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Using Federal Power to Compel Fire Prevention and Address Growing Property Insurance Issues in Wildland-Urban Interface

Brandon A. Prince

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Using Federal Power to Compel Fire Prevention and Address Growing Property Insurance Issues in Wildland-Urban Interface

*Brandon A. Prince**

ABSTRACT

The Western United States continues to experience devastating wildfire seasons. These severe disasters worsen as climate change lengthens periods of aridity and hotter temperatures. Despite this longstanding and well-documented forecast, wildland-urban interface (“WUI”) development has continued without much restriction over the past thirty years. Insurers who once issued policies in these western WUI regions now experience substantial losses on an annual basis and are reconsidering their approach to market participation in fire-prone areas. In areas with acute fire destruction like California, insurers’ resulting rate increases and non-renewals have forced state government intervention to protect property owners. This tension is emblematic of the growing property insurance problem facing the United States and other western WUI areas that forecast a growing wildfire problem within the next century. Drawing on previous discussions, this article outlines detailed policy components for a federal National Wildfire Insurance Program that would offer wildfire insurance to individuals in participating communities concerned with fire risk. In particular, this article attempts to outline program features and mechanisms that would avoid large-scale debt like that of the National Flood Insurance Program.

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INTRODUCTION

Wildfires are no longer a seasonal event in the West.¹ As climate change warms and dries out the region, much of the landscape is now susceptible to brush and forest fires throughout the year. This drier wildland also contains overly dense undergrowth due to over a century of federal fire management that has prioritized complete suppression in favor of preventative measures to manage areas historically familiar with fire.² But the increased aridity, warmer temperatures, and excessive tinder only partially explain why the United States suffered five of its worst wildfire years since 2006.³

The broader issue involves rapid human expansion into fire-prone western areas. The United States Forest Service (“USFS”) designates these fire-prone areas as “Wildland-Urban Interface” (“WUI”) because they exist “where humans meet or intermix with wildland fuel.”⁴ WUI is the fastest growing land use in the contiguous United States, and ninety-seven percent of this development occurred to support new housing.⁵ There were 12.7 million more houses and 25 million more individuals living in WUI in 2010

1. *Facts + Statistics: Wildfires*, INS. INFO. INST., <https://perma.cc/MHF6-5DHE>. The top ten costliest wildfires in U.S. history have all occurred in California; nine of them were in the last fifteen years, and eight were in the last five years. *Id.* All of Colorado’s eleven largest wildfires have occurred since 2002, and three of them occurred in 2020 alone. Terry Terrones, *The 11 Biggest Wildfires in Colorado History*, GAZETTE (Nov. 27, 2020), <https://perma.cc/57WU-2LPG>. The 2002 Rodeo-Chediski fire burned 200,000 hectares and destroyed almost 500 homes in Arizona’s White Mountains. Timothy W. Collins & Bob Bolin, *Situating Hazard Vulnerability: People’s Negotiations with Wildfire Environments in the U.S. Southwest*, 44 ENV’T MGMT. 441, 441 (2009).

2. KATIE HOOVER & LAURA A. HANSON, CONG. RSCH. SERV., IF10244, WILDFIRE STATISTICS 2 (2021). In 2019, seventy-two percent of the acreage burned in the West was on federal lands. *Id.* Preventative measures in forests include prescribed burning, mechanical thinning, and timber harvesting. See Jeffrey P. Prestemon et al., *Understanding Broadscale Wildfire Risks in a Human-Dominated Landscape*, 48 FOREST SCI. 685, 685 (2002).

3. HOOVER & HANSON, *supra* note 2, at 1 (indicating that the five worst fire years on record since 1960 in terms of acreage burned are 2020, 2015, 2017, 2006, and 2007, respectively.).

4. 40 C.F.R. §80.1401 (2021). Wildland vegetation typically includes forest, native grasslands, shrubs, wetlands, and transitional lands between developed areas and wildlands. Volker C. Radeloff et al., *The Wildland-Urban Interface in the United States*, 15 ECOLOGICAL APPLICATIONS 799, 800 (2005).

5. Volker C. Radeloff et al., *Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk*, 115 PROC. NAT’L ACAD. SCIS. 3314, 3314 (2018). Wildfires will become a larger threat to other WUI communities throughout the U.S. as the climate continues to warm and the number of fire-causing humans grows within and near vegetation. See generally Emily K. Brown et al., *US Wildfire Potential: A Historical View and Future Projection Using High Resolution Climate Data*, ENV’T RSCH. LETTERS, Mar. 8, 2021, at 1 (projecting that most of the contiguous U.S. would experience about 90-189 more days per year exceeding the historical local maximum Keetch-Byram Drought Index).

than in 1990.⁶ The increase in human activity among dry wildland has led to a rise in human-caused fires from sources like power lines, fuel tanks, general commercial activity, and individual sources. Examples of individual sources of human-caused fires are cigarettes, private fires, campfires, deliberate ignition, and sparks.

Despite worsening fire trends, it is unlikely that the United States population will stop developing WUI areas. The area is an attractive living space for many citizens who prefer natural settings, open space, and the possibility of property ownership.⁷ This predicament places western WUI settlements in a situation like the flood-prone regions of the United States: both regions must manage entrenched and expanding settlements in an area prone to increasingly severe and predictable natural disasters.

Private property insurance companies are beginning to take steps to curb extensive wildfire losses.⁸ Much like insurers in floodplain regions before the establishment of the National Flood Insurance Program (“NFIP”), property insurance companies operating in particularly high-risk western WUI areas are either refusing to renew policies or charging increasingly unaffordable rates.⁹ This area of high fire vulnerability within the WUI will continue to expand as drier, hotter weather continues. However, the pace of development in WUI and tendency to rebuild in affected wildfire areas forecasts two successive problems: private insurance will continue to face losses in broader areas of WUI with each fire season and then raise rates to compensate for loss or leave the market entirely. This situation creates a significant problem for the large and diverse population occupying the WUI who may face the dual risk of wildfires,¹⁰ as well as the financial liability from an underinsured property.

As this insurance problem manifests, the burden falls on state and federal resources in addition to the property owners themselves. Individuals who lose coverage due to non-renewal or unaffordability usually resort to

6. Kendra Pierre-Louis & Jeremy White, *Americans Are Moving Closer to Nature, and to Fire Danger*, N.Y. TIMES (Nov. 15, 2018), <https://perma.cc/T9V2-8BCQ>.

7. See *infra* Part I(c).

8. Don Jergler, *Wildfires Making Insurance Harder to Find*, *California Department of Insurance Says*, INS. J. (Aug. 21, 2019), <https://perma.cc/7EYV-J328>; Nick Cahill, *Insurers Busy Dropping California Homes and Businesses Over Wildfires*, COURTHOUSE NEWS SERV. (Mar. 11, 2021), <https://perma.cc/389R-ZXLQ>.

9. These increased rates are “unaffordable” but also likely reflect an accurate assessment of the home’s exorbitant risk.

10. See Matthew S. Carroll et al., *Community Diversity and Wildfire Risk: An Archetype Approach to Understanding Local Capacity To Plan for, Respond to, and Recover from Wildfires* 3, 4–5 (Univ. of Oregon, Inst. for a Sustainable Env’t, Ecosystem Workforce Program Working Paper No. 50, 2014) (“Four distinct archetypes [in the WUI] emerged . . . : 1) formalized suburban communities; 2) high amenity, high resource communities; 3) rural lifestyle communities and; 4) working landscape/resource dependent communities. . . . [T]he social context of many WUI communities is in flux and communities can evolve over time” (citations omitted).).

state-funded Fair Access to Insurance Requirement (“FAIR”) Plan programs.¹¹ These programs provide a basic “named perils insurance policy” to property owners that covers wildfire loss.¹² Federal disaster aid and grant assistance additionally provide a significant wildfire recovery funding source for both individuals and the public.¹³

Given this increasing federal burden and the presence of wildfire across multiple states and federal land,¹⁴ the federal government should address the growing property insurance problem in WUI areas with a National Wildfire Insurance Program (“NWIP”). Like the NFIP, the federal government would provide wildfire insurance to WUI communities that agree to adopt rigid building codes and land-use restrictions to mitigate fire damage. The program will also require a mandatory purchase requirement resembling the federally-backed mortgage requirement in the NFIP.¹⁵ However, unlike the NFIP, premiums under this program would accurately reflect the risk facing the structure, and insurance companies would provide rate subsidies to reward citizens that enact “fire-hardening” measures on their property.¹⁶ This program will allow homeowners who desire to remain

11. Private insurance companies also subsidize some state FAIR plan programs. *See, e.g.*, Cal. Ins. Code § 10095(a) (West 2021) (“An insurer described in this subdivision shall be a member of the association and shall remain a member as a condition of its authority to transact those kinds of insurance in this state.”).

12. *See* Julia Kagan, *Named Perils Insurance Policy*, INVESTOPEDIA (Mar. 4, 2021), <https://perma.cc/5D2X-6JSR> (“A named perils insurance policy is a home insurance . . . policy that only provides coverage on losses incurred to your property from hazards or events named on the policy. Named peril coverage may be purchased as a less expensive alternative to a comprehensive coverage or broad policies, which are policies that tend to offer coverage to most perils.”); *see infra* Part II(b)(i). For a discussion of state FAIR plans, *see infra* Part II(b)(i) (wealthier WUI residents have the option to purchase insurance on the surplus line market). *See* LLOYD DIXON ET AL., *THE IMPACT OF CHANGING WILDFIRE RISK ON CALIFORNIA’S RESIDENTIAL INSURANCE MARKET* 31 (2018) (“[P]roperties that end up in the surplus lines market are those that could not be covered at rates approved for the admitted market. The surplus lines market is also known for writing ‘high end’ homes with unique features what may require more-specific coverage requirements.”).

13. *See infra* Part I(b). *See Oregon Wildfires and Straight-Line Winds, Disaster Recovery No. DR-4562-OR*, FED. EMERGENCY MGMT. AGENCY (last updated Feb. 8, 2022), <https://perma.cc/3NF5-DARU> (disaster aid still available for the 2020 Oregon wildfires, \$38.6 million approved for individuals and households, \$356 million obligated for public assistance). *See also California Wildfires, Disaster Record No. DR-4558-CA*, FED. EMERGENCY MGMT. AGENCY (last updated Feb. 7, 2022), <https://perma.cc/DR8G-Q6QY> (aid also still available for the 2020 California wildfires, \$23.1 million approved for individuals and households, \$311 million obligated for public assistance); *California Wildfires, Disaster Record No. DR-4569-CA*, FED. EMERGENCY MGMT. AGENCY (last updated May 8, 2021), <https://perma.cc/G59G-8M5N>.

14. *See infra* Part I(c).

15. *See infra* Parts III(b), V(b).

16. *See, e.g., Is Your Home Hardened to Survive a Wildfire Ember Storm?*, CAL. FIRE SAFE COUNCIL (2019), <https://perma.cc/6B9Z-REQT> (“FIRE HARDENED means your home is prepared for wildfire and an ember storm. It does not mean fireproof. Home

in high-risk wildfire settings to continue receiving property insurance coverage, and effect preventative measures on private lands that supplement local, state, and federal fire mitigation efforts.

Some existing literature discusses a federal wildfire insurance program to address the property insurance problem in WUI areas.¹⁷ This article continues these discussions by drawing on developments in NFIP rate calculations, the considerable rise of non-renewals in California in 2019 and 2020, and the general rise of insurance premiums in western WUI communities.¹⁸ This article also offers approaches for the NFIP to mitigate and avoid large debts following a wave of fire-related disasters.¹⁹

As described in more detail in Part V below, this article proposes a model:

- using individual property assessment to calculate realistic premium costs, much like NFIP's Risk Rating 2.0;²⁰
- using these individual risk rates to create attractive premium subsidies in exchange for undertaking fire-hardening measures on the property;²¹
- collecting risk data and land survey data annually from property owners to update community maps;
- imposing strict requirements on municipalities participating in the program in exchange for insurance and grant funding (including building and zoning standards, mandatory condemnation of severe repetitive loss properties ("SRLs"),²² and voluntary buyout programs);

hardening addresses the most vulnerable components of your house with building materials and installation techniques that increase resistance to heat, flames, and embers that accompany most wildfires."); HARDENING YOUR HOME, CAL. FIRE, <https://perma.cc/Q5ZR-H33Z>.

17. See *infra* Part IV.

18. See *Colorado Wildfire Information*, ROCKY MOUNTAIN INS. INFO. ASS'N, <https://perma.cc/99FF-SKRA> ("Homeowners need to be aware of the steps they should take to prevent wildfire AND be aware of the insurance impact before moving or building in high-risk areas.").

19. See *infra* Part III (explaining that repeated hurricanes in the 2000s and 2010s brought significant debt to the NFIP).

20. See *infra* Part V(a).

21. See *generally Fire Safety Information for Residents*, CALIF. FIRE SAFE COUNCIL, <https://perma.cc/T54E-TDM2> ("Fire hardened means your home is prepared for wildfire and an ember storm. It does not mean fireproof. Home hardening addresses the most vulnerable components of your house with building materials and installation techniques that increase resistance to heat, flames, and embers that accompany most wildfires.").

