note 138, at 1055.

146. JOINT CTR. FOR HOUS. STUD. OF HARVARD UNIV., *supra* note 39, at 8 (noting substantial $12.5 billion investment in federal programs supporting residential energy-efficiency upgrades and electrification).

materials and methods.[147] For instance, residents can reduce embodied emissions by sourcing low-carbon building materials, selecting energy-efficient contractors, and reducing waste from maintenance and rehabilitation projects. Physical control also allows residents to improve the resilience of their homes to severe storms, heatwaves, flooding, wildfire smoke, and even wildfire by adopting appropriate technologies or changes in behavior. Personal knowledge about their co-op's physical vulnerabilities also helps them adapt in more targeted, proactive ways. For example, once predominantly Latinx residents in a Texas manufactured housing community formed a resident-owned community, an analogous structure to LECs, they were able to improve drainage after years of experiencing water ponding on roads.[148] As a result, the residents escaped Hurricane Harvey's substantial flooding in the area.[149]

These climate-related improvements will not automatically occur simply because residents form or live in an LEC. However, resident-directed improvements become possible in an LEC, whereas they would be difficult, if not impossible, to achieve in an inefficient or vulnerable rental apartment building. Residents' social control can also contribute to the likelihood that effective climate mitigation and adaptation measures will be taken. For example, members can establish community expectations for achieving climate goals through bylaws or collaborative decision-making processes. Selection of future members based on alignment with the co-op's climate goals can also improve their success, although this method may raise equity and gentrification concerns, as discussed below. Lack of financial resources and technical knowledge also create barriers to costly physical improvements. Collectively planning for these upgrades or emergencies using a co-op repair fund or leveraging external financial and technical resources through linked co-op networks may exceed an individual owner or renter's ability to make the same improvements.[150]

2. Democratic Governance

Practicing democratic governance and building social cohesion through collaborative management increases the capacity for internal resilience and external impact. The supportive, tight-knit communities that result from collective

147. Consider a DC LEC member's recollection of the LEC's power to immediately replace an ailing refrigerator with a faulty door that the management company had previously refused to replace, despite allowing the family's food to spoil. Huron, *supra* note 133, at 63. Not only does replacing the refrigerator prevent future food spoilage and associated economic hardship, it allows opportunities to select energy-efficient appliances. Likewise, the newest Missoula LEC accounted for the costs of catching up on deferred maintenance, including new roofs for homes that needed them, in their initial rent structures. Dietrich, *supra* note 141. Collective decision-making could thus allow residents to upgrade their roof insulation.

148. Lamb et al., *supra* note 138, at 1068.

149. *Id.*

150. *Id.* at 1065–66 (describing the greater financial and knowledge resources available to resident-owned communities from broader co-op network, compared to conventional manufactured housing communities).

governance can help residents weather the financial, physical, and emotional hardships caused by climate change. Working together consistently over time also builds social trust and community cohesion, which makes it easier to respond to discrete emergencies and proactively reduce vulnerability in the long term.[151] Furthermore, participating in democratic decision-making transforms individuals' and communities' political and social imaginations.[152] The small scale of an LEC or resident-owned community provides significant opportunity for individuals to realize that their voices and perspectives matter and that working in solidarity with others can achieve material results. In other words, the collective governance model provides a "proof-of-concept" that demonstrates "a viable path for mobilizing people and resources."[153]

By building the muscle of social cohesion and participatory democracy at home, residents can use their skills and expanded imagination outside of the LEC to extend cooperative models into other sectors. Early housing cooperatives—and the nonprofits and government agencies that support them—can pass on their experience to tenants who want to form their own. This appears to be occurring in Missoula, Montana, where the first LEC took two years to finalize, the second took only ten months, and NMCDC now hosts guidance for forming LECs on their website.[154] If housing cooperatives are successful, residents may see potential for providing peer support or technical expertise to a worker-owned cooperative seeking to provide property management services. Working collectively at home also prepares residents to take collective climate action in other contexts,[155] whether helping to organize a political rally, bringing concerns to government officials, or building solidarity across different community groups. Building individual housing co-op capacity thus creates opportunity to create broad, cross-sector climate impact.

Internal resilience and broader societal impacts can be threatened by difficult working relationships, social divisions within co-op communities, and challenges posed by collective governance. Collective decision-making takes significant time, which results in both delayed outcomes and requires more time than some residents can contribute.[156] Additionally, differences in residents' objectives or failure to build trust can increase the difficulty of withstanding market pressures to convert LECs back to market-rate properties.[157] Especially when prospective LEC members have little experience or understanding of collective ownership, these challenges may seem like insurmountable barriers to creating an LEC.

151. *See id.* at 1067–68.

152. Gilbert, *supra* note 103, at 108.

153. *Id.*

154. N. Missoula Cmty. Dev. Corp., *Housing Cooperatives*, https://perma.cc/9TTB-JPBK.

155. *See* Varshini Prakash, *We Are Sunrise*, *in* ALL WE CAN SAVE: TRUTH, COURAGE, AND SOLUTIONS FOR THE CLIMATE CRISIS 187, 187–88 (Ayana Elizabeth Johnson & Katharine K. Wilkinson eds., trade paperback ed. 2021) (Sunrise Movement co-founder describing her own journey from feeling "alone, small, powerless" to "powerful" after first collective action).

156. Huron, *supra* note 125, at 972; Lamb et al., *supra* note 138, at 1067.

157. Huron, *supra* note 125, at 975.

Technical support from nonprofits or technical assistance organizations, peer support from other housing cooperatives, and financial assistance to reduce residents' initial risk may all help overcome both the initial barriers and help navigate challenges that arise along the way.[158] Additionally, LECs and other housing cooperative models provide the opportunity to learn and practice the social and collective decision-making skills that are hard to develop elsewhere.

3. Interrupting Wealth Extraction

Because LECs remove housing from landlord control and the speculative real estate market, they disrupt the conventional capitalist wealth accumulation and extraction processes. Whether through individual landlord-tenant relationships or corporate landlords investing in residential property to accumulate capital, financialized residential real estate markets extract money from residents that can be used in climate-destructive activities.[159] By at least partially decommodifying housing by removing it from the speculative real estate market, LECs can divert the profits from landlords to the cooperative and its members. LECs receive some form of subsidy in the original purchase, whether a CLT owns the underlying land or a government or nonprofit grant lowers the purchase price, which increases the margin between monthly operating costs compared to a for-profit housing entity.[160] Furthermore, the absence of a landlord allows the co-op to retain the increased profit margin for themselves.[161] Thus, co-op members can use the retained profit to invest in low-carbon retrofits and increase climate resilience, to facilitate internal social cohesion, or to support the co-op's broader community through solidary partnerships.

4. Escape from Climate and Low-Carbon Gentrification

By combining the above climate benefits into a proven affordable housing tool, LECs may offer a particularly effective way to escape low-carbon and climate gentrification dynamics. Housing co-ops can make physical improvements to reduce their operational and embodied emissions, serving similar goals to drivers of low-carbon gentrification, such as homes marketed for their low emissions or the state-led energy retrofits in Gdańsk. Unlike those drivers, however, LECs and other cooperative models allow residents to remain in their homes, both by maintaining affordability and by stabilization through ownership. Additionally, LECs do not appreciate marketable value when they invest in decarbonization and climate resilience infrastructure, preventing unintended housing cost increases associated with both low-carbon gentrification and climate gentrification's Resilience Investment Pathway. Moreover, because emissions reductions

158. *See* Lamb et al., *supra* note 138, at 1069.

159. Taylor & Aalbers, *supra* note 71, at 1687–90 (describing effect of climate risk management practices on forms of rent-seeking).

160. *See* Kennedy, *supra* note 129, at 97.

161. *Id.* at 96.

could be achieved without significant housing cost increases and while maintaining co-op residents in their homes, the building's consumption-generated emissions may not increase due to the arrival of higher-income residents. Interrupting the complex financialization of climate risk management strategies, even partially, demonstrates that alternative pathways are available, which may encourage additional creativity and experimentation.

Because climate and low-carbon gentrification have only been recently described, and significant data and empirical research gaps remain,[162] it is difficult to predict whether LECs will truly avoid their dynamics. Climate motivates behavior in addition to general gentrification processes, meaning that removing one method of residential climate mitigation and adaptation may not significantly affect gentrification overall. Additionally, LECs are subject to the same oppressive forms as the rest of U.S. society, including systemic racism, settler colonialism, wealth inequality, and heteropatriarchy.[163] The formation and continued governance of LECs must always include intentional interruption of those systems of oppression if they hope to avoid reproducing them.[164] However, by attending to these justice concerns, LECs may successfully create a simultaneous focus on housing justice and climate justice.

CONCLUSION

In the face of seemingly intractable, interrelated crises created by unaffordable housing and climate change, making progress on one issue without setting back efforts to address the other can feel impossible. At the very least, housing solutions must avoid accelerating climate impacts, and climate solutions must take care not to exacerbate housing unaffordability and inequalities. However, interventions can exceed the bare minimum by simultaneously addressing housing justice and climate justice. Such solidarity-based solutions avoid unintended harms, and they can expand benefits by finding additional contexts to fight climate change and unaffordable housing beyond conventional policy silos.

Limited-equity housing cooperatives (LECs or "co-ops"), an example of housing approaches rooted in the social and solidarity economy, demonstrate the potential for such transformative change. First, LECs and other cooperative housing models increase access to lasting, deeply affordable housing. Second, because of residents' physical and social control of their co-ops, they have the power to meaningfully reduce operational and embodied greenhouse gas emissions from their housing. LEC collaborative governance structures train members in participatory democracy, building social trust, and cooperative skills that can be used to scale the co-op's positive climate impacts. LECs also offer an understated method of interrupting capitalist wealth extraction through residential markets, allowing profits to be reinvested in locally climate-friendly practices. Third, LECs may avoid socially inequitable

162. *See* Rice et al., *supra* note 78, at 161; Taylor & Aalbers, *supra* note 71, at 1697.
163. *See* Gilbert, *supra* note 103, at 116.
164. *Id.*

displacement or accumulation of benefits by escaping the dynamics that produce climate and low-carbon gentrification.

As theorized, LECs would be a beneficial tool in addressing Montana's affordable housing and climate crises. Despite the legislature's focus on deregulatory approaches, Montana has a significant community land trust presence compared to other states. LECs and resident-owned community structures are also being used to organize low-income tenants and manufactured housing community residents to gain ownership and control of their housing from willing landlords. This suggests that despite their roots in the transformative social and solidarity economy, these alternative housing models provide enough practical benefits to be implemented by communities across the political spectrum. Additionally, LECs and other cooperative housing approaches potentially provide immediate relief to low-income residents facing displacement or increased costs from the sale of their residences, whereas the legislature's supply-side interventions may take years to materialize as affordable housing. Montana communities should therefore continue expanding and experimenting with LECs and other cooperative housing structures to achieve both housing and climate justice.