22. In the flooding context, SRLs are structures under an NFIP plan that have: incurred flood-related damage for which 4 or more separate claims payments have been made under flood insurance coverage under this chapter, with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or for which at least 2 separate claims payments have been made under such

- lessening the federal government’s fire suppression costs over time; and
- creating new federal investments for increased future prevention programs (including prescribed burns, tree-thinning, and citizen education).

The proposed program will not foreclose private insurers from providing wildfire insurance separately or as part of a broader plan but will instead offer an alternative for communities seeking competitive rates, fire-hardening strategies, and a guarantee that residents will not lose access to affordable property insurance coverage.²³

To outline this proposal, Part I of this article explains the WUI, its characteristics, and its historical development trends in the West. Part II discusses the problems insurers and property owners face in the WUI, leading to non-renewals, unaffordable rates, and government intervention. Part III discusses the NFIP and the parallel problem of insurance risk in floodplain regions of the United States. It also discusses the elements of the NFIP that work and the program features that led to its massive debt. Part IV examines the existing literature on federal wildfire insurance programs. Part V introduces an NWIP proposal for WUI municipalities to manage community risk and ensure citizens can access wildfire insurance and affordable property insurance. Finally, Part VI discusses the foreseeable challenges to an NWIP proposal given potentially high insurance rates, the contentious state of the NFIP, political backlash, the high cost of property in parts of WUI, and the need to continue federal funding of wildfire suppression efforts.

PART I: WUI IS HERE TO STAY: BACKGROUND ON THE AREA’S RAPID GROWTH AND PARALLEL RISK INCREASE

A. OVERVIEW OF THE “WILDLAND-URBAN INTERFACE”

Wildland-Urban Interface (“WUI”) is the area “where humans meet or intermix with wildland fuel.”²⁴ Specifically, it is “the area where houses and wildland vegetation meet or intermingle, and where wildfire problems

coverage, with the cumulative amount of such claims exceeding the value of the insured structure. 42 U.S.C. § 4104c(h)(3) (2012).

23. For a broader discussion of how private insurers can compete alongside a federal disaster insurance program, see generally CAROLYN KOUSKY ET AL., WHARTON RISK MGMT. & DECISION PROCESSES CTR., *THE EMERGING PRIVATE RESIDENTIAL FLOOD INSURANCE MARKET IN THE UNITED STATES* (2018).

24. 40 C.F.R. § 80.1401 (2021). Wildland “fuel” is “[c]ombustible material” and “[i]ncludes[] vegetation, such as grass, leaves, ground litter, plants, shrubs and trees, that feed a fire.” NAT’L PARK SERV., *Fire Terminology*, <https://perma.cc/BJH3-STZE> (last visited Apr. 19, 2022).

are most pronounced.”²⁵ There are two particular classifications of WUI development, intermix and interface, which are the focus of wildfire problems. Intermix WUI communities are those where properties and wildland vegetation intermingle and coexist.²⁶ Alternatively, interface WUI communities are clusters of settlements that border large areas of wildland vegetation.²⁷

“[A]t-risk communit[ies]” within western WUI are experiencing this increased wildfire threat due to prolonged hot weather,²⁸ man-made and natural fire hazards, and developments that border or mix with dry vegetation.²⁹ Human-caused ignition from sources like private burns, campfires, landscaping equipment, cigarettes, power lines, and other spark-emitting sources are a paramount concern in WUI areas experiencing drier conditions.

Proper hazard prevention and response to wildfire in intermix and interface areas require an examination of the different characteristics within each WUI development category.³⁰ “Census-based and point-based WUI maps, respectively, classified 86% and 97% of all of the buildings lost in WUI disasters as being in either the WUI interface or intermix.”³¹ Although studies differ on which of the two WUI areas experiences a higher rate of building destruction,³² the high incidence of fire in both settings requires a

25. Radeloff et al., *supra* note 5.

26. *See infra* Part I(a)(i).

27. *See infra* Part I(a)(ii).

28. *See* 16 U.S.C. § 6511(1) (“The term ‘at-risk community’ means an area . . . in which conditions are conducive to a large-scale wildland fire disturbance event; and for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.”). *See also* John T. Abatzoglou & A. Park Williams, *Impact of Anthropogenic Climate Change on Wildfire Across Western US Forests*, 113 PROC. NAT’L ACAD. SCI. 11770, 11770 (2016) (“We demonstrate that human-caused climate change caused over half of the documented increases in fuel aridity since the 1970s and doubled the cumulative forest fire area since 1984. This analysis suggests that anthropogenic climate change will continue to chronically enhance the potential for western US forest fire activity while fuels are not limiting.”).

29. Notice, *Urban Wildland Interface Communities Within the Vicinity of Federal Lands that Are at High Risk from Wildfire*, 66 Fed. Reg. 751–52 (Jan. 4, 2001) [hereinafter *Urban Wildland Interface Communities*].

30. Roger B. Hammer et al., *Wildland-Urban Interface Housing Growth During the 1990s in California, Oregon, and Washington*, 16 INT’L J. WILDLAND FIRE 255, 256 (2007). *But see* David M. Theobald & William H. Romme, *Expansion of the US Wildland–Urban Interface*, 83 LANDSCAPE & URB. PLAN. 340, 341–42 (2007) (excluding the characterization of occluded WUI in the discussion of wildland fires). *See also* *Urban Wildland Interface Communities*, *supra* note 29, at 753 (describing occluded WUI as one that “generally exists in a situation, often within a city, where structures abut an island of wildland fuels” with “a clear line of demarcation between structures and wildland fuels”).

31. Michael D. Caggiano et al., *Building Loss in WUI Disasters: Evaluating the Core Components of the Wildland-Urban Interface Definition*, FIRE, Dec. 2020, at 1, 12.

32. *Id.* at 12 (using data from 70 U.S. wildfires between 2000-2018, a study by Caggiano found that “building loss mostly occurs in areas with low building densities and

response that incorporates their different landscape characteristics and engages the agencies handling fire response.³³

1. Intermix

Intermix WUI development “exists where structures are scattered throughout a wildland area . . . [and] there is no clear line of demarcation” between the wildland and settlement.³⁴ These areas have between 28 and 250 people per square mile.³⁵ Structural density is varied and ranges from one structure per forty acres to clusters of structures built closely together.³⁶

Numerous factors associated with this low-density characteristic make intermix WUI “more difficult to manage for wildland fire.”³⁷ The primary challenge is that homes interspersed in dry wildland require an “immediate and intense firefighter involvement—letting fire pursue its natural course in a wooded residential area is not a feasible option.”³⁸ Another major challenge in intermix WUI is the general community resistance to government regulation.³⁹ The distaste for regulation on private property in most of the intermix West creates “an exercise in frustration” for wildland fire agencies, because building codes are “frequently inadequate or disregarded despite dramatic losses and spectacular fires.”⁴⁰

2. Interface

Interface WUI development “exists where structures directly abut wildland fuels . . . , [and] there is a clear line of demarcation” between

high vegetation cover, support[ing] previous findings . . . [of] [h]igher losses in rural intermix environments.”). *But see* Heather A. Kramer et al., *High Wildfire Damage in Interface Communities in California*, 28 INT’L J. WILDLAND FIRE 641, 641 (2019) (finding that interface WUI contained fifty percent of buildings destroyed by wildfire in California from 1985-2013 whereas intermix only contained thirty-two percent of building loss). “In total, half of all buildings destroyed by wildfire were located in the interface WUI, which composed only 2% of the area burned by these wildfires (though interface WUI includes 27% of all homes in California)”. *Id.* at 646.

33. *See, e.g.*, Kramer, *supra* note 32, at 642 (“[M]aintaining defensible space and reducing fuel loads over large landscapes may be more effective in reducing wildfire losses in the intermix WUI than the interface WUI.”). Kramer also notes that “fuel models and wildland fire behaviour models” do not sufficiently account for “non-natural fuel such as propane tanks, vehicles and the homes themselves” commonly found in interface WUI. *Id.*

34. *See* Urban Wildland Interface Communities, *supra* note 29, at 753.

35. *Id.*

36. *Id.*

37. Kramer et al., *supra* note 32, at 642.

38. Lauren Wishnie, *Fire and Federalism*, 17 N.Y.U. ENV’T L.J. 1006, 1036 (2008).

39. CAROL L. RICE & JAMES B. DAVIS, U.S. FOREST SERV., U.S.D.A., GEN. TECH. REP., PSW-127, LAND-USE PLANNING MAY REDUCE FIRE DAMAGE IN THE URBAN-WILDLAND INTERMIX I (1991).

40. *Id.*

structures and wildland fuels.⁴¹ Interface areas typically have 250 or more people per square mile, three or more structures per acre, and share municipal services.⁴² These communities often have local government fire protection to fight local outbreaks and advancing wildfire.

Although interface terrain comprises a smaller total of western WUI than its counterparts, it accounts for a more significant portion of suppression costs, structural damage, and death associated with wildfire. In addition, because interface communities are dense clusters of settlement abutting wildlands, the risk of human-caused wildfire is much more significant.⁴³

3. Fire Response in the WUI

Wildfire response in WUI areas usually involves a coordinated response using local, state, and federal fire response teams. The factor determining initial response is typically the ignition point jurisdiction.⁴⁴ States respond to incidents on state land and private unincorporated areas, and various federal agencies—including primarily USFS, but also Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and Fish and Wildlife Service—may play some role in initial response.⁴⁵ To respond to fires affecting multiple jurisdictions, federal and state agencies usually have cooperative agreements in place to assess initial response.⁴⁶ The National Interagency Fire Center also assists state, local, and federal agencies to coordinate joint response efforts and pool firefighting resources.⁴⁷

B. FEDERAL GOVERNMENT’S ROLE IN WILDFIRE MANAGEMENT

The federal government will continue to play a prominent role in wildfire management and suppression, because the federal government

41. See *Urban Wildland Interface Communities*, *supra* note 29, at 753.

42. See *Urban Wildland Interface Communities*, *supra* note 29, at 753.

43. Kramer et al., *supra* note 32, at 648. Increased population density leads to more landscaping, agriculture, and structures that become sources of fuel themselves. *Id.*

44. Patrick Baylis & Judson Boomhower, *Moral Hazard, Wildfires, and the Economic Incidence of Natural Disasters* 6 (NAT’L BUREAU OF ECON. RSCH., Working Paper No. 26550, 2019), <https://perma.cc/24K6-GE7R>.

45. *Id.*

46. KATIE HOOVER, CONG. RSCH. SERV., IF10732, FEDERAL ASSISTANCE FOR WILDFIRE RESPONSE AND RECOVERY 1 (2020).

47. See *How Resource Mobilization Works: Three Levels of Response*, NAT’L INTERAGENCY FIRE CTR., <https://perma.cc/2UAJ-Q97J> (“National interagency coordination is based on a three-tier system of response, including local, geographic area, and national. There are almost 400 local dispatch centers across the nation, each of which coordinates the initial and local response to a wildfire or other natural emergency.”).

owns significant wildland acreage in the West.⁴⁸ The federal government also has the resources necessary to combat such a widespread and costly problem.⁴⁹ The federal government is responsible for addressing fires ignited on federal lands and protects nonfederal lands under cooperative agreements with states and localities.⁵⁰ Forests on federal land are a significant potential source for wildfire ignition,⁵¹ and wildfire on federal land requires a multiagency response.⁵²

The wildfire threat on federal land is due to the combined effects of historic logging practices favoring larger, fire-resistant trees and federal fire suppression policy in the twentieth century.⁵³ As housing demand in the West increased in the nineteenth and twentieth century, logging practices favored mature tree species, which were historically resistant to forest fire.⁵⁴ Increased settlement and severe fire events in the early twentieth

48. CAROL HARDY VINCENT & LAURA A. HANSON, CONG. RSCH. SERV., R42346, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA 19 (2020). Of the roughly 640 million federally owned acres, 45.9% of this acreage is in the eleven coterminous western states. *Id.*

49. To understand the growing cost of fire suppression for the federal government, see KATIE HOOVER, CONG. RSCH. SERV., R46583, FEDERAL WILDFIRE MANAGEMENT: TEN-YEAR FUNDING TRENDS AND ISSUES (FY2011-FY2020), SUMMARY (2020) (“Total combined FS and DOI wildfire appropriations fluctuated annually but increased from FY2011 to FY2020. On average, combined wildfire appropriations were \$4.48 billion annually in inflation-adjusted constant FY2020 dollars, and the appropriations nearly doubled over the 10-year period. The FY2020 wildfire appropriation was \$6.11 billion, the highest appropriation to date.”).

50. *Id.* See also, e.g., CAL. WILDLAND FIRE COORDINATING AGENCY, 2018-2023 CALIFORNIA MASTER COOPERATIVE WILDLAND FIRE MANAGEMENT AND STAFFORD ACT RESPONSE AGREEMENT (2018).

51. See Alan A. Ager et al., *Wildfire Exposure to the Wildland Urban Interface in the Western US*, APPLIED GEOGRAPHY, Oct. 2019, at 1, 1 (“Simulated wildfires ignited on national forests can potentially affect about half of the communities in the western US . . . with 90% of exposure affecting the top 20% of the communities.”).

52. Federal agencies coordinate national fire response efforts through a partnership with the National Interagency Fire Center. See *Our Partners*, NAT’L INTERAGENCY FIRE CTR., <https://perma.cc/3DD7-BG4W> (“NIFC is home to the national fire management programs for the Bureau of Indian Affairs, Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service, USDA Forest Service, along with partners including the National Association of State Foresters, the U.S. Fire Administration, and the National Weather Service.”).

53. ROSS GORTE, HEADWATERS ECON., THE RISING COST OF WILDFIRE PROTECTION 2 (2013). See generally Jack Cohen, *The Wildland-Urban Interface Fire Problem*, FOREST HIST. TODAY, Fall 2008, at 20, 21 (“Wildfire exclusion started as a prime directive in the early years of the U.S. Forest Service and became a broad national perspective.”).

54. *Id.* For a detailed discussion of how logging altered the species and age distributions in California wildlands, see William F. Laudenslayer, Jr. & Herman H. Darr, *Historical Effects of Logging on the Forests of the Cascade and Sierra Nevada Ranges of California*, 26 TRANSACTIONS W. SECTION WILDLIFE SOC’Y 12, 12 (1990) (“Because of their value as lumber and the susceptibility of sugar pine to white pine blister rust . . . ponderosa and sugar pine declined, and incense-cedar and California white fir increased over those parts of the forest where they coexisted. At present, trees are, in general, younger and smaller in diameter and height; however, occasional larger, older trees that were left after logging

century forced the USFS to adopt the policy of complete fire suppression,⁵⁵ leading to a buildup of natural fuel in wildland forests that have historically experienced intermittent natural fires.⁵⁶ Increased undergrowth, drier conditions, and a rise in human activity on adjacent non-federal wildlands have all contributed to the rise in wildfires started on federal land.⁵⁷ Federal wildland forests and WUI developments are often adjacent to large acres of dry scrubland and grassland, which create an increased risk of acreage spread.⁵⁸

The federal government also supplies states with disaster aid and emergency assistance grants at the time ““a threat of major disaster exists.””⁵⁹ States only shoulder 25% of these grant costs, so long as states can show that a given fire event exceeds their threshold for fire cost.⁶⁰ In combination with other federal assistance with costs, state contributions to wildfire activities often average “less than [0.5%]” of western state’s general fund revenues.⁶¹ Moreover, these grant funds do not go to direct firefighting response activities; rather, they go to activities that mitigate the possibility of mudslides, debris flows, and future wildfire events.⁶² The grants have a wide range of applicability, as they are accessible for fire events on “publicly or privately owned forests or grasslands.”⁶³

This continued federal assistance has created an entrenched development problem known as the “guardianship model,”⁶⁴ where residents in high-risk communities fail to organize or act locally under the

can still be found. Also, grasses have declined and higher amounts of shrubs and small trees are now found under the tree canopy.”).

55. GORTE, *supra* note 53, at 2–3.

56. GORTE, *supra* note 53, at 2.

57. Jennifer K. Balch et al., *Human-Started Wildfires Expand the Fire Niche Across the United States*, 114 PROC. NAT’L ACAD. SCIS. 2946, 2947–48 (2017) (“Overall, humans expand the spatial and temporal ‘fire niche’ by introducing ignitions into landscapes when fuels are sufficiently dry enough to ignite and carry fire, but when lightning is rare.”).

58. Jessica R. Haas et al., *A National Approach for Integrating Wildfire Simulation Modeling into Wildland Urban Interface Risk Assessments Within the United States*, 110 LANDSCAPE & URB. PLAN. 44, 46 (2013). Research also indicates that wildfire spread accounts for the majority of acreage burned, as opposed to localized ignitions. *Id.*

59. *Fire Management Assistance Grants*, FED. EMERGENCY MGMT. AGENCY (last updated July 1, 2021), <https://perma.cc/ACP4-BBP4>. See generally HOOVER, *supra* note 46 (discussing federal grant authorizations to assist wildfire response and recovery).

60. *Id.*

61. Philip S. Cook & Dennis R. Becker, UNIV. IDAHO, COLL. NAT. RES., POL’Y ANALYSIS GRP., REP. NO. 37. STATE FUNDING FOR WILDFIRE SUPPRESSION IN THE WESTERN U.S., at i, i (2017).

62. See 42 U.S.C. § 5170c(f).

63. FED. EMERGENCY MGMT. AGENCY, *supra* note 59.

64. Jesse B. Abrams et al., *Re-Envisioning Community-Wildfire Relations in the U.S. West as Adaptive Governance*, 20 ECOLOGY & SOC’Y, June 2015, at 1, 4 (quotation omitted).

assumption that the federal government will suppress a fire.⁶⁵ Although wildfire events substantially affect municipal budgets,⁶⁶ local governments do not shoulder the majority of costs of short-term wildfire suppression and associated externalities.⁶⁷ As a result, investment in risk mitigation measures is less likely,⁶⁸ which may lead to decreased risk perception among residents.⁶⁹ Further, this guardianship model leads to a reactive and inefficient local response that only seeks fire-adaptation following destructive events.⁷⁰

C. GROWTH TRENDS AND THE DECENTRALIZATION OF URBAN AREAS IN THE WESTERN UNITED STATES SINCE 1990

WUI settlement is proliferating, regardless of whether citizens recognize the growing risk of wildfire and increasingly dry weather. Twenty-five million more individuals relocated to WUI areas from 1990 to 2010 and constructed 12.7 million additional housing units.⁷¹ The WUI area development during this time period covered about 9.5% of the contiguous United States, approximately the size of Washington State.⁷²

65. Bruce E. Goldstein, *Skunkworks in the Embers of the Cedar Fire: Enhancing Resilience in the Aftermath of a Disaster*, 36 HUM. ECOLOGY 15, 24 (Feb. 2007) (arguing that government’s reassurance to the public of proper wildfire suppression created a populace “complacent about fire risks, disengaged from any sense of responsibility for their lives or environment, ignorant about ecological relationships and the practical skills needed to protect their lives and property.”). *Id.* According to Goldstein, this tactic allowed federal, state, and local governments to continue maintaining authority and legitimacy without having to place “politically hazardous restrictions on the use of private property.” *Id.*

66. Yanjun Liao & Carolyn Kousky, *The Fiscal Impacts of Wildfires on California Municipalities* 1 (Wharton Sch., Univ. Penn. Working Paper Series, 2020) (last revised Feb. 27, 2021). *See also* HEADWATERS ECON., THE FULL COMMUNITY COSTS OF WILDFIRE I (2018). Suppression costs shouldered by state and federal agencies account for only nine percent of wildfire cost, while costs from short-term expenses and long-term damages account for the rest (shouldered by federal, state, and local entities). *Id.* at 3. Short-term expenses include “relief aid, evacuation services, and home and property loss.” *Id.* at 21–27. Long-term damages include “tax, business, and natural resource loss; long-term landscape rehabilitation; energy and infrastructure; human casualties; and degraded ecosystem services.”

67. HEADWATERS ECON., *supra* note 66, at 33. Externalities include “smoke, habitat destruction, carbon emissions, and increased risk of landslides.” *Id.*

68. *Id.*

69. For a broader discussion of the variance in WUI resident risk perception, see *infra* Part I(c).

70. *See* Sarah E. Anderson et al., *The Dangers of Disaster-Driven Responses to Climate Change*, 8 NAT. CLIMATE CHANGE 651, 651 (2018) (arguing that “Low-probability, high-consequence climate change events are likely to trigger management responses that are based on the demand for immediate action from those affected. . . . [T]hese responses may be inefficient and even maladaptive in the long term.”).

71. Radloff et al., *supra* note 5.

72. *Id.*

Growth also trends toward WUI areas because the region provides natural beauty, open space, and privacy.⁷³ Many people prefer to live in spacious, natural settings if their economic situation and job proximity allow this lifestyle. Many urban job centers exist at the edge of significant wildland acreage in the West.⁷⁴ The availability of these decentralized residential areas leads individuals to develop and settle in WUI settings without regard for the broader wildfire risk. Additional suburban and exurban WUI areas also have ample space and housing availability in contrast to the West's denser and expensive city centers.⁷⁵

Property owners in the WUI also have a strong attachment to their "lot and their lifestyle" and face the most substantial incentive to rebuild and return to normalcy following a wildfire event.⁷⁶ Even facing evidence that their homes are at risk for future wildfire destruction, homeowners in the WUI place more importance on "non-ecological" factors in their decision to rebuild.⁷⁷ Such factors include ties to the community and land, continued availability of insurance and rebuilding assistance, and personal experiences with wildfire events.⁷⁸ Although recent studies agree that residential increase of risk perception positively influences mitigation activity,⁷⁹ some have nonetheless found that "direct experience with

73. Evan Hjerpe et al., *Forest Density Preferences of Homebuyers in the Wildland-Urban Interface*, 70 FOREST POL'Y & ECON. 56, 56–57 (2016). Hjerpe also notes that these benefits, derived mainly from large tree cover, make it hard for policymakers to engage property owners about the parallel wildfire risks large, dense tree cover creates. *Id.*

74. The American West is surprisingly the most urban region of the United States; California is the most urbanized state in the U.S., and Arizona, Nevada, and Utah all make the top ten. Henry Grabar, *Can We Design California Houses So They Don't Burn?*, SLATE (Nov. 26, 2018, 10:47 AM), **Error! Hyperlink reference not valid.** <https://perma.cc/3SUQ-B664>. WUI housing growth trends also show that more Americans are migrating into natural areas of the West. *Id.*

75. For a discussion of exurban settlement patterns, see Jill K. Clark et al., *Spatial characteristics of exurban settlement pattern in the United States*, 90 LANDSCAPE & URB. PLAN. 178, 179 ("Most commonly, exurbia is conceptualized as a place of transition between urban and rural, located somewhere between the suburbs and truly rural areas and within the commuting zone of a large, urbanized area.").

76. Patricia M. Alexandre et al., *Rebuilding and New Housing Development After Wildfire*, 24 INT'L J. WILDLAND FIRE 138, 139 (2015).

77. *Id.* at 146.

78. Alexandre et al., *supra* note 76, at 146.

79. See Benjamin Ghasemi et al., *An Examination of the Social-Psychological Drivers of Homeowner Wildfire Mitigation*, 70 J. ENV'T PSYCH. 101442, 101447 (2020) ("Similar to findings previously reported in the literature. . . we observed that perceived risk of wildfire positively influences homeowners' intention to adopt Firewise activities."). Firewise USA is a recognition program created by the National Fire Protection Association where volunteers can undertake risk mitigation steps to receive a certification renewable annually. *Fire Causes and Risks*, NAT'L FIRE PROT. ASS'N (May 10, 2021), <https://perma.cc/4AHF-34AW>. For example, USAA provides insurance discounts for homeowners who receive FIREWISE certification in ten states. *Insurance Discounts for*

wildfires did not significantly influence homeowners' decisions to mitigate the risk."⁸⁰ Further, there is often a large gap in risk perception between WUI residents and the professionals that manage fire.⁸¹

Additionally, local government forces may drive development into further wildlands. Many WUI communities are small towns or cities incorporated separately from nearby urban counterparts and rely on local tax revenue to provide infrastructure and municipal services to their communities. Alongside these suburban, exurban, and rural communities also exist unincorporated WUI communities subject to county jurisdiction. Together, these smaller localities might face a general resistance to dedicating public resources toward fire mitigation efforts.⁸² For larger cities with incorporated WUI settlements, the combined prospect of revenue from large housing developments and the need for affordable housing compel the government to support projects in WUI.⁸³ Wildfire is not often a deterrent to these endeavors because most firefighting and protection costs fall on federal and state taxpayers. This lack of deterrent creates the possibility for a cycle of destruction in certain areas and draws attention to the vital role local government plays in WUI development.⁸⁴

PART II: DIMINISHING RETURNS: THE PROPERTY INSURANCE PROBLEM IN WUI

USAA Members in 10 States, NAT'L FIRE PROT. ASS'N (May 10, 2021), <https://perma.cc/Y7U8-LMC7>.

80. See Wade E. Martin et al., *The Role of Risk Perceptions in the Risk Mitigation Process: The Case of Wildfire in High Risk Communities*, 91 J. ENV'T MGMT. 489, 497 (2009).

81. See James R. Meldrum et al., *Understanding Gaps Between the Risk Perceptions of Wildland-Urban Interface (WUI) Residents and Wildfire Professionals*, 35 RISK ANALYSIS 1746, 1758 (2015) (finding that "this gap extends to many individual property attributes related to wildfire risk, including the flammability of the home's exterior and deck, the distance to flammable vegetation and other combustibles, and the visibility of the property's address"). However, WUI residents tended to place "width of driveway" and "level of background fields" in riskier categories than the professional counterpart. *Id.*

82. See Carroll et al., *supra* note 10 (remarking that rural lifestyle WUI communities and working landscape/resource dependent WUI communities are generally less likely to rely on public agency programs for fire prevention efforts).

83. See GREGORY L. SIMON, *FLAME AND FORTUNE IN THE AMERICAN WEST: URBAN DEVELOPMENT, ENVIRONMENTAL CHANGE, AND THE GREAT OAKLAND HILLS FIRE 71–88* (2016) (providing a history of Oakland, California and the surrounding area's relationship with tax revenue and WUI development).

84. Many sources use this phrase to describe rebuilding issues in high-risk wildland areas. See, e.g., Sean Kennedy & Stephanie Pincetl, Cal. Ctr. Sustainable Cmty's., *Inst. Env't Sustainability, UCLA, ASLA 2018 Annual Meeting & Expo: Political and Economic Drivers of Wildland-Urban Interface (WUI) Development in California 16* (Oct. 20, 2018), <https://perma.cc/SH7E-HGHB>.

This continued cycle of destruction is not sustainable for the private property insurance market as wildfire frequency and severity rises. The number of payouts from wildfire loss in western states has continued to increase significantly in recent years.⁸⁵ This loss forecast is forcing insurance companies to reconsider their options in western states acutely affected by wildfire.⁸⁶

A. NON-RENEWALS AND RATE INCREASES

Property insurance companies in the West are now facing consequences from longstanding sales of artificially low premiums in fire-prone wildland areas. Property insurance is a necessity for any homeowner seeking a mortgage,⁸⁷ and its broader role in encouraging stable property ownership prompts close government regulation to ensure that citizens can access affordable premiums.⁸⁸ For years, insurance companies offered comprehensive home insurance policies in WUI communities that were indirectly subsidized by federal and state firefighting management services that suppress fires and provide disaster recovery assistance to affected communities.⁸⁹ National insurance companies also issued these

85. *RMS Says Insured Losses from 2020 Western U.S. Wildfires \$7-\$13 Billion*, INS. J. (Dec. 15, 2020), <https://perma.cc/6X65-9F7A>.

86. *Id.* (noting that 2020 loss estimates were highest in Northern California (\$5-\$9 billion), Oregon and Washington (\$1-\$3 billion), and Colorado (up to \$1 billion)). California, Oregon, and Colorado all experienced record-breaking fires in 2020. *Id.* See Samantha Fields, *Insurance Increasingly Unaffordable as Climate Change Brings More Disasters*, MARKETPLACE (Aug. 31, 2020), <https://perma.cc/7EZA-3R6F>.

87. See MARTIN F. GRACE ET AL., *CATASTROPHE INSURANCE: CONSUMER DEMAND, MARKETS AND REGULATION* 83 (2003) (“[H]omeowners insurance . . . is essentially mandatory . . .”).

88. Christopher French, *America on Fire: Climate Change, Wildfires & Insuring Natural Catastrophes*, 54 U.C. DAVIS L. REV. 817, 851 (2020) (finding that the insurance industry is highly regulated because it is a mandatory requirement in certain purchases with one-sided bargaining power, possesses an anticompetitive nature, requires assurance of its promise to the consumer through a guaranty or reinsurance, and entails a public policy concern for compensation of innocent victims).

89. See SIMON, *supra* note 83, at 83 (“Moreover beyond the insurance industry stands a large federal system of fire mitigation services that reduces insurance company cost-share responsibilities, leading in turn to artificially low coverage plans for homeowners. If residents can afford the cost of comprehensive fire insurance—such as guaranteed replacement cost plans—they can effectively pay for the right to live in areas with historically high fire activity.”). See also Paulo Issler et al., *Mortgage Markets with Climate-Change Risk: Evidence from Wildfires in California 1* (U.C. Berkeley, Haas Sch. Bus., Fisher Ctr. for Real Estate & Urban Econ. Working Paper, 2020) (“This development is encouraged by the fact that firefighting in the forests and grasslands of the western US is the responsibility of state or federal agencies, and not of either homeowners or local decision-makers such as cities and counties.”).

undervalued WUI rates due to a combination of relatively low fire incidence and a broad, varying risk pool across the country.⁹⁰

This system of private insurance coverage is breaking down. Private insurers are increasingly reluctant to offer affordable coverage in western WUI communities.⁹¹ In California, they are refusing to renew policies or denying coverage to high-risk WUI properties.⁹² In a place like California, with government caps on property insurance rate increases,⁹³ non-renewal by insurers in the ten most fire-exposed counties increased 203% from 2018 to 2019 before state government intervened and placed a moratorium on non-renewals.⁹⁴ In Colorado, homeowners' insurance rates increased 15% in 2013 due to multiple wildfires and prompted the state to pass a reform act that eased the burden of rising rates and "tighte[ned]" underwriting standards.⁹⁵

Recent wildfire events in the West are forcing public officials to "grappl[e] with how to reform these markets to provide adequate coverage to homeowners while remaining solvent."⁹⁶ The increased timeframe, scale, and length of wildfires in recent years demonstrate that a single disaster event can threaten an insurance company's solvency.⁹⁷ As a result, private insurance companies with pools of high-risk customers in the West may not renew these policies or risk pricing their customers out of the

90. INS. INFOR. INST., *supra* note 1 ("Annual Number of Acres Burned in Wildland Fires, 1980-2020").

91. See Alicja Grzadzowska, *Property Market Under Stress as Insurers Have "Dramatically Withdrawn" Due to Wildfires*, INS. BUS. AM. (Oct. 14, 2020), <https://perma.cc/W6AM-7F83> ("Many of the standard lines companies are non-renewing any property that has a score in excess of six in the fire protection class system, and are often excluding properties that have an even lower score than that.").

92. See *infra* Part II(b).

93. CAL. DEP'T INS., DATA ON INSURANCE NON-RENEWALS, FAIR PLAN, AND SURPLUS LINES (2015-2019) 1-3 (2020). Non-renewals statewide increased by thirty-one percent from 2018 to 2019 (179,479 homes to 235,274 homes). *Id.* at 1. Modeling projections show that sixty-five percent of homes in Tuolumne, Trinity, Nevada, Mariposa, Plumas, Alpine, Calaveras, Sierra, Amador, and El Dorado counties are in "high fire risk fire exposure" area. *Id.* at 4 n.2.

94. John Egan & Amy Danise, *What's California Going To Do About Future Wildfire Insurance?*, FORBES ADVISOR (Sept. 21, 2020, 7:00 AM), <https://perma.cc/NW6H-BRZF>. From 2010 to 2017, California homeowners' insurance premiums increased only 7.3%. *Id.*

95. HEADWATERS ECON., DOES INSURANCE INFLUENCE HOME BUILDING ON FIRE-PRONE LANDS? 5 (2016).

96. Katherine R. H. Wagner, *Why Is Reforming Natural Disaster Insurance Markets So Hard*, STAN. INST. ECON. POL'Y RSCH., 2 (2020).

97. LLOYD DIXON ET AL., *supra* note 12, at 50 ("Underwriting profits in the Homeowners Multiple Peril and Fire lines totaled \$12.1 billion from 2001 through 2016 combined, and were almost completely wiped out by the results for 2017.").

market.⁹⁸ In California, insurance companies even deny coverage to fire-hardened properties in high-risk areas.⁹⁹ These trends indicate an increasing likelihood that private insurers will begin to approach wildfire risk as a correlated loss like flooding, refusing to cover damage in the future and creating a devastating financial risk for WUI residents.¹⁰⁰

B. STATE GOVERNMENT INTERVENTION

State governments have started to respond with measures to mitigate the harsh effects of rate increases and policy non-renewals facing WUI citizens. For example, state governments, rather than Congress, regulate the insurance industry as a matter of “the public interest.”¹⁰¹ California provides the most prominent example of government intervention,¹⁰² because it contains a significantly higher proportion of homes in the WUI compared to other western states.¹⁰³

For example, California Insurance Commissioner Ricardo Lara renewed an existing moratorium in November 2020 on residential property non-renewals and shielded nearly 2.1 million properties (18% of the state’s residential insurance market) from possible non-renewal.¹⁰⁴ The California Senate also rejected AB 2167 in 2020, a bill that would have allowed insurance companies to sidestep rate increase restrictions for homes that face high wildfire risk.¹⁰⁵ The bill faced significant consumer opposition,¹⁰⁶ despite industry proponents claiming it was necessary to continue offering

98. SIMON, *supra* note 83, at 45 (estimating that “900,000 residential properties are currently located in high or very high wildfire-risk categories (as designated by state and federal fire zone severity mapping projects)”).

99. James Bikales, *Can ‘Fire Hardening’ Solve California’s Home Insurance Crisis?*, CAL MATTERS (Dec. 9, 2020), <https://perma.cc/CN2B-M74H>.

100. See French, *supra* note 88, at 824–25 (“Because many types of natural catastrophes are considered correlated risks, private insurers generally refuse to insure them. Private insurers avoid insuring correlated risks because of insurers’ alleged inability to accurately predict when and where losses associated with correlated risks will occur, which in turn makes it difficult to establish actuarially sound premiums and spread the risk across a large enough pool of insureds with diverse risk profiles.”) (citation omitted).

101. 15 U.S.C. § 1012 (2020).

102. Nonetheless, Colorado also prohibits non-renewal of properties that faced wildfire risk in a federally designated disaster area. COLO. REV. STAT. § 10-4-110.9(2) (2021).

103. *Verisk Wildfire Risk Analysis*, VERISK, <https://perma.cc/95LL-AKAV>. California has 2,040,600 properties at high to extreme fire risk; Colorado, the next highest western state, has only 373,900 properties at high or extreme fire risk. *Id.*

104. See Press Release, Ricardo Lara, Cal. Dep’t Ins., Insurance Commissioner Lara Projects More Than 2 Million Policyholders Affected by Wildfires from Policy Non-Renewal for One Year (Nov. 5, 2020) (on file with U.C. Hastings Law Library).

105. Assem. Bill No. 2167 (2019–2020 Reg. Sess.).

106. See e.g., Ricardo Lara & Richard Holober, *‘I’ve Had More Stress than I’ve Ever Felt’: AB 2167 Is Detrimental to Many Californians*, SACRAMENTO BEE (July 10, 2020, 7:31 AM), <https://perma.cc/Z8WU-ZVGW>.

coverage in the state's highest-risk areas.¹⁰⁷ However, drastic measures like moratoriums on private insurance non-renewals are not sustainable, as these areas continue to grow and develop. For state FAIR plans, private sponsors and state legislatures will likely grow dissatisfied with the growing burden of the insurance program's strain on revenue. Insurers forced to continue insuring high-risk policies and set rate increases within state approval will likely contemplate exiting the state market entirely.

C. FAIR PLAN ASSOCIATIONS

To alleviate the burden of policy non-renewals and rate increases, California and other western states cover wildfire damage under their FAIR plans for customers who need last resort property insurance.¹⁰⁸ They are typically subsidized by state taxpayers and a pool of the authorized insurers in the state who collectively cover the high risk.¹⁰⁹ For example, the California FAIR plan offers a skeleton property insurance plan that covers damage to a dwelling and belongings for fire or lightning, smoke, and internal explosions.¹¹⁰ However, the plan does not cover any other "physical loss" except for optional "extended coverage" and vandalism coverage.¹¹¹ FAIR plan reliance has grown significantly in California in the past three years, and the program paid over \$350 million claims between September and December 2020 alone.¹¹²

Reactive state government intervention and overreliance on FAIR plans are not sustainable solutions for the growing number of WUI residents facing non-renewals and unaffordable property insurance rates. Policy measures that force insurers to provide affordable coverage in high-risk areas will have greater incentive for insurers to exit markets entirely to avoid costly losses with each fire season. In the long term, this exit will disproportionately affect middle class and lower-income WUI residents

107. See e.g., Don Jergler, *California Bill Addressing Property Rates in Wildfire-Prone Areas Awaits Hearing*, INS. J. (Aug. 11, 2020), <https://perma.cc/2XTP-D796> ("The bill calls for ensuring insurance rates are adequate to avoid insurer insolvencies and to permit insurers to operate in the state's highest risk areas. . . . The bill's language makes the argument that climate change has created a 'new reality' in California, where the average length of fire seasons are 80 days longer than in the 1970s, and that major insurers are pulling back from writing new policies or renewing policies in the wildland-urban interface fire areas." (quote omitted)).

108. See, e.g., Bethan Moorcraft, *What Are FAIR Insurance Plans?*, INS. BUS. MAG. (July 12, 2019), <https://perma.cc/2VJM-XNPK>.

109. *Id.*

110. See e.g., CAL. FAIR PLAN ASS'N, INSURANCE POLICY COMPARISON CFP DWELLING POLICY TO ISO HO-3, <https://perma.cc/84AD-N62T>.

111. *Id.* Extended coverage includes windstorms, hail, explosions, riots, aircrafts, and vehicles.

112. Dawn Hodson, *FAIR Plan Rates To Rise*, MOUNTAIN DEMOCRAT (Dec. 11, 2020, 3:59 PM), <https://perma.cc/L5DU-5HZ9>.

who cannot afford surplus line insurance and instead have only the option to underinsure their homes through a FAIR plan.¹¹³

PART III: NFIP AS A MODEL FOR WHAT TO DO AND WHAT NOT TO DO FOR A FEDERAL WILDFIRE INSURANCE PROGRAM

To address the growing property insurance problem in WUI communities, Congress should use the NFIP as both a model and a cautionary tale for providing insurance in high-risk areas. The United States has already faced a similar non-renewal and rate increase problem. Properties in high-risk flood areas after losses from the 1927 Mississippi River floods led private insurers to exit the market.¹¹⁴ “In the absence of private insurance,” the federal government provided aid “in the form of flood disaster relief,” while congressional efforts to address the insurance problem stalled.¹¹⁵ As development continued in floodplain areas and disaster costs ballooned, the government sought a method of pooling risk to sustain inevitable recovery efforts.¹¹⁶ Congress also realized that local government and property owner participation were vital to mitigating future flood risk in areas prone to repeated disaster events.¹¹⁷ Legislators passed the NFIP in 1968 to provide flood insurance to individuals in high-risk flood areas and impose building and zoning strategies that mitigate future losses.¹¹⁸

Today, the program insures over 5 million households and businesses.¹¹⁹ However, the NFIP also suffers from crippling debt,¹²⁰ low consumer participation,¹²¹ scant enforcement of flood mitigation

113. *See infra* Part VI(c).

114. NAT'L ACADS. PRESS, AFFORDABILITY OF NATIONAL FLOOD INSURANCE PROGRAM PREMIUMS: REPORT 1, at 23-24 (2015).

115. *Id.*

116. 42 U.S.C. § 4002(a).

117. *See id.* § 4002(b)(3).

118. CONG. RSCH. SERV., REP. NO. R44593, INTRODUCTION TO THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) 2 (2021) [hereinafter NFIP REPORT].

119. H.R. 3167, 116th Cong. § 2(4) (2019).

120. NFIP REPORT, *supra* note 118, at 27. Similar to the worsening wildfire crisis in the West, hurricane frequency and severity continues to worsen for the southern and eastern United States. *Id.* These areas witnessed an expeditious rise in severe hurricane events over the past twenty years that brought the NFIP's debt to \$20.525 billion (with only \$9.9 billion remaining borrowing authority). *Id.* This figure does not include the \$16 billion in debt Congress cancelled to pay for the 2017 hurricane season. *Id.* For perspective, the NFIP was able to cover its own costs prior to Hurricane Katrina in 2005, requiring only small loans from the U.S. treasury repaid with interest. *Id.*

121. French, *supra* note 88, at 866–67.

measures,¹²² outdated mapping of flood zone areas,¹²³ SRLs that collect multiple damage claims,¹²⁴ overlapping federal spending on disaster recovery,¹²⁵ and harsh political pushback against measures to increase premiums that reflect accurate flood risk.¹²⁶ Climate change also increases the frequency of extreme weather events in high-risk areas.¹²⁷ The program requires major reform to maintain an operation that is not sinking further into debt following each (increasingly frequent, severe) natural disaster. However, both political sides agree on the program's necessity to affected communities and citizens.¹²⁸ To develop a functional wildfire insurance program, Congress should examine the structure of the NFIP to determine what areas of the program work best in the context of wildfire.

A. COMMUNITY PARTICIPATION

The NFIP's community participation model provides a useful tool to dictate land use and zoning controls. In the NFIP, states or localities that agree to participate must show a "positive interest in securing flood insurance coverage" and agree to implement land use and construction laws to mitigate future flood risk.¹²⁹ In addition, communities may participate in a "community rating system" that provides incentives for localities to

122. Adelle Thomas & Robin Leichenko, *Adaptation Through Insurance: Lessons from the NFIP*, 3 INT'L J. CLIMATE CHANGE STRATEGIES & MGMT. 255 (2011) (arguing that enforcement of flood mitigation ordinances currently falls primarily on lenders backing a given property's mortgage).

123. NFIP REPORT, *supra* note 118, at 4 ("Flood maps adopted across the country vary considerably in age and in quality. While some FIRMs may have last been developed and adopted by a community in the 1980s, especially in rural areas of the country, most communities will have maps adopted within the past 15 to 20 years.").

124. FED. EMERGENCY MGMT. ASS'N, ANSWERS TO QUESTIONS ABOUT THE NFIP 35 (2011).

125. Thomas & Leichenko, *supra* note 122, at 252.

126. *See generally* Homeowners Flood Insurance Affordability Act, Pub. L. No. 113-89, 128 Stat. 1020, 1020 (2014) ("An Act [t]o delay the implementation of certain provisions of the Biggert-Waters Flood Insurance Act of 2012, and for other purposes."). Provisions of the Act include "repeal of certain rate increases . . . , restoration of grandfathered rates. . . ," and other relaxations of the 2012 reform. *Id.* at §§ 3-4.

127. William V. Sweet et al., *Sea Level Rise*, in CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, Vol. I, at 334 (D.J. Wuebbles et al. eds., U.S. Global Change Research Program 2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf ("Assuming storm characteristics do not change, sea level rise will increase the frequency and extent of extreme flooding associated with coastal storms, such as hurricanes and nor'easters (*very high confidence*).").

128. Michelle Cottle, *Can Congress Bring the National Flood Insurance Program Above Water?*, ATLANTIC (Aug. 5, 2017), <https://perma.cc/GSF5-FRW8> ("Despite the bipartisan nature of NFIP, the regional politics involved make significant change next to impossible.").

129. 42 U.S.C. § 4012(c). *See also id.* § 4102 (providing the Administrator guidelines to craft land use and construction laws).

implement these land use controls.¹³⁰ Communities may receive “credits” based on the amount of flood and erosion damage risk they reduce that apply to their residents’ insurance premiums.¹³¹

B. MANDATORY PURCHASE REQUIREMENT

The NFIP surveys participating communities and determines which areas are within a Special Flood Hazard Area (“SFHA”).¹³² Properties located within an SFHA are subject to a mandatory purchase requirement, meaning that the owner must obtain flood insurance for any home financed using a mortgage from a federally backed lender or government-sponsored enterprise.¹³³ Although federal mortgage regulators responsible for this requirement do not provide official statistics,¹³⁴ studies indicate that compliance with the requirement varies depending on the region of the United States.¹³⁵ The most recent amendment to increase enforcement requires regulated lenders to escrow flood insurance for mortgages, subject to exceptions.¹³⁶ Although this requirement went into effect in 2016, no data exists to show whether the program successfully increased compliance.¹³⁷

C. THE NEW RISK RATING 2.0 TO CALCULATE PREMIUMS

The NFIP is also implementing a new system to calculate flood insurance rates in participating communities. Known as Risk Rating 2.0, this process will use a combination of catastrophe models, existing NFIP mapping data, and other “cutting-edge technology” to provide a more accurate risk calculation at the national and local levels.¹³⁸ Instead of assigning premium rates to a structure based on its location within a given flood zone, the new risk scheme will assess individual property characteristics and susceptibility to flood.¹³⁹ Although Risk Rating 2.0 also

130. 42 U.S.C. § 4022(b). For an overview of community rating system eligibility, see generally FEMA, NFIP FLOOD INSURANCE MANUAL Appx. F (2021).

131. 42 U.S.C. § 4022(b).

132. CONG. RSCH. SERV., REP. NO., R45999, NATIONAL FLOOD INSURANCE PROGRAM: THE CURRENT RATING STRUCTURE AND RISK RATING 2.0, at 3 (2019) [hereinafter RISK RATING 2.0 REPORT].

133. RISK RATING 2.0 REPORT, *supra* note 132.; FED. EMERGENCY MGMT. ASS’N, FLOOD ZONES, <https://perma.cc/DR44-X26R> (last updated July 8, 2020) (further subdividing SFHAs into multiple subzones depending on floodplain characteristics).

134. NFIP REPORT, *supra* note 118, at 11.

135. *Id.* (finding that compliance may be as high as 88% in the west and as low as 43% in the Midwest). A 2017 study found that New York City flood insurance rates increased from 61% in 2012 to 73% in 2016, likely in response to Hurricane Sandy. *Id.*

136. 42 U.S.C. § 4012a(d)(1).

137. NFIP REPORT, *supra* note 118, at 12.

138. FED. EMERGENCY MGMT. ASS’N, RISK RATING 2.0: EQUITY IN ACTION, <https://perma.cc/G8FN-XEXW> (last updated Feb. 13, 2022).

139. RISK RATING 2.0 REPORT, *supra* note 132, at 7–10.

plans to offer subsidy credits for individual homeowner property actions that mitigate flood risk, the program structure intends to phase out insurance subsidies to better reflect actual risk.¹⁴⁰ Federal Emergency Management Agency (“FEMA”) plans to implement this risk strategy to create “transparent and accurate flood insurance pricing” that will lead to better “risk communication and an increase in flood insurance take-up rate.”¹⁴¹ However, FEMA also stresses that this restructuring is not “designed to increase or decrease revenue for the NFIP.”¹⁴² Nonetheless, individually assessed flood insurance rates should lead to more accurate risk distribution for homes within SFHAs.

D. PROBLEMS WITH SEVERE REPETITIVE LOSS PROPERTIES

A major problem for the NFIP in recent decades involves SRL properties, properties that are “repeatedly flooded, repaired, and rebuilt.”¹⁴³ This small number of properties are responsible for a disproportionate number of damage claims paid by the program.¹⁴⁴ To resolve the problem, Congress created the SRL category to distinguish these properties and reassign them to a “Special Direct Facility” that monitors them and issues higher premium rates.¹⁴⁵ Additionally, recent reform to recoup losses from SRL properties requires their owners to pay a 15% additional premium on the annual flood insurance rate.¹⁴⁶ The program allows individuals to undertake flood mitigation activities on the property and apply for removal from SRL status for the next annual rate calculation.¹⁴⁷ One primary concern for homeowners and FEMA alike is the potential for many homes to meet SRL status as climate change leads to rising sea levels and increasingly severe storms.¹⁴⁸ Additionally, not all participating NFIP

140. *Id.* at 13.

141. *Id.* at 16.

142. *Id.* at 7–9 (stating that insurance premiums are calculated based on risk modeling, geographic and structural variables, and replacement cost value).

143. DENA ALDER & JOEL SCATA, COLUM. L. SCH. SABIN CTR. FOR CLIMATE CHANGE L., *BREAKING THE CYCLE OF “FLOOD-REBUILD-REPEAT”: LOCAL AND STATE OPTIONS TO IMPROVE SUBSTANTIAL DAMAGE AND IMPROVEMENT STANDARDS IN THE NATIONAL FLOOD INSURANCE PROGRAM* i (2019).

144. *Id.* at 2 (“The NFIP paid \$5.5 billion to repair and rebuild more than 30,000 SRL properties between 1978 and 2015. These SRL properties constitute only 0.6 percent of the 5.1 million properties insured through the NFIP but have consumed a disproportionate 9.6 percent of all damages paid out of the NFIP as of 2015.”) (citations omitted).

145. FEMA, *NFIP FLOOD INSURANCE MANUAL I-1* (2021).

146. *RISK RATING 2.0 REPORT*, *supra* note 132, at 7.

147. *Id.* at 9–10.

148. *See* ALDER & SCATA, *supra* note 143, at 4 (“Sea level rise will further exacerbate the cycle of ‘flood-rebuild-repeat’ plaguing the NFIP. NRDC estimates that 3 feet of sea level rise by 2100 could result in an additional 820,000 severe repetitive loss (SRL) properties and 6 feet of SLR would result in 2.57 million more SRL properties.”) (citation omitted).

communities have or enforce a “repetitive loss provision” that records, declares, and mandates improvements to properties that have experienced repetitive loss.¹⁴⁹

Although the NFIP suffers from fundamental problems that led to its burdensome debt, the NFIP nonetheless provides a viable basis to construct a functioning national insurance program for a disaster like wildfire that insurers are treating with skepticism and concern.

PART IV: LITERATURE DISCUSSING A NATIONAL WILDFIRE INSURANCE PROGRAM

There is existing literature discussing variations of a national wildfire insurance program. Attorney Benjamin Reilly advocates for a program that imposes an individual mandate penalty on individuals who live in qualifying WUI areas but refuse to participate in the program.¹⁵⁰ His program would preempt private wildfire insurance options to ensure a large coverage pool and charge rates that accurately reflect the risk of living in WUI communities. Professor Christopher French advocates for a national catastrophe insurance program that combines insurance for floods, fires, hurricanes, landslides, and other disaster events into a single policy to create a larger risk pool.¹⁵¹

A. USE OF THE INDIVIDUAL HEALTHCARE MANDATE PAYMENT MODEL TO ENFORCE PURCHASE OF WILDFIRE INSURANCE THAT REFLECTS ACTUAL RISK

Reilly advocates for a NWIP that acts as sole provider of wildfire insurance in the country.¹⁵² Under his proposal for the NWIP, the federal government should adjust the cost of wildfire insurance to reflect the actual risk of living in wildfire-prone areas.¹⁵³ For property owners that refuse to purchase wildfire insurance, Reilly proposes a “homeowner mandate” that places a tax penalty on homeowners who fail to purchase wildfire insurance from the federal government.¹⁵⁴ To support the legality of this mandate, Reilly cites the Supreme Court’s opinion in *National Federation of*

149. NFIP REPORT, *supra* note 118, at 13.

150. Benjamin S. Reilly, *Free Riders on the Firestorm: How Shifting the Costs of Wildfire Management to Residents of the Wildland-Urban Interface Will Benefit Our Public Forests*, 42 B.C. ENV’T AFFS. L. REV. 541, 562 (2015).

151. French, *supra* note 88, at 850. In addition to the solutions that Reilly and French pose, Headwaters Economics mentions a National Wildfire Insurance Program. GORTE, *supra* note 53, at 13.

152. Reilly, *supra* note 150, at 543.

153. *Id.* at 543 n.16 (“For purposes of this Note, ‘actual wildfire risk’ accounts for the suppression costs incurred by the federal government.”).

154. *Id.* at 561 (explaining that this mandate serves a similar role to the NFIP’s mandatory purchase requirement).

Independent Business v. Sebelius,¹⁵⁵ which held that a mandate penalizing individuals who fail to purchase health insurance was a valid use of congressional taxing power.¹⁵⁶ Reilly also emphasizes the importance of fire mitigation incentives to reduce premiums and the use of a phasing system to lessen the burden of incremental rate increases.¹⁵⁷

Reilly's use of an individual mandate to enforce insurance purchase would likely face poor political reception. Reilly notes that an individual mandate to purchase wildfire insurance for WUI residents would create immense political backlash.¹⁵⁸ Echoing Reilly's concern, Congress later repealed the individual mandate requirement in 2018.¹⁵⁹ Although Congress may survive a Supreme Court challenge to legislation that required a wildfire insurance mandate,¹⁶⁰ it is unlikely that this enforcement scheme would become law. Additionally, Reilly's exclusion of private insurers from the wildfire insurance market may prove unsound; if private insurers begin to fashion policies to compete with NWIP rates that offer mitigation subsidies, this will provide the dual benefit of consumer affordability and fire-hardening on private land.

B. A NATIONAL CATASTROPHE INSURANCE PROGRAM THAT COVERS ALL NATURAL DISASTERS TO INCREASE THE OVERALL RISK POOL

French argues that the federal government should create a bundled National Catastrophe Insurance Program to provide natural disaster insurance to property owners in high-risk areas through a single policy.¹⁶¹ French explains that standalone national insurance programs like the NFIP are unsuccessful because they suffer from adverse selection, in which the only individuals that participate in the program have the highest risk,

155. *National Federation of Independent Business v. Sebelius*, 567 U.S. 519, 588 (2012); *see also* Reilly, *supra* note 150, at 565–71.

156. *Sebelius*, 567 U.S. at 572.

157. Reilly, *supra* note 150, at 562–64.

158. *Id.* at 564 (“This Note does not endeavor to explain why wildfire insurance reform could be or would be more politically palatable than attempts to reform the NFIP or the ACA.”).

159. Tax Cuts and Jobs Act, Pub. L. No. 115-97, 131 Stat. 2092, 11081 (2017) (codified as amended at 26 U.S.C. § 5000A); Since the repeal of the federal individual healthcare mandate in 2018, only five states (CA, MA, NJ, RI, and VT) and the District of Columbia have enacted their own health insurance requirement. Jennifer Tolbert et al., *State Actions To Improve the Affordability of Health Insurance in the Individual Market*, KAISER FAM. FOUND. (July 17, 2019), <https://perma.cc/8Q8R-6RFD>.

160. *See Sebelius*, 567 U.S. at 588.

161. French, *supra* note 88, at 821 (“Specifically, this Article proposes that coverage for natural catastrophe perils, including wildfires, floods, landslides, and hurricanes, be ‘bundled’ together in a single property insurance policy sold by the government.”) (footnote omitted).

creating a pool of high-risk insureds with no balance.¹⁶² This adverse selection leads to high premium rates, which in turn lead to low take-up rates for individuals that may face some degree of natural disaster risk.¹⁶³ French emphasizes that these adverse selection problems will lead to a program like the NFIP that faces a large deficit, charges high premiums for low coverage, and still fails to reflect the actual risk associated with the property at issue.¹⁶⁴

By creating a combined risk pool across the country's natural disasters, French argues that this approach will address the problems of "correlated risk, adverse selection, and moral hazard" that arise when private insurers refuse to cover these losses.¹⁶⁵ He argues that the federal government is best equipped to administer the program, because the federal government "would allow for the pool of insureds to span the entire country."¹⁶⁶ Although French disagrees with the viability of a standalone program like the NWIP,¹⁶⁷ he offers two compelling points that legislators should consider if they choose to craft such a wildfire program:

1. A standalone NWIP program must emphasize the importance of wildfire coverage to property owners across all of America's WUI,¹⁶⁸ addressing the problem of adverse selection in standalone programs by incorporating areas that face a lower (but realized) fire risk. However, one obstacle to this approach is likely a low take-up rate, as individuals in the central and eastern WUI may view this coverage as a scheme to bail out property owners who live in increasingly wildfire-prone western regions.
2. The creation of government catastrophe insurance provides a structured and predictable payout mechanism to victims of natural disasters.¹⁶⁹ This insurance would provide predictability for those affected by natural disaster, increases transparency regarding the use of federal disaster relief funding, and avoids the political obstacles associated with a reactive bailout bill.¹⁷⁰

162. *Id.* at 854.

163. *Id.* at 857 (noting that, in addition to unaffordable rates for flood insurance, ignorance of the risk involved with a given property affects the program's low take-up rate).

164. *Id.* at 856–57.

165. *Id.* at 822.

166. French, *supra* note 88, at 849 n.159.

167. *Id.* at 854.

168. *See generally* Brown et al., *supra* note 5.

169. French, *supra* note 88, at 853–54.

170. *Id.* at 854.

French particularly argues that a bundled program will help solve the problems that affect standalone programs like the NFIP: adverse selection, high premiums, and low take up rates.¹⁷¹

However, these problems may persist regardless of insuring multiple perils. Although the number of individuals under the plan may increase, homeowner behavior would likely still exhibit low take-up rates, purchase by those who only face severe risk, and resulting high premiums. Arguably, a standalone program implemented based on land characteristics (like WUI) and enforced in communities with varying degrees of risk could better solve these problems by creating a more balanced risk pool.

**PART V: A REIMAGINED NATIONAL WILDFIRE
INSURANCE PROGRAM—VOLUNTARY PROGRAM
FOR MUNICIPALITIES THAT AVOIDS THE
FAILURES OF NFIP AND TAKES A BROADER, MORE
AGGRESSIVE APPROACH TO FIRE PREVENTION**

To address property insurance non-renewals due to wildfire, the federal government should create a NWIP that establishes accurate risk premiums for property in fire-prone WUI communities while also providing strong incentives for property owners and localities to use their land control power to mitigate this risk. This program will offer standalone coverage for wildfire insurance. Private insurers may continue to provide comprehensive property coverage or sever wildfire liability from the plan and provide other property coverage.

This program recognizes the barriers to halting wildland development and the large number of existing WUI communities already present in the United States. Because of this entrenched attachment to WUI development, this article advocates for a federal wildfire coverage program to spur fire prevention investment at the state and local level, mitigate excess insurance rate increases and non-renewals affecting WUI citizens, and over time stabilize the federal fire suppression budget.

A. BROADER PROGRAM GOALS

1. Offer to all municipalities

The federal government should offer the program to all WUI municipalities in the country that express interest in wildfire mitigation. Although the West faces the most acute risk from wildfire currently, other WUI areas in the United States also experience destructive wildfire events and forecast increases in annual fire activity over the next century.¹⁷² This

171. *Id.*

172. *See* Brown et al., *supra* note 5, at 2, 5–6.

broad eligibility is also necessary to provide a large risk pool with varying degrees of exposure.¹⁷³

Given the considerable number of private acres that exist in the WUI, this program will ideally spur investment at the state and local level in broad-scale property and land use reforms. The increasing inability to obtain property insurance will become a central issue for constituents in the WUI and pressure local politicians to participate in NWIP. Although states will continue to offer FAIR plan policies and regulate insurance rate increases, these are not sustainable solutions to a growing volume of uninsured or underinsured WUI properties. It is likely that private insurance could pull out of these markets entirely if losses are too great for rates to justify continued participation. Given that FAIR plans are either state funded or subsidized by private insurance, a large increase in participants may net the same effect, or else place the state in a perilous financial situation during a season of severe fire disaster.

2. Bolster private, local, and state participation in fire mitigation and prevention

Given inherent state and local authority over land use issues, this program will require the municipality to implement a scaled system of building and zoning requirements in exchange for providing NWIP coverage. It also compels private citizen engagement in land management reform, as affordable wildfire insurance is a vital commodity in higher risk WUI areas. Lastly, a long-term strategy emphasizing state, local, and private mitigation efforts may eventually reduce the federal cost of wildfire suppression and allow the USFS to focus its efforts on fire prevention.¹⁷⁴ However, current trends in federal fire appropriations indicate that any sort of cost-saving benefit from such a program is far off.

The NWIP should also implement a mandatory wildfire insurance purchase requirement to spur purchase of wildfire insurance in participating communities. For example, the NFIP requires individuals seeking federally backed mortgage loans in high-risk floodplain areas to purchase flood insurance. Similarly, the NWIP must implement a compulsory participation mechanism to ensure that continued development in WUI communities prioritizes fire mitigation from the outset of planning and construction.

173. French, *supra* note 88, at 857.

174. However, the program may still face the participation issue that burdens the NFIP (individuals in areas with mild to moderate flood risk refuse to support municipal participation). To combat this issue, the program must stress the cost savings associated with severing wildfire risk from a general policy and the subsidies the NWIP offers to those who take risk reduction measures.

3. Ensure residents can obtain subsidies in exchange for this mitigation and prevention to afford wildfire insurance

To calculate rates, the NWIP should use the NFIP's incoming Risk Rating 2.0 model as a basis for its premium calculation,¹⁷⁵ create subsidies for individuals that enact land management reforms, enforce strict condemnation and relocation measures for SRLs, construct a subsidy program for low-income individuals in the WUI, and provide individuals the opportunity for voluntary condemnation and relocation. However, the program must take care to craft an accurate definition of an SRL for high-risk wildfire communities.

Although the program's larger goal is to ensure that WUI residents can continue accessing insurance, there may be some areas with such a prohibitive fire-risk that affordable rates are unjustified. However, the existence of fire-hardening subsidies, lower-income mitigation assistance grants, and the option to voluntarily condemn and relocate will help offset the burden of prohibitive rates for individuals in extremely high-risk areas.

4. Stabilize the federal fire suppression budget

Although current wildfire trends forecast increasing budget expenditures on federal fire suppression, the long-term goal of a program like the NWIP is to implement preventative measures at the private, local, and state level while undertaking similar steps on federal land. By creating a cooperative structure that promotes standard fire-hardening practices at all levels of wildland jurisdiction, the program should help facilitate more predictable and containable wildfire seasons in the future.

5. Allow private insurers to continue operation

Additionally, federal wildfire insurance coverage may allow private insurers to continue offering coverage to property owners in NWIP-participant areas for affordable rates because the risk of numerous claims from wildfire damage will no longer threaten payout ability.¹⁷⁶ By severing wildfire protection from a basic homeowner insurance policy (but maintaining coverage for fire losses unassociated with wildfire), insurers will have less reason to leave western property insurance markets. Although some may argue that this policy promotes continuing

175. See CONG. RSCH. SERV., REP. NO., R45999, NATIONAL FLOOD INSURANCE PROGRAM: THE CURRENT RATING STRUCTURE AND RISK RATING 2.0, at 1 (2022). The main feature of Risk Rating 2.0 is the calculation of premiums using individual property characteristics instead of broader zone characteristics; the program's rate calculation change began October 1, 2021. *Id.* Legislators crafting a premium program for NWIP will have the opportunity to study the short-term consequences of Risk Rating 2.0 on the NFIP program and anticipate problems in the wildfire insurance context.

176. See KOUSKY ET AL., *supra* note 23.

development in wildfire-prone areas, this proposal recognizes that mitigation and prevention are the most viable strategies to manage WUI communities.

To create a successful NWIP structure, Congress must avoid program measures that lead to unmanageable debt in the event of multiple catastrophes. To do so, Congress must target the same issues that plagued the NFIP by¹⁷⁷:

- reflecting actual risk in premiums;
- mandating strict SRL requirements and possible condemnations;
- utilizing risk and mapping tools that incorporate new wildfire events and location data into existing maps of WUI community risk;
- creating a streamlined incentive program for property owners and localities that offers grants to municipalities for community fire mitigation activities;
- creating subsidies for property owners who mitigate their personal property risk; and
- creating voluntary buyout options to individuals with repetitive-loss properties or who face a forecasted risk of repetitive loss.

The following sections of this article outline NWIP features that Congress can utilize to craft a financially sound wildfire insurance program.

B. HOW TO ACHIEVE THESE GOALS

1. Utilizing NFIP's Risk Rating 2.0

The NWIP premium structure should reflect an individual property's actual risk to potential wildfire. This reflection is necessary to provide adequate claim funding in the event of multiple widespread fire disasters.¹⁷⁸ As a model, the program should observe and improve upon Risk Rating 2.0, an incoming NFIP reform that changes how the program calculates premiums.¹⁷⁹ The reformed program calculates premiums using individual property characteristics,¹⁸⁰ rather than solely assigning insurance rates to properties based on their location within a mapped disaster risk area.¹⁸¹

177. See *supra* notes 123–130 and accompanying text.

178. See *supra* Part III.

179. RISK RATING 2.0 REPORT, *supra* note 132, at 7.

180. *Id.* at 9 (explaining that individual property characteristics include structural variables (e.g., foundation type, height of the lowest floor,) and replacement cost value).

181. *Id.* at 1; *Id.* at 10 (stating that the reformed program will still use area classification mapping to determine different floodplain categories and their respective

Like the NFIP, current property insurance rates undervalue the risk associated with wildfire risk and produce artificially low premiums.¹⁸² These rates encourage individuals to move to, and continue living in, areas facing a foreseeable increase in natural disasters. Artificially low rates also create inevitable deficit problems for any insurance program, because reduced premiums will fail to cover costs during increasingly severe fire seasons.¹⁸³ The federal government must ensure that NWIP homeowner premiums reflect the actual risk associated with living in a fire-prone area.

The NWIP should implement this risk rating structure to create a system that ensures property owners receive a reward or penalty depending on their maintenance and building choices. This individual approach will also better allocate risk within the NWIP insurance pool, as property owners with particularly high-risk characteristics will not be able to benefit from a broadscale assignment of rates. Like the NFIP, this individual calculation will still utilize a broader mapping tool to determine property rate depending on relative risk.¹⁸⁴

To create an accurate assessment for individual rate calculation, the program must account for both community factors and individual property characteristics. Michael Caggiano, Research Associate for the Colorado Forest Restoration Institute, recommends the use of point-based WUI maps that utilize “location and development data” to better identify at-risk WUI areas.¹⁸⁵ Point-based mapping assigns a risk value to each individual building point-based on WUI components, like housing unit density, vegetation cover, and proximity to large patches of contiguous wildland vegetation.¹⁸⁶ This mapping method is consistent with the goals of Risk

requirements). The reformed program will still use area classification mapping to determine different floodplain categories and their respective requirements. *Id.*

182. See Patricia Gallagher & Devika Hazra, *Do Insurance Premiums Put the Fire Out? Evidence from Los Angeles* 1–7 (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3491339 (discussing the disconnect between insurance premiums and actual wildfire risk).

183. *Id.*

184. See *infra* Part V(e).

185. Caggiano, *supra* note 32, at 13 (finding that “[p]oint-based WUI maps identified a higher percentage of burned buildings as WUI compared to the census-based methods. This suggests that, if the goal is to identify at-risk buildings, map developers can adjust WUI mapping methods to align with the observed losses.”).

186. *Id.* This approach contrasts with USFS’ current census-based mapping, which combines U.S. census data and the National Land Cover Dataset to characterize the WUI. Susan Stewart et al., *Defining the Wildland-Urban Interface*, 105 J. FORESTRY 201, 203 (2007). See also Avi Bar-Massada et al., *Using Structure Locations as a Basis for Mapping the Wildland Urban Interface*, 128 J. ENV’T MGMT. 540, 540 (2013) (“Our goal was to develop a consistent method to map the WUI that is able to determine where neighborhoods (or clusters of houses) exist, using just housing location and wildland fuel data We conclude that this hybrid method is a useful alternative to zonal mapping from the neighborhood to the landscape scale, and results in maps that are better suited to operational

Rating 2.0 because it focuses on location characteristics specific to the individual property. Further, NWIP premium calculations will supplement point-based maps with broader individual property characteristics. Insurance companies also possess risk maps and individual property information to better calculate premium rates.

One major limitation to an accurate Risk Rating 2.0 calculation is the NWIP's ability to maintain updated WUI maps that account for changes in vegetation and housing cover. Changes in vegetation cover can occur quickly, and property development in the WUI will likely outpace the program's ability to create updated surveys of community and individual property changes.

To remedy this, the subsidy program and annual rate recalculation will help collect data to update NWIP risk maps. Homeowners seeking subsidies will report the changes they performed on their property. Additionally, the program should require participating communities to inform FEMA of property development and changes in vegetation coverage annually before each rate recalculation. The locality will also want to ensure that they give an accurate update on community housing and vegetation changes, because doing so may benefit their citizens' individual rates.

2. Mandatory Purchase Requirement

To ensure that homeowners purchase wildfire insurance in participating communities, the NWIP must require any property seeking a federally-backed mortgage to purchase wildfire insurance. In NFIP communities, the requirement to purchase flood insurance attaches to any mortgage or financial action taken against a property using a federally regulated entity.¹⁸⁷ Another financial incentive to compel purchase could include tying local receipt of federal funding to homeowner purchase of insurance. This incentive could compel local government to educate and engage local community members to increase overall risk perception and spur wildfire insurance purchase in property owners not subject to a mortgage or other property liability.

3. Severe Repetitive-Loss Properties

The NWIP should also impose harsh regulations on a classification of severe repetitive loss properties appropriate for WUI areas. One difficulty in particularly fire-prone areas is the tendency for structures to burn and

fire management (e.g., fuels reduction) needs, while maintaining consistency with conceptual and U.S. policy-specific WUI definitions.”).

187. See *supra* Part III(b).

individuals to rebuild with insufficient fire mitigation to the property¹⁸⁸; however, this cycle of destruction is not as predictable for WUI areas. Fire is more unpredictable than floodwaters, and in some cases, wildfire may clear enough brush and dry fuel in an area to lessen its future risk.

To address the dual issue of fire unpredictability and repeat-loss structures, the NWIP should fashion an SRL classification that accounts for past property damage and the likelihood of future property damage. Past property damage classifications could resemble the NFIP by targeting properties that have experienced two or more claims exceeding property value or else a number of claims exceeding a certain dollar amount (both within a set period of time).¹⁸⁹ In addition, a wildfire SRL could also require some measurement of future fire susceptibility based on individual property and broader fire zone vulnerability. Lastly, this SRL program should be mandatory for all communities participating in the NWIP.¹⁹⁰

The program could also require involuntary condemnation of severe repetitive-loss properties. Federal and state governments possess the power of eminent domain, if the exercise of private property acquisition is for a “public purpose.”¹⁹¹ In his Brooklyn Law Review article, Attorney Alexander Mendelson argues this approach to curb redevelopment and create natural barriers in high-risk flood areas, noting that it also provides an effective tool to “mitigate inevitable flood damage, avoid the persistent problems of correlated loss, adverse selection, and moral hazard, and properly allocate the burdens of flood damage.”¹⁹²

To overcome these potential political consequences, the program could offer additional funding to communities with a high number of potential SRLs to undertake drastic fire-hardening measures and prevent the possibility of destruction or condemnation in the next disaster. Communities that are reluctant to participate in the program due to the high number of SRLs can also work with FEMA to develop a Community Wildfire Protection Plans (“CWPP”), as discussed *infra* Part V(d)(ii). Additionally, the local government could engage property owners and

188. See Alexandre et al., *supra* note 76, at 147 (“In general, we found little evidence though that homeowners or communities adapted to fire by changing the locations of buildings, or by lowering rates of new development after the fire.”).

189. 42 U.S.C. § 4104c(h)(3) (defining SRLs as those with four or more claim payments above \$5,000 each, or at least two claims with a cumulative total exceeding property value before destruction).

190. This position is contrary to the NFIP SRL program, which is optional for participating communities. See NFIP REPORT, *supra* note 118, at 12.

191. Alexander S. Mendelson, *Taking Away the Tighrope: Fixing the National Flood Insurance Program Circus via Eminent Domain*, 83 BROOK. L. REV. 1519, 1534 (2018).

192. *Id.* at 1535.

create outreach programs that incentivize fire-hardening and vegetation clearance.¹⁹³

4. Using Subsidies to Encourage Fire-Hardening Property

a. Insurance Subsidies and Fire-Hardening Assistance for the Individual Property Owner

To mitigate the potential increase for wildfire insurance protection after rate restructuring, the NWIP should offer subsidies to property owners who implement certain preventative measures that increase structural fire resistance. Preventative measures include the creation of defensible space, changes to the positioning and type of flora planted on the property, and structural changes to buildings on the property.¹⁹⁴

Although local governments have some control over private property through building and land use ordinances, it is difficult to monitor compliance on private property. Moreover, measures that restrict private property use are often politically unpopular in certain WUI settings.¹⁹⁵ Individual risk perception is also a key driver in wildfire preparation, and the possibility of subsidizing rates will likely increase property owner engagement.¹⁹⁶

As a result, the NWIP should offer wildfire insurance subsidies to lower individual property rates. By offering incentives to reduce potentially expensive premiums, individual property owners who live in NWIP communities will have more interest in undertaking fire prevention measures at the individual structure level. By offering this incentive and requiring land use and building code changes locally, the NWIP helps provide a comprehensive local mitigation strategy.

b. Subsidies for Low-Income WUI Property Owners

The NWIP should provide low-income property owners fire-hardening assistance grants to ensure access to the program's insurance subsidies. Income levels vary considerably in WUI property owners. For example, Professor Shelby D. Green of Pace University Law School observes two compounding phenomena facing cost-burdened residents in areas increasingly vulnerable to natural disaster: an immediate effect of "dislocation and displacement" and a subsequent economic effect resulting

193. See, e.g., Boulder Cnty., Colo.'s "Wildfire Partners" program. *Our Program, WILDFIRE PARTNERS*, <https://perma.cc/X3A3-22TH> (explaining that the program provides free assessments to qualified residents who want to fire-harden their home or surrounding property). The program also provides financial awards to subsidize the cost of mitigation efforts that use participating contractors. *Id.*

194. See sources cited *supra* note 17.

195. See generally Carroll et al., *supra* note 10.

196. Ghasemi et al., *supra* note 79, at 7–8.

from increased rebuilding costs, increased insurance premiums, and difficulty for low-income property owners to obtain decent mortgage appraisals.¹⁹⁷

Because the NWIP may create overall rate increases for many communities, it must provide financial assistance to the underprivileged citizens in the WUI who need fire-hardening assistance to their property and combatting the economic costs of post-fire change. For example, California recently proposed to allocate over \$20 million in its 2021 budget to the Office of Emergency Services “for the purposes of establishing a financial assistance program to help low-income and disadvantaged homeowners . . . as a part of a community-wide home hardening program or effort.”¹⁹⁸ Similarly, the NWIP can provide assistance to individuals who meet low-income qualifications and want to make property modifications that qualify for insurance subsidies. The program should also seek to develop standards to provide fire-hardening assistance to owners of multifamily properties that rent to low-income individuals.¹⁹⁹

5. Strict Land-Use Requirements for NWIP Communities

- a. Use “Fire Zones” To Create Scaled Ordinances that Minimize Fire Spread and Help with Mitigation Strategy on Nonfederal Public Land

The NWIP should create a scale that subdivides communities into “fire zones” based on risk and applies respective building and vegetation standards to reduce that zone’s particular vulnerability and exposure. For example, Alexander Maranghides, Fire Protection Engineer for the National Institute of Standards and Technology, and William Mell, Research Combustion Engineer for the United States Forest Service, created two exposure scales that measure the likelihood of combustion in a community from fire exposure and ember exposure.²⁰⁰ To create the fire and ember exposure scales, the study quantified community factors like

197. 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, 528 (2014).

198. S.B. 85 § 3, 2021 Leg. (Cal. 2021).

199. Although renters do not bear the burden of structural property loss in a wildfire event, they risk the loss of their lives, personal property, cars, and an affordable home. Any legislation that seeks to help low-income WUI residents should include multifamily property owners in the discussion to ensure they are able to provide fire-hardening upgrades without burdening renters with the cost.

200. ALEXANDER MARANGHIDES & WILLIAM MELL, NAT’L INST. STANDARDS & TECH. NOTE 1748, U.S. DEP’T COM., FRAMEWORK FOR ADDRESSING THE NATIONAL WILDLAND URBAN INTERFACE FIRE PROBLEM—DETERMINING FIRE AND EMBER EXPOSURE ZONES USING A WUI HAZARD SCALE 4 (2012).

surrounding fuel type, local weather, and topography.²⁰¹ A similar scale would allow the NWIP to better assist local communities in the development of effective building and land use standards. In addition to the factors used by Maranghides and Mell, the program exposure scale could utilize historical local fire data and future exposure trends to determine what restrictions may reduce community damage.

b. Use Community Wildfire Protection Plans to Create Tailored Ordinances

Local governments can also use CWPP to identify risk areas and create effective local law that reflects broader state and federal wildfire policy goals.²⁰² CWPP programs “identif[y] and prioritize[] areas for hazardous fuel reduction treatments and recommend the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure.”²⁰³ The USFS estimates that less than 10% of communities facing wildfire risk have a developed CWPP,²⁰⁴ indicating that there is significant room to create local fire plans that better coordinate with state and federal officials and lead to better land management outcomes.²⁰⁵ Given this low participation, the NWIP provides a viable opportunity to facilitate the widespread creation of CWPPs. As a result, the program should require the creation of a CWPP that works with federal and state fire agencies to retain a flexible structure that changes as “community capacity and other conditions change.”²⁰⁶ In addition, the existence of a countywide or other large CWPP will offer municipalities a basis for creating land use regulations that best fit the community and protect it from larger adjacent wildlands.

c. Offer Grants to State Governments and Local Governments Participating in NWIP

NWIP should also implement a grant system that provides state and local government resources to educate property owners about fire

201. *Id.* at 9, 13.

202. *See* 16 U.S.C. § 6511(3).

203. *Id.*

204. *How To Create a Community Wildfire Protection Plan*, U.S. FIRE ADMIN.: COFFEE BREAK BULLETIN (June 24, 2020), <https://perma.cc/WU7U-TYAP>.

205. *See e.g.*, PAMELA J. JAKES ET AL., U.S. FOREST SERV., GEN. TECH. REP. NRS-89, BEST MANAGEMENT PRACTICES FOR CREATING A COMMUNITY WILDFIRE PROTECTION PLAN 20 (2012) (recommending that local communities seeking to reduce fire across a broad area create plans that “forge valuable new relationships and coordination among federal, state, and county fire management officers”).

206. U.S. FIRE ADMIN., *supra* note 204.

prevention and finance larger community fire prevention initiatives.²⁰⁷ Additionally, the NWIP could permit states to administer funding for the low-income residential subsidy program, as discussed *supra* Part V(c)(ii).

Although the NWIP assists WUI communities through regulation development and insurance coverage, the program should also provide state and local governments with assistance to develop fire-hardening plans on public property. WUI communities that oversee nonfederal wildlands play an equally important role in creating defensible space within the community. Additionally, communities will likely need assistance fire-hardening public buildings, infrastructure, and providing general education to the public about the property changes associated with the introduction of NWIP into the community. Lastly, the grants should help state and local fire agencies develop prescribed burn and fuel reduction CWPPs that protect WUI communities at large. This grant system will help prevent reactive behavior to wildfire and encourage communities to put effort toward prevention and risk mitigation.

6. Offer the Option To Condemn Property Voluntarily

The NWIP should create a comprehensive and attractive voluntary buyout program to draw homeowners away from the WUI. Many argue that buyouts offer “maybe the quickest, most politically expedient way to address the most notorious [SRL] properties” under the NFIP.²⁰⁸ This proposition is also true for WUI areas facing increased wildfire frequency and severity. The growing wildfire season is creating prolonged instability for many WUI residents due to repeated evacuations, power shut-offs, and prolonged exposure to toxic wildfire smoke. Although WUI residents often have strong ties to their community and land, the presence of these threats may prompt some citizens to relocate.

Voluntary buyouts for structures in high-risk wildfire areas may garner significant popularity for existing residents. However, the federal government must make the option available in any broader plan to mitigate loss in future wildfire events. For example, NFIP adopted a voluntary buyout methodology known as the Upton-Jones Amendment, allowing property owners to collect their NFIP insurance claims “to relocate or demolish buildings imminently threatened by coastal (and riverine) erosion prior to any damages actually occurring.”²⁰⁹ Despite this incentive, the

207. The federal government currently runs the “Fire Management Assistance Grant Program” to assist states with firefighting response activities, providing a 75/25 federal/state cost-sharing structure. 44 C.F.R. §§ 204.21, 204.61 (2021). The NWIP grant program would provide separate assistance that focuses on fire mitigation and prevention activities.

208. Thomas Ruppert et al., *Managing Property Buyouts at the Local Level: Seeking Benefits and Limiting Harms*, 48 ENV'T L. REP. 10520, 10521 (2018).

209. Mark Crowell et al., *Evaluation of Coastal Erosion Hazards Study: An Overview*, J. COASTAL RSCH., Spring 1999, Special Issue No. 28, at 4 (stating that the

program garnered little support and instead allowed property owners to benefit from demolition payments that drove up program costs, forcing Congress to repeal the amendment in 1994.²¹⁰

Although the Upton-Jones Amendment did not succeed for floodplain management, its basic model is a viable option for property owners facing a high wildfire risk. Using mapping data gathered for individual NWIP participant rates, FEMA could develop criteria to identify the highest-risk structures in a given community. The agency could then offer these property owners buyout options that include full reimbursement and relocation costs. Although this program may face the same expense burden that plagued the Upton-Jones Amendment, the skyrocketing cost of federal fire suppression may justify spending large sums to relocate willing WUI participants.²¹¹

7. Maintain a Role for Private Insurers

The NWIP should also not disclose the participation of private insurers in the program. Instead, the program should incentivize private competition by offering its own baseline alternative rate.²¹² Although there is some fear that communities will avoid participation in the NWIP, if private insurance offers standalone or bundled wildfire policies, such avoidance is unlikely given the continuing rise in property insurance non-renewals within wildfire areas. Rather, the different offerings will incentivize the private insurance industry to develop its own rate reduction structure to match the possible subsidies property owners can receive through NWIP policies.

PART VI: FORESEEABLE CHALLENGES FOR THE NWIP

Although the NWIP provides a solution to residents facing non-renewals or unaffordable property insurance rates, it will likely face

program allowed insureds to opt for either relocation payment up to 40% of the structure value or demolition payment up to 100% of the structure value, plus 10% of the value for demolition cost. FEMA or a state authority must also determine the structure is within a zone of “imminent collapse.”)

210. *Id.* (finding that in the program’s six-year tenure, less than a thousand homeowners filed claims and that FEMA only approved 581 of them).

211. For example, California is already considering a buyout program for coastal real estate that faces inevitable sea rise. *See, e.g.,* Nathan Rott, *California Has a New Idea for Homes at Risk from Rising Seas: Buy, Rent, Retreat*, NAT’L PUB. RADIO (Mar. 21, 2021, 7:00 AM), <https://perma.cc/N37X-C3HD>.

212. KOUSKY ET AL., *supra* note 23, at 42 (discussing the implications of allowing private insurers to compete with NFIP policies); “the impacts of more substantial private sector growth, if that emerges, have been debated. Some worry about loss of the highest priced policies undermining the financial stability of the NFIP. Others argue any shedding of policies to the private sector should be on net positive for the NFIP.” *Id.*

significant political hurdles at the local, state, and federal levels. Although any broadscale overhaul like the NWIP will contain shortcomings, this Part highlights the major obstacles to the program's success.

A. LOW INITIAL TAKE-UP RATES

One problem that will face the NWIP is a low take-up rate by WUI communities.²¹³ Although community risk perception is increasing in the face of disastrous fire seasons, residents will likely resist the additional insurance requirement.²¹⁴ There will likely be significant pushback from consumer advocacy groups and local politicians alike to voice WUI citizen resistance to the program. However, participants are essential in this program to create a large enough coverage pool that can sustain inevitable wildfire claims in the forthcoming seasons.

To solve this issue, the NWIP could require a local enforcement mechanism in its agreement with a community to provide wildfire insurance. The program could provide funding to localities that either expands the role of building and zoning code enforcement teams or creates a new role that enforces local fire insurance and code requirements. This dedicated enforcement would better ensure that residents adhere to local wildfire insurance requirements, proper building code requirements, and zoning laws crafted for wildfire mitigation.

Although it is a matter for separate discussion, the federal government could also replace the current role of state FAIR plans and provide similar last resort property coverage on the federal level.²¹⁵ This would better ensure a large risk pool by combining current FAIR plan participants with additional citizens in communities that opt for this new form of coverage. However, the intent of the NWIP is not to provide a last resort property coverage option, but rather to sever the cost of wildfire damage from existing property insurance plans and address the growing skepticism of private insurance to participate in high-risk fire areas.

B. HIGH VALUE OF PROPERTY IN MUCH OF WUI

A potential problem facing the NWIP is the high monetary value of many homes in the WUI and the disparity between WUI property values within states. The relative cost of homes in the WUI depends on the state and the specific region. In some western states, like Colorado and Nevada,

213. Reilly's proposal solves this dilemma by preempting other wildfire coverage and requiring a "homeowner mandate" for individuals who do not participate. Reilly, *supra* note 150, at 561–62.

214. Resistance would likely come from individuals in higher-risk fire areas that have yet to experience a disaster, and from individuals in WUI communities in areas that are not historically susceptible to wildfire but face an increased risk forecast.

215. This last resort coverage option echoes French's national catastrophe insurance program. See French, *supra* note 88.

WUI homes are more valuable than the average, whereas in Arizona and Oregon, they are worth less than the average.²¹⁶ In California, there is a large range of property values and residential housing types in areas considered WUI,²¹⁷ although the values of many homes in WUI regions closer to major metropolitan areas can often exceed \$1 million for a residential property.²¹⁸ The presence of expensive homes in the WUI makes the idea of subsidy incentives less appealing politically, creates a possibility of loss for an insurance company with policies in a wealthy WUI area, and may unfairly burden the rates of lower-value WUI properties that participate in the program when wealthy communities rebuild in high-risk areas.

One way to combat this burden is a mandatory condemnation requirement. If wealthy communities participating in the program live in too high risk of an area and rebuild after disaster, this condemnation requirement will force rethinking on where to locate the community and minimize the chance of repeated high-dollar disaster claims.

Additionally, high-value residential communities may provide the risk pool with significant funding if the program ties premium rates to a property's replacement cost. Homeowners who live in less wealthy WUI communities may actually benefit from these high-value community payments because they will help lessen the NWIP's deficit risk. Affluent WUI communities are generally supportive of fire hazard mitigation and thus may face a lower risk during a given wildfire season that affects all WUI communities.²¹⁹

C. APPROPRIATING FUNDS TO THIS PROGRAM WHILE STILL PROVIDING FUNDS FOR ENTRENCHED FIRE SUPPRESSION

Funding is also a major question surrounding the NWIP, as the program engages federal, state, local, and private entities to enact its goals.

216. Grabar, *supra* note 74.

217. Fires occur in areas like the Oakland Hills, Malibu, Santa Barbara, and Southern Orange County (where home prices easily exceed \$1 million). Fires also spread in areas like the Sierra foothills, Central Coast, San Bernardino foothills, and rural mountain counties (where home prices are significantly lower than Bay Area and Southland urban and suburban WUI areas).

218. Aware of this disparity within the broad "WUI" category of California, Gregory L. Simon proposes the use of an "affluence-vulnerability index" to complement the WUI by measuring who is vulnerable, what characterizes this vulnerability, where the most vulnerable areas in a community are located, and what events create this elevated risk. SIMON, *supra*, note 83, at 31. This index would evaluate the vulnerabilities and risks facing individual households beyond property characteristics and could possibly "reveal[] community attributes and behaviors that reduce other modalities of risk." *Id.* at 101. To sum up this point, a resident affected by the 1991 Oakland Hills Fire stated, "If your house is going to burn, be sure that it does with three thousand of your neighbors' in a major media market." *Id.*

219. See Carroll et al., *supra* note 10, at 5.

The federal government already spends a record amount on fire suppression and provides states with grant funding at the time a wildfire strikes.²²⁰ As a result, legislative advocates of the NWIP must stress the importance of the program as a long-term preventative solution to America's growing wildfire problem. To support this assertion, advocates should cite the expeditious rise of wildfire in the West and general increase in fires across other WUI areas in the country. This argument should accompany research demonstrating long-term cost benefits of the program to justify the large upfront cost of undertaking a new insurance program. Although the program will require significant investment, the intent is to create preventative and mitigatory strategies that will drive down federal fire suppression cost over time.

CONCLUSION

Any successful long-term solution to manage and mitigate wildfire in the western WUI should account for the people, settlement, and development that will remain in the area despite increasing exposure to wildfire. The broad, multijurisdictional, and unpredictable nature of wildfire warrants a solution from the federal level that invokes private, local, and state cooperation. The NWIP will facilitate this engagement and ensure that preventative measures occur beyond federal lands alone. Additionally, this program will ensure that residents of the WUI do not face underinsurance or non-renewal, but rather will receive accurate rates with the opportunity to subsidize cost in exchange for fire-hardening property. Although recent problems with the NFIP caution the use of a federal program to provide insurance for an increasingly correlated risk like wildfire, such a program can operate without significant debt, if the initial policy components are strict enough to prevent repeated damage claims, encourage mitigation, and provide accurate risk premiums.

220. Jingjing Liang et al., *Factors influencing large wildland fire suppression expenditures*, 17 INT'L J. WILDLAND FIRE 650, 650 (2008) ("Since the new millennium, the federal government has spent on average over US\$1 billion per year on suppression, while its annual expenditures from 1970 to 2000 averaged below US\$400 million (all expenditures in 2005 US dollars)."); *Fire Management Assistance Grants*, *supra* note 59.
